# DOMINGUEZ CHANNEL BACTERIA TMDL STUDY 2003

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Channel

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Prepared For:

Los Angeles Regional Water Quality Control Board 320 West Fourth Street, Suite 200 Los Angeles, California 90013

Prepared By:

MEC Analytical Systems, Inc. 2433 Impala Drive Carlsbad, California 92008

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# INTRODUCTION

On October 1, 2003, MEC Analytical Systems, Inc. (MEC) conducted water quality sampling along the Dominguez Channel in support of the Los Angeles Regional Water Quality Control Board's (LARWQCB) Total Maximum Daily Load (TMDL) Program for coliform bacteria contamination. This sampling effort was a follow-up to an initial bacterial TMDL study performed by MEC in June 2002.

The Dominguez Watershed (Hydrologic Unit 405.12) is a large watershed in the southern portion of Los Angeles County and covers approximately 110 square miles (Figure 1). Ninety-six percent of its total area is developed and the predominant land use is transportation.

The Dominguez Channel drains the Dominguez Watershed. It is a concrete channel from the headwaters near the City of Inglewood until it enters the estuarine environment below Vermont Street. From Vermont Street to the Consolidated Slip in the Los Angeles Harbor, the Dominguez Channel has either riprap or concrete banks and is tidally influenced. Throughout the entire course of the channel, large culverts, laterals and small storm drain outfalls provide freshwater and urban runoff inputs to the system.

The entire Dominguez Channel (above and below Vermont Street) is listed on the Clean Water Act Section 303(d) List of Impaired Water Bodies for high coliform bacteria counts. As a result of this impairment, the LARWQCB is developing a coliform bacteria TMDL for the Dominguez Channel.

### **METHODS**

A total of 34 water samples were collected for bacterial analyses, including 13 water samples from within the freshwater portion of the Dominguez Channel (above Vermont St.), 12 water samples from within the Dominguez Channel estuary (below Vermont St.), six duplicate samples and three field blanks for quality control. In addition to water samples, physical water quality measurements were collected at each site. This survey effort was completed by a two person field crew, one representative each from the LARWQCB and MEC.

Of the 13 samples collected above Vermont Street, two samples were collected at the headwaters, three samples were collected from laterals entering the channel, four samples were collected from outfalls discharging to the channel and four samples were collected directly from the center of the channel. Of the 12 samples collected from the estuarine environment downstream of Vermont Street, three samples were collected from laterals entering the channel and 9 samples were collected from three transects across the channel. At each of these three transects a sample was collected from the center and sides of the channel.

#### DOMINGUEZ CHANNEL BACTERIA TMDL STUDY

Field observations and measurements were recorded on field log sheets and are included in Appendix A. Observations included weather conditions, a physical description of each site (location, type and size of outfall, if applicable, and GPS coordinates), visual water quality, flow estimations, physical water quality data and comments. Each site was also documented with a digital photograph (Appendix B). A white board listing the Site ID, sample time and date was included in each photograph.

Flow estimations were conducted by several methods. For conveyances with low flows, flow was estimated by recording the length of time it took to fill a container to a known volume or flow was estimated using the area velocity method (measure the depth and width of flow and record the length of time for an object to be transported an known distance). Flow within the main channel was measured using a Marsh McBirney Flo-Mate Model 2000 portable flow meter. Upstream of Vermont Street, measurements made with-the meter were taken from the horizontal and vertical center of the channel. Downstream of Vermont Street, measurements were made approximately 3 feet from the channel banks at mid-water column depth.

Physical water quality data measurements were taken for pH, temperature and conductivity using an Oakton CON10 ph/conductivity/temperature meter. All field instruments were calibrated prior to the sampling efforts.

During all sampling operations, extreme care was taken to minimize exposure of the sample to human, atmospheric and other sources of contamination. In order to accomplish this, the field crew utilized clean sampling techniques for collecting water samples. In addition, samples were collected from downstream to upstream so that sampling personnel and vehicles did not disturb the channel prior to samples being taken.

Water samples for bacterial analyses were collected using pre-sterilized, EPA approved, Whirl-pacTM sampling bags or 1/2 liter sample containers (depending on flow volume). The samplers cleaned their hands using an antibacterial hand wash prior to sampling at each site. Sterile, powder-free nitrile gloves were worn at all times during sample collection and changed between each site. After sampling, the sample bags or sample containers were closed tightly and kept in separate, sealed, zip-lock bags. Bags were placed in coolers with ice and delivered to the laboratory at 4 C. Sample coolers also reduced the exposure of the sample to sunlight. Chains of custody were filled out completely and accurately and were signed by the sampling and receiving technicians. To ensure holding times were met, technicians received samples from the field crew and delivered samples to the laboratory throughout the day.

All bacterial analyses were initiated within the National Environmental Laboratory Accreditation Program's (NELAP) approved holding times for total coliform, fecal coliform, *E. coli* and enterococcus. All samples were analyzed at MEC's microbiology laboratory in Carlsbad, California. Samples were analyzed with the following methods: total coliform with Colilert 18, fecal coliform with Membrane Filtration, *E. coli* with Colilert 18 and enterococcus with Enterolert.

### RESULTS

Concentrations of all four bacterial indicators exhibited a wide range of values, depending on the location of the sample site. Samples collected in the upper, freshwater reaches of the Dominguez Channel had the greatest variation in bacterial concentrations, with samples of outfall discharge and at the headwaters having the most elevated bacterial concentrations (Figures 2 through 5). Samples collected within the channel in this reach usually had lower bacterial levels than those collected from laterals or outfalls. Levels for the different bacterial indicators above Vermont Street were:

- Total Coliform 3,873 MPN/100mL to >24,196,000 MPN/100mL
- Fecal Coliform 230 CFU/100mL to 20,000,000 CFU/100mL
- *E. coli* 134 MPN/100mL to 313,010 MPN/100mL
- Enterococcus 10 MPN/100mL to 111,987 MPN/100mL

For each indicator, the maximum concentration occurred from outfall discharge at Site 4. The minimum concentration occurred at Site 18 for each indicator except for *E. coli*, which occurred at Site 13. Each of these sites was located within the center of the channel. Table 1 lists all water quality data and bacterial analyses results for all stations.

The lower, estuarine portion of the Dominguez Channel typically had values that decreased with increasing distance downstream (Figures 7 - 10). Bacterial concentrations did not fluctuate greatly from site to site. The majority of samples collected in this reach were taken from the channel instead of laterals and outfalls, and these in-channel samples typically had bacterial concentrations an order of magnitude greater than in-channel samples collected above Vermont Street. Levels for the different bacterial indicators below Vermont Street were:

- Total Coliform 199 MPN/100mL to 32,554 MPN/100mL
- Fecal Coliform 10 CFU/100mL to 26,500 CFU/100mL
- *E. coli* non detect (<10) MPN/100mL to 7,894 MPN/100mL
- Enterococcus non detect (<10) MPN/100mL to 185 MPN/100mL

The maximum concentration for total coliform was located at Site 29, a lateral entering the Dominguez Channel downstream of  $190^{th}$  Street. The maximum concentration for fecal coliform and *E. coli* were located along the transect at  $190^{th}$  Street (Site 26) and the maximum concentration for enterococcus was located at Site 36 ( $223^{rd}$  Street). The minimum concentrations for all four bacterial indicators were located at the furthest downstream transect consisting of Sites 38, 39 and 40. Table 1 lists all water quality data and bacterial analyses results for all stations.

Figures 2 through 11 illustrate the relative locations of sample sites, station type (headwaters, lateral, outfall or in-channel) and relative bacterial concentration for each indicator as well as the fecal coliform to enterococcus ratio. These figures are divided

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into the upper, freshwater reaches of Dominguez Channel (Figures 2 - 6) and the lower, estuarine reaches of the Dominguez Channel (Figures 7 - 11).

Figures 12 - 15 graphically display all samples by station type with distance downstream and actual bacterial concentration for each indicator. Included in these graphs are data collected during the June 2002 sampling effort for comparison between dry-weather years. Figure 16 - 18 compare results for samples based on conveyance type and freshwater versus saline environments.

### DISCUSSION

Several sites within the upper portion of the Dominguez Channel have bacterial concentrations that are of concern, warranting possible further investigation. These sites are discussed in sequence from the headwaters of the channel to the mouth of the Dominguez Channel at Consolidated Slip.

Sites 50 and 51 are two large double box-culverts located at the headwaters where the channel first emerges from underground. The bacterial levels at Sites 50 and 51 are indicative of possible sewage contamination. Although bacterial contamination values at Sites 50 and 51 are slightly different than results from samples collected in 2002, the results are within close enough range to show consistency in bacterial contamination.

Comparable to 2002, the laterals at Sites 24 and 15 and the channel at Site 1 show elevated levels of total coliform, with low fecal coliform, E. coli and enterococcus counts. Due to the ability of total coliforms to grow readily in the environment, elevated total coliform numbers, without a corresponding increase in one or more of the other bacterial indicators, should not be overly concerning. This does not suggest, however, that high total coliform counts should not be investigated, rather investigations at these sites should not be given priority over sites with elevated bacterial levels of multiple indicators.

The outfall samples appeared to have the greatest contributory affect to bacterial levels within the Dominguez Channel. Sites 12, 4 and 3 were outfalls with elevated levels of bacterial contamination. For all bacterial indicators, Site 4 had the highest bacterial concentrations and these bacterial concentrations are representative of undiluted raw sewage. In 2002, Site 3 was recommended for additional investigations due to possible sewage contamination.

An overall assessment of the bacterial concentrations for each reach (above and below Vermont Street) provides interesting results. In 2003, sample results showed that the geometric mean bacterial concentration of **all** samples collected above Vermont Street was approximately one order of magnitude higher than the geometric mean bacterial concentration for **all** samples collected below Vermont Street (Figure 17). However, calculating the geometric mean bacterial concentration utilizing only in-channel samples

(excluding headwaters, laterals and outfalls), the bacterial levels are similar for each reach (Figure 18).

Environmental stresses, such as elevated pH values, sunlight, and salinity are factors that may reduce bacterial concentrations in the channel. Above Vermont Street, pH levels greater than 10 were measured at three stations (Sites 13, 18 and 23) in the concrete portion of the channel and a pH of 9.7 was measured at Site 1. High pH values were also recorded in 2002 and are likely the result of calcium carbonate deposits creating an alkaline environment in the channel waters. Elevated pH values can act as a bactericide and restrict the bacterial levels to relatively low counts; pH levels above 8 become bactericidal for coliforms and bacteriostatic for enterococcus. Although enterococcus are more resistant to high pH, even this family of organisms loses its resistance to pH levels above 9.

For all indicators except enterococcus, bacteria levels appear to rise during the first mile of the estuary. Surprisingly, within this same reach, enterococcus levels dropped. This may be explained by a combination of factors. First, enterococcus concentrations are more susceptible to decreases by sunlight in a more fresh water environment than coliforms and *E. coli* (Sinton, 2002). All bacterial indicators react similarly to sunlight deactivation with increases in saltwater concentration. However, downstream in the estuary, as salinity levels do increase, coliforms and *E. coli* are more susceptible to inactivation by increases in salinity as compared to enterococcus; this is evident in Figures 12 - 15 where the coliform and *E. coli* levels decrease by one to two orders of magnitude and the enterococcus levels remain relatively stable.

#### **Comparison of Results**

Figures 12 through 15 graphically display each indicator, differentiating between inchannel bacterial counts and inputs from headwaters, outfalls and laterals, and are plotted against their relative distance downstream. For comparison, results from the 2002 survey are included. From 2002 to 2003, only enterococcus appears to have an overall drop in numbers.

Figure 16 compares the geometric mean of bacteria levels for all parameters tested between in-channel, lateral, outfall and headwater samples. The same trend was observed for all parameters. Headwater levels were highest, followed by outfalls, laterals and lastly in-channel bacteria levels were lowest. Typically in human sewage, total coliforms numbers are approximately 2 logs higher than fecal coliforms (including *E. coli*), and enterococcus are typically 1-2 logs lower than fecal coliforms. This trend is evident in Figure 16. If animal waste were the predominant source, the trend should be reversed, with greater enterococcus numbers followed by decreasing levels of fecal and total coliforms, respectively.

#### Fecal Coliform/Enterococcus Ratio

There has long been a debate in the microbiological community with regard to the ratio between fecal coliforms and fecal streptococcus (or enterococcus) (fc/fs). Studies have

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implied that a ratio of 4:1 fc/fs in a given sample indicates more human contamination, while a ratio of 0.7:1 indicates a higher possibility of animal pollution. This theory is based in part on the fact that *in general*, humans produce much higher numbers of coliform bacteria, while most animals produce higher numbers of enterococcus.

Studies have shown this ratio to be valid only during recent (24-hour) pollution episodes and in fresh water samples (coliform bacteria cannot withstand the high salinity in seawater as well as enterococcus can). An additional drawback is that substantial changes in temperature and pH can affect growth and die-off of these organisms differently. In addition, while coliforms can often grow in the environment, especially in the presence of organic material and higher water temperatures, they also die-off more easily due to extreme temperatures, pH, and lack of nutrients. Enterococcus however, does not tend to grow in water as coliforms can, but remains constant with little die-off, even in extreme temperatures, pH and saline environments.

The fecal coliform results for each sample were divided by the corresponding enterococcus results. The methods used for enumeration were the membrane filtration method for fecal coliforms and the IDEXX Enterolert method for enterococcus. The fc/fs ratios presented in Figures 6 and 11 were compared to the site observation sheets. If the ratio held true, with the presence of birds and other animals, a higher fecal streptococcus (enterococcus) ratio would be exhibited. It was therefore expected that lack of animals, the potential for sewage contamination, etc., *might* present a possibility of more human contamination emanating from channel flows.

In 2002, a number of the fecal coliform to enterococcus results suggested an abundance of animal contamination, despite the lack of visible animals present. In 2003, the fecal to enterococcus ratios suggested a greater influence from human contamination. However, this change may be in response to environmental stresses such as temperature, pH and the presence of organic materials among other things. Such physical stresses create the possibility for drastic changes in bacterial counts from one location – and one moment - to the next.

### **CONCLUSIONS and RECOMMENDATIONS**

As this year's sampling included only a subset of the sites sampled in 2002, a complete analysis of sources and trends from one year to the next is impossible to perform. However, some general conclusions and recommendations can be made. The headwaters, laterals and outfalls are contributing sources to the bacterial contamination in the Dominguez Channel. Further sampling upstream of each of these discharge points would be required to determine potential sources. Samples from within the concrete channel are low, likely due to environmental stresses such as pH, temperature, and dilution. Samples from within the estuary are also low, and decrease steadily with increasing distance downstream. This decrease is likely due to environmental stresses such as salinity, UV and dilution. Sites 3, 4, 12, 50 and 51 have significantly elevated bacterial levels and should be addressed. Sites 3, 4 and 12 are possibly impacted by raw sewage contamination.

### REFERENCES

Sinton, Lester W., Finlay, Rochelle K. and Lynch, Philippa A. Sunlight Inactivation of Fecal Bacteriophages and Bacteria in Sewage-Polluted Seawater. Applied and Environmental Microbiology. Aug. 1999. p. 3605-3613.

			Miles Downstream		Lat	Long	• •			-	• •		· · · · ·
	Sample		from	Time	Lat Decimal	Long Decimal	Water		Conductivity	<b>Total Coliform</b>	Fecal Coliform	E. coli	Enterococcus
	ID	Notes	Headwaters	Sampled	Degrees Minutes	Degrees Minutes	Temp (°C)	pН	(uS)	(MPN/100mL)	(CFU/100mL)	(MPN/100mL)	(MPN/100mL)
	51	headwaters	0	18:25	33° 55.724'	118° 20.290'	22.5	8.41	731	488,440	150,000	6,488	14,672
	50	headwaters	0.06	18:36	33° 55.659'	118° 20.257'	21.8	8.27	701	682,800	73,500	48,844	3,076
	24	lateral	3.61	17:40	33° 53.238'	118° 20.103'	21.9	8.91	1393	41,058	1,850	1,281	368
	23	in channel	3.61	17:32	33° 53.229'	118° 20.102'	23.4	10.08	741	6,867	340	301	30
-	18	in channel	4.07	17:17	33° 52.872'	118° 19.870'	24.9	10.34	571	3,873	230	203	10
ate	15	lateral	4.36	16:57	33° 52.798'	118° 19.609'	20.8	8.44	1475	74,300	2,000	- 910	1,850
2	13	in channel	4.69	16:29	33° 52.172'	118° 19.267'	26.9	10.52	557	2,755	255	134	41
as (	() <b>12</b>	outfall	4.9	16:08	33° 52.684'	118° 19.069'	21.6	8.29	837	512,100	53,500	38,732	40,770
- <b>E</b> 1	11	outfall	4.9	16:05	33° 52.686'	118° 19.059'	21.7	8.78	1280	4,352	400	199	31
	5	lateral	6.28	15:20	33° 52.277'	118° 17.920'	23.3	8.27	590	32,554	1,400	520	97
0	<u> </u>	outfall	6.47	15:02	. 33° 52.264'	118° 17.713'	22.3	7.99	1683	>24,196,000	20,000,000	313,010	111,987
. (	13	outfall	6.66	14:41	33° 52.265'	118° 17.534	23.2	8.50	863	387,320	58,000	13,169	4,884
	1	<ul> <li>in channel</li> </ul>	6.75	14:25	33° 52.258'	118° 17.431'	25.8	9.72	788	124,570	4,950	- 1,918	318
	29	lateral ·	- 7.53	13:04	33° 51.698'	118° 17.015'	22.8	7.74	saline		7,800	7,701	20
(p	28	in channel	7.51	12:15	33° 51.697	118° 17.049'	22.9	7.89	saline	24,809	6,650.	5,794	10
č	.27	in channel	7.51	12:23	33° 51.699'	118° 17.035'	na	na	na	20,354	9,500	6,631	30
ien i	26	in channel	7.51	12:35	33° 51.703'	118° 17.031	22.7	7.70	satine	30,759	26,500	7,894	62
Ĩ	31	lateral	8.98	11:40	33° 50.753'	118° 16.063'	22.1	7.68	saline	11,446	2,050		31
۲I	32	lateral	9.32	11:10	33° 50.461'	118° 15.831'	22.0	8.11	saline	16,071	3,250	1,935	74
lal	36	in channel	11.08	9:40	33° 49.463'	118° 14.590'	20.9	7.91	saline	13,735	2,000	1,989	185
Ĕ	35	in channel	11.08	9:58	33° 49.465'	118° 14.576'	na	na	na	21,872	1,800	1,314	98
2	34	in channel	11.08	10:05	33° 49.462'	118° 14.554'	na	na	na	9,854	2,660	1,334	83
tua	40	in channel	14.95	9:00	33° 46.641'	118° 14.462'	17.4	7.75	satine	1,989	25	· <10	31
Se	39	in channel	14.95	8:50	33° 46.632'	118° 14.456'	na	na	na	199	10	10	20
	38	in channel	14.95	8:30	33° 46.625'	118° 14.457'	17.5	7.68	saline	256	15	10	<10
	30	at site 27	7.51	12:27	33° 51.699'	118° 17.035'				19,890	8,400	6,015	- 20
80	48	at site 50	0.06	18:48	33° 55.659'	118° 20.257'				512,200	180,000	143,870	1,904
cat	22	at site 23	3.61	17:34	33° 53.229'	118° 20.102'				3,255	180	175	20
ā	14	at site 13	4.69	16:31	33° 52.172'	118° 19.267'				3,654	145	122	41
무	6	at site 3	6.66	14:46	33° 52.265'	118° 17.534'				726,990	350,000 E	1 <u>6,</u> 242	7,701
	20	at site 29	7.51	13:07	33° 51.698'	118° 17.015'				24,809	6,500	5,794	10
ks	37	at site 36	· · · · · · · · · · · · · · · · · · ·	9.42	33° 49.463'	118° 14.590'				<10	<10	<10	<10
an	21	at site 23		17:37	33° 53.229'	118° 20.102'				<10	<10	<10	- <10
٩	33	at site 27		12:30	33° 51.699'	118° 17.035'				<10	<10	<10	<10

0.1

#### Table 1. Dominguez Channel Water Quality Sampling Results, October 1, 2003

#### E = Estimated Value

Red values exceed Dry Weather Action Levels developed by the County of San Diego based on the upper 90% confidence level of the San Diego County Copermittees 2002 dry weather analytical monitoring data and applied to the Dominguez Channel solely as a point of reference. There has been no Action Level developed for *E. coli*.



Figure 2. Total coliform in northern Dominguez Channel.



Figure 3. Fecal coliform in northern Dominguez Channel.



Figure 4. Enterococcus in northern Dominguez Channel.

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Figure 5. E. coli in northern Dominguez Channel.



Figure 6. Fecal coliform to Enterococcus ratio in northern Dominguez Channel.



Figure 7. Total coliform in southern Dominguez Channel.



Figure 8. Fecal coliform in southern Dominguez Channel.



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Figure 9. Enterococcus in southern Dominguez Channel.



Figure 10. E. coli in southern Dominguez Channel.



Figure 11. Fecal coliform to Enterococcus ratio in southern Dominguez Channel.

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<u>Dor</u>	ninguez Cha	nnel Bac	terial Monit	oring Data and	<b>Observation Sheet</b>	
) PS Coordi	nates: <u>118°1'</u> Z 7°4(	1,457	W	Date/Time:	Site ID: 38	
Weather Inf	ormation.	+002	N Field C	rew: / Cada	A Math	
Light Condi	tions: Sunny	Over	cast Partly	Cloudy		
Last Rain:	-72 h	ours < 72	hours <3 ho	ITS Prec	<u>eipitation:</u> > 0.1" < 0.1"	
Site Descrip	tion: Location:_	H. Ford	Bridge, Eg.	+/South		 _
Earthen Drain	nage Concrete C	nammely? Outf	all 0 'Manhol	e $l$ Catchbasin	Other	<b></b> '
Flow Estima	tion: Flow Yes	/ No / Ponded/	Frickle <u>Evidenc</u>	e of overland flow near	sampling location?: Yes / No	
Are 1. Wi	a X Velocity (creek dth (cm ft - in)	/channel)	Filling 1. Volume	a Bottle (mL - L - oz)	Area X Velocity (pipe) 1. Pipe Diameter (ft/in)	
2. De	pth (cm {ft / in)		2. Time	(sec)	2. Depth	
3. Ve	locity (cm - ft/- in /(s	$(C) \cup (J > ($	psterm	· · · · · · · · ·	3. Velocity	
4. Flo	W 168 9	luc	***See formula	a on back	***See formula on back	
Visuals:	<u>Photo Taken:</u>	yes/ no	Roll#/Pic#		Draw sample location if no photo	<u>):</u>
Odor	Chemical	Sewage	Rotten Eggs	None other		
Color	Greyish	Greenish	Browish	None/Other		
Clarity	Clear	Cloudy		Other		
oatables	Gily) Rainbow	Trash	Bubbles	None/Other		
degetation	Limited	Extensive	and the server	WNone/Other		
Biology	Mosquitos	Algae	Snails / Fish	Orone/Other		
Trash In Vie 0. None 1. Light (< 2. Moderat 3. High (1) 4. September 2.	cinity of Drain (Cir 5) te (6-10) 1-25)	cle): <u>Type:</u>	<ul> <li>6 of number not</li> <li>% Organic (food)</li> <li>% Plastics (cups, str bottles, junk)</li> <li>% Recyclables-not</li> <li>bottles, matal)</li> </ul>	total volume of items): aws, bags, wrappers, plastic (paper, glass		•
4. Somewn 5. Dense (>	at Dense (26-50) >50)		_% Large items (app	liances, cars, tires)		
Drain Assoc Algae covera 0. None 1. ≤5% 2. 5-25% 3. 25-50% 4. 50-75% 5. ≥ 75%	aited Algae: age (circle):	Algae outsid Main algae t % film a [% turf al %macro	e of flow?: (ves) no ype: lgae gae algae	Other Obser Fish:yes Snails: yes Birds: yes Other: Number of ho Evidence of d	vations: no no no fish pomeless: tumping: yes no	-
* <u>Field</u> <u>Screening</u>	Water Temp (% pH (pH units)_	c) 175 7.68	Conductivity	tine_mS / uS (Ci	rcle appropriate units)	i i
* <u>Laborator</u> <u>Analysis</u>	Y Fecal Coliform Enterococcus	· · · · · · · · · · · · · · · · · · ·	(MPN) (MPN)	E.Coli Total Colifon	(MPN) m(MPN)	, t. 
ab Sample	es taken (Yes)	No Bott	le ID#'s $0.38$	· <u>· · · · · · · · · · · · · · · · · · </u>		
Comments		· · · ·		·		- -
Observation	15 Water	prov no	x upstre	an - tide	com, ag in	_
			<b>↓</b>			-

Dominguez Channel Bacterial Monitoring Data and Observation Sheet
PS Coordinates: $11894.456$ w 3346.632 N Date/Time: $64/632$ DSSO
Weather Information: Field Crew: L. Callson A. Martin
Light Conditions:SunnyOvercastPartly CloudyLast Rain:<72 hours
Site Description: Location: Henry Ford Bridge Barthen Drainage Concrete Channel O Outfall Manhole Catchbasin Other
Flow Estimation: Flow Yes No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No
Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)1.Width (cm - ft - in) /// 01.Volume
2. Depth (cm - ft - in) backnow 2. Time (sec) 2. Depth
3. Velocity (cm - ft - in / sec) 3. Velocity
4. Flow $\simeq 168 F_{4}/scc$ $P_{4}/F_{4}$ = similar to site 38 ***See formula on back
Visuals:         Photo Taken:         yes/ no         Roll#/Pic#         Draw sample location if no photo:
Odor Chemical Sewage Rotten Eggs None/Other
Clority Clear Cloudy Other
Clarify Clear Cloudy Other
egetation Limited Extensive None/Other
Biology Mosquitos Algae Snails / Fish None/Other Nation
Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)1. Light (<5)
Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (vest no)Other Observations: Fish: yes no Snails: yes no Birds: yes no0. NoneMain algae type: % film algaeSnails: yes no Birds: yes no 
* <u>Field</u> Screening Water Temp (°C) Conductivity mS / uS (Circle appropriate units)
*Laboratory         Fecal Coliform         (MPN)         E.Coli         (MPN)           Analysis         Enterococcus         (MPN)         Total Coliform         (MPN)
ab Samples taken (Yes) No Bottle ID#'s 04
Comments Observations Mid Channel, Field Screening readings not available. Water is inwitig Canot see 75ft below surface

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<b>Dominguez Channel Bacterial Monitoring Data and Observation Sheet</b>
PS Coordinates: <u>B/18°14,462</u> w Site ID: <u>40</u> <u>33°46,641</u> N Date/Time: <u>10/1/03</u> <u>07:00</u>
Weather Information: Field Crew: L. Carlson /A. Martin
Light Conditions:SunnyOvercastPartly CloudyLast Rain:<72 hours
Site Description: Location: Henn Ford Bolge Wroth Parthen Drainage Concrete Channel Outfall Manhold Catchbasin Other
Flow Estimation: Flow Yes/No/Ponded/Trickle Evidence of overland flow near sampling location?: Yes/No
Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)1.Width (cm - ft - in)1.Volume(mL - L - oz)1.2.Depth (cm - ft - in)2.Time(sec)2.Depth3.Velocity (cm - ft - in / sec) O(O)2.Time(sec)2.Depth4.Flow $O_1O_1O_1O_2O_2O_2O_2O_2O_2O_2O_2O_2O_2O_2O_2O_2O$
Visuals:   Photo Taken: yes / no Roll#/Pic# 3   Draw sample location if no photo:
Odor Chemical Sewage Rotten Eggs None/Other
Color Greyish Greenish Browish None/Other
Clarity Clear Cloudy Other
'oatables Oily Rainbow Trash Bubbles None/Other
egetation Limited Extensive None/Others
Biology Mosquitos Algae Snails / Fish None/Other
Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)1. Light (<5)
Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes / no)Other Observations: Fish: yes no Snails: yes no Birds: yes no0. None 1. <5%
* <u>Field</u> Screening Water Temp (°C) <u>17.4</u> pH (pH units) <u>7.45</u> Conductivity <u>Saline</u> mS / uS (Circle appropriate units)
*Laboratory       Fecal Coliform       (MPN)       E.Coli       (MPN)         Analysis       Enterococcus       (MPN)       Total Coliform       (MPN)
Ab Samples taken Yes / No Bottle ID#'s 070 Comments
Observations Wash Moving upstolang - tide coming in.

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<b>Dominguez Channel Bacterial Monitoring Data and Observation Sheet</b>	
) PS Coordinates: $\frac{18^{\circ}/4}{33^{\circ}/9.463}$ W Site ID: $\frac{36}{740}$ Date/Time: $10+3$ $\frac{7}{40}$	-
Weather Information: Field Crew: L. Carls	-
Light Conditions:SunnyOvercastPartly CloudyLast Rain:272 hours< 72 hours	
Site Description: Location: 22 rd St. NW Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other	-
Flow Estimation: Flow Yes / No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No	
Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)1.Width (cm $(ft - in)$ 1971. Volume (mL - L - oz)1. Pipe Diameter (ft/in)2.Depth (cm $(ft - in)$ 2. Time (sec)2. Depth3.Velocity (cm $(ft)$ in / sec)013. Velocity4.Flow47-3Ft / sec***See formula on back	
Visuals:     Photo Taken:     yes / no     Roll#/Pic#     J       Odor     Chemical     Sewage     Rotten Eggs     None/Other       Color     Grevish     Greenish     Browisb     None/Other	-
Clarity Clear Cloudy Other 'oatables Oily Rainbow Trash Bubbles None/Other 'egetation Limited Extensive None/Other	
Biology Mosquitos Algae Snails (Fish None/Other	•
Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)1. Light (<5)	
Drain Assocaited Algae:       Algae outside of flow?: (ve) / no)       Other Observations:         Algae coverage (circle):       Algae outside of flow?: (ve) / no)       Fish: ves no chocks - Hundred         0. None       Main algae type:       None         1. < 5%	- S.
* <u>Field</u> Water Temp (°C) <u>0</u> , <u>9</u> Conductivity <u>Sal</u> , <u>m</u> S / uS (Circle appropriate units) <u>Screening</u> pH (pH units) <u>7</u> , <u>9</u>	
*Laboratory Analysis ) Fecal Coliform (MPN) Enterococcus (MPN) Total Coliform (MPN)	
b Samples taken Yes / No Bottle ID#'s (750	
Comments Observations A Plock of pidgeons Plan as we argived etches the Thong landed on the box in [vert. Admik flew accross the way	Ke

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Dominguez Cha	innel Bacterial Monitol	ing Data and Observation Sh	eet
		2/6	327
PS Coordinates:	<u> </u>	Site ID:	
	N	Date/Time: 10/1/03 9	142
eather Information:	Field Cre	Carlson A. Martin	·
ight Conditions: Sunny	Overcast Partly Clo	udy Precipitation: >0.1"	< 0.1"
	On a CL Barl	<u>rreepration.</u> > 0.1	< 0.1
te Description: Location:	annel Outfall Manhole	Catchhasin Other	
ow Estimation: Flow Yes	/ No / Ponded/Trickle <u>Evidence o</u>	overland flow near sampling location?: Yes	s/No <sup>·</sup>
Area X Velocity (creek Width (cm - ft - in)	/channel) Filling a 9_7_ 1. Volume	Bottle         Area X Veloci          (mL - L - oz)         1. Pipe Diameter	ty (pipe) (ft/in)
Depth (cm - ft - in)	2. Time	(sec) 2. Depth	•
Velocity (cm - ft - in / s	ec)	3. Velocity	
Flow N/A	***See formula o	back ***See formula on back	: 
isuals:   <u>Photo Taken:</u>	yes no Roll#/Pic#	Draw sample location	if no photo
dor Chemical	Sewage Rotten Eggs 1	lone/Other	· · · · · · · · · · · · · · · · · · ·
olor Greyish	Greenish Browish 1	lone/Other	•
larity Clear	Cloudy	Other	
oatables Oily / Rainbow	Trash Bubbles 1	lone/Other	•
egetation Limited	Extensive	Ione/Other	,
iology Mosquitos	Algae Snails / Fish	Ione/Other	
rash In Vicinity of Drain (Circ	cle): Type: (% of number not tot	l volume of items):	
None Light (<5)	% Organic (food)	have wranners	
Moderate (6-10)	bottles, junk)	, ougs, whippens,	
High (11-25) Somewhat Dense (26-50)	<u>% Recyclables-not pla</u>	tic (paper, glass	
Dense (>50)	% Large items (applia	ces, cars, tires)	
rain Assocaited Alage.		Other Observations:	
lgae coverage (circle):	Algae outside of flow?: (yes / no)	Fish: yes no	
None < 5%	Main algae tyne:	Snails: yes no Birds: yes no	
5-25%	% film algae	Other:	
25-50% 50-75%	% turf algae %macroalgae	Number of homeless: Evidence of dumping: ves no	•
> 7.5%		F=-6: ,	•
Field Water Temp (°C	C) Conductivity	mS / uS (Circle appropriate units)	
Screening pH (pH units)	······		
Laboratory Fecal Coliform	(MPN)	E.Coli(MP	N)
Analysis Enterococcus	(MPN)	Total Coliform(MP	<b>N)</b> .
ab Samples taken Yes / ]	No Bottle ID#'s 037		** • • • •
			•
omments bservations	Sleaf - Din	) Promilian Kar of	

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<b>Dominguez Channel Bacterial Monitoring Data and Observation Sheet</b>
$\frac{1000}{1400} PS Coordinates: \frac{1000}{140000000000000000000000000000000$
Weather Information: Field Crew: L. Carlson / A. Mastr
Light Conditions: Sunny Overcast Partly Cloudy
Last Ram: 72 hours <3 hours <u>Precipitation</u> 20.1 <0.1
Site Description: Location: 22. Onter Of Channel
Flow Estimation: Flow Yes/ No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes (No)
Area X Velocity (creek / channel) Filling a Bottle Area X Velocity (pipe)
1. Width (cm $-\frac{4}{4}$ in) $\frac{1}{2}$ 1. Volume (mL - L - oz) 1. Pipe Diameter (ft/in) 2. Denth (cm $\frac{1}{4}$ in) $\frac{1}{2}$ 2. Time (acc) 2. Denth
2. Depth (cm $(fr)$ in) <u>- 20</u> 2. Time <u>(sec)</u> 2. Depth 3. Velocity (cm $(ft)$ in / sec) (VT) 3. Velocity
4. Flow +**See formula on back ***See formula on back
<u>Visuals:</u> <u>Photo Taken:</u> <u>yes</u> no Roll#/Pic# <u>Draw sample location if no photo:</u>
Odor Chemical Sewage Rotten Eggs None/Other
Clarity Clear Cloudy Other
oatables Oily Rainbow Trash Bubbles None/Other
legetation Limited Extensive None/Other
Biology Mosquitos Algae Snails / Fish None/Other
Trash In Vicinity of Drain (Circle):0.None1.Light (<5)
Drain Assocaited Algae:Culd hot See bottomOther Observations:Algae coverage (circle):Algae autside of flow?: (yes / no)Fish: Ces no0. NoneNonef CathySnails: yes no1. < 5%
*Field     Water Temp (°C)     ConductivitymS / uS (Circle appropriate units)       Screening     pH (pH units)     Sife
*Laboratory       Fecal Coliform       (MPN)       E.Coli       (MPN)         Analysis       Enterococcus       (MPN)       Total Coliform       (MPN)
Jib Samples taken (Yes) No Bottle ID#'s DS
Observations Trash bag Hoating in Water 1 ft doren.

1	· · · · · · · · · · · · · · · · · · ·
Dominguez Channel Bacterial Monitoring Data and	l Observation Sheet
PS Coordinates: 118 14,554 w 35 49,462 N Date/Time:	Site ID: <u>34</u> 10/1/03 10:05am
Veather Information: Field Crew: L. Cas (Sm	A. Martin
<u>Light Conditions:</u> Sunny Overcast Partly Cloudy Last Rain: 72 hours < 72 hours < 3 hours <u>Prev</u>	<u>sipitation:</u> > 0.1" < 0.1"
ite Description: Location: 22 Street Bo dae Street	St
How Estimation: Flow Yes No / Ponded/Trickle Evidence of overland flow near	sampling location?: Yes No
Area X Velocity (creek / channel)Filling a Bottle.Width (cm - ft - in)1. Volume (mL - L - oz)	Area X Velocity (pipe) 1. Pipe Diameter (ft/in)
	2. Depth
Velocity (cm - ft - in / sec)	3. Velocity
Flow r/A ***See formula on back	***See formula on back
/isuals:     Photo Taken:     yes no     Roll#/Pic#       Odor     Chemical     Sewage     Rotten Eggs     None)Other	Draw sample location if no photo:
Color Greyish Greenish Browish None/Other	
Clarity Clear Cloudy Other	
'oatables Oil) / Rainbow Trash Bubbles None/Other	
legetation Limited Extensive None/Other	
Biology Mosquitos Algae Snails Fish None/Other	
Trash In Vicinity of Drain (Circle):       Type: (% of number not total volume of items):         None      % Organic (food)         Light (<5)	
Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (vest no)Other Obser Fish: (vest no)0. NoneMain algae type: % film algaeBirds: vest Birds: vest Other:2. 5-25%% film algae % furf algaeOther Obser Fish: vest Snails: vest Birds: vest 	omeless:
tEield Water Torra (°C) Conductivity mS / uS (C	ircle appropriate unite)
Screening pH (pH units) Given and the second determined of the se	Left Sik inaccessible
Laboratory         Fecal Coliform         (MPN)         E.Coli           Analysis         Enterococcus         (MPN)         Total Colifor	(MPN) m(MPN)
	ана стана стана Стана стана стан
b Samples taken (Yes / No Bottle ID#'s 34	

Dominguez Channel Bacterial Monitoring Data and Observati	on Sheet
PS Coordinates: <u>HC H D</u> W <u>SS H HC D</u> N <u>Weather Information:</u> 33 D. 161 Field Crew: <u>L. Cortson</u> <u>A</u>	B2 103 11:10 Martin
Light Conditions:SunnyOvercastPartly CloudyLast Rain:> 72 hours< 72 hours	"
Site Description: Location: To crance La Heral A. D. C. Earthen Drainage concrete Channel Outfall Manhole Catchbasin Other	
Flow Estimation:       Flow Yes / No / Ponded/Trickle       Evidence of overland flow near sampling location         Area X Velocity (creek / channel)       Filling a Bottle       Area         Width (cm ft) in)       SO       1. Volume       (mL - L - oz)       1. Pipe Diame	<u>?:</u> Yes / No X Velocity (pipe)
2. Depth (cm $(ft)$ in) $(ft)$ 2. Time $(sec)$ 2. Depth	(10 m)
3.Velocity (cm (ft) in / sec) ()_4 ()_23.Velocity4.Flow $1 \cdot 2 \cdot f + 3/ \leq tc$ ***See formula on back***See formula	a on back
Visuals:       Photo Taken:       yes/ no       Roll#/Pic#       Praw sample         Odor       Chemical       Sewage       Rotten Eggs       None/Other       Draw sample         Color       Greyish       Freenish       Browish       None/Other       Color         Clarity       Clear       Cloudy       Other       Color       Other       Clear         'oatables       Oily / Rainbow       Trash       Bubbles       None/Other       None/Other         Biology       Mosquitos       Algae       Snails / Fish       None/Other       None/Other	<u>location if no photo:</u>
Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None	
Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: $\sqrt{e}$ / no)Other Observations: Fish: yes no Snails: yes no Birds: $\sqrt{es}$ no - $\mathcal{E}_{3}$ / $e^{-2}$ 0. None 1. < 5%	t D
*Field Screening pH (pH units) 8, Conductivity Sa (, ) Sa (, ) Sa (Circle appropriate units)	its)
*Laboratory Analysis       Fecal Coliform       (MPN)       E.Coli         Analysis       Enterococcus       (MPN)       Total Coliform         b Samples taken       Yes / No       Bottle ID#'s       32	(MPN) (MPN)
Comments Observations	

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<b>Dominguez Channel Bacterial Monitoring Data and Observation Sheet</b>
PS Coordinates: 118 16,063 W <u>33,50,753</u> N <u>Weather Information:</u> <u>Light Conditions:</u> <u>Light Conditions:</u> <u>Sunny</u> <u>Overcast</u> <u>72 hours</u> <u>Overcast</u> <u>72 hours</u> <u>Overcast</u> <u>72 hours</u> <u>Overcast</u> <u>72 hours</u> <u>Overcast</u> <u>72 hours</u> <u>Overcast</u> <u>72 hours</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overcast</u> <u>Overc</u>
Site Description: Location: Former La Head East at DC Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other
Flow Estimation: Flow (Yes) No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No
Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)1.Width (cm $(ft)$ - in) $\land$ $\checkmark$ $\circlearrowright$ 1.Volume $(mL - L - oz)$ 1.Pipe Diameter $(ft/in)$ 2.Depth (cm $-ft$ )- in) $\land$ $\checkmark$ $\circlearrowright$ 2.Time $(sec)$ 2.Depth 3.Velocity (cm $(ft)$ - in / sec) $\bigcirc$ $\bigcirc$ $\bigcirc$ $\checkmark$ 3.Velocity (cm $(ft)$ - in / sec) $\bigcirc$ $\bigcirc$ $\bigcirc$ $\checkmark$ ***See formula on back***See formula on back
Visuals:       Photo Taken:       yes/ no       Roll#/Pic#       Draw sample location if no photo:         Odor       Chemical       Sewage       Rotten Eggs       None/Other         Color       Greyish       Greenish       Browish       None/Other         Clarity       Clear       Cloudy       Other         'oatables       Oily / Rainbow       Trash       Bubbles       None/Other film and the photo:         Biology       Mosquitos       Algae       Snails / Fish       None/Other Taken inc. dragen fig
Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)1. Light (<5)
Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes bit)Other Observations: Fish: yes 10 Snails: yes 10 Birds: ves no-doublean0. None 1. <5%
* <u>Field</u> Water Temp (°C) <u>22</u> , <u>(</u> <u>Screening</u> pH (pH units) <u>7,68</u> Conductivity <u>Scline</u> mS / uS (Circle appropriate units)
*Laboratory       Fecal Coliform(MPN)       E.Coli(MPN)         Analysis       Enterococcus(MPN)       Total Coliform(MPN)
bamples taken (Yès/No Bottle ID#'s )? Comments <u>balt course</u> as a cicent using recuciled water phservations <u>Flow</u> upstruchen due to the portuge of the change ( How upstruchen due to the portuge of the bank of latterd.

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Dominguez Channel Bacterial Monitoring Data and Observation Sheet         PS Coordinates:       1187.119       Site ID:       25         PS Coordinates:       1187.119       N       DateTime:       21.115         Weather Information:       Pield Crew.       2.151.15       Pield Crew.       2.151.15         Light Conditions:       Sumy       Overcast       Entry Cloud       Precinitation:       >0.1"       <0.1"         Light Conditions:       Sumy       Concrete Channel       Outfall       Mahole       Catchfasin       Offer         Etwice Extension       Concrete Channel       Outfall       Mahole       Catchfasin       Offer       Catchfasin       Offer         1. Width (em Qr in)       2. Time       (ml - 1 c2)       1. Pipe Pianeter       (ft/in)         2. Depth (em Qr in)       2. Time       (sec)       2. Depth       3. Velocity (pipe)         3. Velocity (em Qr in / sec) (ft/i       1. Volume       NoneOther       1. Velocity       ***See formula on back       ***See formula on back         Visualis:       Chanical       Sowage       Roiten Eggs       NoneOther       Draw sample location if no photos:         Odor       Chemical       Sowage       Soutes Eggs       NoneOther       Soutes Eggs       No				· · ·		
PS Coordinates:       III & III & IIII & IIIII & IIIIII & IIIIII	Do	minguez Ch	annel Bact	erial Moni	toring Data a	nd Observation Sheet
Site Description:       Location:       Image: Concrete Channel       Image: Concrete Channel       Image: Concrete Channel       Filling a Bottle       Area X Velocity (prex / channel)       I. Velocity (prex / channel)       Filling a Bottle       Area X Velocity (prex / channel)       I. Velocity (mile in in its concrete Channel)       Filling a Bottle       Area X Velocity (prex / channel)       I. Velocity (mile in in in its concrete Channel)       Filling a Bottle       Area X Velocity (prex / channel)       I. Velocity (mile in in in its concrete Channel)       Filling a Bottle       Area X Velocity (prex / channel)       I. Velocity (mile in in its concrete Channel)       Filling a Bottle       Area X Velocity (mile in in its concrete Channel)       Area X Velocity (mile in in its concrete Channel)       I. Velocity is the interval in its concrete Channel       Area X Velocity (mile in interval in its concrete Channel)       I. Velocity is the interval inte	PS Coord ) <u>Weather In</u> <u>Light Cond</u> <u>Last Rain:</u>	linates: 1(8,1) 33 5 nformation: ditions: Sunn	<u>y</u> V V Nours V V V V V V V V V V V V V	W N Cast Partly hours 3 ho	Date/Tim Crew: L. Car le Cloudy burs P	Site ID: $25$ e: $Oct 1.3$ $(2.15)$ 52 A Machinerecipitation: > 0.1" < 0.1"
Partner       Current Channels       Other       Other         Flow Estimation:       Fib (Cis) No / Ponded/Trickle       Evidence of overland flow near sampling location?:       Yes / No         Area X Velocity (creck / channel)       Filling a Bottle       Area X Velocity (pipe)       Prove for the point of the point o	Site Descri	ption: Location:	D.C.	190th-8	F. Bridge-	- South ( worth , scone
Area X Velocity (creek / channel)       Filling a Bottle       Area X Velocity (pipe)         1.       Width (cm · 0 · in) 101 - 5       1. Volume (mL - L - oz)       1. Pipe Diameter (ft/in)         2.       Depth (cm @ in / sec) (L O I       3. Velocity (ml @ in / sec) (L O I       3. Velocity         3.       Velocity (cm @ in / sec) (L O I       3. Velocity       3. Velocity         4.       Flow       [1 - 4 f1 / - c.]       ***See formula on back       ***See formula on back         Visuals:       Photo Taken:       @ No       Roll#/Pic#       Prove the provide of the photo:         Odor       Chemical       Sowage       Rotten Eggs       None/Other       Draw sample location if no photo:         Odor       Chemical       Sowage       Rotten Eggs       None/Other       Draw sample location if no photo:         Odor       Chemical       Sowage       SomeWata City of Drain (Circle):       Type: (% of aumber not total volume of items):       Draw sample location if no photo:         Oily / Raibow       Afgae       Snails / Fish       None/Other       Draw sample location if no photo:         Trash In Vicinity of Drain (Circle):       Type: (% of aumber not total volume of items):       Note       Somewata Circle):       None location if no photo:         1.       Light (1-23)       Moderate (6-10)	Flow Estim	nation: Flow X	S /No / Ponded/T	rickle Eviden	ce of overland flow ne	ear sampling location?: Yes / No
Visuals:       Photo Taken:       Poto Taken:	Ar 1. W 2. Do 3. V 4. Fl	rea X Velocity (creel Vidth (cm $- fr - in)$ Vepth (cm $fr - in)$ Velocity (cm $fr - in / fr$ Velocity (cm $fr - in / fr$ )	$\frac{k/channel}{21-5}$ $\frac{2}{sec} = 0.010$	Fillin 1. Volume 2. Time ***See formu	g a Bottle (mL - L - oz) (sec) la on back	Area X Velocity (pipe) 1. Pipe Diameter (ft/in) 2. Depth 3. Velocity ***See formula on back
Trash In Vicinity of Drain (Circle):       Type: (% of number not total volume of items):         0. None      % Organic (food)         1. Light (<5)      % Organic (food)         2. Moderate (6-10)       \$% Organic (paper, glass         3. Somewhat Dense (26-50)      % Carge items (appliances, cars, tires)         Drain Assocaited Algae:       Algae outside of flow?: (yes / no)         Algae coverage (circle):       Algae outside of flow?: (yes / no)         0. None      % film algae         1. < 5%       Main algae type:         2. 5-25%      % film algae         3. 25-50%      % film algae         4. Son-75%      % macroalgae         *Field       Water Temp (°C)         Ymap:       Conductivity         Ymap:       Ymap:         *Laboratory       Fecal Coliform         (MPN)       E.Coli       (MPN)         Analysis       Entercooccus       (MPN)         basenples taken       Ymap:       Ymap:	Visuals: Odor Color Clarity 'oatables )egetation Biology	Photo Taken: Chemical Greyish Clear Oily / Rainbow Immited Mosquitos	ves no Sewage Greenish Cloudy v Trash Extensive Algae	Roll#/Pic# Rotten Eggs Browish Bubbles Snails / Fish	None/Other None/Other Other Mone/Other None/Other None/Other	<u>Draw sample location if no photo:</u>
Drain Assocaited Algae:       Other Observations:         Algae coverage (circle):       Algae outside of flow?: (yes / no)       Fish: yes no         0. None       Snails: yes no       Snails: yes no         1. < 5%	Trash In V 0. None 1. Light ( 2. Modera 3. High (1 4. Somew 5. Dense	/icinity of Drain (Cir <5) ate (6-10) 11-25) vhat Dense (26-50) (>50)	r <u>cle):</u> <u>Type:(</u>	% of number not         % Organic (food)         % Plastics (cups, st         bottles, junk)         % Recyclables-not         bottles, metal)         % Large items (ap)	total volume of items raws, bags, wrappers, plastic (paper, glass pliances, cars, tires)	
*Field       Water Temp (°C)       D. I       Conductivity       S. I       ms / us (Circle appropriate units)         Screening       pH (pH units)       I       I       Image: Conductivity       S. I       Image: Conductivity       Image: Conductity       Image: Conductity       Image:	Drain Asso           Algae cover           0. None           1. < 5%	D <u>caited Algae:</u> rage (circle):	Algae outside Main algae ty % film al /% turf alg %macroa	of flow?: (yes / no ype: gae gae llgae	b) D) D) D) D) D) D) D) D) D) D	servations: es no es no es no f homeless: of dumping: yes no
	* <u>Field</u> Screening * <u>Laborato</u> Analysis	Water Temp ( pH (pH units) ry Fecal Coliforn Enterococcus	PC) 22.91 4.591	Conductivity_ (MPN) (MPN)	E.Coli Total Coli	(Circle appropriate units) (MPN) form(MPN)

Dominguez Channel Bacterial Monitoring	Data and Observation Sheet
PS Coordinates: $118^{\circ} 17,035$ W $329^{\circ} 51,699$ N	Site ID: 77 Date/Time: 0241, 03 12128
eather Information: Field Crew:	Castron / A. Martin
ght Conditions:SunnyOvercastPartly Cloudyast Rain:72 hours< 72 hours	Precipitation: > 0.1" < 0.1"
te Description: Location: DC - 90th A Brid Inthen Drainage Concrete Channel Outfall Manhole	Catchbasin Other
low Estimation: Flow Yes No / Ponded/Trickle Evidence of overla	nd flow near sampling location?: Yes / No
Area X Velocity (creek / channel)Filling a BottleWidth (cm - ft - in) $0$ 1.Volume(m	Area X Velocity (pipe)L - L - oz)1. Pipe Diameter (ft/in)
Depth (cm - ft - in) $\sim \Delta$ 2. Time (se	c) 2. Depth
Velocity (cm - ft - in / sec) $\frac{N}{2}$	3. Velocity
Flow   Y     Y   ***See formula on back	***See formula on back
<u>'isuals: Photo Taken:</u> yes/ no Roll#/Pic#	Draw sample location if no photo
odor Chemical Sewage Rotten Eggs None/Ot	her
color Greyish Greenish Browish None/Ot	her
larity Clear Cloudy Other	
oatables Oily / Rainbow Trash Bubbles	her
Limited Extensive None/Of	her <u>i fi</u>
iology Mosquitos Algae Snails / Fish None/O	
Trash In Vicinity of Drain (Circle):None	<u>ne of items):</u> wrappers, per, glass rs, tires)
Drain Assocaited Algae:	Other Observations:
Algae coverage (circle): Algae outside of flow?: (yes / no)	Fish: yes no Snails: yes no
. < 5% Main algae type: None	Birds: yes no
. 5-25%% film algae + 684 %	Other: Number of homeless:
50-75%%macroalgae	Evidence of dumping: yes no
Field       Water Temp (°C)       Conductivity         Screening       pH (pH units)	_mS / uS (Circle appropriate units)
LaboratoryFecal Coliform(MPN)AnalysisEnterococcus(MPN)	E.Coli(MPN) Total Coliform(MPN)
b Samples taken Yes No Bottle ID#'s 027	· · · · · · · · · · · · · · · · ·
Comments Deservations	

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# **Dominguez Channel Bacterial Monitoring Data and Observation Sheet**

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<u>D01</u>	minguez Cha	and Datter		Jing Data all	Cost vation Sheet
	·	· ·	•	· .	2~
- PS Coordi	nates:	N	v	· . · ·	Site ID:
)	·	i	N	Date/Time:	Oct 01 03 12127
Weather Inf	formation:	· •	Field C	rew: L, Carls	m/A. Martin
Light Condi	tions: Sunny	Overcast	Partly C	Cloudy	
<u>Last Rain:</u>	272 ho	urs < 72 hou	rs < 3 hou	rs <u>Prec</u>	<u>cipitation:</u> > 0.1" < 0.1"
<u>Site Descrip</u> Earthen Drai	tion: Location: nage Concrete Cha	annel Outfall	Manhole	<u>Canter</u> catchbasin	Dufficate
Flow Estima	ation: Flow Yes	No / Ponded/Trick	le <u>Evidence</u>	e of overland flow near	sampling location?: Yes / No
	a X Velocity (creek /	channel)	Filling	a Bottle	Area X Velocity (pipe)
1. WI	ath (cm - ft - fn)	·····	1. volume	(III <u>L</u> - L - 02)	2 Donth
2. De	ptn (cm - n - m)		2. Time	(sec)	2. Velasia
3. ve	locity (cm - it - in / se	<u> </u>	***0	an haiste in the	3. Velocity
4. FIC	w		See formula	on dack	See formula on back
Visuals:	Photo Taken:	yes / no	Roll#/Pic#	······································	Draw sample location if no photo:
Odor	Chemical	Sewage	Rotten Eggs	None/Other	
Color	Greyish	Greenish	Browish	None/Other	
Clarity	Clear	Cloudy		Other	
	Oily / Rainbow	Trash	Bubbles	None/Other	
egetation	Limited	Extensive		None/Other	
Biology	Mosquitos	Algae	Snails / Fish	None/Other	
Trach In Vi	ainity of Drain (Ciral	a). Tunai (9/ 4		otal valume of items):	
$\frac{11231111}{0}$	chilly of Drain (Circi	<u>er: <u>Type: 1/80</u> %C</u>	Organic (food)	otal volume of items).	
1. Light (<	5)	%Pl	astics (cups, stra	ws, bags, wrappers,	
2. Moderal 3. High (1)	1-25)	% R	ecyclables-not p	lastic (paper, glass	
4. Somewh	nat Dense (26-50)	t	ottles, metal)		
5. Dense (>	>50)	% L	arge items (appl	iances, cars, tires)	
Drain Assoc	aited Algae:			Other Obser	vations:
Algae covera	age (circle):	Algae outside of	llow?: (yes / no)	Fish: yes Snails: yes	no
1. < 5%		Main algae type:	•	Birds: yes	no
2. 5-25%		% film algae		Other:	
3. 25-50%		% turf algae	•	Number of ho	humping: ves no
5. > 75%		/onlice/ourgav			imiping. yes no
*Field	Water Temn (°C	)	Conductivity	mS / uS (Ci	rcle appropriate units)
Screening	pH (pH units)	·			
*Laborator	v Fecal Coliform		(MPN)	E Coli	(MPN)
Analysis	Enterococcus	·····	_(MPN)	Total Colifor	(MPN)
h Sample	staken Nech	0 Rottle II	()		
				······································	
Comments			<u></u>	~~~~	······
Onservation	15 Jon fillo	ask Jor	Dotte Li	T-J	
		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·

PS Coordinates:	w		Site ID: <u>3</u> 3
)	N	Date/Time:	3ct/, 03 12:30
Weather Information:	Field Cr	rew: 2. Carler	1 A. Martin
Light Conditions: Sunny Last Rain: > 72 ho	Overcast Partly C ours < 72 hours < 3 hou	Cloudy Preci	nitation: >0.1" <0.1"
	19ATHST Brida	alle ks	fr- 8 18 17-
Barthen Drainage Concrete Ch	annel Outfall Manhole	Catchbasin	Other
Flow Estimation: Flow Yes	/ No / Ponded/Trickle <u>Evidence</u>	e of overland flow near	sampling location?: Yes / No
Area X Velocity (creek /         1.       Width (cm - ft - in)	channel) Filling 1. Volume	a Bottle (mL - L - oz)	Area X Velocity (pipe) 1. Pipe Diameter(ft/in)
2. Depth (cm - ft - in)	2. Time	(sec)	2. Depth
3. Velocity (cm - ft - in / se	<u>c)</u>		3. Velocity
4. Flow	***See formula	on back	***See formula on back
Visuals: Photo Taken:	yes / no Roll#/Pic#	· · · · · · · · · · · · · · · · · · ·	Draw sample location if no photo:
Odor Chemical	Sewage Rotten Eggs	None/Other	
Color Greyish	Greenish Browish	None/Other	
Clarity Clear	Cloudy	Other	
Oatables Oily / Rainbow	Trash Bubbles	None/Other	
Biology Mosquitos	Algae Snails / Fish	None/Other	
0. None	<u>A rype. ( % of number not t</u> % Organic (food)		
1. Light (<5) 2. Moderate (6-10)	bottles, junk)	iws, bags, wrappers,	
3. High (11-25) 4. Somewhat Dense (26-50)	% Recyclables-not p bottles_metal)	olastic (paper, glass	· · · ·
5. Dense (>50)	% Large items (appl	iances, cars, tires)	
Drain Assocaited Algae:		Other Observ	vations:
Aigae coverage (circle): 0. None	Aigae outside of now 7: (yes / no)	Snails: yes	no
1. < 5%	Main algae type: % film algae	Birds: yes	no
3. 25-50%	% turf algae	Number of ho	meless:
4. 50-75% 5. > 75%	%macroalgae	Evidence of d	umping: yes no
*Field Water Temp (°C	Conductivity	mS / uS (Cir	cle appropriate units)
Screening pH (pH units)			
*Laboratory Fecal Coliform	(MPN)	E.Coli	(MPN)
	(MPN)	Total Coliforn	n(MPN)
Analysis Enterococcus		:	· · ·
Analysis         Enterococcus_           b Samples taken         Yesy N	lo Bottle ID#'s		
Analysis Enterococcus	lo Bottle ID#'s () 5 5		

Dominguez Channel Bacterial Monitoring Data and Observation Sheet         PS Coordinates:       118 17.021 w       Site 10:26         Site 10:26       Site 10:26       Site 10:26         Site 10:26       Site 10:26       Site 10:26         Weather Information:       Overcast       Partly Cloudy         Last Rain:       "27 hours"       Site 10:26         Site Discortion:       Courtest       Partly Cloudy         Site Discortion:       Fiew Estimation:       Fiew Site Courtest       Partly Cloudy         1. Velocity (creck / changet)       Image Bottle       Image Bottle       Area X Velocity (creck / changet)         2. Depth (cm - B - in)       Court       Image Bottle       Steensive Bages       Mergo/Other         2. Dipth (cm - B - in)       Colsortion:       Roll#/Pic/d       Image Bottle       Presonal on back         Yisuas:       Photo Taken:       Col not in / Ooi / 100       Presonal on back       Presonal on back         Yisuas:       Concercian       Area X Ve	) · · · · ·
PS Coordinates:       118 17.03 w       Site 10:26         Weather Information:       Site 10:26       Date/Time:       Code/10.3 (1000)         Weather Information:       Party Cloudy       Party Cloudy       Precipitation: >0.1"       <0.1"         Site Description:       Code to an and to the code to an and the code to an and to the code to an and the code to an and to the code to an and to the code to an and the code to an an	<b>Dominguez Channel Bacterial Monitoring Data and Observation Sheet</b>
Flow       Flow       Flow       Flow       Flow       Yes / No / Ponded/Trickle       Evidence of overland flow near sampling location?:       Yes / No         Area X Velocity (creek / changel)       Width (cm (b + in)	PS Coordinates: 118 17.03 W <u>33° 51,703</u> N <u>Weather Information:</u> <u>Light Conditions:</u> <u>Last Rain:</u> <u>Site Description:</u> Location: <u>10°</u> <u>Site ID: 26</u> <u>Date/Time:</u> <u>Ocf / 03' 12'</u> <u>Date/Time:</u> <u>Ocf / 03' 12'</u> <u>Carl Son / A. / Machine</u> <u>Carl So</u>
Area X Velocity (creek / changel)       Filling a Bottle       Area X Velocity (pipe)         1.       Width (cm (1 + in)	Flow Estimation: Flow Yes/ No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No
Visuals: Odor       Photo Taken: Chemical       Draw sample location if no photo:         Color       Chemical       Sewage       Rotten Eggs       None/Other	Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)1.Width (cm $(ft - in)$ $(ft - in)$ $(ft - in)$ 1.Volume $(mL - L - oz)$ 1.Pipe Diameter $(ft - in)$ 2.Depth (cm - ft - in) $(ft - in)$ 2.Time $(sec)$ 2.Depth $(sec)$ 2.3.Velocity (cm - ft - in) $(ft - in)$ 4.Flow $4(t - 3)$ $ft - 1/scu$ ***See formula on back***See formula on back
Odor       Chemical       Sewage       Rotten Eggs       None/Other	Visuals: Photo Taken: yes/ no Roll#/Pic# Draw sample location if no photo:
Type: (% of number not total volume of items):         0. None       % Organic (food)         1. Light (<5)	Odor       Chemical       Sewage       Rotten Eggs       None/Other         Color       Greyish       Greenish       Browish       None/Other         Clarity       Clear       Cloudy       Other         'oatables       Oilly/Rainbow Trash       Bubbles       None/Other         'egetation       Limited       Extensive       None/Other         Biology       Mosquitos       Algae       Snails / Fish       None/Other
Drain Assocaited Algae:       Algae outside of flow?: (yes from a line of flow: (yes from a line line line of flow:: (yes from a line of flow::	Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)1. Light (<5)
*Field       Water Temp (°C)       MPN)       Mater Temp (°C)       MPN)       MP	Drain Assocaited Algae:       Algae outside of flow?: (yest no)       Other Observations:         Algae coverage (circle):       Algae outside of flow?: (yest no)       Fish: yes       flow         0. None       Main algae type:       Snails: yes       flow         1. < 5%
*Laboratory       Fecal Coliform       (MPN)       E.Coli       (MPN)         Analysis       Enterococccus       (MPN)       Total Coliform       (MPN)         b Samples taken       Yes/No       Bottle ID#'s O26	* <u>Field</u> Water Temp (°C) 22.7 Conductivity Salme mS / uS (Circle appropriate units) Screening pH (pH units) 7.70
b Samples taken Yes/No Bottle ID#'s O26	*Laboratory AnalysisFecal Coliform(MPN)E.Coli(MPN)AnalysisEnterococcus(MPN)Total Coliform(MPN)
	b Samples taken Yes/No Bottle ID#'s O26 Comments Observations

AND DESCRIPTION OF THE OWNER OWNER

Dominguez Channel Bacterial Monitoring	Data and Observation Sheet
) PS Coordinates: $\frac{118}{23}, 51, 698$ N	Site ID: <u>29</u> <u>304</u> Date/Time: <u>Oct 1</u> , <u>03</u> <u>1</u> 54 w
Weather Information: Field Crew: 6	Carlson/ A. Martin
Light Conditions: Sunny Overcast Partly Cloudy	
Last Rain: <pre>&gt;72 hours</pre>	$\frac{Precipitation:}{Precipitation:} > 0.1'' < 0.1''$
Site Description: Location: (1) 1/2 - 55 Site of Earthen Drainage Concrete Channel Outfall Manhole	Catchbasin Other Cri rest
Flow Estimation: Flow Yes / No / Ponded/Trickle Evidence of overla	nd flow near sampling location?: Yes / No
Area X Velocity (creek / channel)Filling a Bottle1.Width (cm - ftr- in) / / / / / / / / / / / / / / / / / / /	Area X Velocity (pipe)L - L - oz)1. Pipe Diameter (ft/in)
2. Depth (cm - $f = in$ ) 2. Time (se	c) 2. Depth
Velocity (cm ( $fb$ - in / sec) $0$ $1$	3. Velocity
Flow $6.2 \text{ ft}^3/\text{sc}$ ***See formula on back	***See formula on back
Visuals:   Photo Taken: yes / no Roll#/Pic# 2	Draw sample location if no photo:
Ddor Chemical Sewage Rotten Eggs None/O	her
color Greyish Greenish Browish None/O	her
clear Cloudy Other	
oatables Oily / Rainbow Trash Bubbles None/O	her <u>Biobla</u>
egetation Limited Extensive None O	her
Biology Mosquitos Algae Snails / Fish None/O	her
Trash In Vicinity of Drain (Circle):Type: (% of number not total volumeNone% Organic (food)Light (<5)	ne of items): wrappers, ber, glass rs, tires)
Drain Assocaited Algae:	Other Observations:
Algae coverage (circle): Algae outside of flow?: (yes (no)) 0. None 1. < 5% Main algae type: 2. 5-25% % film algae	Snails: yes no bronacles below Birds: yes no water level
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Number of homeless: Evidence of dumping: yes no
* <u>Field</u> Water Temp (°C) <u>Screening</u> pH (pH units) <u>Screening</u> pH (pH units)	_mS / uS (Circle appropriate units)
Laboratory       Fecal Coliform       (MPN)         Analysis       Enterococcus       (MPN)	E.Coli(MPN) Total Coliform(MPN)
_lb Samples taken (Yes)/ No Bottle ID#'s ()	
Comments Observations Works Ch (vcot Fle	w from DC to Ocean
	/

180 <b>H</b>			- 	<u>.</u>	·
Dor	<u>minguez Cha</u>	nnel Bac	terial Monit	toring Data and	<b>Observation Sheet</b>
	0 1				
PS Coord	inates: <u>181</u>	DIS	W		Site ID: 20
	3375	,698	N	Date/Time:	Oct 1, 03 1301
eather Inf	formation:		Field C	Crew: <u>[. (26]</u> 5	non/A. Mactin
ast Rain:	sunny > 72 ho	ours < 72	hours < 3 ho	urs <u>Preci</u>	pitation: > 0.1" < 0.1"
te Descrip	tion: Location:	Dinge for	cSite 29	1- Cullert &	200 190th St Brile
arthen Drai	nage Concrete Ch	annel Outf	all Manho	le Catchbasin	Other Box Gluer
ow Estima	ation: Flow Yes	/ No / Ponded/1	Frickle <u>Evidenc</u>	ce of overland flow near :	sampling location?: Yes / No
Are	a X Velocity (creek	/ channel)	Filling	g a Bottle	Area X Velocity (pipe)
· Wi	idth (cm - ft - in)		1. Volume	(mL - L - oz)	1. Pipe Diameter (ft/in)
· De · Ve	$\frac{1}{100} = \frac{1}{100} = \frac{1}$	·	2. Time	(sec)	2. Depth
Flo	w		***See formul	a on back	***See formula on back
					l,
suals:	<u>Photo Taken:</u>	yes / no	Roll#/Pic#	<u> </u>	Draw sample location if no photo
ior Jor	Chemical	Sewage	Rotten Eggs	None/Other	
nor arity	Clear	Cloudy	Browish	Other	n an
oatables	Oily / Rainbow	Trash	Bubbles	None/Other	4
egetation	Limited	Extensive		None/Other	· · · · · · · · · · · · · · · · · · ·
ology	Mosquitos	Algae	Snails / Fish	None/Other	
rash In Vi	cinity of Drain (Circ	le): <u>Type</u> :	(% of number not	total volume of items):	
None Light (<	5)		.% Organic (food) %Plastics (cups, str	aws, bags, wrappers,	
Moderat	te (6-10)		bottles, junk)	plastic (paper glass	
Somewi	nat Dense (26-50)		bottles, metal)	plastic (paper, glass	
Dense (>	>50)		% Large items (app	bliances, cars, tires)	
rain Assoc	caited Algae: age (circle):	Algae outside	e of flow?: (ves / no	b) Other Observ Fish: ves	vations: no
None			i	Snails: yes	no
< 3% 5-25%		Main aigae r % film a	ype: lgae	Other:	no
25-50%	:	% turf al	gae	Number of ho	meless:
50-75% > 75%		%macroa	algae	Evidence of du	umping: yes no
ield	Water Temp (°C		Conductivity	mS / uS (Cir	cle appropriate units)
creening	pH (pH units)			·	
aborator	y Fecal Coliform		(MPN)	E.Coli	(MPN)
<u>nalysis</u>	Enterococcus_		(MPN)	Total Coliforn	n(MPN)
b Sample	es taken Yes / N	lo Bott	le ID#'s		
		r.	•	· · · ·	
omments		1/10		<u> </u>	

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Dom	inguez Channel Bacterial Monitoring Data and Observation Sheet
) PS Coordina <u>Weather Infor</u> <u>Light Conditi</u> <u>Last Rain:</u> <u>Site Descriptio</u> Earthen Draina	ates: <u>M8</u> <u>7</u> <u>43</u> <u>w</u> <u>3</u> <u>52</u> <u>958</u> <u>N</u> <u>rmation:</u> <u>0</u> <u>495</u> <u>rmation:</u> <u>0</u> <u>1495</u> <u>sunny</u> <u>Overcast</u> <u>Partly Cloudy</u> <u>ons:</u> <u>Sunny</u> <u>Overcast</u> <u>Partly Cloudy</u> <u>&gt;72 hours</u> <u>&lt;72 hours</u> <u>&lt;3 hours</u> <u>Precipitation:</u> >0.1" <0.1" <u>on:</u> <u>Location:</u> <u>A Vermont</u> , <u>where</u> <u>Channel neet</u> <u>Esthern</u> <u>n channel</u> <u>Generete Channels</u> <u>Outfall</u> <u>Manhole</u> <u>Catchbasin</u> <u>Other</u>
Flow Estimati	on: Flow Yes No / Ponded/Trickle <u>Evidence of overland flow near sampling location?</u> : Yes No
Area 1. Widt 2. Dept 3. Velo 4. Flow	X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)h (cm - ft) - in)121. Volume(mL - L - oz)1. Pipe Diameter(ft/in)h (cm - ft) - in)1.52. Time(sec)2. Depthcity (cm - ft) in / sec)0.653. Velocityt12.2 $fr^2/suc$ ***See formula on back***See formula on back
Visuals:	Photo Taken: yes no Roll#/Pic# Draw sample location if no photo:
Odor	Chemical Sewage Rotten Eggs None/Other
Color	Greyish Greenish Browish None/Other
'oatables	Cical Cloudy Ouler
	Limited Extensive None/Other
Biology	Mosquitos Algae Snails / Fish None/Other
Trash In Vicit0.None1.Light (<5)	Type: (% of number not total volume of items):         % Organic (food)         % % Plastics (cups, straws, bags, wrappers, bottles, junk)         25)       / 0% Recyclables-not plastic (paper, glass bottles, metal)         0)      % Large items (appliances, cars, tires)
Drain Assocat           Algae coverag           0. None           1. < 5%	ted Algae:       Algae outside of flow?: (yes / no)       Other Observations:         e (circle):       Algae outside of flow?: (yes / no)       Fish: yes no       Schools         Main algae type:       % film algae       Birds: yes no       Schools         % film algae       Other:       Number of homeless:       Number of homeless:         %macroalgae       Evidence of dumping: yes no       No
* <u>Field</u> Screening	Water Temp (°C) <u>25.8</u> pH (pH units) <u>9.72</u> Conductivity <u>788</u> (Circle appropriate units)
* <u>Laboratory</u>	Fecal Coliform (MPN) E.Coli (MPN)
MILATYSIS	taken (Yes / No Bottle ID#'s (1)
b Samples	
	14.
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------
<b>Dominguez Channel Bacterial Monitor</b>	ing Data and Observation Sheet
PS Coordinates:	Site ID: <u>03</u> Date/Time: <u>Ocf 1, 03 14:47</u> : <u>Li Caclson 1A Mardon</u> udy <u>Precipitation:</u> > 0.1" < 0.1"
Site Description: Location: 36 Found Aray Earthen Drainage Concrete Channel Outfall Manhole	Catchbasin Other
Flow Estimation: Flow Yes No / Ponded/Trickle Evidence of	overland flow near sampling location?: Yes / 10
Area X Velocity (creek / channel)Filling a B1.Width (cm - ft - in)1.2.Depth (cm - ft - in)2.2.Time $l O$	Area X Velocity (pipe)       (mL L - oz)     1. Pipe Diameter(ft/in)       (sec)     2. Depth
3. Velocity (cm - ft - in / sec) $\frac{2'' - \mu_{ex}}{2f'' - \mu_{ex}}$ 4. Flow 015 $fr^3/sec$ ***See formula on	3. Velocity back ***See formula on back
Visuals:     Photo Taken:     yes/ no     Roll#/Pic#       Odor     Chemical     Sewage     Rotten Eggs	Draw sample location if no photo:
Color Greyish Greenish Browish N Clarity Clear Cloudy O Cloudy N	ther
Vegetation     Limited     Extensive       Biology     Mosquitos     Algae     Snails / Fish	one/Other
Trash In Vicinity of Drain (Circle):0.None0.None1.Light (<5)2.Moderate (6-10)3.High (11-25)4.Somewhat Dense (26-50)5.Dense (>50)	<u>l volume of items):</u> , bags, wrappers, tic (paper, glass ces, cars, tires)
Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes / no)0. None1. < 5%Main algae type:2. 5-25%% film algae3. 25-50%% film algae4. 50-75%%macroalgae	Other Observations: Fish: yes no Snails: yes no Birds: yes no Other: Number of homeless: Evidence of dumping: yes no
*Field Water Temp (°C) 23 2 Conductivity 86 Screening pH (pH units) 5.5	mS uS (Circle appropriate units)
*Laboratory Analysis     Fecal Coliform     (MPN)       Enterococcus     (MPN)	E.Coli (MPN) Total Coliform (MPN)
Lab Samples taken Kos/No Bottle ID#'s <u>(22</u> Comments <u>Dettern</u> <u>E 552 + 83</u> Observations <u>Conchest</u> Channel	36" 
- Jean of the first	<u> </u>

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ister an neurophaneses and British Tana a back and Tarantota an earlister.

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PS Coordinates:	w		Site ID: 276
· ·	N	Date/Time:	Set (13 1446
Veather Information:	Field Crev	r:L. Carlson	- 1A Martin
ight Conditions: Sunny	Overcast Partly Clo	udy	Č ,
ast Rain: >72 ho	ours < 72 hours < 3 hours	Preci	<u>pitation:</u> > 0.1" < 0.1"
ite Description: Location:	Dupe. 477		
Carthen Drainage Concrete Ch	annel VOutfall Manhole	Catchbasin	Other
<u>low Estimation:</u> Flow Yes	No / Ponded/Trickle <u>Evidence of</u>	<u>overland flow near s</u>	ampling location?: Yes No
Area X Velocity (creek Width (cm - ft - in)	/ channel) Filling a l	Bottle (mL - L - oz)	Area X Velocity (pipe) 1. Pipe Diameter (ft/in)
2. Depth (cm - ft - in)	2. Time	(sec)	2. Depth
Velocity (cm - ft - in / se	ec)		3. Velocity
. Flow	***See formula or	back	***See formula on back
/isuals: <u>Photo Taken:</u>	yes / no Roll#/Pic#	1	Draw sample location if no photo:
Odor Chemical	Sewage Rotten Eggs N	lone/Other	· · ·
olor Greyish	Greenish Browish N	lone/Other	
larity Clear	Cloudy	Other	
oatables Oily / Rainbow	Trash Bubbles N	lone/Other	
egetation Limited	Extensive	lone/Other	
biology Mosquitos	Algae Snails / Fish N	Ione/Other	
Frash In Vicinity of Drain (Circ	le): Type: (% of number not tota	l volume of items):	
). None L. Light (<5)	% Organic (food)     %Plastics (cups, straws)	, bags, wrappers,	
2. Moderate (6-10)	bottles, junk)		
5. High (11-25) 5. Somewhat Dense (26-50)	bottles, metal)	tic (paper, glass	
. Dense (>50)	% Large items (applian	ces, cars, tires)	
)rain Assocaited Algae:	[	Other Observ	ations:
Algae coverage (circle):	Algae outside of flow?: (yes / no)	Fish: yes Snails: yes	no
. < 5%	Main algae type:	Birds: yes	no
. 5-25%	% film algae	Other:	neless
. 50-75%	%macroalgae	Evidence of du	imping: yes no
. > 75%			
Field Water Temp (°C	C) Conductivity	mS /uS (Cire	cle appropriate units)
<u>serecume</u> pri (pri unus)			
Laboratory Fecal Coliform	(MPN)	E.Coli	(MPN)
	(1111 11)		(141 (1)
Ab Samples taken Yes / N	lo Bottle ID#'s		
	$(\cdot, \cdot, \cdot)$		· · ·
Comments For Ch	the all sites		· · · · · · · · · · · · · · · · · · ·

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<b>Dominguez Channel Bacterial Monitoring Data and Observa</b>	tion Sheet
PS Coordinates: $1897777$ W $33^{5}52,264$ N <u>Weather Information:</u> <u>Light Conditions:</u> <u>Light Rain:</u> Sunny Overcast 72 hours 72 hours	04 03,1502 ann (n) (0.1")
Site Description:         Location:         J         Just Cult           Earthen Drainage         Concrete Channel         Outfall         Manhole         Catchbasin         Other	
Flow Estimation: Flow Yes / No / Ponded Trickle Evidence of overland flow near sampling locat	<u>ion?:</u> Yes /No
Area X Velocity (creek / channel)Filling a BottleAr1.Width (cm - ft - in)1. Volume $223$ (mL L - oz)1. Pipe Dia2.Depth (cm - ft - in)2. Time $423$ (sec)2. Depth3.Velocity (cm - ft - in / sec) $244$ $3.$ Velocity $3.$ Velocity4.Flow $0.0079$ ft //sec $4.$ ***See formula on back $4.$ ***See formula on back	rea X Velocity (pipe) meter (ft/in)  nula on back
Visuals:       Photo Taken:       yes/ no       Roll#/Pic#       Draw same         Odor       Chemical       Sewage       Rotten Eggs       None/Other         Color       Greyish       Greenish       Browish       None/Other         Clarity       Clear       Cloudy       Other         'oatables       Oily/ Rainbow       Trash       Bubbles       None/Other         egetation       Limited       Extensive       None/Other         Biology       Mosquitos       Algae       Snails / Fish       None/Other	<u>ele location if no photo:</u>
Trash In Vicinity of Drain (Circle):0. NoneImage: Construction of the section of the s	
Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes) no)Other Observations: Fish: yes Snails: yes Birds: yes No0. NoneMain algae type: % film algaeBirds: yes Other: Birds: yes Number of homeless: Evidence of dumping: yes3. 25-50%% film algae % macroalgaeOther Observations: Fish: yes Birds: yes Number of homeless: Evidence of dumping: yes	J TO
* <u>Field</u> Water Temp (°C) Conductivity 1683 mS /uS (Circle appropriate <u>Screening</u> pH (pH units) 7,99	units)
*Laboratory Analysis       Fecal Coliform       (MPN)       E.Coli         Analysis       Enterococcus       (MPN)       Total Coliform         Ob Samples taken       Yes No       Bottle ID#'s Off	(MPN) (MPN)

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<b>Dominguez Chan</b> ı	nel Bacterial Monitor	ring Data and Obse	ervation Sheet
PS Coordinates: M8 <sup>0</sup> 7, 9 <u>35</u> 52 1 <u>Weather Information:</u> <u>Light Conditions:</u> <u>Last Rain:</u> Sunny Sunny Sunny Sunny Sunny Sunny Sunny	VADE VADE VADE Field Crew VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VadE VaE VadE VadE VadE VadE V	Bate/Time:_Ocf w:_ <u>L_Cadson/_A</u> budy <u>Precipitation:</u>	$\frac{1}{2000} = \frac{5}{100000000000000000000000000000000000$
Site Description: Location: Earthen Drainage Concrete Chann	let Outfall Manhole	Catchbasin Other	
Flow Estimation: Flow Yes N	o / Ponded/Trickle <u>Evidence o</u>	f overland flow near sampling	location?: Yes No
Area X Velocity (creek / ch1.Width (cm - ft - in)2.Depth (cm - ft - in)3.Velocity (cm - ft - in / sec)4.Flow $0.0(2 \text{ Pt})/\text{s}$	Filling a       1. Volume       2. Time       3. Time </td <td>Bottle         1. Pip           (nL)         L - oz)         1. Pip           (sec)         2. De           3. Ve           n back         ****Se</td> <td>Area X Velocity (pipe) De Diameter (ft/in) Ppth Plocity De formula on back</td>	Bottle         1. Pip           (nL)         L - oz)         1. Pip           (sec)         2. De           3. Ve           n back         ****Se	Area X Velocity (pipe) De Diameter (ft/in) Ppth Plocity De formula on back
Visuals:Photo Taken:OdorChemicalColorGreyishClarityClear'oatablesOily / RainbowLimitedE	es / no Roll#/Pic# ewage Rotten Eggs I breenish Browish I cloudy rash Bubbles wtensive I	2 Draw None/Other None/Other Dther None/Other None/Other	sample location if no photo:
BiologyMosquitosATrash In Vicinity of Drain (Circle):0. None1. Light (<5)	Type: (% of number not tot        % Organic (food)        % Plastics (cups, straw         bottles, junk)        % Recyclables-not pla         bottles, metal)        % Large items (appliant)	al volume of items): s, bags, wrappers, stic (paper, glass nces, cars, tires)	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Algae outside of flow?: Fes no) Main algae type: % film algae Macroalgae % macroalgae	Other Observations:Fish:yesnoSnails:yesnoBirds:yesnoOther:	yes no
*Field       Water Temp (°C)         Screening       pH (pH units)         *Laboratory       Fecal Coliform         Analysis       Enterococcus         b Samples taken       Yes/ No         Comments	Conductivity S9 (MPN) (MPN) (MPN) Bottle ID#'s	Circle appro	priate units)(MPN)(MPN)
Observations			

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# **Dominguez Channel Bacterial Monitoring Data and Observation Sheet**

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TYPS Coordin	nates:		W		, .	Site ID:	7.7
J		······································	N	Date/T	ime: 🔿	$ef(\alpha)$	1.5.42
Weather Info	ormation:	~	Field C	rew: 1	bile	A A	Marka
Light Condit	tions: Sunny	Overcast	Partly (	Cloudy	(2-C		Jug III
Last Rain:	> 72 ho	urs < 72 hou	irs < 3 hou	irs	Precipi	<u>tation:</u> > 0.1"	< 0.1"
Site Descript	tion: Location:	603 +57	-7.4	· · · · ·	. '		······································
Earthen Drain	nage Concrete Ch	annel Outfall	Manhol	e Catchba	asin	Other K	<u>cl</u>
Flow Estima	<u>tion:</u> Flow Yes	/ No / Ponded/Tricl	kle <u>Evidence</u>	e of overland flow	near sai	mpling location	<u>?:</u> Yes / No
Area	a X Velocity (creek /	'channel)	Filling	a Bottle		Area	X Velocity (pipe)
2 Der	oth (cm - ft - in)		2. Time	(int_ 12 0		2. Depth	
2. Dog 3 Vel	locity (cm - ft - in / set)			(000)		3. Velocity	
4. Flo	w	<u></u>	***See formula	on back		***See formula	a on back
v							· · · · · · · · · · · · · · · · · · ·
<u>Visuals:</u>	<u>Photo Taken:</u>	Veg/no 2	Roll#/Pic#	2418		Draw sample	ocation if no photo:
Odor	Chemical	Sewage	Rotten Eggs	None/Other			. )
Color	Greyish	Greenish (	Browish	None/Other		• 	{
Clarity	Clear	Cloudy		Other			
oatables	Oily / Rainbow	Frash	Bubbles	None/Other			
-/egetation	Limited	Extensive		None/Other			
Biology	Mosquitos	Algae	Snails / Fish	None/Other		1 .	
Trash In Vic	inity of Drain (Circ	<u>le): Түре: (%</u>	of number not t	total volume of ite	ems):	* •	
0. None 1 Light (<	5) 5)	%C %P	Organic (food) lastics (cups. stra	aws, bags, wrapper	rs.	:	
2. Moderat	e (6-10)	b	ottles, junk)	· · · · · · · · · · · · · · · · · · ·		i.	
3. High (11 4 Somewh	-25) at Dense (26-50)	<u>7-0</u> % F	Recyclables-not p bottles_metal)	plastic (paper, glass	S		
5. Dense (>	•50)	% I	Large items (appl	liances, cars, tires)			
Drain Assoc	aited Algae:			1 Other	Observat	tions:	
Algae covera	ge (circle):	Algae outside of	flow?: (yes / no)	) Fish:	yes	no	
0. None $1 < 5\%$		Main algae type		Snails: Birds:	yes ves	no	
2. 5-25%	1	% film algae	, ,	Other:			
3 25-50%		% turf algae	· .	Numbe	r of home	eless:	
4. 50-75% 5. >75%		%macroalga	δ.	Eviden		ipilig. yes no	· · ·
*Field	Water Temp (°C	<u>F</u> >-	Conductivity		uS (Circle	annronriate uni	te)
Screening	pH (pH units)	·	Conductivity			e appropriate am	
*Laboratom	Fecal Coliform		(MPN)	F Coli			(MPN)
Analysis	Enterococcus	· · · · · · · · · · · · · · · · · · ·	(MPN)	Total C	Coliform_		(MPN)
b Sample	s taken Yes //N	b Bottle I	D#'s		1.	4	
		)	· · · · · · · · · · · · ·	<u>.</u>		· . ·	
Comments Observation	s berz	<b>)</b>					······································
							· · · · · · · · · · · · · · · · · · ·

# **Dominguez Channel Bacterial Monitoring Data and Observation Sheet**

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YPS Coordinates:W	Site ID: 10
N	Date/Time: Oct 1, 03 1550
Weather Information: Field Crew:	1 Carbon A, Martin
Light Conditions: Sunny Overcast Partly Cloudy	
Last Rain: > 72 hours < 72 hours < 3 hours	<u>Precipitation:</u> > 0.1" < 0.1"
Site Description: Location: $630 + 61 - 65^{n}$	
Earthen Drainage Concrete Channel Outfall Manhole	Catchbasin Other <u>CCC</u>
Flow Estimation: Flow Yes / No / Ponded/Trickle Evidence of over	rland flow near sampling location?: Yes / No
Area X Velocity (creek / channel) Filling a Bottle	Area X Velocity (pipe)
1. whath (cm - ft - in) 1. Volume ((	mL - L - oz) 1. Pipe Diameter (m/m)
2. Deput (cm - ft - in ) 2. Time (	3 Velocity
5. Velocity (cin - in - sec)	***See formula on back
Visuals:   Photo Taken: yesy no Roll#/Pic# 9	<u>Draw sample location if no photo:</u>
Odor Chemical Sewage Rotten Eggs None/	Other <u>PA</u>
Color Greyish Greenish Browish None/	Other 074
Clarity Clear Cloudy Other	- NA-
oatables Oily / Rainbow Trash Bubbles None/	Other_
legetation Limited Extensive	Other
Biology Mosquitos Algae Snails / Fish None/	Other
Trash In Vicinity of Drain (Circle): Type: (% of number not total vol	ume of items):
0. None % Organic (food)	s wrappers
2. Moderate (6-10) <u>bottles, junk</u>	a, mappers,
3. High (11-25)% Recyclables-not plastic (p	paper, glass
4. Somewhat Dense (20-50)       000000, metal)         3. Dense (>50)      % Large items (appliances, of the second se	cars, tires)
Drois Associated Algorithm	Other Observations:
Algae coverage (circle): Algae outside of flow?: (yes (no))	Fish: yes no
0. None	Snails: yes no Birda: yes no
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Other:
(3.) 25-50%% turf algae	Number of homeless:
4. 50-75%%macroalgae	Evidence of dumping: yes no
* <u>Field</u> Water Temp (°C) Conductivity Screening pH (pH units)	mS / uS (Circle appropriate units)
<u>Analysis</u> Enterococcus (MPN)	Total Coliform (MPN)
Ab Samplas takan Vas Ala Dattia ID42a	
Bottle ID# S	
Comments Observations Dog & La Dog - Discussion	No. 8 1 0
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Dominguez Channel Dacterial Monitoring Data and	I HISPEVALION SNAAT
	Observation Sheet
PS Coordinates: 1180 19.059 W	Site ID:
$\frac{33-52,686}{N}$ Date/Time: (	DCT D1,03 +9 160
Weather Information: Field Crew: <u>C. CastSor</u>	MARINE_
Light Conditions: Sunny Overcast Partly Cloudy Last Rain: (>72 hours) <72 hours <3 hours <u>Preci</u>	<u>pitation:</u> > 0. <u>1</u> " < 0.1"
Site Description: Location: 644+29 -66	
Earthen Drainage Concrete Channel Outfall Manhole Catchbasin	Other RCP
Flow Estimation: Flow Yes / No / Ponded/Trickle Evidence of overland flow near s	sampling location?: Yes / No
Area X Velocity (creek / channel) Width (cm - ft - in)	Area X Velocity (pipe)
2. Depth (cm - ft - in) 2. Time $\int (sec)$	2. Depth
3. Velocity (cm - ft - in / sec) $2^{\prime}$	3. Velocity
4. Flow Q. Q (a ft <sup>3</sup> /sea) ***See formula on back	***See formula on back
<u>Visuals:</u> <u>Photo Taken:</u> es no Roll#/Pic#	Draw sample location if no photo:
Odor Chemical Sewage Rotten Eggs None/Other	
Color Greyish Greenish Browish None/Other	
Clarity Clear Cloudy Other	
oatables Olly Rainbow Trash Bubbles NoneOlner	
Piology Mosquitos Aldae Spails / Fish & None/Other	
Biology Mosquitos Algae Shans / For None Other	:
<u><b>Frash In Vicinity of Drain (Circle):</b></u> <u>None</u> <u><b>Type: (% of Humber not total volume of items):</b></u> <u>Worganic (food)</u>	
1. Light (<5) 3/ %Plastics (cups, straws, bags, wrappers,	
2. Moderate (6-10) bottles, junk) 3. High (11-25) 5 % Recyclables-not plastic (paper, glass	
4. Somewhat Dense (26-50)     bottles, metal)	
5. Dense (>50)% Large items (appliances, cars, tires)	· · · · · · · · · · · · · · · · · · ·
Drain Assocaited Algae:	ations:
0. None Snails: yes	no
1. < 5%Main algae type:Birds: yes0. 5.25%% film algaeOther:	(no i
$\frac{1}{1000}\% \text{ turf algae}$	neless: $\Lambda$ )77
4. 50-75%%macroalgae Evidence of du	imping: yes no
1 2 13%	
<u>Field</u> Water Temp (°C) ( , 7 Conductivity ] 2.00 mS / uS/Ciro <u>Screening</u> pH (pH units) 5 , 7 (2)	cle appropriate units)
Laboratory Fecal Coliform	(MPN)
Analysis Enterococcus (MPN) Total Coliform	(MPN)
ab Samples taken Yes) No Bottle ID#'s 11	
Comments	

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Appendiation and statements of a failure of a failure of the second statements of the

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# **Dominguez Channel Bacterial Monitoring Data and Observation Sheet**

118 Goodington 118 19 AL9	Site UP (1)
) PS Coordinates: 110 17, 00 w	Site ID: 12
$\frac{2}{2} \frac{2}{2} \frac{2}{68} \frac{1}{168} $ N	Date/Time: $DXI DS 16100$
Weather Information: Field Cre	W. C. Caspon / A. Marin
Light Conditions: Last Rain: >72 hours <72 hours <3 hours	s <u>Precipitation:</u> > 0.1" < 0.1"
Site Description:Location:August August Augus	North of Sifell Catchbasin Other <u>RCP</u>
Flow Estimation: Flow Yes No / Ponded/Trickle Evidence	of overland flow near sampling location?: Yes / No
Area X Velocity (creek / channel) Filling a	Bottle Area X Velocity (pipe)
1. Width (cm - ft - in) 1. Volume $32$	$\frac{2}{2} (mL - L - oz) \qquad 1. Pipe Diameter (ft/in)$
2. Depth (cm - ft - in) 2. Time $\leq 1$	(sec) 2. Depth
3. Velocity (cm - ft - in / sec) $21^{4}$	4" delp 3. Velocity
4. Flow $0.11 + \frac{3}{4}$ ***See formula c	on back ' 🦾 🐑 ***See formula on back
Visuals: Photo Taken: (yes) no 2 Roll#/Pic# 21/	Draw sample location if no photo:
Odor Chemical Sewage Rotten Eggs	Mane/Other
Color Greyish Greenish Browish	None/Other <u>gellow</u> ith
Clarity Clear Cloudy	Other
oatables Oily / Rainbow Trash Bubbles	None/Other fam where it meets the
egetation Limited Extensive	NoneOther Channel
Biology Mosquitos Algae Snails / Fish	None/Other
Trash In Vicinity of Drain (Circle): Type: (% of number not to	tal volume of items):
0. None <u>% Organic (food)</u>	is hare wrappers
2. Moderate (6-10)	rs, Jags, wrappors,
3. High (11-25) A Summarian Dama (2(50) A Summarian Dama (2(50))	astic (paper, glass
4. Somewhat Dense (20-50) bottles, metal) 5. Dense (>50) % Large items (applia	nces, cars, tires)
Durin Associated Alexan	8 Le
Algae coverage (circle): Algae outside of flow?: (yes / no)	Fish: yes no
0. None	Snails: yes no
1.< 5%Main algae type:2.5-25%% film algae	Birds: yes no Other:
3. 25-50% $\overline{D}$ % turf algae	Number of homeless:
4. $50-75\%$ %macroalgae	Evidence of dumping: yes no
$\frac{\text{Field}}{\text{Screening}}  \text{pH (pH units)}  \frac{3}{2} \cdot 29$	<u>) 7 ms</u> (us (Gircle appropriate units)
*Laboratory Fecal Coliform (MPN)	E.Coli(MPN)
Anarysis Enterococcus (MPN)	1 otai Collionn(MPN)
b Samples taken Yes No Bottle ID#	
Comments	

<b>Dominguez Channel Bacterial Monitoring Data and</b>	<b>Observation Sheet</b>
PS Coordinates: 188 118° 19.26 Tw 32° 52 1 72 N Date/Time: ( Weather Information: Light Conditions: Last Rain: Sunny Overcast Partly Cloudy >72 hours <72 hours <3 hours Preci Site Description: Location: Thanke Farthen Drainage Corcrete Channel Outfall Manhole Catchbasin	Site ID: $13$ g D = 103 $1629D = 103$ $1629D = 100$ $100$ $100D = 100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$ $100$
Flow Estimation: Flow Yes No / Ponded/Trickle Evidence of overland flow near	sampling location?: Yes / Ro
Area X Velocity (creek / channel)Filling a Bottle1.Width (cm - ft) - in)	Area X Velocity (pipe) 1. Pipe Diameter (ft/in) 2. Depth 3. Velocity ***See formula on back
Visuals:       Photo Taken:       yes/ no       Roll#/Pic#       (66)         Odor       Chemical       Sewage       Rotten Eggs       One/Other         Color       Greyish       Greenish       Browish       None/Other         Clarity       Clear       Cloudy       Other         'oatables       Oily / Rainbow       Trash       Bubbles       None/Other         egetation       Limited       Extensive       None/Other         Biology       Mosquitos       Algae       Snails / Fish       None/Other	<u>Draw sample location if no photo:</u>
Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)(1.) Light (<5)	
Drain Assocaited Algae: Algae coverage (circle):Other Observerage Fish: yes Ontropy of a 5%Other Observerage Fish: yes Snails: yes Birds: yes Other: Wain algae % film algae % turf algaeOther Observerage Fish: yes Birds: yes Other: Number of ho Evidence of dr0. None 1. <5%	meless:
* <u>Field</u> Water Temp (°C) $26.9$ Conductivity $557$ mS $7uS$ (Cir <u>Screening</u> pH (pH units) $10.52$	cle appropriate units)
*Laboratory Fecal Coliform (MPN) E.Coli <u>Analysis</u> Enterococcus (MPN) Total Coliform b Samples taken (Yes / No Bottle ID#'s ] Comments Observations	(MPN) n(MPN)

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# **Dominguez Channel Bacterial Monitoring Data and Observation Sheet**

PS Coordinates: _	· · · · · · · · · · · · · · · · · · ·	W	Date/Time:	Site ID: 14 Det 1.03 1631
<u>Weather Informatio</u> <u>Light Conditions:</u> Last Rain:	n: Sunny > 72 hours < 72 ho	Field Cre t Partly Cl urs < 3 hours	w: <u>L. Carlsov</u> oudy Precip	Ditation: > 0.1" < 0.1"
Site Description: Earthen Drainage	Location: In Ch. Concrete Channel Outfall	annel f Marihole	Durge for S Catchbasin	other
Flow Estimation:	No / Ponded/Tric	kle <u>Evidence c</u>	of overland flow near sa	Impling location?: Yes / No
Area X Velo1.Width (cm	ocity (creek / channel) • ft - in)	Filling a 1. Volume	Bottle (mL - L - oz)	Area X Velocity (pipe) 1. Pipe Diameter (ft/in)
2. Depth (cm -	ft - in)	2. Time	(sec)	2. Depth
3. Velocity (cr	n - ft - in / sec)			3. Velocity
4. Flow		***See formula o	n back	***See formula on back
Visuals: Pho	oto Taken: yes / no	Roll#/Pic#		Draw sample location if no photo:
Odor Che	mical Sewage	Rotten Eggs	None/Other	
Color Gre	yish Greenish	Browish	None/Other	
Clarity Cle	ar Cloudy		Other	· ·
oatables Oil	y / Rainbow Trash	Bubbles	None/Other	
vegetation Lin	ited Extensive		None/Other	· · · ·
Biology Mo	squitos Algae	Snails / Fish	None/Other	
Trash In Vicinity of	Drain (Circle): Type: (%	of number not tot	tal volume of items):	ст. 1
0. None 1. Light (<5)	%	Organic (food) Plastics (cups, straw	vs, bags, wrappers,	
2. Moderate (6-10)		bottles, junk)		
3. High (11-25) 4 Somewhat Dense	<u> </u>	Recyclables-not pla bottles_metal)	istic (paper, glass	· · ·
5. Dense (>50)	%	Large items (applia	nces, cars, tires)	
Drain Assocaited Al	 gae:		Other Observe	itions:
Algae coverage (circl	e): Algae outside of	flow?: (yes / no)	Fish: yes	no
1. < 5%	Main algae type	<b>:</b>	Birds: yes	no
2. 5-25%	% film alga	e	Other:	
4. 50-75%	%macroalg	ne	Evidence of du	mping: yes no
5. > 75%	· · · · · · · · · · · · · · · · · · ·	i	·	
* <u>Field</u> Wa	ter Temp (°C)	Conductivity	mS / uS (Circ	le appropriate units)
Screening pH	(pH units)			
*Laboratory Fee	al Coliform	(MPN)	E.Coli	(MPN)
Analysis Ent	erococcus	(MPN)	Total Coliform	(MPN)
b Samples taken	Yes / No Bottle I	D#'s <u>14</u>		· · · ·
Comments		· /		· · · ·
Observations		······································		······································
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Don	ninguez Chai	nnel Bacto	erial Monit	toring Data and	<b>Observation Sheet</b>
PS Coordin <u>Weather Infe</u> Light Condit Last Rain:	nates:	$\frac{1}{27.609}$ $\frac{1}{798}$ $\frac{1}{798}$ $\frac{1}{72}$ Overc $\frac{1}{72}$ h	W N Field C ast Partly ours < 3 ho	Date/Time:_( Crew: <u>L_CarlSo</u> Cloudy urs <u>Preci</u>	Site ID: $15$ Det $03$ 16678765 A-Martin ipitation: > 0.1" < 0.1"
Site Descript	tion: Location:	$\Sigma = \Lambda I \cdot G$	4 Crancha	w	<u>_</u>
Earthen Drain	nage Concrete Cha	nnel Outfal	IU Manho	le Catchbasin	Other Do Culler
Flow Estima	<u>tion:</u> Flow Es	No / Ponded/Tr	ickle <u>Eviden</u>	e of overland flow near :	sampling location?: Yes / No
Area 1. Wie	a X Velocity (creek / dth (cm - ft - in)	channel)	Filling 1. Volume	g a Bottle (mL - L - oz)	Area X Velocity (pipe) 1. Pipe Diameter (ft/in)
2. Der	pth (cm - ft - in)		2. Time	(sec)	2. Depth
3. Vel	locity (cm - It - in / sec	) <u>[]</u> 101	Visec	, 	3. Velocity
4. FIO	W [13.5 FF3	ser 1	61 See formul		
<u>Visuals:</u>	Photo Taken:	yes) no	Roll#/Pic#	4	Draw sample location if no photo:
Odor	Chemical	Sewage	Rotten Eggs	None Other	
Color	Greyish	Greenish	Browish	None/Other	
Clarity	Oily ( Rainbow	Trash	Bubbles	Other	
	Limited	Extensive	Duoties	None/Other	4
Biology	Mosquitos	Atgae	Snails / Fish	None/Other	inds, insects
Trash In Vic0.None1.Light (<	2 <u>inity of Drain (Circl</u> 5) e (6-10) 25) at Dense (26-50) -50)	<u>e): Type: (°</u> <u>2</u> <u>9</u> <u>2</u> <u>9</u> <u>9</u> <u>9</u>	6 of number not 6 Organic (food) 6 Plastics (cups, str bottles, junk) 6 Recyclables-not bottles, metal) 6 Large items (app	total volume of items): aws, bags, wrappers, plastic (paper, glass pliances, cars, tires) ≈ st	
$\begin{array}{c c} \underline{Drain \ Assoc:}\\ Algae \ covera\\ 0. \ None\\ 1. \ < 5\%\\ 5-25\%\\ 3. \ 25-50\%\\ 4. \ 50-75\%\\ (5. \ > 75\%) \end{array}$	<u>aited Algae:</u> ge (circle):	Algae outside Main algae ty % film alg % turf alg %macroal	of flow?: (ves) no pe: gae gae	b) Fish: yes Snails: yes Birds: yes Other: Number of ho Evidence of de	rations: 10 10 10 10 10 10 10 10 10 10
* <u>Field</u> Screening	Water Temp (°C) pH (pH units)	20.8	Conductivity_	<u>1475</u> mS /705xCir	cl <del>e</del> appropriate units)
* <u>Laboratory</u> <u>Analysis</u>	Y Fecal Coliform_ Enterococcus_	·	(MPN) (MPN)	E.Coli Total Coliforn	(MPN) n(MPN)
Comments Observation	s taken Yes No	o Bottle	ID#'s 15	Gm 2 Ray	cooris down streamy
					ater 0
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Domi	nguez Chann	<u>el Bacterial Ma</u>	onitoring Data a	and Observation	n Sheet
) 'PS Coordinate Weather Inform Light Condition	es: $M_{8}^{\circ}$ 19 33 52 nation: <u>is:</u> Sunny	<u>818</u> <u>w</u> 8 <u>38</u> N Fi Overcast	Date/Tin ield Crew: <u>L</u> Casts	Site ID: <u>/</u> me: <u>Oct (_03</u> StrA.Ma	5 1711 Ann
Last Kain: Site Description Earthen Drainage	Location: concrete Channe	$\frac{834}{1000000000000000000000000000000000000$	<u>"DCN-UL</u> (anhole Catchbas	renotion: >0.1 renotion: >0.1	<0.1 <u>CP</u>
Flow Estimation	<u>n:</u> Flow Yes/No	/ Ponded/Trickle Ev	idence of overland flow	near sampling location?:	Yes / No
Area X 1. Width 2. Depth 3. Veloci 4. Flow	Velocity (creek / cha (cm - ft - in) (cm - ft - in) ty (cm - ft - in / sec)	nnel) F 1. Volum 2. Time 	Filling a Bottle ne (mL - L - oz (sec) ormula on back	Area X 1. Pipe Diameter 2. Depth 3. Velocity ***See formula of	Velocity (pipe) (ft/in)  on back
Visuals: Odor Color Clarity joatables egetation Biology	Photo Taken:yesChemicalSetGreyishGreClearCleOily / RainbowTraLimitedExMosquitosAla	/ no Roll#/Pick wage Rotten Eg eenish Browish budy ash Bubbles tensive gae Snails / Fi	gs None/Other None/Other Other None/Other None/Other sh None/Other	<u>Draw sample lo</u>	cation if no photo
Trash In Vicini           0.         None           1.         Light (<5)	ty of Drain (Circle): -10) ) Dense (26-50)	Type: (% of number        % Organic (for        % Plastics (cup         bottles, junl        % Recyclable         bottles, me        % Large items        % large items	r not total volume of iten bod) ps, straws, bags, wrappers k) s-not plastic (paper, glass stal) s (appliances, cars, tires)	<u>ns):</u> ,	
Drain Assocaite           Algae coverage           0. None           1. < 5%	i <mark>d Algae:</mark> (circle): Alj Ma 	gae outside of flow?(ye ain algae type: % film algae % turf algae %macroalgae	(x)	bservations: yes no yes no yes no of homeless: e of dumping: yes no	
* <u>Field</u> Screening	Water Temp (°C) pH (pH units)	Conductiv	vitymS / us	S (Circle appropriate units	)
* <u>Laboratory</u> <u>Analysis</u> Jb Samples ta	Fecal Coliform Enterococcus ken Yes / No	(MPN) (MPN) Bottle ID#'s	E.Coli Total Co	liform	(MPN) (MPN)

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Dominguez Channel Bacterial Monitoring Data and	Observation Sheet
PS Coordinates:       18       19       8       70       Weather Information:       Date/Time:         Weather Information:       Sunny       Overcast       Field Crew:       Cast Sort         Light Conditions:       Sunny       Overcast       Partly Cloudy         Last Rain:       > 72 hours       < 72 hours       < 3 hours	Site ID: 2011.03.1717 /A.Mastrix ipitation: >0.1" < 0.1"
Site Description: Earthen Drainage Concrete Channel Outfall Manhole Catchbasin	tunnel Other
Flow Estimation: Flow Yes)No / Ponded/Trickle Evidence of overland flow near s	sampling location?: Yes / No
Area X Velocity (creek / channel)Filling a Bottle1.Width (cm - ft - in)IIVolume(mL - L - oz)2.9'Depth (cm - ft - in)II''2.Time(sec)3.Velocity (cm - ft) in / (sec))II''4.FlowI 5.2 $ft^3/suc$ 4.FlowI 5.2 $ft^3/suc$ ***See formula on back	Area X Velocity (pipe) 1. Pipe Diameter(ft/in) 2. Depth 3. Velocity ***See formula on back
<u>Visuals:</u> <u>Photo Taken:</u> yes no Roll#/Pic# <u>26</u>	Draw sample location if no photo:
Odor     Chemical     Sewage     Rotten Eggs     None/Other       Color     Greyish     Greenish     Browish     None/Other       Clarity     Clear     Cloudy     Other       'oatables     Oily / Rainbow     Trash     Bubbles     None/Other       egetation     Limited     Extensive     None/Other	
BiologyMosquitosAlgaeSnails / FishNone/OtherTrash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)1. Light (<5)	
Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes / fo)Other Observ Fish: yes Snails: yes0. NoneMain algae type: % film algaeBirds: yes Other: % turf algaeBirds: yes 	rations: no no meless:
* <u>Field</u> Water Temp (°C) <u>24.7</u> Conductivity <u>571</u> mS / uS (Circ <u>Screening</u> pH (pH units) <u>10,34</u>	cle appropriate units)
*Laboratory Analysis       Fecal Coliform       (MPN)       E.Coli	(MPN) n(MPN)
Comments Observations Flow Where last Site 18 Sample taken nystolen of Flowy Grass gi	taken This owing downstream,

<b>Dominguez Channel Bacterial Moni</b> t	toring Data and Observation Sheet
PS Coordinates: <u>18°20,102</u> w <u>33°53,229</u> N <u>Veather Information:</u> <u>sight Conditions:</u> <u>sunny</u> Sunny Sunny > 72 hours < 72 hours < 3 hours	Site ID: 23 Date/Time: $OCI / O3 (732)$ Crew: $\int Cas   Sup / A Mastroneous$ Cloudy Durs <u>Precipitation:</u> > 0.1" < 0.1"
ite Description: Location: In Channel Wh arthen Drainage Goncrete Channel Outfall Manho	le Catchbasin Other
<u>Nov Estimation:</u> Flow (Yes) No / Ponded/Trickle <u>Evidence</u>	ce of overland flow near sampling location?: Yes / No
Area X Velocity (creek / channel)FillingWidth (cm - ft) in) (1 / 51. Volume _Depth (cm - ft - in) (2 - 52. Time _Velocity (cm - ft) - in / sec) 2. 44***See formulation	g a BottleArea X Velocity (pipe)(mL - L - oz)1. Pipe Diameter (ft/in)(sec)2. Depth3. Velocity
Visuals:Photo Taken:yes noRoll#/Pic#OdorChemicalSewageRotten EggsColorGreyishGreenishBrowishClarityClearCloudyBubblesOatablesOily/ RainbowTrashBubblesLimitedExtensiveSnails / Fish	Draw sample location if no photo:         None/Other         Other         Other         None/Other         None/Other         None/Other         None/Other         None/Other         None/Other         None/Other         None/Other
Trash In Vicinity of Drain (Circle):Type: (% of number notNone% Organic (food)Light (<5)	total volume of items): raws, bags, wrappers, plastic (paper, glass pliances, cars, tires)
Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes $/ not$ $S = 25.50\%$ Algae outside of flow?: (yes $/ not$ Main algae type: $S = 25.50\%$ Main algae type: $\%$ film algae Much on $\%$ turf algae $\%$ macroalgaeMain algae type: $\%$ film algae Much on $\%$ film algae $\%$ film algae $\%$ film algae $\%$ film algae $\%$ film algae $\%$ film algae $\%$ film algae 	Other Observations:         Fish:       yes       no         Snails:       yes       no         Birds:       yes       no         Other:
Field     Water Temp (°C)     23.4     Conductivity_       Screening     pH (pH units)     07	The ms /us Circle appropriate units)
Laboratory       Fecal Coliform (MPN)         Analysis       Enterococcus (MPN)         Ib Samples taken       Yes No       Bottle ID#'s 23         Comments       Source 25	E.Coli (MPN) Total Coliform (MPN)

PS Coordinates:	w	A	Site ID: <u>J</u>
eather Information:	N Field Crev Overcast Partly Clo	Date/Time: <u>(</u> w: <u>L. CarlSor</u> oudy	A. Mastr
<u>ast Rain:</u> (> 72 ho	urs < 72 hours < 3 hours	Preci	<u>pitation:</u> > 0.1" < 0.1"
te Description: Location:	nnel Outfall Manhole	<u>Channe</u> Catchbasin	Other
ow Estimation: Flow Yes	No / Ponded/Trickle <u>Evidence o</u>	<u>f overland flow near s</u>	ampling location?: Yes / No
Area X Velocity (creek / Width (cm - ft - in)	channel) Filling a l	Bottle (mL - L - oz)	Area X Velocity (pipe) 1. Pipe Diameter(ft/in)
Depth (cm - ft - in)	2. Time	(sec)	2. Depth
Velocity (cm - ft - in / se	c)		3. Velocity
Flow	***See formula of	n back	***See formula on back
isuals: Photo Taken:	yes / no Roll#/Pic#	None/Other	Draw sample location if no photo:
olor Grevish	Greenish Browish	None/Other	ция а <sup>с</sup>
larity Clear	Cloudy	Other	
oatables Oily / Rainbow	Trash Bubbles	None/Other	· ·
egetation Limited	Extensive N	None/Other	· · ·
iology Mosquitos	Algae Snails / Fish	None/Other	
rash In Vicinity of Drain (Circl)NoneLight (<5)	e): Type: (% of number not tot % Organic (food) %Plastics (cups, straw bottles, junk) % Recyclables-not pla bottles, metal) % Large items (applian	<u>al volume of items):</u> s, bags, wrappers, stic (paper, glass nces, cars, tires)	
		Other Observ	ations:
Algae coverage (circle): None <. <.5% 	Algae outside of flow?: (yes / no) Main algae type: % film algae % turf algae %macroalgae	Fish: yes Snails: yes Birds: yes Other: Number of hor Evidence of du	no no no meless: umping: yes no
Field         Water Temp (°C           Screening         pH (pH units)	) Conductivity	mS / uS (Cire	cle appropriate units)
Laboratory       Fecal Coliform_         Analysis       Enterococcus         b Samples taken       Yes	(MPN) (MPN) o Bottle ID#'s 22	E.Coli Total Coliform	(MPN) 1(MPN)
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Do	minguez Cha	nnel Bact	erial Moni	toring Data and	Observation Sheet
PS Coord <u>/eather In</u>	inates:  formation:		W N Field (	Date/Time:_ Crew: <u>L. CarlSon</u>	Site ID: 2/ Oct 1,03 17:3 J.A. Martin
ight Cond ast Rain:	itions: Sunny > 72 ho	Overo ours < 72	cast Partly nours < 3 ho	Cloudy ours <u>Prec</u>	ipitation: > 0.1" < 0.1"
ite Descrip arthen Dra	<u>otion:</u> Location:_ inage Concrete Ch	<u>flank</u> annel Outfa	II Manho	Semple 23 le Catchbasin	Other
low Estim	<u>ation:</u> Flow Yes	/ No / Ponded/T	rickle <u>Eviden</u>	<u>ce of overland flow near</u>	sampling location?: Yes / No
Are W De Ve	ea X Velocity (creek idth (cm - ft - in) epth (cm - ft - in) elocity (cm - ft - in / so ow	/ channel)  ec)	Fillin 1. Volume 2. Time ***See formu	g a Bottle (mL - L - oz) (sec) la on back	Area X Velocity (pipe) 1. Pipe Diameter(ft/in) 2. Depth 3. Velocity ***See formula on back
<u>isuals:</u> dor olor larity	Photo Taken: Chemical Greyish Clear	yes / no Sewage Greenish Cloudy	Roll#/Pic# Rotten Eggs Browish	None/Other None/Other Other	Draw sample location if no photo
oatables egetation iology	Oily / Rainbow Limited Mosquitos	Trash Extensive Algae	Bubbles Snails / Fish	None/Other None/Other None/Other	
rash In Vi None Light (< Modera High (1 Somew Dense (	<pre>&lt;5) &lt;5) te (6-10) 1-25) hat Dense (26-50) &gt;50)</pre>	<u>ele): Type: (</u>	<ul> <li>% of number not</li> <li>% Organic (food)</li> <li>% Plastics (cups, structure)</li> <li>bottles, junk)</li> <li>% Recyclables-not</li> <li>bottles, metal)</li> <li>% Large items (app)</li> </ul>	total volume of items): raws, bags, wrappers, plastic (paper, glass pliances, cars, tires)	
rain Associate lgae cover <pre>Source </pre>	caited Algae: age (circle):	Algae outside Main algae ty % film alg % turf alg %macroa	of flow?: (yes / no pe: gae gae lgae	b) <b>Other Observ</b> Fish: yes Snails: yes Birds: yes Other: Number of ho Evidence of de	vations: no no no meless: umping: yes no
<u>Field</u> Screening	Water Temp (°C pH (pH units)	C)	Conductivity	mS / uS (Cir	cle appropriate units)
<u>_aborator</u> <u>Analysis</u> b Sample omments	Y Fecal Coliform_ Enterococcus_ es taken Yes N	lo Bottl	(MPN) (MPN) e ID#'s	E.Coli Total Coliforn	(MPN) n(MPN)

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Dominguez Channel Bacterial Monitoring Data and C	<b>Observation Sheet</b>
PS Coordinates: M& 20,103 W <u>3353,238</u> N <u>Weather Information:</u> <u>Light Conditions:</u> <u>Last Rain:</u> PS Coordinates: M& Date/Time: C Sunny Overcast >72 hours Precipin	Site ID: $24$ 24 $2603$ $17404$ $Mastr tation: > 0.1" < 0.1"$
<u>Site Description:</u> Location: DC - $\frac{1}{27}$ West 27de - South- Earthen Drainage Concrete Channel Outfall Manhole Catchbasin	Other Bry Calust
Flow Estimation: Flow Yes No / Ponded/Trickle Evidence of overland flow near sar	mpling location?: Yes / No
Area X Velocity (creek / channel)Filling a Bottle1.Width (cm - ft - in)1.2.Depth (cm - ft - in)2.3.Velocity (cm - ft - in / sec)2.4.Flow $0.5 \notin ft^3/sccl$	Area X Velocity (pipe) 1. Pipe Diameter(ft/in) 2. Depth 3. Velocity ***See formula on back
Visuals:       Photo Taken:       yes no       Roll#/Pic#       7         Odor       Chemical       Sewage       Rotten Eggs       None/Other       Must here         Color       Greyish       Greenish       Browish       Guilt/Yone/Other       Other         Clarity       Clear       Cloudy       Other       Other         Clarity       Oily / Rainbow       Trash       Bubbles       None/Other	Draw sample location if no photo:
1. Light (<5)	
Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (ves) no)Other Observat Fish: yes Snails: yes0. NoneMain algae type: % film algaeBirds: yes Other:1. < 5%	tions: no no no no pless: ping: yes no
*Field Water Temp (°C) 2/9 Conductivity 1393 mS TuS Circle Screening pH (pH units) 7.91	e appropriate units)
*Laboratory     Fecal Coliform(MPN)     E.Coli       Analysis     Enterococcus(MPN)     Total Coliform	(MPN) (MPN)
b Samples taken Yes No Bottle ID#'s 24 Comments Observations	

<b>Dominguez Channel Bacterial Monitorin</b>	g Data and Observation Sheet
$\frac{10^{\circ} 20^{\circ} 290^{\circ} W}{33^{\circ} 55_{1} 724^{\circ} N}$ $\frac{10^{\circ} 20^{\circ} 55_{1} 724^{\circ} N}{\frac{1000}{1000}}$ Field Crew: $\frac{10^{\circ} 20^{\circ} 55_{1} 724^{\circ} N}{\frac{1000}{1000}}$	Site ID: <u>S</u> / Date/Time: <u>Def LO3</u> 1825 <u>Le Carlson LA. Martin</u> Precipitation: >01" <01"
Site Description: Location: Hendwates -	West side of bisin
Earthen Drainage Concrete Channel Outfall Manhole	Catchbasin Other U
Flow Estimation:FlowYes / No / Ponded/TrickleEvidence of over1Area X Velocity (creek / channel) $10^{11}$ Filling a Bott1.Width (cm - ft - in) $10^{11}$ 1.2.Depth (cm - ft - in) $10^{11}$ 2.3.Velocity (cm - ft - in / sec) $211$ $10^{12}$ 4.Flow $0.25$ $51^{12}$ $10^{12}$	erland flow near sampling location?: Yes / No         le       Area X Velocity (pipe)         (mL - L - oz)       1. Pipe Diameter(ft/in)         (sec)       2. Depth         3. Velocity          ck       ***See formula on back
Visuals:   Photo Taken: yes no Roll#/Pic#	<u>Draw sample location if no photo:</u>
Odor Chemical Sewage Rotten Eggs None	Dother 44.3-5
Color Greyish Greenish Browish None	VOther
Clarity Clear Cloudy Outer	r
Oatables Ony Kaindow Irash Duotes Duotes	Yother
Biology Mosquitos Algae Snails / Fish None	s/Other
Trash In Vicinity of Drain (Circle): Type: (% of number not total vo	olume of items):
0.None% Organic (food)1.Light (<5)	gs, wrappers, (paper, glass , cars, tires)
Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes no)0. None 1. < 5%	Other Observations:         Fish:       yes         Snails:       yes         No       no         Other:
* <u>Field</u> Water Temp (°C) Conductivity 7.31 Screening pH (pH units)	mS / uS (Circle appropriate units)
*Laboratory Fecal Coliform(MPN) Analysis Enterococcus(MPN)	E:Coli (MPN) Total Coliform (MPN)
b Samples taken Yes / No Bottle ID#'s	
Comments	
Observations	
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<b>Dominguez Channel Bacterial Monitorin</b>	ng Data and Observation Sheet
PS Coordinates:       18 201257 w         Weather Information:       55 659 N         Light Conditions:       Sunny         Last Rain:       72 hours         Site Description:       Location:         Earthen Drainage       Concrete Channel	Site ID: 5 Date/Time: Oct (, 2003 + 1836 C. Carlson / A. Martin 1836 y) <u>Precipitation:</u> > 0.1" < 0.1" Daters from 2 Culvert Mit Catchbasin Other
Flow Estimation: Flow Yes / No / Ponded/Trickle Evidence of o	verland flow near sampling location?: Yes / No
Area X Velocity (creek / channel)Filling a Bo1. $2^3$ Width (cm - ft - in) $2^3$ $1$ Volume2. $2^5$ Depth (cm ft) $1$ $2$ $1$ $2$ 3. $1^{-4/3}$ Velocity (cm - ft - in / sec) $1^{-4/3}$ $1^{-4/3}$ $1^{-4/3}$ 4.Flow $7.59$ $ft^{-1}/cm$ ***See formula on b	Area X Velocity (pipe)         _ (mL - L - oz)       I. Pipe Diameter (ft/in)         _ (sec)       2. Depth         _ 3. Velocity          ack       ***See formula on back
Visuals: OdorPhoto Taken: Chemicalyes no SewageRoll#/Pic# Rotten EggsColor ClarityGreyishGreenishBrowishClarityClearCloudyOthCoatablesOily / RainbowIrashBubblesNorVegetationLimitedExtensiveNorBiologyMosquitosAlgaeSnails / FishNor	Draw sample location if no photo: Depother ne/Other ne/Other ne/Other
Trash In Vicinity of Drain (Circle):Type: (% of number not total y0. None% Organic (food)1. Light (<5)	volume of items): pags, wrappers, c (paper, glass s, cars, tires)
Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes/ no)0. None1. < 5%	Other Observations:Fish:yesNumber of homeless:Evidence of dumping:yesno
*Field Water Temp (°C) 21 8 Conductivity 70 Screening pH (pH units) 8,27	mS /us Circle appropriate units)
* <u>Laboratory</u> Fecal Coliform (MPN) <u>Analysis</u> Enterococcus (MPN) wab Samples taken (Yes) No Bottle ID#'s 5/	E.Coli(MPN) Total Coliform(MPN)
Comments Observations Jample composited (p. Flow in creased at end	at into bag in 2023 grass

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 Dom	inguez Cha	nnel Bacte	rial Monit	aring Data and	l Observation Sheet
)PS Coordina	ites:		_w		D Site ID: 16 48
/	<u>_,</u>		_ N	Date/Time:	Oct 1, 203 1818
Veather Infor	mation:		Field C	rew: C, Corso	n/AMasin_
<u>ast Rain:</u>	ons: Sunny	Overca Verca	ours <3 hor	Cloudy ars <u>Prec</u>	<u>sipitation:</u> > 0.1" < 0.1"
ite Descriptio	on: Location:	Dupe &	\$ 50		
arthen Draina	ge Concrete Ch	annel V Outfall	Manhol	e Catchbasin	Other
<u>low Estimati</u> Area	on: Flow Yes X Velocity (creek /	/ No / Ponded/Tri / channel)	ckle <u>Evidenc</u> Filling	a Bottle	<u>sampling location?:</u> Yes / No Area X Velocity (pipe)
. Widt	h (cm - ft - in)		1. Volume	(mL - L - oz)	1. Pipe Diameter (ft/in)
. Dept	h (cm - ft - in)		2. Time	(sec)	2. Depth
. veio Flow	$city (cm - \pi - m / second$		***See formula	a on back	***See formula on back
<u>'isuals:</u>	<u>Photo Taken:</u>	yes / no	Roll#/Pic#		Draw sample location if no photo:
dor	Chemical	Sewage	Rotten Eggs	None/Other	
olor	Greyish	Greenish	Browish	None/Other	
larity	Clear	Cloudy	Bubbles	None/Other	
egetation	Limited	Extensive	Bubbles	None/Other	
iology	Mosquitos	Algae	Snails / Fish	None/Other	
<u>rash In Vicin</u> None	nity of Drain (Circ	<u>le): Type: (%</u> %	6 of number not Organic (food)	total volume of items):	
. Light (<5) Moderate	(6-10)	%	Plastics (cups, str bottles, junk)	aws, bags, wrappers,	
High (11-2	25)	%	Recyclables-not	plastic (paper, glass	
Dense (>5	(26-50) 0)	%	Large items (app	liances, cars, tires)	
rain Assoca	ted Algae:			Other Obser	vations:
lgae coverag	e (circle):	Algae outside o	of flow?: (yes / no	) Fish: yes	no
< 5%		Main algae typ	e:	Birds: yes	no
. 5-25% . 25-50%		% film alga % turf alga	ae Ie	Other: Number of ho	omeless:
. 50-75% . > 75%		%macroalg	gae	Evidence of c	dumping: yes no
Field Screening	Water Temp (°C pH (pH units)	C)	Conductivity	mS / uS (Ci	ircle appropriate units)
Laboratory Analysis	Fecal Coliform_ Enterococcus		(MPN) (MPN)	E.Coli Total Colifor	(MPN) m(MPN)
) ⊿ab Samples	taken Yes/N	lo Bottle	ID#'s		· · · · · · · · · · · · · · · · · · ·
Comments Observations	Darek	for Sn	M SA		
		-(***	1/- 1/-		

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### **Prepared For:**

ور میں میں اور اور ور میں میں مولک Southern California Coastal Water Research Project 7171 Fenwick Lane Westminster, California 92683 And Los Angeles Regional Water Quality Control Board 320 W. 4th St., Suite 200 Los Angeles, California 90013

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MEC Analytical Systems, Inc.

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**Prepared For:** 

Southern California Coastal Water Research Project 7171 Fenwick Lane Westminster, California 92683 And Los Angeles Regional Water Quality Control Board 320 W. 4th St., Suite 200 Los Angeles, California 90013

#### **Prepared By:**

MEC Analytical Systems, Inc. 2433 Impala Drive Carlsbad, California 92008

July 2002

#### INTRODUCTION

During June 2002, MEC Analytical Systems (MEC) conducted bacteriological sampling along the Dominguez Channel in support of the Los Angeles County Regional Water Quality Control Board's (RWQCB) Total Maximum Daily Load (TMDL) program.

Dominguez Channel (Hydrologic Unit 405.12) is a large watershed in South Los Angeles County and covers approximately 110 square miles. Ninety-six percent of its total area is developed and the predominant land use within the watershed is transportation. The Dominguez Channel is on the 303d List of Impaired Water Bodies for high coliform bacteria counts. As a result of this the RWQCB is developing a TMDL for coliform bacteria for Dominguez Channel (above Vermont) and Dominguez Channel Estuary (below Vermont) (LA County 2002).

#### METHODS

On June 10, 2002 a field reconnaissance survey was conducted along the Dominguez Channel. The purpose of the field reconnaissance was to identify and locate flowing storm drains, identify site concerns and constraints, and plan sample collection activities. MEC scientists, along with regional board personnel, surveyed the channel from it flows above ground in the City of Hawthorne, downstream to its terminus at the East Basin. Crews were equipped with maps, digital cameras, and GPS units to log potential sampling locations.

Sample collection was conducted on June 17 and 18, 2002 using a team of two MEC scientists with regional board personnel present. Samples were collected from the channel center and from side channels and pipes.

The Dominguez Channel has two major sections: an upstream section that consists of a concrete channel (above Vermont) and a downstream section that is an estuary (below Vermont). There were a total of fifty-one samples collected over the two-day period. Fifteen samples were collected along the downstream estuary section of the channel and thirty-six samples were collected along the upstream section.

Samples collected along the downstream estuary section (below Vermont) included nine samples within the Dominguez Channel, two samples in the Torrance Lateral, and the remaining four samples from outfalls and/or laterals flowing into the channel. The samples taken from within the channel consisted of three cross-sectional areas, taken at three separate bridges. The cross-sections consisted of samples collected from both sides of the channel and from the channel center.

Samples collected along the upstream section of Dominguez Channel (above Vermont) included six samples collected from the channel center and thirty samples collected from side channels or pipes.

Field observations and measurements were recorded on field logsheets and are included in Appendix B. Observations included weather conditions, physical description of each site (location, type and size of pipe, GPS coordinates), visual water quality, flow estimation, field

measurements, and comments. For conveyances with low flows, flow was estimated by timing how long it took to fill a container of known volume. If this method was not an option, flow was estimated using the area velocity method. Flow within the channel was measured using a Marsh McBirney Flo-Mate Model 2000 portable flow meter.

Field crews documented site visits with photographs. Field crews were equipped with digital cameras and a white board was set up near each sampling location to visually document site ID, sample time and date, and conveyance type and location. A photo of each sampling location was taken and is included in Appendix A.

Field measurements were taken for pH, temperature and conductivity using an Oakton CON10 pH/conductivity/temperature meter. All field instruments were calibrated before each sampling event. If sufficient flow was present, measurements were taken from the horizontal and vertical center of flow. If low flow conditions existed, a clean HDPE sample container was used to collect the sample for measurement.

During all sampling operations extreme care was taken to minimize exposure of the sample to human, atmospheric, and other sources of contamination. In order to accomplish this, field crews employed clean sampling techniques for collecting bacteriological samples. Field crews were also careful when planning the sampling route. Sampling vehicles were driven in the upstream direction so that vehicles and sampling personnel did not disturb the channel prior to samples being taken.

Bacteriological samples were collected using pre-sterilized. EPA approved, Whirl-pac<sup>TM</sup> sampling bags containing sodium thio-sulfate. When sampling, sterile, powder-free latex gloves were worn at all times and were changed between each site. In addition, field crews frequently cleaned their hands using an antibacterial hand wash. Upon sampling, bags were closed tightly and kept in separate, sealed, zip-lock bags. Bags were placed in coolers on ice and samples were delivered to the laboratory at 4° C. In addition to keeping samples cool, sample containers were also kept in coolers to minimize exposure to sunlight. Chains of custody were filled out completely and accurately and were signed by the sampling and receiving technicians. To ensure holding times were met, technicians delivered samples to the laboratory throughout the day while field crews continued sampling.

All sample analyses were initiated within sample holding times for total coliform, fecal coliform, *E. coli*, and *Enterococcus* at MEC's microbiology laboratory in Carlsbad, California. Laboratory methods for each parameter are listed in Table 1.

#### RESULTS

Total coliform levels ranged from 42 MPN/100mL at Site 39 to 5,172,000 MPN/100mL at Site 50. Fecal coliform levels ranged from 45 CFU/100mL at Site 39 to 4,550,000 CFU/100mL at Site 50. *E. coli* levels ranged from 5 MPN/100mL at Site 6 to 262,000 MPN/100mL at Site 3. Enterococci levels ranged from 47 MPN/100mL at Site 43 to 410,600 MPN/100mL at Site 3. Table 1 presents the reported bacteria levels for each site listed from upstream to downstream and the type of laboratory tests performed.

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			Lab Method:	Colilert 18	Membrane Filtration	Colilert 18	Enterolert
	Client Sample ID	Miles Down	Sample Date	Total Coliform MPN/100 mL	Fecal Coliform CFU/100 mL	<i>E. coli</i> MPN/100 mL	Enterococci MPN/100 mL
•	51.	0.00	6/18/2002	104,620	16,000	1,674	6,488
5		0.06	6/18/2002	5,172,000	4,550,000	7,701	21,870
1	48	0.27	6/18/2002	1,259	205	9	186
	49	0.27	6/18/2002	1,300	150	.29	86
0	47	0.34	6/18/2002	155,310	13,000	488	7,270
$\mathbb{R}$	46	1.18	6/18/2002	64,880	8,900	866	3,873
	45	1.65	6/18/2002	1,607	270	58	291
ଧ	44	1.65	6/18/2002	10,462	110	13	<u></u> б,867
	43	1.90	6/18/2002	520	220	16	47
· [	< <b>∿ 42</b> ;	2.16	6/18/2002	54,750	1,950	365	1,597
	41	2.81	6/18/2002	1,401,000	235,000	22,820	5,475
	24	3.61	6/17/2002	22,240	2,250	488	823
	25	3.61	6/17/2002	129,970	6,000	1,300	2,382
[	23	3.61	6/17/2002	6,488	435	120	365
	22	3.66	6/17/2002	141,360	17,500	4,280	4,884
. [	21	3.77	6/17/2002	57,940	2,600	579	1,211
.[	20	3.90	6/17/2002	9,208	3,350	1,576	613
	19	4.02	6/17/2002	6,867	1,150	980	770
[	1.8	4.07	6/17/2002	8,164	380	146	248
	17	4.08	6/17/2002	14,210	1,900	50	291
-	16	4.14	6/17/2002	613,100	25,500	4,352	5,012
[	15	4.36	6/17/2002	261,300	4,700	291	3,654
	14	4.38	6/17/2002	41,060	1,650	104	980
	13	4.69	6/17/2002	27,550	1,200	980	461
	11	4.90	6/17/2002	22,820	305	37	488
	12	4.90	6/17/2002	43,520	4,900	365	816
	10 .	5.15	6/17/2002	290,900	2,950	517.1	5,172
	9	5.21	6/17/2002	579,400	155	128	6,131
	7.	5.67	6/17/2002	38,730	5,100	548	1,300
	£ <sup>9</sup> 8	5.67	6/17/2002	51,720	1,050	770	1,081
	6	6.24	6/17/2002	980	100	5	96
	5	6.28	6/17/2002	111,990	63,000	1,904	1,918
	4.	6.47	6/17/2002	920,800	1,400	980	3,448
	3	6.66	6/17/2002	1,106,000	375,000	262,000	410,600
	2	6.75	6/17/2002	17,820	525	291	233
	1	6.75	6/17/2002	48,840	2,350	1,236	650
	29	7.51	6/18/2002	1,720,000	53,500	38,730	218
	26	7.51	6/18/2002	43,520	3,000	- 1,076	259
	,27	7.51	6/18/2002	88,000	2,300	1,785	546
•	28	7.51	6/18/2002	129,970	5,750	3,255	1,120
	• 30	8.75	6/18/2002	15.530	2,150	435	1,203
	- 31	8.98	6/18/2002	71,500	535	59	345
	· 32	9.32	6/18/2002	224 700	3,450	454	1.607

**Table 1: Bacterial Sampling Results** 

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		Lab Method:	Colilert 18	Membrane Filtration	Colilert 18	Enterolert
Client Sample ID	Miles Down	Sample Date	Total Coliform MPN/100 mL	Fecal Coliform CFU/100 mL	<i>E. coli</i> MPN/100 mL	Enterococci MPN/100 mL
33	9.32	6/18/2002	172,700	23,000	550	2,098
37	10.83	6/18/2002	1,990	180	86	308
( <b>34</b>	11.08	6/18/2002	6,830	590	475	836
35	11.08	6/18/2002	2,909	530	411	457
36	11.08	6/18/2002	1,120	245	205	1,203
38	14.95	6/18/2002	148	110	58	291
39	14.95	6/18/2002	42	45	40	186
40	14.95	6/18/2002	461	265	137	326
الم الم م				200	4	35

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There were a total of fifty-one sampling locations. Figure 1 provides a visual display of all of the sampling locations. The two sampling points located where the channel daylights are labeled as headwater stations and are indicated by the color purple. Samples taken directly from Dominguez Channel are labeled channel stations and are indicated by the color green. All conveyances that emptied into Dominguez Channel are labeled outfalls and are indicated by the color red. In some areas the locations of the stations on the map have been offset slightly in order to differentiate between sampling points that were in close proximity to one another.

Figures 2 through 5 present the bacterial sampling results for total coliform (MPN/100mL), fecal coliform (CFU/100mL), *Enterococcus* (MPN/100mL), and *E. coli* (MPN/100mL). The bacteria levels are displayed spatially by sampling location and color-coded by intensity. Results falling in the lower ranges are indicated by blue to green dots. Results falling in the mid-range of the scale are indicated by white dots. Results at the higher end of the scale are indicated by pink to red dots. Figure 6 presents the ratio of fecal coliform to *Enterococcus* bacteria. The significance of this ratio is discussed in the next section.

#### DISCUSSION

#### Areas of Potential Concern

Sites that had elevated bacteria levels, in comparison to other sites, are highlighted in red in Table 1.

Sites 50 and 51 are two large double box-culverts with elevated levels of bacteria. The levels at Site 50 are indicative of sewage contamination entering the channel. Site 51 is just upstream of Site 50, but both are located where the channel daylights in the City of Hawthorne. This is the most upstream point that is accessible in the Dominguez Channel. The channel goes underground at Sites 50 and 51 (see Appendix A for individual site photos).

Sites 48 and 49 are separate channels within the same double box culvert on the west side of Dominguez Channel. Field crews noted a strong chlorine smell emanating from Site 49. Both sites had significant flow, but no chlorine odor was noted form Site 48.

Sites 46 and 47 are laterals with elevated bacteria levels. Although flow from Sites 46 and especially 47 may have some effect on dilution in the sample taken at Site 45, the presence of

	ninguez Ch	annel bacu		Uning Data a	ind Observa	<u>IIOII SIICEL</u>
GPS Coordi	nates: <u>118</u> 33	°17,4301	W N	Date/Ti	Site ID: me: 17 June	(enter (west) Chi 2002 / 0800~
Veather Inf Light Condi Last Rain:	ormation: tions: Sunn > 72	hours < 72 h		rew: <u>L·Nguyer</u> Cloudy Irs	<u>p</u> L. Carlson ( Precipitation: >0	2. Warn J. Ericke
Site Descrip Earthen Drai	tion: Location: nage Concrete (	Channel Outfa	f Estuary N 11 Manhole	e Catchbas	in Other	ark <u>fride us</u> o Laten
Flow Estima	ition: Flow Y	es No / Ponded/Ti	ickle <u>Evidence</u>	e of overland flow	near sampling locati	on?: Yes No
Are Wi	a X Velocity (cree dth (cm - ft - (in))	$\frac{k}{50} = 12.5f$	Filling + 1. Volume + 2. Time	a Bottle (mL - L - 02 (sec)	Ard 1. Pipe Dian 2. Depth	ea X Velocity (pipe) meter (fl/in)
3. Ve 4. F16		sec) 0.9 /S	***See formula	on back	3. Velocity ***See form	ula on back
<u>Visuals:</u> Odor	<u>Photo Taken</u> Chemical	yes no Sewage	Roll#/Pic# Rotten Eggs	None/Other	Draw samp	le location if no photo:
Color Clarity	Greyish	Greenish Cloudy	Browish	None/Other Other	*	•
Floatables Vegetation Biology	Oily / Rainbo Limited Mosquitos	W Trash Extensive Algae	Bubbles Snails / Fish	None/Other None/Other None/Other	spended Solids	
Trash In ViD. NoneI. Light (2. Moderal3. High (1)4. Somewl5. Dense (2)	<u>cinity of Drain (Ci</u> 5) te (6-10) 1-25) nat Dense (26-50) >50)	<u>ircle): Type: (</u> <u>95</u> %	<ul> <li>% of number not t</li> <li>% Organic (food)</li> <li>% Plastics (cups, strabuttles, junk)</li> <li>% Recyclables-not p</li> <li>bottles, metal)</li> <li>% Large items (appl</li> </ul>	otal volume of iter aws, bags, wrappers blastic (paper, glass liances, cars, tires)	<u>1s):</u>	
$\begin{array}{c c} \textbf{Drain Assoc} \\ \textbf{Algae covers} \\ \textbf{Algae covers} \\ \textbf{O. None} \\ \textbf{I.} < 5\% \\ \textbf{2.} 5-25\% \\ \textbf{3.} 25-50\% \\ \textbf{4.} 50-75\% \\ \textbf{5.} > 75\% \end{array}$	<u>aited Algae:</u> age (circle):	Algae outside Main algae ty % film alg 100 % turf alg %macroa	of flow?: (yes/ no) pe: gae filomentous ae in channe gae	Other O Fish: Snails: Birds: Other: Number Evidence	bservations: yes no yes no of homeless:	 no
* <u>Field</u> Screening	Water Temp ( pH (pH units)	(°C)_21.5 7.10	Conductivity <b>g</b>	738 mS/u	S (Circle appropriate	units)
* <u>Laborator</u> Analysis	Y Fecal Coliforn Enterococcus	m	(MPN) (MPN)	E.Coli_ Total Co	liform	(MPN) (MPN)
Lab Sample	es taken Yes	No Bottl	e ID#'s			

<u>.*.</u>		Calcul	atino th	Area (	a) of the	Crose Se	h	ion of	a Circu	lar Pine			
•		Caicui	aring till		owing P	artially l	Fin		и <u>Сп.</u> СЦ	iër rathe			
	. •			ere Vite e Gal	· · · · · · · · · · · · · · · · · · ·		A State						
D = 1	Depth of wat	er a	= area of w	ater in partia	ally filled pip						· · · · · · · · · · · · · · · · · · ·		
d = d	iameter of th	ne pipe 🕺 T	a = Tabulat	ed Value				Then a =	Ta*d2				
D/d	0.00	0.01	0.02	0.03	0.04	0.05		0.06	0.07	0.08	0.09		
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	(	0.0192	0.0242	0.0294	0.0350		
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739		0.0817	0.0885	0.0951	0.1039		
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535		0.1623	0.1711	0.1800	0.1890		
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450		0.2540	0.2642	0.2780	0.2836		
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428		0.3527	0.3627	0.3727	0.3827		
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	++	0.4320	0.4020	0.4720	0.4820		
0.0	0.4920	0.5960	0.5120	0.5210	0.5310	0.5400		0.5500	0.5390	0.5090	0.5780		
0.7	0.5870	0.5700	0.6890	0.6970	0 7040	0.0320	+	0 7190	0.7250	0.7320	0.0000		
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710		0.7750	0.7790	0.7820	0.7840		
	AREAN	VELOCI	TV	TIME RI	OUIRED	TO FILL 2	4	ARE	A x VELC	CITY			
	AICUAA			KNOWN	VOLUME				di vini	26. <b>6</b> 4 64			
				(FII:1 A I	OTTLE M	FTHON	) 	l (P	ARTIALL	Y FILLED	PIPF)		
,, (C	REEK/CHA	NNEL ME	THOD)				188						
a. I	Measure the w he water.	idth, depth, and	l velocity of	I. Determine volume/capacity of the sample bottle.					1) All measurement must be converted to a common unit before calculation (ft, in, or cm).				
b.	Convert each v	alue to a comn	10n unit (i.e.	2. Measure time required to fill the				2) Let D = water depth.					
	all measuremen	nts converted to	o cm, ft, or	bottle.					3) Let $d = inside$ nine diameter				
	in. <u>j</u> .			3. Flow will be determined by initial				5) Let d – <i>inside</i> pipe diameter					
	Multiply the w	idth * donth * .	valaaity to	volume units: 4)					culate D/d.				
C.	determine flow	ium · uepm · · /.	velocity to	•	mL/s			5) Fin	5) Find the tabulated (Ta) value on the partially				
d	Mailtinha the fl	and her A P for a	raale	• oz/s					filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then $T_2 = 1623$ )				
a.	measurements	-or 0.9 for c	oncrete	4. Convert to desired value.									
	channel measu	rements to acco	ount for										
	channel roughr	iess.		,					6) Find the area using the formula				
	The recultr if n	secured in							$\mathbf{a} = \mathbf{T}\mathbf{a}^*\mathbf{d}^2.$	-	•		
С.	The results it in	icasureu in						7) Mu	ltiply area (a) b	y the water vel	ocity.		
•	$Ft = Ft^3/sec$	m1 (000)						8) Co	wert to desired	value	-		
•	$in = in^3/sec$	mL/sec)						0) 00	iven to desired	value.			
ŕ	Convert to deci	red value											
		ircu value.	I					L					
SA	E / Metric	Unit Conve	rsion										
0.0	83 ft =	1 in =	-2.54 cm		,		۰.			•			
0.1	337 ft <sup>3</sup> =	1 gal   =	128 oz		•	•		•					
	070		= 3.785 L	3	·								
	$\frac{10}{8}$ gal $=$		0.0011 ft										
<b></b>													
				÷							· · · ·		
					•				· .	· · ·			

100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 ÷ 

· · ·	
<u>Domir</u>	nguez Channel Bacterial Monitoring Data and Observation Sheet
GPS Coordinate	s: <u>18°,17,4/6</u> w Site ID: <u>2</u> (Centres) 3780,52,27/ N Date/Time: 06 17 02/05/0588
Weather Inform	s: Sunter Overcast Partly Cloudy
Last Rain:	72 hours < 72 hours < 3 hours $Precipitation: > 0.1"$ < 0.1"
<u>Site Description</u> Earthen Drainage	<u>Location: 2 a st ( a ffera / all Start ist Estuary</u> Concrete Channel Outfall Manhole Catchbasin Other
Flow Estimation	: Flow Yes No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes No
Area X 1. Width ( 2. Depth (	Velocity (creek / channel) $cm - ft - in$ $4 = 1.58 \pm 1.$ Volume $6\pi - 1.02$ $1.$ Pipe Diameter (ft/in) $cm - ft - im$ $2 / 8 = .18 \pm 2.$ Time (sec) $2.$ Depth
<ol> <li>Jopin (</li> <li>Velocit</li> <li>Flow</li> </ol>	y (cm (ft) in / sec) $0.03$ • 009 ft <sup>3</sup> /s ***See formula on back ***See formula on back
Visuals:	<u>Photo Taken:</u> yes/no Roll#/Pic# / 53 Chemical Sewage Rotten Eegs None/Other
Color	Greyish Greenish Browish Yellow None/Other
Floatables	"Oily / Rainbow     Trash     Bubbles     None/Other       Limited     Future inter     Trash
Biology	Mosquitos Algae Snails / Fish None/Other
Trash In Vicinit0None11Light (<5)20Moderate (6-3.High (11-25)4.Somewhat D5.Dense (>50)	y of Drain (Circle):       Type: (% of number not total volume of items):        % Organic (food)      % Organic (cups, straws, bags, wrappers, bottles, junk)         -10)      % Plastics (cups, straws, bags, wrappers, bottles, junk)         )      % Recyclables-not plastic (paper, glass bottles, metal)        % Large items (appliances, cars, tires)
Drain Assocaite Algae coverage ( 0. None 1. < 5%	<u>d Algae:</u> Other Observations:         circle):       Algae outside of flow?: (yes / no)       Fish: yes       no         Main algae type:       Birds: yes       no
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Image       Other:       Image       Image       Other:       Image       <
* <u>Field</u> Screening	Water Temp (°C) 22.2 Conductivity 870 mS (uS) Circle appropriate units) pH (pH units) 7.23
* <u>Laboratory</u> <u>Analysis</u>	Fecal Coliform(MPN)       E. Coli(MPN)       (MPN)         Enterococcus(MPN)       Total Coliform(MPN)
Lab Samples tal Comments Observations	Luhite Stains on concrete, white stains on algar.

# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

	<u> </u>								· · · · · · · · · · · · · · · · · · ·			
D = 1	Depth of wat	er a	= area of w	ater in partia	ally filled pip	e .			•			
d = d	iameter of th	ne pipe T	a = Tabulat	ed Value			Then	a = Ta*d2				
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09		
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	2 0.0242	0.0294	0.0350		
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	7 0.0885	0.0951	0.1039		
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890		
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836		
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.352	7 0.3627	0.3727	0.3827		
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820		
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780		
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660		
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360		
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840		
	AREAX	VELOCI	ТҮ	TIME RI	EQUIRED	TO FILL 2	4   AR	EA x VELC	)CITY 🗠			
				KNOWN	VOLUME							
	a danga si dalamak Kasar			/ETT 1 A T	OTTLE M	FTUON		(PARTIALI	Y FILLED	PIPE)		
<u>(C</u>	REEK/CH/	NNEL ME	THOD)	(FILL AI								
a.	Measure the w	idth, depth, and	velocity of	I. D samp	etermine volum e bottle.	e/capacity of th	e    1)	All measurement i common unit befo	must be conver ore calculation (	ted to a ft, in, or cm).		
b.	Convert each v	value to a comm	ion unit (i.e.	2. Measure time required to fill the bottle.				2) Let D = water depth.				
	all measureme	nts converted to	o cm, ft, or									
	in.).			3. FI	ow will be deter	rmined by initia	(C    1	Let a = inside pipe	e diameter			
				vo	olume units:		4)	Calculate D/d.	•			
C.	Multiply the w determine flow	ridth * depth * v /.	elocity to		ml /s		5)	Find the tabulated	(Ta) value on t	he nartially		
	determine non			•	oz/s			filled pipe formu	la chart above u	ising the D/d		
d.	Multiply the fl	ow by 0.8 for ci	reek	4. Convert to desired value.				value. (i.e. if $D/d = 0.263$ then Ta = 1623).				
	channel measu	rements to acco	ount for						· ·	۰.		
	channel rought	ness.						Find the ener weigh	- Ale - C1-			
					·		6)	Find the area using $a = Ta^{*}d^{2}$ .	g the formula			
e.	The results if n	neasured in										
	$Ft = Ft^3/sec$					*	7)	Multiply area (a) t	by the water vel	ocity.		
•	$cm = cm^3/sec$ (	mL/sec)					8)	Convert to desired	value.			
•	in = in³/sec											
f	Convert to desi	ired value.		· · ·								
					······································					•		
SA	E / Metric	Unit Conver	rsion			•						
0.0	)83 ft =	1 in =	2.54 cm									
0.1	$ 337  ft^3  =$	1 gal   =	128 oz					•		•		
∥			3.785 L							•		
0.0	$\frac{0078 \text{ gal}}{100000000000000000000000000000000000$	loz   =	0.0011 f									
	$00 \text{ cm}^3$ =	<u>  L  =</u>	1000mL									
		·····		d								
·									· · · · · · · · · · · · · · · · · · ·			
	. •											

<u>Do</u>	minguez Cha	nnel Bacto	erial wioni	toring	Data and	Observatio	<u>n Sneet</u>
GPS Coord	inates: 118. 1	7.523	_ <b>W</b>	:		Site ID:	3/
	25.52	.768	<u>N</u>		Date/Time: <u>C</u>	617020	8- 90
Weather In	formation:		Field	Crew: <u>/_/</u>	Ignyen/L. Carl	Son / C. Wara	13. Eticks
Light Cond Last Rain:	itions: Sunny	$\sim$ Overca ours < 72 h	ast Partly ours < 3 h	y Cloudy ours	Precip	$\frac{\text{Ditation:}}{2} > 0.1$ "	< 0.1"
<u>Site Descrip</u> Earthen Dra	<u>ation:</u> Location( <u>)</u> inage Concrete Cl	. I. N. of annel Outfai	Estran Maun	Start	- Sonth Catchbasin	Other 36"Green	de on wall de pipe onside of
<u>Flow Estim</u>	<u>ation:</u> Flow Yes	/ No / Ponded	ickle <u>Evider</u>	ce of over	rland flow near s	ampling location?	<u>:</u> Yes / 🕅
Ar 1. • W	ea X Velocity (creek idth (cm - ft - in)	/ channel)	Fillir 1. Volume	ig a Bottle	= . 018 ft m] - L - oz)	3 Area X 1. Pipe Diamete	Velocity (pipe) er <u>36</u> (ft(n)
2. D	epth (cm - ft - in)		2. Time /	<u> 4                                    </u>	sec)	2. Depth	
3. Vo 4. Fl	elocity (cm - ft - in / s ow $\sqrt{0.6413}$	ec)	ر ***See formu	- 20% 11a on back	offlow.	3. Velocity ***See formula	on back
	1000.1	2		75	- 		
<u>Visuals:</u> Odor	Photo Taken: Chemical	yes / no Sewage	Roll#/Pic# Rotten Eggs	Nond	Other	Draw sample lo	ecation if no photo:
Color	Greyish	Greenish	Browish	None/	Other Jellon	·	
Clarity	(Clear)	Cloudy		Other_			
Floatables	Oily / Rainbow	Trash	Bubbles	None	Other		-
Vegetation	Limited	Extensive		None	Other		
Biology	Mosquitos	Algae	Snails / Fish	None/	Other		
Trash In V	icinity of Drain (Circ	<u>:le): Type: (%</u>	<u>% of number no</u>	t total vol	ume of items):		
U. None	<5)	100 %	Plastics (cups, s	traws, bag	s, wrappers,		
Modera	te (6-10)	0/	bottles, junk) Recyclables-no	t plástic (r	aner glass	•	
A Somew	hat Dense (26-50)	·	bottles, metal)	r prustie (p	apor, grass		
-5. Dense (	>50)	9	6 Large items (ap	pliances, o	cars, tires)	· · · · · · · · · · · · · · · · · · ·	
Drain Asso	caited Algae:	Algaa autoida	fifter 2. (vor / m	2	Other Observa	ations:	
0. None	age (circle).	Aigae outside	or now :: (yes / n		Snails: yes		
1. < 5%		Main algae typ	)e:		Birds: yes Other:	no l	
3. 25-50%	1	$\frac{1}{100}$ % turf alg	ae		Number of hom	neless: NO	
4. 50-75%	)	%macroal	gae	Ì	Evidence of du	mping: yes no	
13.) = 1378		ui-At	<u>^</u>	<u>, , , , , , , , , , , , , , , , , , , </u>	- A C		· · · · · · · · · · · · · · · · · · ·
* <u>Field</u> Screening	Water Temp (°C pH (pH units)	5) <del>1959</del> 25! 7.37	Conductivity	427	yrs (us (Circ	le appropriate units	3)
* <u>Laborato</u> i Analysis	Y Fecal Coliform Enterococcus	· · · · · · · · · · · · · · · · · · ·	(MPN) (MPN)		E.Coli Total Coliform		(MPN)
Lab Sampl	es taken (Pos / 1	lo Bottle	ID#'s				(
Comments Observatio	ns						

## Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

			ې د د د د شعر او شعر او	·								
D = [	Depth of wat	er a	= area of w	ater in partia	lly filled pip	e						
d = d	iameter of th	ne pipe – T	`a = Tabulat	ated Value Then $a = Ta^*d2$								
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09		
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350		
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039		
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890		
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836		
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827		
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820		
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780		
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660		
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360		
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840		
	AREA x	VELOCI	ΤY	TIME RE	QUIRED	TO FILL A	ARE	<b>4 x VELC</b>	OCITY			
				KNOWN	<b>VOLUME</b>			승규는 것은				
				(FILL A R	OTTLE M	ЕТНОЙ	l de la centre de	ARTIALL	Y FILLED	PIPE)		
Ser (C	кеек/сна	NNEL ME	тнор)	a seguration of								
a. tl	Measure the with the water.	idth, depth, and	l velocity of	1. De sample	termine volume bottle.	e/capacity of the	l) All	<ol> <li>All measurement must be converted to a common unit before calculation (ft, in, or cm).</li> </ol>				
b.	Convert each v	alue to a comm	non unit (i.e.	2. Me	easure time requ	aired to fill the	2) Let	<ul> <li>2) Let D = water depth.</li> <li>3) Let d = <i>inside</i> pipe diameter</li> </ul>				
	in.)		, cin, n, or	00			3) Let					
				3. Flo	w will be deter	mined by initial		(1) Colculate D/d				
<b>c</b> .	Multiply the w	idth * depth * v	elocity to	4) Calculate D/g								
	determine flow			•	mL/s		5) Fin	5) Find the tabulated (Ta) value on the partially filled pine formula short above using the D/d				
d,	Multiply the flo	ow by 0.8 for ci	reek	•	02/5			value. (i.e. if $D/d = 0.263$ then Ta = .1623).				
	measurements	-or 0.9 for co	ncrete	4. Co	nvert to desired	l value.						
	channel measu channel roughn	rements to acco	ount for		·				<b>.</b>			
	5	•					6) Fin	d the area using	g the formula			
e. '	The results if m	neasured in					$a = Ta^*d^4$ .					
							7) Multiply area (a) by the water velocity.					
•	Ft = Ft'/sec $cm = cm^3/sec$ (1)	mi/sec)					8) Convert to desired value					
•	$in = in^3/sec$							iven to desired	raide.	. ,		
e i	Consider to deal	and suctions										
			i									
SA	E / Metric I	Unit Conve	rsion									
0.0	83 ft =	1 in   =	2.54 cm							· ·		
0.1	$337 \text{ ft}^3 =$	1 gal =	128 oz									
	= 3.785 L											
0.0078  gal = 1  oz = 0.0011  f				3								
100	$0 \text{ cm}^3 =$	1L =	1000mL									
	····			l								
									· .			
	-4								•			

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Dominguez Channel Bacterial Monitoring Data and Observation Sheet
GPS Coordinates: $118^{\circ}/7.7/9^{\prime}$ W Site ID: 4
$33^{\circ}52.270'$ N Date/Time: $cc (17/02 8:50)$
Weather Information: Field Crew: ( Nowyon (L. Carlson ( C. ween ( J. Errde
Light Conditions: Sunn Overcast Partly Cloudy
Last Rain: <72 hours <72 hours <3 hours Precipitation: >0.1" <0.1"
Site Description: Location: 0.2 N of Estuary Start Southword ride - From two Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other
<u>Flow Estimation:</u> Flow (res/ No / Ponded/Prickle) Evidence of overland flow near sampling location?: Yes No
Area X Velocity (creek / channel)Filling a Bottle $=$ .018 fL <sup>3</sup> Area X Velocity (pipe)1.Width (cm - ft - in)1.Volume $\boxed{00}$ (mLL - oz)1.Pipe Diameter (ft/ir
2. Depth (cm - ft - in) 2. Time $\frac{1}{2}$ (sec) 2. Depth
3. Velocity (cm - ft - in / sec) $\gamma$ 50% flow 3. Velocity
4. Flow $5.9 \text{ ft}^3/s$ 5.9 $5.9 \text{ ft}^3/s$ ***See formula on back ***See formula on back ***See formula on back
Visuals: Photo Taken: rest no Roll#/Pic# 1/5/ Draw sample location if no pho
Odor Chemical Sewage Rotten Eggs None/Other
Color Greyish Greenish Browish None/Other Yellow
Clarity Clear Cloudy Other
Floatables Oily / Rainbow Trash Bubbles None/Other
Vegetation Limited Extensive
Biology Mosquitos Algae Sinaits Fish Mone/Other
Trash In Vicinity of Drain (Circle):       Type: (% of number not total volume of items):         0.       None         % Organic (food)
1. Light (<5) %Plastics (cups, straws, bags, wrappers,
2. Moderate (6-10) Bottles, Junk) 3. High (11-25) 25 % Recyclables-not plastic (paper, glass
4. Somewhat Dense (26-50) bottles, metal) 5. Dense (50) % Large items (appliances, cars, tires)
Drain Assocaited Algae:       Other Observations:         Algae coverage (circle):       Algae outside of flow?: (yes / no)       Fish: yes       Image: Coverage
0. None Snails: $\sqrt{2}$ no $\sqrt{2}$
2. 5-25%    % film algae     Other:
3. $25-50\%$ (102) % turf algae Number of homeless: $\frac{100}{50-75\%}$ % macroalgae Evidence of dumping ves (no)
5. 75%
*Field Water Temp (°C) $25.4$ °C Conductivity $678$ frs/uS (Circle appropriate units) Screening pH (pH units) $7.70$
*Laboratory AnalysisFecal Coliform Enterococcus(MPN)E.Coli Total Coliform (MPN)
Lab Samples taken Yes No Bottle ID#'s
Comments
Observations

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	· .	Calcul	ating the	e Area (a Fl	a) of the owing Pi	Cross Se artially I	ecti Ful	on of I	a Circu	lar Pipe			
			.*		- <b>-</b>		- 75 C						
D = I	Denth of wat	er a	≓ area of w	ater in partia	llv filled pip	e				· · · · · · · · · · · · · · · · · · ·			
d = d	iameter of th	ne pipe 7	a = Tabulat	ed Value	,	-	-	Then a =	Ta*d2				
D/d	0.00	0.01	0.02	0.03	0.04	0.05		0.06	0.07	0.08	0.09		
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0	.0192	0.0242	0.0294	0.0350		
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0	.0817	0.0885	0.0951	0.1039		
0.2	0.1118	0.1199 -	0.1281	0.1365	0.1440	0.1535	<u>(0</u> ,	.1623	0.1711	0.1800	0.1890		
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0	.2540	0.2642	0.2780	0.2836		
0.4	0.2934	0.3032	0.3130	0.3220	0:3328	0.3428		.3527	0.3627	0.3727	0.3827		
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430		.4520	0.4620	0.4720	0.4820		
. 0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400		.5500	0.5590	0.5690	0.5780		
0.7	0.58/0	0.5960	0.6000	0.6140	0.0230	0.0320		7100	0.0490	0.7220	0.7260		
0.0	0.0740	0.0810	0.0090	0.0970	0.7040	0.7120		7750	0.7230	0.7820	0.7940		
0.9				TIME RE		$TO^{TI}$	4	ARE			0.7840		
	AREAX	VELOCI	1 Y	KNOWN	VOLUME	1011LL1				· · · ·			
						And the first		(D	ADTIALL		DIDE		
(Ĉ	<u>REEK/CH/</u>	NNEL ME	THOD)	(FILL A B	OTTLE M	ETHOD)		<u> </u>	ARTIALE	I FILLED	PIPE)		
a. t	Measure the w he water.	idth, depth, and	I velocity of	I. Determine volume/capacity of the sample bottle.				<ol> <li>All measurement must be converted to a common unit before calculation (ft, in, or cm).</li> </ol>					
b.	Convert each wall measureme	value to a comm	non unit (i.e.	2. Measure time required to fill the bottle.				2) Let D = water depth.					
	in.).		· · ·	3. Flow will be determined by initial				3) Let d = <i>inside</i> pipe diameter					
c.	Multiply the w	idth * depth * v	elocity to	volume units.				5) Find the tabulated (Ta) value on the part "					
	determine flow	'.		mL/s     oz/s				5) Find the tabulated (1a) value on the partially filled pipe formula chart above using the D/d					
d.	Multiply the flo measurements	ow by 0.8 for c. or 0.9 for co	reek oncrete	4 Convert to desired value				value. (i.e. if $D/d = 0.263$ then Ta = 1623).					
	channel measu	rements to acco	ount for	4. Convert to desired value.									
	channel roughr	iess.						6) Find the area using the formula					
	The secults if a							$\mathbf{a} = \mathbf{T}\mathbf{a}^*\mathbf{d}^2.$					
e.	The results if n	heasured in				· .		7) Mu	ltiply area (a) b	y the water vel	ocity.		
•	$Ft = Ft^{3}/sec$	ml /sec)						8) Con	vert to desired	value	-		
•	$in = in^3/sec$	1112/300 <i>)</i>						5, 001					
f.	Convert to desi	red value.				·							
SA	E / Metric	Unit Conve	rsion										
	$\frac{83 \text{ ft}}{227.0^3} =$	$\frac{1 \text{ in}}{1 \text{ in}} =$	2.54 cm										
0.1	$33/\pi =$		128 OZ										
	078 gal -		0.0011 4	3-		÷.							
$1000 \text{ cm}^3 = 102 = 0.0011 \text{ ft}^3$													
	l												
			<u> </u>			····		<u>.</u>					
						• •							

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	Dominguez Channel Bacterial Monitoring Data and Observation Sheet
	GPS Coordinates: $18^{\circ}17.918$ W Site ID: 5 $33^{\circ}12278$ N Date/Time: $06/701 = 0906$
	Weather Information: Light Conditions: Sunny Overcast Partly Cloudy
	Last Rain: $>72$ hours $<72$ hours $<3$ hours       Precipitation: $>0.1''$ Site Description: $= 1.0$ $= 1.0$ $= 1.0$ $< 0.1''$
	Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other Local wert
	Filling a Bottle       Area X Velocity (creek / channel)       Filling a Bottle       Area X Velocity (pipe)         1.       Width (cm - ft (in))/(/ + 1)       3.92 ft 1.       Volume (mL - L - oz)       1.       Pipe Diameter (ft/in)         2. = .02 ft Depth (cm - ft - ft) // (-ful)       =
	3. $$ 3. $$ 3. Velocity 4. Flow $\cdot$ 09 ft <sup>3</sup> /5 $\cdot$ ***See formula on back $\cdot$ ***See formula on back $\cdot$ ***See formula on back
	Visuals:         Photo Taken:         yesy no         Roll#/Pic#         150         Strain         Draw sample location if no photo:           Odor         Chemical         Sewage         Rotten Eggs         NoneOther         Draw sample location if no photo:
	Color     Greyish     Greenish     Browish     None/Other       Clarity     Clear     Cloudy     Other       Floatables     Oily / Rainbow     Trash     Bubbles     None/Other
-	Vegetation     Limited     Extensive       Biology     Mosquitos     Algae     Snails / Fish     None/Other       Trash In Vicinity of Drain (Circle):     Type: (% of number not total volume of items):     Image: Circle - Ci
	1. Light (<5)       50 % Organic (food). (ea vestimation)         2. Moderate (6-10)       50 % Plastics (cups, straws, bags, wrappers, bottles, junk)         3. High (11-25)       % Recyclables-not plastic (paper, glass)         4. Somewhat Dense (26-50)       bottles, metal)         5. Dense (>50)       % Large items (appliances, cars, tires)
	Drain Assocaited Algae:       Algae outside of flow?: (yet / no)       Other Observations:         Algae coverage (circle):       Algae outside of flow?: (yet / no)       Fish: yes (no)         0. None       Main algae type:       Snails: yes (no)         1. < 5%       Main algae type:       Birds: (yes / no)         2. 5-25%       % film algae       Other:         3. 25-50%       % turf algae       Number of homeless: No         4. 50-75%       % macroalgae       Evidence of dumping: yes (no)
(	$\frac{(5) > 75\%}{*Field} \qquad Water Temp (°C) 3.5 Conductivity 677 (ms) uS(Circle appropriate units) Screening pH (pH units) 7.8$
	*Laboratory       Fecal Coliform(MPN)       E.Coli(MPN)         Analysis       Enterococcus(MPN)       Total Coliform(MPN)
	Lab Samples taken     Yes / No     Bottle ID#'s       Comments
## Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

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	<u> </u>	<u> </u>	<u></u>	<u> </u>							
D = [	Depth of wat	er a	= area of w	ater in partia	ally filled pip	e					
d = d	iameter of th	ne pipe – T	a = Tabulat	ed Value	·		The	en a =	= Ta*d2		•
				· · · · · · · · · · · · · · · · · · ·	·····	** <u></u>	r		·····		· · · · · · · · · · · · · · · · · · ·
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.0	6	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.01	92	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.08	17	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.16	23	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.25	40	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.35	27	0.3627	0.3727	<u>, 0.3827</u>
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.45	20	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.55	00	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.64	00	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.71	90	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.77	50	0.7790	0.7820	0.7840
	AREA x	VELOCI	ΤY	IIME RE	QUIRED	IOFILL /	4    A	RE.	A x VELC	OCITY :	
			e e de la companya d La companya de la comp	KNOWN	VOLUME						
	DEEK/CHA	NNEL ME	тнору	(FILL A E	<b>OTTLE</b> M	ETHOD)			ARTIALL	Y FILLED	PIPE)
	NMM NCH-		anopjes	AN CONTRACT OF STATE				MARK MA		And Andrews	
a.	Measure the w	idth, depth, and	velocity of	I. De	etermine volume	capacity of th	e    1)	All	measurement r	nust be convert	ted to a
	ne water.			sampi	e douie.			COI	nmon unit beio	re calculation (	ft, in, or cm).
<b>b</b> .	Convert each v	alue to a comm	ion unit (i.e.	2. M	easure time requ	aired to fill the	2)	Lei	t D = water depi	lh.	
	all measurement	is converted to	cm, π, or	60	ttle.		3)	Let	t d = <i>inside</i> pipe	diameter	
				3. Fl	ow will be deter	mined by initia	1				
C.	Multiply the w	idth * depth * v	elocity to	γo	iume units:		4)	Ca	Iculate D/d.		
	determine flow			•	mL/s		5	) Fin	nd the tabulated	(Ta) value on t	he partially
d	Multiply the flo	- nw.hv.0.8.for.ci	reek	•	oz/s			fi	lled pipe formul	a chart above $\iota$	using the D/d $r_0 = 1622$
u.	measurements	or 0.9 for co	ncrete	4. Co	onvert to desired	value.		• •		0.205 then 1	a –. 1023).
	channel measur	rements to acco	unt for				ų				
	chaimer rough			•			6)	Fin	d the area using	the formula	
	The results if m	accured in							$a = Ta^*d^2$ .	-	
С.	The results II II	icasured in					7)	Mu	ultiply area (a) b	v the water vel	ocity.
•	$Ft = Ft^{3}/sec$	• • •						~			
•	$cm = cm^{2}/sec$ (i in = in <sup>3</sup> /sec	mL/sec)		· ·			8)	Co	nvert to desired	value.	
f.	Convert to desi	red value.									
SA	E / Metric I	Unit Conve	rsion								
0.0	83  ft =	1  in  =	2.54 cm								
0.1	$337 \text{ ft}^3 =$	1  gal =	128 oz								
		=	3.785 L			, .					
0.0	078 gal =	1 oz =	0.0011 ft	3		•					
100	$00 \text{ cm}^3 =$	1 L =	1000mL								
					• • •						
•									•		s.
									<u> </u>	······	
		2 C							• .		
	•										

<b>P</b> ***	a
	<b>Dominguez Channel Bacterial Monitoring Data and Observation Sheet</b>
2011 1011 1011	GPS Coordinates: 118°17962 W Site ID: 6
	<u>Weather Information:</u> <u>Uight Conditions:</u> <u>Uight Conditions:</u> <u>Uight Conditions:</u> <u>Uight Conditions:</u> <u>Summa</u> <u>Overcast</u> <u>N</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Time:</u> <u>Date/Ti</u>
	Last Rain:     > 72 hours     < 72 hours
「日本」	Earthen Drainage Concrete Channel) Outfall Maimole Catchbasin Other_Dearn
	Flow Estimation:       Flow (Yest No / Ponded/Frickle       Evidence of overland flow near sampling location?:       Yes / No         Area X Velocity (creek / channel)       Filling a Bottle $\stackrel{=}{\longrightarrow}$ 0 4 ft <sup>3</sup> Area X Velocity (pipe)         1.       Width (cm - ft - in)       1.       Volume       (mL (L) oz)       1.       Pipe Diameter $\stackrel{\sim}{\longrightarrow}$ (ft(fn)
	2. Depth (cm - ft - in) 2. Time $3$ (sec) : 01 ft <sup>3</sup> / <sub>6</sub> 2. Depth 2. Velocity
	4. Flow .015 £2315 ***See formula on back ***See formula on back
	Visuals:     Photo Taken:     yes/ no     Roll#/Pic#     53/19     Draw sample location if no photo:       Odor     Chemical     Sewage     Botten Eggs     None/Other     Draw sample location if no photo:
	Color     Greenish     Browish     Greenish       Clarity     Claudy     Claudy
	Clarity     Cloudy     Other       Floatables     Oily / Rainbow Trash     Bubbles     None/Other
L.	Vegetation     Limited     Extensive     Mone/Other       Biology     Mosquitos     Algae     Snails     Fish     None/Other
	Trash In Vicinity of Drain (Circle):       Type: (% of number not total volume of items):         0.       None
	1. Light (<5)       \$\sum_{\mathcal{P}}\$ Plastics (cups, straws, bags, wrappers, bottles, junk)         2. Moderate (6-10)       \$\sum_{\mathcal{P}}\$ Mecyclables-not plastic (paper, glass         3. High (11-25)       \$\sum_{\mathcal{P}}\$ Recyclables-not plastic (paper, glass
	5. Dense (>50)    % Large items (appliances, cars, tires)
	Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes/ no)Other Observations: Fish: yes0. None 1. < 5%Main algae type:Birds: yesno
Constant of the second s	2. $5-25\%$ $\%$ film algaeOther:3. $25-50\%$ $720$ % turf algaeNumber of homeless:4. $50-75\%$ $\%$ macroalgaeEvidence of dumping:5) $>75\%$ $75\%$
	* <u>Field</u> Water Temp (°C) <u>259</u> Conductivity <u>776</u> (Circle appropriate units) <u>Screening</u> pH (pH units) <u>8.01</u>
(internet)	*Laboratory AnalysisFecal Coliform Enterococcus (MPN)(MPN)E.Coli Total Coliform (MPN)(MPN)
distant.	Lab Samples taken (Yes / No Bottle ID#'s
	Observations Horses New by - not necessarily influencing champel
- A - A - A - A - A - A - A - A - A - A	

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## Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

•		<u></u>	<u></u>			·				
D = [	Depth of wat	er a	= area of w	ater in partia	lly filled pip	e				-
d ≈ d	iameter of th	ne pipe – T	fa = Tabulat	ed Value			Then a	= Ta*d2		
			·····	·····		r	r			·
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0:3328	0.3428	0.3527	0.3627	0.3727	, 0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
	AREA x	VELOCI	ΤY	TIME RE	QUIRED	TO FILL /	4 ARE	A x VELO	OCITY	
				KNOWN	VOLUME					
				(FILL A P	OTTI F M	FTHOD	$   \sim a$	PARTIALL	Y FILLED	PIPE)
<u>. (C</u>	REEK/CHA	NNEL ME	THOD)							
a. ti	Measure the w he water.	idth, depth, and	l velocity of	I. De sample	etermine volume e bottle.	e/capacity of th	e 1) Al co	l measurement mmon unit befo	must be conver ore calculation (	ted to a ft, in, or cm).
b.	Convert each v	alue to a comm	non unit (i.e.	2. M	easure time requ	uired to fill the	2) Le	t D = water den	th	
0.	all measuremen	nts converted to	o cm, ft, or	bo	ttle.		-/			
	in.).			3 Fl	nw will he deter	mined by initia	.    3) Le	t d = <i>inside</i> pip	e diameter	
				vo	lume units:	mined by mine	"    4) Ca	lculate D/d.		
C.	Multiply the w	idth * depth * ·	velocity to		m1 /a		S E	مطغلبم فمامينا مغمط	(Ta) value and	h
	determine now	•		•	oz/s			illed pipe formu	la chart above i	ne partially ising the D/d
đ.	Multiply the flo	ow by 0.8 for c	reek				v	alue. (i.e. if D/	$d = 0.263$ then $\frac{1}{2}$	Γa =.1623).
	channel measu	rements to acco	ount for	4. Co	onvert to desired	l value.				
	channel roughr	ness.								
							6) Fi	nd the area usin $a = Ta^* d^2$	g the formula	
e.	The results if n	neasured in						a - 1a a .		
							7) M	ultiply area (a) l	by the water vel	ocity.
•	$cm = cm^3/sec$ (	, mL/sec)			·		8) Co	onvert to desired	l value.	
٠	in = in <sup>3</sup> /sec			· ·			<b>1</b>			
f	Convert to desi	red value								
							l		· · · · · · · · · · · · · · · · · · ·	
SA	E / Metric	Unit Conve	rsion							
0.0	83 ft =	1 in   =	2.54 cm							•
0.1	$337 \text{ ft}^3 =$	1 gal =	128 oz							•
		· =	3.785 L							
0.0	078 gal   =	1 oz =	0.0011 ft		÷					İ
[ 100	)0 cm'   =	1L =	1000mL							
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	<b>Dominguez Channel Bacterial Monitoring Data and Observation Sheet</b>
	GPS Coordinates: $1/8^{\circ}/8540^{\circ}$ W Site ID: $7$
	Weather Information:       Field Crew: Thousen/L Carlson         Light Conditions:       Sunny         Overcast       Partly Cloudy
	Last Rain:> 72 hours< 72 hours
	<u>Flow Estimation:</u> Flow (Yes) / No / Ponded/Trickle <u>Evidence of overland flow near sampling location?</u> : Yes / No
	Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)1.Width (cm - ft (in)) $12 = 1$ ft1. Volume (mL - L - oz)1. Pipe Diameter $7.2$ (ft/m)2.Depth (cm - ft (in)) $1/2 = 3$ (DH ft - 2. Time (coo))2. Depth
	2.       Depth (chi + it - (h)) / 2 · (v + 2 · (hite - (sec)) / 2 · (bet))       2.       Depth (chi + it - (h)) / 2 · (v + 2 · (hite - (sec)) / 2 · (bet))         3.       Velocity (cm (ft / in / (sec)) / 2 · (v + 2 · (hite - (sec)) / 2 · (bet))       3.       Velocity (cm (ft / in / (sec)) / 2 · (bet))         4.       Flow (v + 2 · (hite - (sec)) / 2 · (bet))       3.       Velocity (cm (ft / in / (sec)) / 2 · (bet))         4.       Flow (v + 2 · (bet)) / 2 · (bet) / 2 · (bet)       ***See formula on back       ***See formula on back
	Visuals:     Photo Taken:     yes / no     Roll#/Pic#     Uraw sample location if no photo:       Odor     Chemical     Sewage     Rotten Eggs     Mone/Other
	Color     Greyish     Greenish     Browish     None/Other       Clarity     Clear     Cloudy     Other
	Floatables     Oily / Rainbow     Trash     Bubbles       Vegetation     Limited     Extensive
	Biology       Mosquitos       Argae       Statis / Fish       Note/Other <u>Trash In Vicinity of Drain (Circle):</u> Type: (% of number not total volume of items):       % Organic (food)
	1. Light (<5)       JO       %Plastics (cups, straws, bags, wrappers, bottles, junk)         2. Moderate (6-10)       bottles, junk)       bottles, junk)         3. High (11-25)       Somewhat Dense (26-50)       bottles, metal)
	5. Dense (>50)      % Large items (appliances, cars, tires)         Prain Associated Algae:
	Drain Associated Algae.         Algae coverage (circle):       Algae outside of flow?: (yes / no)       Fish: yes       10         0. None       Snails: yes       ID         1. < 5%       Main algae type:       Birds: yes       ID
	2.5-25% $\checkmark$ film algaeOther: $\checkmark$ $\checkmark$ $\checkmark$ 3.25-50% $\checkmark$ $\checkmark$ $\checkmark$ $\checkmark$ $\checkmark$ $\checkmark$ $\checkmark$ $\checkmark$ 4.50-75% $\checkmark$ macroalgaeEvidence of dumping:yes $\land$ $\checkmark$
	* <u>Field</u> Water Temp (°C) 22,6 Conductivity <u>//6/</u> mS /uS/Circle appropriate units) <u>Screening</u> pH (pH units) 8,3
	*Laboratory       Fecal Coliform(MPN)       E.Coli(MPN)       (MPN)         Analysis       Enterococcus(MPN)       Total Coliform(MPN)
and the second s	Lab Samples taken (Yes / No Bottle ID#'s
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## **Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full**

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D = I	Denth of wat	er a	= area of w	ater in partia	illy filled pir	ie.		· · · ·		
. d = d	liameter of th	ne pipe 1	fa = Tabulat	ed Value			Then a	= Ta*d2		
									,	
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623)	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355'	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	, 0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
	AREAY	VELOCI	TV	TIME RE	OUIRED	TO FILL	<b>ARE</b>	A x VELO	CITY	
		A DECC		KNOWN	<b><i>VOLUME</i></b>			14-20. Vi		
								PADTIALL	VEILLED	DIDEN
ः (C	REEK/CHA	NNEL ME	THOD)	(FILL A P		ETHOD),			I TILLED	
a. '	Measure the w	idth, depth, and	d velocity of	1. De sampl	etermine volum e bottle.	e/capacity of the	e I) Al	II measurement i mmon unit befo	must be convert ore calculation (	ted to a ft, in, or cm).
b.	Convert each v all measuremen	value to a comin nts converted to	non unit (i.e. o cm, ft, or	2. M bo	easure time requittle.	uired to fill the	2) Le	et D = water dep	th.	
	in.).		• •				3) Le	et d = inside pip	e diameter	
*				3. Fl	ow will be deter lume units:	rmined by initia		alculate D/d		
С.	Multiply the w	idth * depth *	velocity to	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	iunie units.			incurate Dru.		
	determine flow	Ι.			mL/s		5) Fi	nd the tabulated	(Ta) value on t	he partially
đ.	Multiply the flo	ow by 0.8 for c	reek	•	oz/s		, r	alue. (i.e. if D/d	ia chart above i d = 0.263 then 1	Sing the D/d $\Gamma a = .1623$ ).
	measurements	or 0.9 for co	oncrete	4. Co	onvert to desired	l value.		· ·	1	
	channel measu	rements to acco	ount for				1		<i>-</i> -l	
							6) Fi	nd the area usin a = Ta*d².	g the formula	
e.	I ne results if n	neasured in					7) M	ultiply area (a) t	by the water vel	ocity.
•	$Ft = Ft^3/sec$								• ·	
•	cm = cm'/sec ( in = in <sup>3</sup> /sec	mL/sec)		•			8) 0	onvert to desired	i value.	
•	m = m /sec .									
f.	Convert to des	ired value.			·····				· · · · · ·	·
	r1 / B.4.	U								•
SA	E / Wietric	Unit Conve							•	
	$\frac{10.5 \text{ IL}}{13.37  ^3}$ =	1 m   =	= 128  or							
			= 37851							
	$\frac{1078 \text{ gal}}{-}$		= 0.0011 f	<mark>₁3</mark>						
	1000000000000000000000000000000000000		= 1000mT							
									•	
	·····		<b>2</b>			i		· <u>· · · · · · · · · · · · · · · · · · </u>		
	ан сайтаан ал									

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Do	minguez Channel Bacterial Monitoring Data and Observation Sheet	<u>t</u>
GPS Coord	dinates: $\frac{1/8}{23}$ $\frac{1}{8}$ $\frac{539}{281}$ W Site ID: 8 Date/Time: $06/703$ $\frac{1}{010}$	
Weather In	nformation: Field Crew: [1) on men /L. Cas Son /C. Warn 19.	Erick
<u>Light Cond</u> Last Rain:	ditions: Overcast Partly Cloudy View Courts Courts Cloudy Courts	:0.1"
<u>Site Descrip</u> Earthen Dra	ption: Location: N.E. Side of Change / Awestury ainage Concrete Channel Outfall Manholo P. Pe-Catchbasin Other 42" Pipe	
Flow Estim	nation: Flow (Yes) No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / N	7
Aro 1. W 2. Do 3. Vo 4. Fl	rea X Velocity (creek / channel)Filling a BottleArea X Velocity (rVidth (cm - ft - (n)	oipe) (ft/in)
<u>Visuals:</u> Odor Color	Photo Taken:       yes       no       Roll#/Pic#       47       Draw sample location if no         Chemical       Sewage       Rotten Eggs       None/Other       Draw sample location if no         Greyish       Greenish       Browish       None/Other       Draw sample location if no	) photo
Clarity Floatables	Clear     Cloudy     Other       Oily / Rainbow     Trash     Bubbles       Limited     Extensive     None/Other	· .
Biology	Mosquitos Algae Snails / Fish None/Other Ants	
Trash In V 0. None 1. Light (- 2. Modera 3. High (1 4. Somew 5. Dense (	Type: (% of number not total volume of items):         % Organic (food)         % Organic (food)         % Plastics (cups, straws, bags, wrappers, bottles, junk)         11-25)       % Recyclables-not plastic (paper, glass bottles, metal)         (>50)       % Large items (appliances, cars, tires)	
$\begin{array}{c c} \hline Drain Asso} \\ Algae cover \\ 0. None \\ 1. < 5\% \\ 2. 5-25\% \\ 3. 25-50\% \\ 4. 50-75\% \\ \hline 5. > 75\% \end{array}$	Occaited Algae:       Other Observations:         brage (circle):       Algae outside of flow?: (yes / no)       Fish: yes no         Main algae type:       % film algae       Birds: yes         % film algae       Other Observations:         % film algae       Mumber of homeless:         % macroalgae       Fish: yes no         % film algae       Number of homeless:         % film algae       Number of dumping: yes no	
* <u>Field</u> Screening	Water Temp (°C) $26.6$ Conductivity $2.90$ (mS)/ uS (Circle appropriate units) pH (pH units) $7.97$	
* <u>Laborator</u> <u>Analysis</u>	PryFecal Coliform (MPN)E.Coli (MPN)Enterococcus (MPN)Total Coliform (MPN)	
Lab Sampl	les taken (Yes)/ No Bottle ID#'s	
Comments Observatio	s ons	

. A4.5

## **Calculating the Area (a) of the Cross Section of a Circular Pipe** Flowing Partially Full

			i sere en el	Martin 1 1. 14		•			······································	
D = [	Depth of wat	er a	= area of w	ater in partia	Illy filled pip	e				
d = d	iameter of th	ne pipe – T	a = Tabulat	ed Value			Then a	= Ta*d2		
					· · ·					
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0 1118	0.1199	0.1281	0.1365	0.1440	0.1535	(0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.4	0.225	0.4030	0.4130	0.4230	0.4330	0 4430	0.4520	0.4620	0.4720	0.4820
0.5	0.3200	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.0	0.4720	0.5020	0.5120	0.5210	0.6230	0.5400	0.5500	0.6490	0.5570	0.5760
	0.3870	0.3900	0.0030	0.0140	0.0230	0.0320	0.7100	0.7250	0.0370	0.0000
0.0	0.0740	0.0010	0.0090	0.0970	0.7660	0.7120	0.7750	0.7230	0.7320	0.7300
U.9	0.7430	0.7300	0.7300			TO EV				0.7840
	AREA x	VELOCI	TY	VINIE KE	VOLUM	TO FILL?		AX VILLU	JULLI	
			6. no C. S	<u>, KINOWN</u>	VOLUME					
	DEEV/CU	NNET ME	тнору	(FILL A E	OTTLE M	ETHOD)	- (	PARTIALL	Y FILLED	PIPE)
	NEENVOID	VINIA CONSTRUCT		See Some Constraints		en e	<u> 2860 (8 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 -</u>	an news and protein Association		<u>Kanan Yokuzat in Agent</u>
a. t	Measure the w he water.	idth, depth, and	l velocity of	1. De sampl	etermine volume e bottle.	e/capacity of the	e   1) A	Il measurement i ommon unit befo	must be conver ore calculation (	ted to a
								<u> </u>		
Ь.	Convert each w	alue to a comm	ion unit (i.e.	2. M	easure time requ	uired to fill the	2) L	et D = water dep	th.	
	in.).		5 cm, n, or		tuo.	•	3) L	et d = inside pipe	e diameter	
			• •	3. Fl	ow will be deter	mined by initia		alaulata D/J		•
c	Multinly the w	idth * denth * y	velocity to	VC	iume units:		( 4) C	alculate D/d.		
υ.	determine flow	/.		•	mL/s		5) F	ind the tabulated	(Ta) value on	the partially
			1	•	oz/s			filled pipe formu	la chart above	using the D/d
a.	measurements	ow by 0.8 for c -or 0.9 for co	ncrete	4 Co	onvert to desired	I value.		value. (i.e. ii D/C	1 - 0.263 then	(a 1025).
	channel measu	rements to acco	ount for							
	channel roughr	tess.		I			6) F	ind the area usin	a the formula	
	*							$a = Ta^*d^2$ .	g the torntula	
<b>e</b>	The results if n	neasured in						• ••••••••••••••••••••••••••••••••••••		н. 4.
•	$Ft = Ft^3/sec$		•					iuitipiy area (a) t	by the water ve	locity.
•	$cm = cm^3/sec$ (	mL/sec)				· .	8) C	onvert to desired	l value.	
٠	$in = in^3/sec$									
f.	Convert to desi	ired value.						•		
			/							· .
SA	E / Metric	Unit Conve	rsion							
0.0	83 ft =	1 in =	2.54 cm							-
0.1	$337 \text{ ft}^3 =$	1 gal =	128 oz							
		=	3.785 L							
0.0	078 gal =	1 oz =	0.0011 f							
100	$00 \text{ cm}^3 =$	1 L =	1000mL			-				
L										
	······································									
										•

S.C.S. C. S. S. 5 ţ... . . . . .

Do	<u>minguez Chann</u>	el Bacterial Moni	toring Data and	Observation S	Sheet
GPS Coord <u>Weather In</u> Light Cond	inates: $\frac{118^{\circ}}{33^{\circ}}$ $\frac{18,7}{52,55}$ formation: itions: Sunny	<u>64</u> <u>W</u> <u>Field</u> Overcast <u>S72</u> hours <u>S72</u> hours <u>S72</u> hours	Date/Time:_ Crew: <u>C. Ngu gen</u> /C Cloudy	Site ID: $9$ 0617621101 Carlsm/C. was	LS -n/J.Eric
<u>Site Descrip</u> Earthen Dra	ntion: Location: NE inage Concrete Channe	S, Le D. C. Outfall Manho	ole Catchbasin	Other Mehl	Pie
Flow Estim	ation: Flow Yes/No	/ Ponded/Trickle Eviden	ce of overland flow near	sampling location?:	Yes / No
Are 1. W	ea X Velocity (creek / cha idth (cm - ft - in)	nnel) Fillin 1. Volume 2. Time	g = Bottle = 7,02 FF SCU (mL) L - oz)	Area X Vel 1. Pipe Diameter	ocity (pipe) 24 (ft/fn)
<ol> <li>Z. D.</li> <li>3. Ve</li> <li>4. Fl</li> </ol>	elocity (cm - ft - in / sec) $0^{10}$	2. ***See formu		3. Velocity ***See formula on b	ack
<u>Visuals:</u> Odor	Photo Taken: yes Chemical Sev	)/ no Roll#/Pic# wage Rotten Eggs	None/Other	Draw sample locati	on if no photo
Color Clarity	Greyish Gro Clear Clo	eenish Browish /	None/Other <u>Geller</u> Other		
Floatables Vegetation Biology	Oily / Rainbow Tra Limited Ex Mosquitos	sh Bubbles tensive gae Snails / Fish	None/Other None/Other None/Other		
Trash In V 0. None 1. Light (~ 2. Modera 3. High (1 4. Somew 5. Dense (	<pre>icinity of Drain (Circle): &lt;5) <tool> <li>&lt;5) ite (6-10) 1-25) hat Dense (26-50) &gt;50)</li> </tool></pre>	Type: (% of number not % Organic (food) %Plastics (cups, st bottles, junk) % Recyclables-not bottles, metal) % Large items (ap	t total volume of items): traws, bags, wrappers, t plastic (paper, glass pliances, cars, tires)		· ·
Drain Asso Algae cover None Construction 2. 5-25% 3. 25-50% 4. 50-75% 5. > 75%	caited Algae: age (circle): Alg M: 	<b>;ae outside of flow?:</b> (yes //n <b>in algae type:</b> _% film algae _% turf algae _%macroalgae	Other Obser Fish: yes Snails: yes Birds: yes Other: Number of ho Evidence of d	vations:	
* <u>Field</u> Screening	Water Temp (°C) pH (pH units)	Conductivity	805 ms us dei	rcle appropriate units)	
* <u>Laborato</u> <u>Analysis</u>	ry Fecal Coliform Enterococcus	(MPN) (MPN)	E.Coli Total Colifor	(	MPN) MPN)
Lab Sampl Comments Observatio	es taken (Yes) No	Bottle ID#'s	<u> </u>		······

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## **Calculating the Area (a) of the Cross Section of a Circular Pipe** Flowing Partially Full

	·	<u></u>	· · · · · · · · · · · · · · · · · · ·	1000 100			•				· .
D = I	Depth of wat	er a	= area of w	ater in partia	lly filled pip	e					
d = d	iameter of tl	ne pipe – T	a = Tabulat	ed Value				Then a =	= Ta*d2		
D/d	0.00	0.01	0.02	0.03	0.04	0.05		0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	. 0.0147	0	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	C	).0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0	).1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450		0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428		).3527	0.3627	0.3727	. 0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430		0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	H	).5500	0.5590	0.5690	0.5780
0.7	0 5870	0.5960	0.6050	0.6140	0.6230	0.6320		0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120		).7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710		).7750	0.7790	0.7820	0.7840
		WELOOI	**************************************	TIME RE	OUIRED	TOFIL	A	ARE	A X VEL (	CITY	
	AREAX	VELUCI	. <b>1</b> . Y	KNOWN	VOLUME						
	19. 19. A.			121011	, OLOML						
C.(C	REEK/CH.	ANNEL ME	THOD)	(FILL A B	OTȚLE M	ETHOD)		(P	AKHALL	Y FILLED.	LILF)
		· · · · · · · · · · · · · · · · · · ·									
a. t	Measure the w he water.	idth, depth, and	I velocity of	I. De sample	e bottle.	e/capacity of th	e	I) All con	measurement i nmon unit befo	must be convert re calculation (	ted to a ft, in, or cm).
b	Convert each y	alue to a com	non unit (i.e.	2. M	easure time rea	uired to fill the	- {	   2) Let	D = water dep	th.	
	all measureme	nts converted to	o cm, ft, or	bo	ttle.						
	in.).			2 F1	ow will be deter	mined by initia		3) Let	d = inside pipe	e diameter	
				J. M	lume units:	minea by min		4) Cal	lculate D/d.		
C.	Multiply the w	idth * depth * v	velocity to		• .				· • • • • • • • •	(T) 1	1
	determine flow	/.		•	mL/s			i S) Fin fil	d the tabulated	(1a) value on t la chart above i	he partially using the D/d
đ.	Multiply the fl	ow by 0.8 for c	reek	-	023			va	lue. (i.e. if D/c	1 = 0.263 then 1	Γa =.1623).
	measurements	-or 0.9 for co	oncrete	4. Co	onvert to desired	l value.				1	
	channel rough	ness.									
	Ų							6) Fin	d the area using	g the formula	
e,	The results if n	neasured in							a = Ta*d4.		
0.	The results in th							7) Mu	ltiply area (a) t	by the water vel	ocity.
•	$Ft = Ft^3/sec$							N Co.	د د ارتباریان مراسمیند		
	$cm = cm^{3}/sec$ ( in = in <sup>3</sup> /sec	mL/sec)						( 8) Cor	ivert to destred	value.	
							I				
<u>f.</u>	Convert to des	ired value.				·····		L		~	
	E / Matria	Unit Convo	raion								
	182 A	1 in =	rsion							· ·	
	$\frac{765 \text{ II}}{337 \theta^3} =$	1 m -	= 128 07								
0.1	557 H		= 3.785 L								
	0.78  gal =		0.0011.6	3							
	$\frac{1070 \text{ gui}}{100 \text{ cm}^3} =$	11. =	1000mL	·							
			110001112								
											· .
l	<u> </u>	<u></u>									
					i de la compañía de l Compañía de la compañía						

د. د.غمینداد -----

		minguaz Channal Rastarial Manitaring Data and	Observation Sheet
	<u>D01</u>	minguez Channel Dacterial Monitoring Data and	Observation Sneet
	GPS Coordi	inates: $18^{\circ}$ 18 80 W	Site ID: 10-20
	Weath on Ind	$\frac{55}{64} = \frac{620}{64}$	BITOL TO CO
3	Weather In	<u>Heid Crew: C. A auger/L</u>	Las Sanf Was af 2. 2 sickson
-	Last Rain:	Autoris: Summy Covercast Party Cloudy 2 > 72 hours < 72 hours < 3 hours <u>Prec</u>	<u>ipitation:</u> > 0.1" < 0.1"
র হা -	<u>Site Descrip</u> Earthen Drai	<u>tion:</u> Location: <u>NE Side of DC at Germer</u> nage Concrete Channel Outfall Manhole Catchbasin	Jother <u>RCP</u>
1	Flow Estima	ation: Flow Ves No / Ponded/Trickle Evidence of overland flow near	sampling location?: Yes / No
(Recent	Are 1. = .92 ftWi 2. = .13 ftDe	ca X Velocity (creek / channel)Filling a Bottleidth (cm - ft - $\overline{ft}$ )1vpth (cm - ft - in)1/42Time2Sec)	Area X Velocity (pipe) 1. Pipe Diameter <u>6.4</u> (ft(in)) 2. Depth
News Va	3.= Control Ve	locity (cm - ft - in / sec)_2.Sec/3ft, (1.5ft/s)	3. Velocity
	4. FIC	Die to Tales (18113/5) Bellium Die Hall (165)	
2 2 2	Odor	Chemical Sewage Rotten Eggs None/Other	Draw sample location if no photo:
	Color	Greyish Greenish Browish None/Other	
ž) -	Clarity	Clear Cloudy Other	
	Floatables	Oily / Rainbow Trash Bubbles None/Other	
3	Vegetation	Limited Extensive None/Other	
7	Biology	Mosquitos Algae Snails / Fish None/Other	
	Trash In Vi	cinity of Drain (Circle): <u>Type: (% of number not total volume of items):</u>	
2	1. Light (<	$\frac{1}{45}$ %Plastics (cups, straws, bags, wrappers,	
	2. Moderat	te (6-10) bottles, junk)	· · · · · · · · · · · · · · · · · · ·
م  ``	3. Flight (1) 4) Somewh	hat Dense (26-50)	
	-5. Dense (>	>50) $-\%$ Large items (appliances, cars, tires)	·
	Drain Assoc Algae covera 0. None	Caited Algae:       Other Observation         age (circle):       Algae outside of flow?: (yes / yo)       Fish: yes         Snails: yes       Snails: yes	vations:
َّا (	(1. < 5%) (2.) 5-25%	% film algae View Other:	
	3. 25-50%	// (n) % turf algae Number of ho	meless:
15	4. $30-75\%$ 5. > 75%		uniping. yes and
	* <u>Field</u> Screening	Water Temp (°C) 23. pH (pH units) $4$ $5.02$ Conductivity $5/7$ mS $103$ (Cir	cle appropriate units)
5 9) 8 • •	* <u>Laborator</u>	y Fecal Coliform(MPN) E.Coli	(MPN)
	<u>Analysis</u>	Enterococcus (MPN) Total Coliforn	n(MPN)
	Lab Sample	s taken n es / No Bottle ID#'s	
	Comments Observation	1S	

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		Calcul	ating the	e Area (a	a) of the	<b>Cross Se</b>	ection of	of a Circu	lar Pipe	
		· · · · ·		FI	owing Pa	artially I	Tull		, ,	
	·	н. Н.	an a	ta Stariaa an						
D = [	Depth of wat	er a	= area of w	ater in partia	ally filled pip	e				· · · · · · · · · · · · · · · · · · ·
d = d	iameter of th	ne pipe – T	a = Tabulat	ed Value		,	Then	a = Ta*d2		
			· · · · · · · · · · · · · · · · · · ·	·	·····	·			·	· · · · · · · · · · · · · · · · · · ·
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2/80	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	, 0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4320	0.4620	0.4720	0.4820
0.0	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5390	0.5090	0.5760
0.7	0.5870	0.5900	0.6890	0.6970	0.0230	0.0320	0.7190	0.0450	0.7320	0.0000
0.0	0.07450	0.0010	0.0050	0.0570	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
<u> </u>		VELOCI	TV	TIMERI	OUIRED	TOFIL	AR	EA X VEL (	OCITY	
	AREAX	VELUCI	1.I.	KNOWN	ŬOLUME				Are the second	er a star
			1			FTUON		PARTIALL	VEILIÈÒ	<b>PIPE</b> )
े(C	REEK/CHA	NNEL ME	THOD)	(FILL A L	SOLLEE M	ETHOD	<u>. 77 ( 77 ( 77 )</u>			
a. t	Measure the w he water.	idth, depth, and	I velocity of	l. Do sampl	etermine volum e bottle.	e/capacity of th	e    1)	All measurement common unit befo	must be conver ore calculation (	ted to a ft, in, or cm).
b.	Convert each y	alue to a comm	non unit (i.e.	2. M	easure time requ	uired to fill the	2)	Let D ≃ water der	oth.	
•••	all measureme	nts converted to	o cm, ft, or	ხი	ottle.					
	in.).			3. FI	ow will be deter	mined by initia	( )	Let a = inside pip	e diameter	
				vo	lume units:		(4)	Calculate D/d.		
<b>C</b> .	determine flow	idth * depth * v	velocity to	•	mL/s		5)	Find the tabulated	(Ta) value on (	the partially
				•	oz/s			filled pipe formu	la chart above i	using the D/d
đ.	measurements	ow by 0.8 for c or 0.9 for cc	ncrete	4. Co	onvert to desired	t value.		value. (i.e. if D/	d = 0.263 then	ra =.1623).
	channel measu	rements to acco	ount for				Y			
	channel rought	iess.					6)	Find the area usin	g the formula	
<b>.</b> .	The coults if a	accurad in						$\mathbf{a} = \mathrm{T}\mathbf{a}^*\mathbf{d}^2$	-	
e.	The results if it	icasurcu in					7)	Multiply area (a)	by the water vel	ocity.
٠	$Ft = Ft^{3}/sec$						0)	Convert to desire	Launhan	• .
•	$cm = cm^{3}/sec$ ( in = in <sup>3</sup> /sec	mL/sec)					0)	Convert to desired	i value.	
				•						
<u>f.</u>	Convert to desi	red value.		<u>```</u>	•				· · · · · · · · · · · · · · · · · · ·	
SA	E / Metric	Unit Conve	rsion							
0.0	83 ft =	1  in  =	2.54 cm							
0.1	$337 \text{ ft}^3 =$	1 gal =	128 oz						•	
			3.785 L							
0.0	078 gal =	l oz =	0.0011 f	3						
10	$00 \text{ cm}^3 =$	1 L =	=   1000mL						1	
				·						
				·						

1 i.t нтт Цэр ( ۰... 

	Don	iniguez C			noring Dat		ervation Sheet
GPS	5 Coordin	ates:8	0 19 059 52 683	<u>8_</u> w	Date	S Time: 6617	ite ID:
Wea	ather Info	rmation:	10,00	Field	Crew: 7. Naw	Br. K. Carl	San 10. Warn 12 Eric
<u>Ligh</u> Last	ht Condiți t Rain:	ions: (Su	nny Ove 72 hours < 72	Part Part 2 hours < 3 l	ly Cloudy	<u>Precipitation</u>	<u>·</u> > 0.1" < 0.1"
<u>Site</u> Eartl	Descripti hen Drain	on: Locatio age Concret	e Channel Out	fall Manl	nole Catc	Ness hbasin Othe	r
<u>Flov</u>	<u>v Estimat</u>	ion: Flow	Yes / No / Ponded/	Trickle <u>Evide</u>	nce of overland fl	ow near sampling	z location?: Yes 🕥
1,	Area Wid	X Velocity (cr th (cm - ft - in)	eek / channel)	Filli 1. Volume	ng a Bottle 500 (mL)- L	718 ft <sup>3</sup> - oz) 1. P	Area X Velocity (pipe) pe Diameter (f(in)
2.	Dep	th (cm - ft - in)		2. Time	えい_(sec)	2. D	epth
3. 4.	Flov	$\frac{1}{2} \frac{1}{2} \frac{1}$	α/sec) ε <sup>3</sup> /ς	***See form	2073 ula on back	3. V . ***S	elocity ee formula on back
<u>Visu</u> Odo	uals:	Photo Tak	en: Jes / no Sewage	Roll#/Pic#	V 4544 None/Other	Drav	v sample location if no photo
Colo	or	Greyish	Greenish	Browish 4	wNone/Other_		. · · ·
Clar	ity	Clean Oile ( Paint	Cloudy	Dubbles	Other		
Veg	etation	Limited	Extensive	Speile / Fink	None/Other		
D101	sh In Visi	nity of Drain (	Circle): Type:	Sharis / Fish	t total volume of	itoms):	
0. 1.	None Light (<5	). 	<u>Erreier. 1998.</u> 95	_% Organic (food) _%Plastics (cups, s	straws, bags, wrap	pers,	
2. 3.	Moderate High (11- Somewha	(6-10) 25) It Dense (26-50)	)	bottles, junk) _% Recyclables-ne bottles, metal)	ot plastic (paper, g	lass	· · ·
5.	Dense (>:	50)	, 	_% Large items (a	ppliances, cars, tire	es)	
Dra Alga 0.	in Assoca ae coverag None	ited Algae: e (circle):	Algae outsid	le of flow?: yes	no) Distriction (Constraint) (C	yes my s: yes	
1. 2. 2	< 5% 5-25% 25.50%	• •	Main algae % film a	type: algae	Bird Othe	s: yes no r: <u>MSAL</u>	<u></u>
4.	23-30% 50-75% > 75%	· · ·	%macro	balgae	Evid	ence of dumping:	yes no
* <u>Fie</u> <u>Sci</u>	eld reening	Water Tem pH (pH uni	p (°C) <u>22, 7</u> ts) <u>7,94</u>	Conductivity	<u>8/5</u> ms	US (Circle appro	opriate units)
* <u>La</u> <u>An</u>	boratory Ialysis	Fecal Colif Enterococc	orm us	(MPN)	E.Cc Tota	li l Coliform	(MPN) (MPN)
Lab	Samples	taken <b>Y</b>	k/No Bot	tle ID#'s			•
Con	nments	i				· · · ·	· .

## Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially, Full

·	· · · · · · · · · · · · · · · · · · ·						<u> </u>				
D = [	Depth of wat	er a	= area of w	ater in partia	lly filled pip	e					
d = d	iameter of th	ne pipe T	`a = Tabulat	ed Value			T	hen a •	= Ta*d2		
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0	.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0	)192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0	817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	<i>(</i> 0.	623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.:	2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.1	3527	0.3627	0.3727	, 0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4	1520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.	5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.0	5400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.	7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.	750	0.7790	0.7820	0.7840
	AREA x	VELOCI	TY	TIME RE	QUIRED	TO FILL A	1	ARE	A x VELC	CITY	
				KNOWN	<b><i>VOLUME</i></b>					and in the second	
				EIT A B	OTTUF M	ศาการ		A	PARTIALLY	(FILLED)	PIPE)
<u>}_(C</u> )	REEK/CH/	NNEL ME	THOD)					88 - N			
a. t	Measure the w he water.	idth, depth, and	velocity of	1. De sample	etermine volume e bottle.	capacity of the	2	l) Al co	l measurement n mmon unit befor	nust be convert re calculation (	ted to a ft, in, or cm).
b.	Convert each w	value to a comm	10n unit (i.e.	2. Me	easure time requ	aired to fill the		2) Le	t D = water dept	h.	1
	all measureme	nts converted to	o cm, ft, or	bo	ttle.			3) [6	t d = inisida nine	diameter	
	ш <i>. ј</i> .	•		3. Flo	ow will be deter	mined by initia	ı	5) · LC	t d – marde pipe	utameter	
	Multinle the w	ideh * daneh * e	vala alturta	vo	lume units:			4) Ca	lculate D/d.	•	·
C.	determine flow	iain * aepin * v /.	relocity to	•	mL/s	•		5) Fir	nd the tabulated	(Ta) value on t	he partially
		1 0 0 0		•	oz/s		1	fi	lled pipe formul	a chart above u	ising the D/d
a.	measurements	ow by 0.8 for ci -or 0.9 for co	ncrete	4 · Co	nvert to désired	value		v	alue. (i.e. if D/d	= 0.263 then 1	ſa =.1623).
	channel measu	rements to acco	ount for	4. 00	invert to desined			·····			
	channel rought	ness.						5) Fir	nd the area using	the formula	
								5) 11	$a = Ta^*d^2$ .		
e.	The results if n	neasured in				•		1) N.A.	ultimbu awaa (a) b		
•	Ft = Ft <sup>3</sup> /sec			,				/) ivii	unipiy area (a) b	y the water ver	ocity.
•	$cm = cm^3/sec$ (	mL/sec)						3) Co	nvert to desired	value.	
•	in = in /sec										
<u>f.</u>	Convert to desi	red value.									
				]							
	<u>E / Metric</u>	Unit Conve	rsion			,					
$\frac{0.0}{0.1}$	$\frac{83 \text{ ft}}{227.03} =$	l in $ $ =	2.54 cm				-				
0.1	33/π <sup>-</sup> =		128 OZ								
	070	-+	3./83 L	3		• .					
0.0	$\frac{10}{8}$ gal $=$	1  OZ   =	1000mT								
			TUUUIIL								
		•••••••••••••••••••••••••••••••••••••••	· · ·								

•. • į. 1. AND ć.

GPS Coordi	nates: 1180 19.05	<u>&amp;_</u> w		Site ID:	
· .	~68}	<u> </u>	Date/Time:(	261702 10:4	<u> </u>
Weather In	formation:	Field Crev	V: C. Nguyen	L. Carlson K. Wan,	<u> 1. E</u>
Light Condi Last Rain:	tions: Sunny Ov 72 hours < 7	ercast Partly Clo 2 hours < 3 hours	udy <i>Precij</i>	<u>bitation:</u> > 0.1" < (	0.1"
Site Descrip Earthen Drai	tion: Location: <u>んとし</u> nage Concrete Channel Ou	tfall Manhole	Catchbasin	<u>Aless</u> Other <u>Pipe(RCP)</u>	
Flow Estima	ation: Flow Yes / No / Ponded	Trickle Evidence o	f overland flow near s	ampling location?: Yes / No	$\supset$
Are 1. Wi	a X Velocity (creek / channel) dth (cm - ft - in)	Filling a 1 1. Volume <u>SC</u>	Bottle → .018 ft <sup>3</sup> ) (mL - L - oz)	Area X Velocity (pi	ipe) ft M
2. De	pth (cm - ft - in)	2. Time	$\sum_{n}$ (sec)	2. Depth	
3. Ve	locity (cm - ft - in / sec)	607	ъ	3. Velocity	
4. Flo	1003 ft3/5	***See formula or	n back	***See formula on back	
<u>Visuals:</u> Odor	Photo Taken: ver / no Chemical Sewage	Roll#/Pic#	13 None/Other	Draw sample location if no	<u>photc</u>
Color	Grevish Greenish	Browish	one/Other		
Clarity	Cloudy	greet	Dther		
Floatables	Oily/Rainbow Trash	Bubbles 1	None/Other		
Vegetation	Limited Extensive		tone/Other		
Biology	Mosquitos Algae	Snails Fish	None/Other		
 Trash In Vi	cinity of Drain (Circle): Type	.: (% of number not tot:	al volume of items).		
D. None		% Organic (food)	ir (or items)		
1.) Light (< Modera	5) te (6-10)	%Plastics (cups, straws	s, bags, wrappers,		
3. High (1	1-25)	> % Recyclables-not plas	stic (paper, glass	۲	
4. Somewi 5. Dense (3	nat Dense (26-50) >50)	bottles, metal) % Large items (appliar	aces, cars, tires)		
			Other Observe	ations	
Algae cover	age (circle): Algae outsi	de of flow?: (yes /10)	Fish: yes	<u>@</u>	
$1) \text{None} \\ < 5\%$	Main aloae	type:	Snails: Jes Birds: ves	no	
2. 5-25%	% film	algae	Other:		•
3. 25-50% 4. 50-75%	%`turf %macr	algae	Number of hon Evidence of du	mping: yes no	
5. > 75%		-			
* <u>Field</u> Screening	Water Temp (°C) <u>]</u> ]. 0 pH (pH units) <u>7,03</u>	Conductivity 7		le appropriate units)	
* <u>Laborator</u> <u>Analysis</u>	y Fecal Coliform Enterococcus	(MPN) (MPN)	E.Coli Total Coliform	(MPN) (MPN)	
Lab Sample	es taken (Yes) / No Bo	ttle ID#'s			
	$\mathbf{O}$				

## Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

	<u> </u>			<u> </u>		·			·			
D = [	Depth of wat	er a	= area of w	ater in partia	lly filled pip	e						
d = d	iameter of th	ne pipe – T	`a = Tabulat	ed Value			Then a	= Ta*d2				
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09		
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350		
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039		
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890		
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836		
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3.727	0.3827		
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820		
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780		
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660		
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360		
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840		
	AREA	VELOCI	ТУ	TIME RE	QUIRED	TO FILL A	4. ARI	CA x VELO	OCITY			
	A CLUT A			KNOWN	VOLUME							
					00000	-		PADTIAL	V FH I FD	DIDENS		
े <b>ं (C</b> ]	REEK/CHA	NNEL ME	THOD)		OLIEEM	ETHOD)		TARTAGE				
a. t	Measure the w he water.	idth, depth, and	l velocity of	I. De sample	etermine volume e bottle.	capacity of th	e    1) A c	All measurement i ommon unit befo	must be convert re calculation (	ted to a ft, in, or cm).		
b.	Convert each y	alue to a comm	ion unit (i.e.	2. Measure time required to fill the				2) Let D = water depth.				
	all measurement	nts converted to	cm, ft, or	bo	ttle.							
	in.).			3 Flo	ow will be deter	mined by initia	1 3) L 1  1	et d = inside pipe	e diameter			
				vo	lume units:			Calculate D/d.				
C.	Multiply the w	idth * depth * v	elocity to	•	ml /r		S) F	ind the tobulated	(Ta) value on t	ha namiallu		
	determine now			•	oz/s			filled pipe formu	la chart above t	ising the D/d		
d.	Multiply the fl	ow by 0.8 for c	reek					value. (i.e. if D/c	l = 0.263 then 1	ra = 1623).		
	channel measu	-or 0.9 for co rements to acco	ount for	4. Co	nvert to desired	l value.	ļ					
	channel roughr	ness.										
			ĺ				6) F	ind the area using	g the formula			
e.	The results if n	neasured in						a – Ta'u.				
	n. n.l						7) N	Iultiply area (a) b	y the water vel	ocity.		
•	$rt = rt^{-}/sec$ $cm = cm^{3}/sec$ (	mL/sec)					8) C	Convert to desired	value.			
•	$in = in^{1}/sec$											
f	Convert to desi	ired value										
ı.									<u>.</u>			
SA	E / Metric	Unit Conve	rsion									
0.0	983 ft =	1 in =	2.54 cm									
0.1	337 ft <sup>3</sup> =	l gal =	128 oz		•							
		=	3.785 L									
0.0	078 gal =	1 oz =	0.0011 ft	3								
100	$00 \text{ cm}^3 =$	1L =	1000mL									
				L								
				<u> </u>								
		<u> </u>										
									•			
								×				

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<u>D01</u>	miguez Chai	mer bacter				Observa	ation Sheet	<b>.</b>
656 G	11019	9791				C:4. 11		
GPS Coordi	nates: <u>118 17.</u>	ZIZ V	/	n	· · · ·	Site II	/ <u>)</u>	
	<u>65 52</u>	<u>707</u> ,	Tial J.C	Suma Suma		06/1/16	100	
weather ini	ormation:	Ourse ant	rielu C	Claudu	Jue pres	Long ny		
Light Condi Last Rain:	<u>nons:</u> Sunny > 72 hou	irs < 72 hour	$\frac{1}{3}$ s $\frac{1}{3}$ hc	urs.	Precip	<u>itation:</u> >	0.1" <	0.1'
Site Descrip Earthen Drai	tion: Location: nage Concrete Cha	nne) Before	Zando A Manho	le Ca	tchbasin	Other	Channel Ce	nte
Flow Estima	tion: Flow Yes	) No / Ponded/Trick	e <u>Eviden</u>	ce of overland	flow near sa	mpling loca	tion?: Yes No	3
Are 1. Wi	a X Velocitý (creek / dth (cm - ft - in)/	channel) = 10.17 f	Filling	g a Bottle T	N L - 0z)	A 1. Pipe D	rea X Velocity (p	ipe) (ft/i
2. =. 75 Hbe	pth (cm - ft in)	indes"	2. Time	(sec)	ł	2. Depth		
3. Ve	locity (cm ft) in / see	) 1.6 sect/s		*	e e e e e e e e e e e e e e e e e e e	3. Velocit	.y	
4. Flo	··· 45+0+	= 12.20 ft	s**See formu	la on back	.	***See for	rmula on back	
Visuals:	Photo Taken:	yes/ no I	Roll#/Pic#	1/42		Draw san	ple location if no	pho
Odor	Chemical	Sewage I	Rotten Eggs	None Other	None			
Color	Greyish	Greenish I	Browish	None/Other	Char			
Clarity	Clear	Cloudy		Other	<u> </u>		•	
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other	None			
Vegetation	Limited	Extensive		None/Other		•		
Biology	Mosquitos	Algae	Snails / Fish	None/Other		-		
Trash In Vi	cinity of Drain (Circl	e): Type: (% c	f number not	total volume	of items):			
0. None		%0	rganic (food)					
1. Light (<	5)	%Pl	astics (cups, st	raws, bags, wra	appers,		.e	
3. High (1)	(-25)	% R	ecyclables-not	plastic (paper,	glass			
4. Somewh	at Dense (26-50)	b	ottles, metal)					
5. Dense (>	>50)	% L	arge items (app	oliances, cars, t	ires)	· · ·		
Drain Assoc	aited Algae:	· .		Ot	her Observa	tions:		
Algae covera	ige (circle):	Algae outside of f	low?: (yes / no	o) Fis	sh: yes	no		
1. < 5%		Main algae type:		Bi	rds: yes	no		
2. 5-25%	· ·	% film algae		Ot	her:	···		
3. 25-50%		% turf algae		Nu	imber of hom	eless:		
4. $30-73\%$ 5. > 75%		/oinaci Uaigae		LY		inping. yes	10	
4T <sup>2</sup> 11	111/1 ton Tonon (°C	9754	Conducativity.	1.60	a Lifercia			
Screening	pH (pH units)	9.22		<u>637</u>		ie appropriat	c units)	
* <u>Laborator</u> <u>Analysis</u>	y Fecal Coliform_ Enterococcus		_(MPN) _(MPN)	E.C To	Coli tal Coliform_		(MPN) (MPN)	
Lab Sample	s taken Yes? No	b Bottle ID	#'s		· · · · · ·	 		
	T	mate in the	, it in	ear dra	in .			

## Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

•	<u> </u>	<u>. 19. 6</u>			<u></u>					· · · · · · · · · · · · · · · · · · ·	
D = [	Depth of wat	er a	= area of w	ater in partia	lly filled pip	e					
d = d	iameter of th	ne pipe – T	`a = Tabulat	ed Value			Then	a = Ta*d2			
Ď/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350	
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039	
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	(0.1623	0.1711	0.1800	0.1890	
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836	
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	, 0.3827	
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820	
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780	
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660	
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360	
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840	
	AREAX	VELOCI	ТҮ	STIME RE	QUIRED.	TO FILL A	1 AR	EA x VELO	)CITY		
				KNOWN	VOLUME	i suido - Anno Anno - Anno -					
4.5					OTTLE M	ETTION)		(PARTIALL	Y FILLED	PIPE	
<u>(C</u>	REEK/CHA	<u>NNEL ME</u>	THOD)	(FILL A D							
a. t	Measure the w he water.	idth, depth, and	l velocity of	l. De sample	termine volume bottle.	c/capacity of the	: 1)	All measurement i common unit befo	nust be conver re calculation (	ted to a ft, in, or cm).	
b.	Convert each v all measuremen	value to a comm nts converted to	oon unit (i.e. cm, ft, or	2. Measure time required to fill the bottle.				2) Let $D =$ water depth.			
	in.).			3 F16	w will be deter	mined by initia	3)	Let d = inside pipe	e diameter		
				vo	lume units:	innied by initia	4)	Calculate D/d.			
С.	Multiply the w determine flow	idth * depth * v /.	velocity to	•	mL/s		5)	Find the tabulated	(Ta) value on t	the partially using the D/d	
d.	Multiply the fle measurements	ow by 0.8 for c -or 0.9 for co	reek increte	4. Co	overt to desired	l value.		value. (i.e. if D/c	$1 = 0.263$ then $\frac{1}{1}$	Ta = 1623).	
	channel measu	rements to acco	ount for				1				
	channel foughi						6)	Find the area using $a = Ta^*d^2$ .	g the formula		
e.	The results if n	neasured in					7)	Multiply area (a) t	y the water vel	locity.	
•	$Ft = Ft^3/sec$	ml (cao)					8)	Convert to desired	value		
•	$in = in^3/sec$	mL/sec)			a				· · · · ·		
<u>f.</u>	Convert to des	ired value.		· · · · · · · · · · · · · · · · · · ·		·		<del>_</del>			
C C A	F / Metric	Unit Conve	rsion								
	$ \mathbf{R}  =  \mathbf{R} $	1  in  =	= 2.54 cm								
0.1	$337 \text{ ft}^3 =$	1  gal =	= 128 oz								
		=	3.785 L						•		
0.0	078 gal =	l oz =	0.0011 f	t <sup>3 </sup>							
10	$00 \text{ cm}^3 =$	1 L =	1000mL								
						•					
							·				
			· · · · · · · · · · · · · · · · · · ·							<u></u>	

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Do	minguez Channel Bacterial Monito	oring Data and Observation Sheet
GPS Coord <u>Weather In</u> <u>Light Cond</u> Last Rain:	inates: $180$ (9579 W $\sim 33^{\circ}$ $77^{\circ}$ N <u>formation:</u> <u>itions:</u> Sunny Overcast Partly C > 72 hours < 72 hours < 3 hou	Site ID: <u>//</u> Date/Time: <u>067702 / 11:30</u> rew <u>L. Nguyen /L. Carlson /C. Warn/J. Eric</u> Cloudy rs Precipitation: >0.1" < 0.1"
<u>Site Descrip</u> Earthen Dra	<u>ption:</u> Location: <u>A)E Si de Albonningue</u> inage Concrete Channel Outfall Manhole	2 Channel/Crenshan) Catchbasin OtherKCP
Flow Estim           Are           1.         W           2.         De           3.         Ve           4.         Flow	ation:FlowYes / No / Ponded/FrickleEvidenceea X Velocity (creek / channel)Fillingidth (cm - ft - in)1. Volumeepth (cm - ft - in)2. Timeelocity (cm - ft - in / sec) $62$ ow $022$ ft <sup>3</sup> /5	a flow near sampling location?: Yes Area         a Bottle , D1% fL3       Area X Velocity (pipe)         D_ (mL - L - oz)       1. Pipe Diameter(ft/fi)         Z
Visuals: Odor Color Clarity Floatables Vegetation Biology <u>Trash In Vi</u>	Photo Taken:       yes too       Roll#/Pic# //         Chemical       Sewage       Rotten Eggs         Greyish       Greenish       Browish         Clear       Cloudy         Oily / Rainbow       Trash       Bubbles         Limited       Extensive         Mosquitos       Algae       Snails)         Fish	Draw sample location if no photo None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other None/Other And to the none/Other None/O
0. None 1. Light (< 2. Modera 3. High (1 4. Somew 5. Dense (	<5) % Organic (food) % Plastics (cups, stra bottles, junk) 1-25) % Recyclables-not p bottles, metal) (>50) % Large items (appl)	ws, bags, wrappers, lastic (paper, glass iances, cars, tires)
Drain Asso           Algae cover           0. None           1.           2.           5-25%           3.           25-50%           4.           50-75%           5.           75%	caited Algae:         rage (circle):       Algae outside of flow?: (yes / no)         Main algae type:        % film algae        % film algae        % turf algae        %macroalgae	Other Observations: Fish: yes no Snails: Yes no Birds: yes no Other: Lell mas ! Number of homeless: Evidence of dumping: yes no
* <u>Field</u> <u>Screening</u> * <u>Laborator</u> <u>Analysis</u>	Water Temp (°C) 2.4.5       Conductivity 5         pH (pH units) 3.94       Conductivity 5         ry       Fecal Coliform (MPN)         Enterococcus (MPN)	E.Coli(MPN) Total Coliform(MPN)
Lab Sample Comments Observatio	es taken (Yes / No Bottle ID#'s ns	

# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

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$D = \Gamma$	Denth of wat	er a	= area of w	ater in nartia	lly filled pin	e	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	····	
d = d	iameter of th	enine T	a = Tabulat	ed Value		-	Then	a = Ta*d2		
u u		ie pipe - i					1 11011			
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
	ADEAX	VELOCI	TV	TIME RE	OUIRED	TO FILL	AR	EA x VELC	CITY	
		VELOCI	• • 7 • • •	KNOWN	<b><i>VOLUME</i></b>					
					OTTAN			(PADTIALL)		DIDEN
(CI	REEK/CHA	NNEL ME	THOD)	(FILL A-B	OTILEM	ETHOD)	3 2. N	(I ANIIAEE		
a. tl	Measure the w he water.	idth, depth, and	velocity of	I. De sample	termine volume e bottle	e/capacity of the	e    1)	All measurement r common unit befo	nust be convert re calculation (	ted to a ft, in, or cm).
<b>b</b> .	Convert each v all measuremei in.).	alue to a comm nts converted to	on unit (i.e. cm, ft, or	2. Me bo	easure time requ ttle.	aired to fill the	2)	Let D = water dep Let d = <i>inside</i> pipe	th. : diameter	
				3. Flo	w will be deter	mined by initia	1			
C.	Multiply the w	idth * depth * v	elocity to	VO	lume units:	•	(14)	Calculate D/d.		
	determine flow			•	mL/s		5)	Find the tabulated	(Ta) value on t	he partially
đ	Multinly the fl	ow by 0.8 for a	reek	•	oz/s			filled pipe formul	a chart above $\iota$	using the D/d $r_{0} = 1622$
. <b>u</b> .	measurements	-or 0.9 for co	ncrete	4. Co	nvert to desired	value.				a = 1023).
	channel measu	rements to acco	unt for				¶			
	channel tought	1655.			,		6) 1	Find the area using	the formula	
	71						· .	$a = Ta^*d^2$ .		
e:	The results if n	leasured in					7)	Multiply area (a) b	v the water vel	ocitý.
•	Ft = Ft <sup>3</sup> /sec									
•	$cm = cm^2/sec$ (i in = in <sup>3</sup> /sec	mL/sec)				,	8)	convert to desired	value.	
-										
f,	Convert to desi	red value.	l							
	ю / N.A									
	E / IVIETRIC	Unit Convei	rsion							
	$\frac{83 \text{ II}}{227  6^3} =$	$\frac{1}{1} \frac{1}{1} \frac{1}$	2.54 cm							
	557 IL   -		3 785 1							
	078 gal =	1.07 =	0.0011.0	<del>3</del> - { . [						
100	$\frac{0.00 \text{ gal}}{10 \text{ cm}^3} =$	1 02 =	1000mT							
	/			'						
-										
									·	l
		•								
										,

00	minguez Chan	iei Dacteria		toring Dat		crvation 2	511661
GPS Coord	inates: <u>118°19</u> <u>33059</u>	601 <sup>1</sup> w 781 <sup>1</sup> N		Date	e/Time: <u>^6</u> [	Site ID:	5
<u>Weather In</u> Light Cond	formation: itions: Suppy	Overcast	Field ( Partly	Crew:			· · · · · · · · · · · · · · · · · · ·
Last Rain:	72 hours	> < 72 hours	< 3 hc	ours	Precipitation	$\frac{1}{2} > 0.1^{\circ}$	< 0.1"
Site Descrip Earthen Dra	btion: Location: inage Concrete Chan	el Outfall	lez C Manhc	ble Catc	<u>Carshau</u> hbasin Othe	SWJ W er Double b	y Cover
Flow_Estim	ation: Flow Yes/N	o / Ponded/Trickle	<u>Eviden</u>	<u>ce of overland fl</u>	<u>ow near samplin</u>	g location?:	Yes / No
Are 1. W 2:= 102 ft De	ea X Velocity (creek / cl idth (cm - ft - in)	annel) = 14.75ft $\frac{7}{2}$ (inches) 1. 8 inclus) 1/2 dephasis	Fillin Volume Time	g a Bottle (mL - L (sec)	- oz) 1. F 2. [	Area X Vel Pipe Diameter Depth	locity (pipe) (ft/in
3.= • 14 ft Ve 4. Fl	elocity (cm - ft - in / sec) 0W $0H$ $E13/c$	1 st / 7 szc **	*See formu	la on back	3. \	/elocity See formula on t	back
<u>Visuals:</u> Odor	Photo Taken:	ewage Rot	l#/Pic#	1/40 NoneOther	Dra	w sample locati	ion if no pho
Color Clarity	Greyish C	reenish Bro	owish	None/Other	Clen		
Floatables Vegetation	Oily / Rainbow I Limited E Mosquitos A	rash Bul xtensive	obles	None/Other None/Other	D. d. olast		
Trash In Vi           0.         None           1.         Light (           2.         Modera           3.         High (1           4.         Somew           5.         Dense (	<pre>icinity of Drain (Circle) &lt;5) ite (6-10) 1-25) hat Dense (26-50) &gt;50)</pre>	<u>Type: (% of n</u> <u>Lg</u> % Orga <u>20</u> %Plasti bottl <u>10</u> % Recy bott <u>4</u> % Larg	umber not inic (food) ics (cups, st es, junk) /clables-not les, metal) e items (ap	t total volume of raws, bags, wrap plastic (paper, g pliances, cars, tir	items): pers, lass es)		
Drain Asso           Algae cover           0. None           1. < 5%	caited Algae: age (circle):	Igae outside of flow fain algae type: % film algae % turf algae %macroalgae	v?: (yes / n	o) Othy Fish Snai Bird Othe Num Evid	er Observations: yes no ls: yes no s: yes no r: ber of homeless: ence of dumping:	yes no	
* <u>Field</u> <u>Screening</u>	Water Temp (°C) pH (pH units)	<u>9.2. 3°C</u> Co <u>5. 45</u>	nductivity_	2.40 ms	)/ uS (Circle appi	opriate units)	
* <u>Laborator</u> Analysis	Y Fecal Coliform Enterococcus	1) /)	MPN) APN)	E.Co Tota	li l Coliform	(	(MPN) (MPN)
Lab Sample Comments	es taken (Yes) No	Bottle ID#'s	s	· · ·	·		

# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

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			1. 	at the second second second					•	_	
D = [	Depth of wat	er a	= area of wa	ater in partia	Illy filled pip	e					
d = d	iameter of th	e pipe – T	`a = Tabulate	ed Value			Then a =	= Ta*d2			
			······		T		r	······			
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350	
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039	
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890	
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836	
0.4_	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827	
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820	
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780	
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660	
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360	
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7/10	0.7750	0.7790	0.7820	0.7840	
	AREA x	VELOCI	TY	IME KE	QUIKED	IO FILL /	4    AKE	A X VELU	JCH Y		
		6. A. S.		KNUWN	VOLUME		Ve Provident	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -			
Ċ	REEK/CHA	NNEL ME	THOD)	(FILL A B	OTTLE M	ETHOD)	,   - , ( <b>f</b>	ARTIALL	Y FILLED.	PIPE)	
198			11000	and a state of the second s		A CALIFICATION & AND			n er fan tin wenne (j	<u>Boolist in a state and state and state</u>	
a. ti	Measure the wi ne water.	dth, depth, and	velocity of	1. Determine volume/capacity of the sample bottle.				<ol> <li>All measurement must be converted to a common unit before calculation (ft, in, or cm)</li> </ol>			
<b>b</b> .	Convert each v	alue to a comm	ion unit (i.e.	2. M	easure time requ	ired to fill the	2) Le	t D = water dep	th.		
	all measuremer	its converted to	o cm, ft, or	bo	ttle.						
	nn. <i>j</i> .			3. Flo	ow will be deter	mined by initia		u = insiae pipe	e diameter		
		1.1. # 1		volume units: 4) Calculate D/d.							
С.	determine flow	atn + aeptn + v	elocity to	• mL/s 5) Find the tabulated (Ta) value on the partia							
		1 0 0 0		•	oz/s		fi	led pipe formul	la chart above u	sing the D/d	
d.	Multiply the flo measurements -	ow by 0.8 for ci -or 0.9 for co	reek norete	4 Co	nvert to desired	value	Va	ilue. (i.e. if D/c	l = 0.263 then T	`a =.1623).	
	channel measur	ements to acco	unt for	4. 00	invent to desired	value.	¥				
	channel roughn	ess.					() Fin	d the area using	the formula		
							0, 11	$a = Ta^*d^2$ .			
e.	The results if m	easured in			•		7) M	ltinly area (a) h	w the water val	o o itu	
•	Ft = Ft <sup>3</sup> /sec						/) (VIC	intipiy area (a) u	by the water ver		
•	$cm = cm^3/sec$ (r	nL/sec)	·				8) Co	nvert to desired	value.		
•	$n = in^{-}/sec$										
<u>f.</u>	Convert to desi	red value.					·	<u></u>			
	F / N#-4 · ·	T-:4 C-									
SA 0.0	E / WIETRIC U	1 in -	2 54 cm	·							
0.0	$337 ft^3 =$	$\frac{1}{1}$ pal =	128 07		•						
0.1		=	3.785 L								
0.0	078 gal =	1 oz =	0.0011 ft	<u></u>							
100	$0 \text{ cm}^3 =$	1L =	1000mL	.							
		• ,									
										· .	







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## Dominguez Channel Bacterial Monitoring Data and Observation Sheet

Dominguez Channel Bacterial Monitoring Data and Observation Sheet
GPS Coordinates: $\frac{118019,801}{33052,845}$ W Site ID: $\frac{16}{10240}$ Date/Time: $\frac{06702}{12240}$
Weather Information: Field Crew: (A Armen / Carlson/C. Wasa 1. Esick
Light Conditions:     Sunny     Overcast     Partly Cloudy       Bast Rain:     > 72 hours     < 72 hours     < 3 hours     Precipitation:     > 0.1"
Site Description: Location: W.S. Le Dommer Channel S. of El Commo Colleger Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other 74° CCP
Flow Estimation: Flow Yes / No / Ponded/Prickle Evidence of overland flow near sampling location?: Yes / No
Area X Velocity (creek / channel)Filling a Bottle $\circ i \forall ft^3$ Area X Velocity (pipe)1.Width (cm - ft - in)1.Volume $4 \circ i \forall ft^3$ I.2.Death (cm - ft - in)2.Time $2 \circ i \forall ft^3$ I.
2. Depth (cm - ft - ln) 2. Lime $\mathcal{L}(\mathcal{L})$ (sec) 2. Depth
4.     Flow     ••••••••••••••••••••••••••••••••••••
<u>Visuals:</u> <u>Photo Taken</u> : <u>Ves</u> / no Roll#/Pic# <u>39</u> <u>Draw sample location if no photo:</u>
Odor Chemical Sewage Rotten Eggs / None/Other Augtry
Clarity Cleap Cloudy Other
Floatables Oily/Rainbow Trash Bubbles None/Other
Vegetation Limited Extensive Mone/Other
Biology Mosquitoe Algae Snails / Fish None/Other
Trash In Vicinity of Drain (Circle):0. None
% Large items (appliances, cars, tires)
Drain Assocaited Algae: Algae coverage (circle):       Algae outside of flow?: (ves)/ no)       Other Observations: Fish: yes         0. None       1. < 5%       Main algae type: 2. 5-25%       5%         2. 5-25%       % film algae       0 ther Observations: Fish: yes       10         3. 25-50%       % film algae       0 ther: / (corrace)         4. 50-75%       % macroalgae       5%
*Field Water Temp (°C) 23, 2 Conductivity 1/22 mS /uS)Circle appropriate units) Screening pH (pH units) 8/5
*Laboratory       Fecal Coliform       (MPN)       E.Coli       (MPN)         Analysis       Enterococcus       (MPN)       Total Coliform       (MPN)
Lab Samples taken Ves No Bottle ID#'s
Comments 10 yds S. of tunnel under Campons

# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

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D = 1	Depth of wat	er a	= area of w	ater in partia	lly filled pip	e						
d = d	iameter of th	enine T	a = Tabulate	ed Value		-	Then a	= Ta*d2				
uu			a rubulua	ia fundo								
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09		
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350		
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039		
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890		
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836		
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827		
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820		
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780		
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660		
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190.	0.7250	0.7320	0.7360		
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840		
	ARE'A V	VELOCI	ту	TIME RE	QUIRED	TO FILL A	A ARF	A x VELC	OCITY			
		, EFOCI	<b>.</b>	KNOWN	<b><i>VOLUME</i></b>					a Carlos a		
						FTUOD		PARTIAL	V FILLEN	PIPE')		
<u>(C</u> ]	REEK/CHA	NNEL ME	THOD)	(FILL A B	OLILEM	ETHOD)						
a. t	Measure the w he water.	idth, depth, and	velocity of	1. De sample	etermine volume bottle.	e/capacity of the	e   1) A	1) All measurement must be converted to a common unit before calculation (ft, in, or cm).				
b.	Convert each w	alue to a comm	ion unit (i.e.	2. M	easure time requ	uired to fill the	2) L	et D = water dep.	th			
	all measurements in )	its converted to	o cm, it, or	<b>b</b> 0	ttle.		3) L	et d = <i>inside</i> pipe	diameter			
	· · · ·			3. Flo	w will be deter	mined by initia	d					
c	Multiply the w	idth * denth * v	elocity to	vo	lume units:		( 4) C	Calculate D/d.				
<b>U</b> .	determine flow		clocity to	•	mL/s		5) F	ind the tabulated	(Ta) value on t	he partially		
A	Multinly the fl	why 0.9 for a	raalr	•	oz/s			filled pipe formul	a chart above u	sing the $D/d$		
a.	measurements	-or 0.9 for co	ncrete	4. Convert to desired value. $(1.6.11 \text{ D/d} = 0.263 \text{ f})$						a = .1623).		
	channel measu	rements to acco	ount for				l					
	channel roughr	IESS.					6) F	ind the area using	the formula			
								$a = Ta^{*}d^{2}$ .				
e.	The results if n	neasured in					7)	Aultigly area (a) h				
•	Ft = Ft <sup>3</sup> /sec	•				•	//	7) Multiply area (a) by the water velocity.				
٠	$cm = cm^{3}/sec$ (	mL/sec)			•		8) C	convert to desired	value.			
•	in = in'/sec											
f	Convert to desi	red value.										
				]								
SA	E / Metric	Unit Convei	rsion				, ,	•		1		
	<u>83 ft =</u>	1 in =	2.54 cm									
0.1	$337 \text{ ft}^3$ =	$ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $ $	128 OZ									
	070		3.785 L	<del>3</del>								
	$\frac{10/8}{10}$ gal =	0Z   =	0.0011 ft		4							
1 100	$ 00 \text{ cm}^2  =$	<u>  L</u>  =	TUUUML							· ·		
L		·····										
								· · · · · · · · · · · · · · · · · · ·				

Dominguez Channel Bacterial Monitoring Data and Observation Sheet         GPS Coordinates:         Mile 10: 17         Site 10: 17         Site 10: 17         Verther Information:         Departing Conditions:         Site 10: 17         Departing Conditions:         Site 10: 17         Departing Conditions:         Field Crew Constance Concepter Channel         Outful Crew Constancon Constance Concepter Channel <th>165 <b>4</b></th> <th><u>.                                    </u></th> <th></th> <th><u></u></th> <th>1 1</th> <th></th> <th>· · ·</th> <th>• .</th> <th>· · ·</th>	165 <b>4</b>	<u>.                                    </u>		<u></u>	1 1		· · ·	• .	· · ·
GPS Coordinates: $\frac{1}{12}$ W       Site ID: $\frac{1}{2}$ GPS Coordinates: $\frac{1}{32}$ $\frac{1}{32}$ W       Date/Time: $\frac{1}{16}$ $\frac{1}{22}$ Weather Information:       Sinhy       Overcast       Partly Cloudy       Prechtilation: > 0.1" $(0,1")$ Site Description:       Locator $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ $(1,2)$ <		<u>Domi</u>	nguez Cha	nnel Bact	erial Moni	toring Data	a and C	<b>D</b> bservatio	n Sheet
Weather Information:       Field Crew!       Darage: (CarlSon f. War, A. E.r.         Light Conditions:       272 hours       20.1"       472 hours       272 ho	GPS C	`oordinat(	es: <u>118<sup>0</sup>1</u>	7.873	W N	Date	/Time: 76/	Site ID: <u>/</u> /ア() スノバン	7
Light Conditions:       Sinity       Overcast       Party Cloudy       Precipitation:       > 0.1"       < 0.1"	<u>Weath</u>	er Inforn	<u>nation:</u>	~ <del>8/(</del>	Field C	Crew: <u>L. Nane</u>	en/IC	actson K.	Warn B. Eric
Site Description:       Low Them       Mr. December of Manhole       Concrete Channel       Other Law       Area to the Manhole         Flow Estimation:       Flow Tool (creek / channel)       Filling a Bottle       Evidence of overland flow near simpling location?:       Yes (b)         Area X Velocity (creek / channel)       Filling a Bottle       Area X Velocity (pripe)         1. Width (cn. ft (b)       1 = L + 1       Volume       (nl L - oz)       1. Pipe Diameter (ft (b)         2. Depth (cm. ft (b)       1 = L + 1       Volume       (sec)       2. Depth         3. Velocity (cm (ft (b) ft (sec))       o2 ft 2. Time       (sec)       2. Depth         3. Velocity (cm (ft (b) ft (sec))       o2 ft 2. Time       (sec)       2. Depth         3. Velocity (m (ft (b) ft (sec))       o2 ft 2. Time       (sec)       2. Depth         4. Flow       - o2 ft 2. Time       (sec)       2. Depth         3. Velocity (creek / channel)       Roll//Picé       - 27 ft (sec)       - o2 ft (sec)         Color       - ftom face       - o2 ft (sec)       - or ot (sec)       - or ot (sec)         Color       Chemical       Sewage       Roll//Picé       - or ot (sec)       - or ot (sec)         Color       Chemical       Sewage       Sonality / Fish       None/Other	Light ( Last R	Condition ain:	<u>s:</u> Sunny > 72 h	ours Over	cast Partly hours < 3 hc	Cloudy 0 ours	/ Precipit	<i>ation:</i> > 0.1"	< 0.1"
Flow Estimation:       Flow       No       Ponded/Trickle       Evidence of overland flow near sampling location?:       Yes         Area X Velocity (creek / channel)       Filling a Bottle       Area X Velocity (creek / channel)       Filling a Bottle       Area X Velocity (ppc)         1.       Widh (cm - ft (c))       Image: filling a Bottle       Area X Velocity (ppc)       Image: filling a Bottle       Area X Velocity (ppc)         2.       Depth (cm - ft (c))       Image: filling a Bottle       Area X Velocity (ppc)       Image: filling a Bottle       Area X Velocity (ppc)         3.       Velocity (cm (ft in fee)       Image: filling a Bottle       Image: filling a Bottle       Area X Velocity (ft filling a Bottle         4.       Flow       Image: filling a Bottle       Imag	Site De Earthei	escription n Drainage	<u>:</u> Locatton:_ e Concrete Cl	iannel Outfa	inguer Cha all Manho	annal ju ile Catch	<del>set</del> bef basin	ore bridge Other 48-"R	c pefore hun
Area X Velocity (creek / channel)       Filling a Bottle       Area X velocity (pipe)         1. Width (cm - ft (d) / 2 - 02 ft 2. Time (see)       1. Pipe Diameter / (ft	<u>Flow E</u>	<u>Estimatior</u>	<u>1:</u> Flow Yes	No / Ponded/T	rickle <u>Eviden</u>	<u>ce of overland flo</u>	w near san	pling location?	: Yes No
3.       Velocity (cm (f) in (se))       3.       3.       Velocity (cm (f) in (se))         4.       Flow       .02 ft3/5       ***See formula on back       ***See formula on back         Yisuals:       Photo Taken:       (r) / (n)       Roll#/Pic#       // 38, 37       Draw sample location if no photo:         Odor       Chemical       Sewage       Rotten Eggs       None/Other       Draw sample location if no photo:         Color       Greyish       Greenish       Browish       WingOther       Draw sample location if no photo:         Color       Greyish       Greenish       Browish       WingOther       Draw sample location if no photo:         Color       Greyish       Greenish       Browish       WingOther       Draw sample location if no photo:         Visuals:       Other       Greyish       Greenish       Browish       WingOther         Biology       Mosquitos       Type: (% of number not total volume of items):       %       %       %         % Organic (food)       Ipht (cs)       %       %       %       %       %         Y Moderate (6-10)       %       %       %       %       %       %       %       %       %       %       %       %       %       %	1. 2.	Area X Width Depth	Velocity (creek (cm - ft (in) / (cm - ft (in) /	$\frac{1}{2} + \frac{1}{2} + \frac{1}$	Fillin 1. Volume	g a Bottle (mL - L - (sec)	• 0Z)	Area X 1. Pipe Diamete 2. Depth	Velocity (pipe) er <u>48</u> (ft/m)
Visuals:       Photo Taken:       yey/ no       Roll#/Pic#       J32, 37       Draw sample location if no photo:         Odor       Chemical       Sewage       Rotten Eggs       None/Other Market       Draw sample location if no photo:         Color       Greyish       Greenish       Browish       None/Other       Draw sample location if no photo:         Clarity       Cleat       Cloudy       Other       Draw sample location if no photo:         Vegetation       Limited       Extensive       None/Other       Draw sample location if no photo:         Trash In Vicinity of Drain (Circle):       Type: (% of number not total volume of items):       % Organic (Good)       Draw sample location if no photo:         1< Light (<5)	3. 4.	Veloci Flow	$\frac{1}{\cdot 02 f t^3}$	ec))	***See formu	la on back		<ol> <li>Velocity</li> <li>***See formula</li> </ol>	on back
Clority	<u>Visual</u> Odor	<u>s:</u>	Photo Taken: Chemical	yes/ no Sewage	Roll#/Pic# Rotten Eggs /	None/Other M Mone/Other	insty/	Draw sample lo	ocation if no photo
Vegetation Biology       Limited Mosquitos       Extensive (ygae)       None/Other Snail/ Fish       None/Other None/Other Arts         Trash In Vicinity of Drain (Circle): 0. None 1. Light (<5)	Clarity Floatab	bles	Clear Oily / Rainbow	Cloudy	Bubbles	Other			
Trash In Vicinity of Drain (Circle):       Type: (% of number not total volume of items):         0. None       % Organic (food)         1. Light (<5)	Vegeta Biolog	ition .y	Limited Mosquitos	Extensive	Snails / Fish	None/Other	nts		
S. Dense (>50)       _% Large items (appliances, cars, tires)         Drain Assocaited Algae:       Algae outside of flow?: (yes) no)       Other Observations:         Algae coverage (circle):       Algae outside of flow?: (yes) no)       Sinth State         0. None       None       Birds: yes no         1. < 5%	<u>Trash</u> 0. No 1. Li 2. M 3. Hi 4 So	In Vicinit one ght (<5) oderate (6 igh (11-25 omewhat [	-10) ) ) )ense (26-50)	<u>cle):</u> <u>Type:</u>	<ul> <li>(% of number not</li> <li>% Organic (food)</li> <li>% Plastics (cups, strassics bottles, junk)</li> <li>% Recyclables-not bottles, metal)</li> </ul>	total volume of i raws, bags, wrapp plastic (paper, gla	tems): ers, ass		
Drain Assocaited Algae: Algae coverage (circle):       Algae outside of flow?: (ves) no)       Other Observations: Fish: yes no Snails: Ves no Snails: Ves no Birds: Yes no Other:	5. De	ense (>50)			% Large items (app	pliances, cars, tires	s)		·····
3. $23-3076$ Implementation         4. $50-75\%$	Drain           Algae           0.         No           1.         <	Assocaite coverage ( one 5% 25%	<u>d Algae:</u> (circle):	Algae outside Main algae ty % film al	e of flow?: (yes) no ype: lgae	b) Other Fish: Snails Birds Other	r Observati yes : Yes : yes	ons: no no ass:	
*Field       Water Temp (°C) 25.3       Conductivity 1.50 mS /uS Circle appropriate units)         Screening       pH (pH units) 8.04       (MPN)         *Laboratory       Fecal Coliform (MPN)       E.Coli (MPN)         Analysis       Enterococcus (MPN)       Total Coliform (MPN)         Lab Samples taken       Yes / No       Bottle ID#'s (MPN)         Comments       Rust Color Mor Algal         Observations       Color Mor Algal	4. 50 5.) > 1			%macroa	algae	Evide	nce of dump	ping: yes no	>
*Laboratory       Fecal Coliform       (MPN)       E.Coli       (MPN)         Analysis       Enterococcus       (MPN)       Total Coliform       (MPN)         Lab Samples taken       Ye       /No       Bottle ID#'s	* <u>Field</u> Scree	ening	Water Temp (°( pH (pH units)_	c) 253 8.04	Conductivity	<u> </u>	uS Circle	appropriate unit	s)
Lab Samples taken (Yes / No Bottle ID#'s Comments Rust Color Under algal	* <u>Labo</u> <u>Analy</u>	<u>ratory</u> ysis	Fecal Coliform Enterococcus		(MPN) (MPN)	E.Col Total	i Coliform		(MPN) (MPN)
	Lab Sa Comm Observ	amples ta 1ents vations	ken (Yes)/1	No Bott	le ID#'s	algal		- -	

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## Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

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		<u>, in state</u>	<u> </u>		a in a com	·				
D = [	Depth of wat	er a	= area of w	ater in partia	lly filled pip	e				-
d = d	iameter of th	ne pipe – T	a = Tabulat	ed Value			Then a =	= Ta*d2	•	
						<b></b>		·····		
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	, 0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0 7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
		VELOCI	TV	TIME RE	OUIRED	TOFIL	4 ARE	AxVELC	OITY	
	AREAX	ÄFFÖČI	1.1	KNOWN	VOLUME			5. E.		
					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				U ETT LED	DIDEN.
(C)	REEK/CH/	NNEL ME	THOD)	(FILL A B	OTTLE M	ETHOD):	( <b>1</b>	AKHALL	Y FILLED	PIPE)
<ul> <li>a. Measure the width, depth, and velocity of the water.</li> <li>b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).</li> <li>c. Multiply the width * depth * velocity to determine flow.</li> <li>d. Multiply the flow by 0.8 for creek measurements -or 0.9 for concrete channel measurements to account for channel roughness.</li> <li>e. The results if measured in</li> <li>Ft = Ft<sup>3</sup>/sec</li> <li>cm = cm<sup>3</sup>/sec (mL/sec)</li> <li>in = in<sup>3</sup>/sec</li> </ul>				1. De sample 2. Me bo 3. Flo vo 4. Co	e 1) All con 2) Lei 3) Le 4) Ca 5) Fir fi vi 6) Fir 7) Ma 8) Co	I measurement i mmon unit befo t $D =$ water dep t $d =$ <i>inside</i> pipe leulate D/d. Ind the tabulated lied pipe formu alue. (i.e. if D/d d the area using $a = Ta*d^2$ . In the area (a) to nvert to desired	must be conver re calculation ( th. e diameter (Ta) value on t la chart above t d = 0.263 then g the formula by the water vel value.	ted to a ft, in, or cm). The partially using the D/d Γa ≈.1623).		
<b>SA</b> 0.0 0.1 0.0 100	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Unit Conve 1 in = 1 gal = 1 oz = 1 L =	rsion = 2.54 cm = 128 oz = 3.785 L = 0.0011 fi = 1000mL	3						

	Dominguez Channel Bacterial Monitoring Data and Observation Sheet
	GPS Coordinates: $(18^{\circ}/9.867^{\circ}/W)$ Site ID: $(18^{\circ}/9.874^{\circ}/W)$ Date/Time: $(18^{\circ}/9.874^{\circ}/W)$ Weather Information: Field Crow:
ed Th	Light Conditions:       Sunny       Overcast       Partly Cloudy         Last Rain:       > 72 hours       < 72 hours
	Site Description: Location: 1960 Channel Center - Becore - the tunkel Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other
	Flow Estimation: Flow Yes No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes No
	Area X Velocity (creek / channel) = 9.83 flFilling a BottleArea X Velocity (pipe)1.Width (cm - ft - (n) $//8$ inclus)1.Volume (mL - L - oz)1.Pipe Diameter (ft/in)2.Death (cm - ft - (n) / (18 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -
	2. Depth (cm - ft - $n_1$ ) / $n_2$ 58 + 2. Time (sec) 2. Depth 3. Velocity (cm - $ft$ ) in / sec) 1.8 + 1/4 3. Velocity
8	4. Flow 7.41 ft <sup>3</sup> /s ***See formula on back ***See formula on back
	Visuals:         Photo Taken:         yes no         Roll#/Pic#         1(36         Draw sample location if no photo           Odor         Chemical         Sewage         Rotten Eggs         None/Other         Draw sample location if no photo
	ColorGreyishGreenishBrowishNone/Other_ClearClarityClearCloudyOther
	Floatables     Oily / Rainbow     Trash     Bubbles     None/Other       Vegetation     Limited     Extensive     None/Other
<b>8</b> -	Biology Mosquitos Algae Snails / Fish None/Other
	1. Light (<5)      % Organic (food)         2. Moderate (6-10)      % Plastics (cups, straws, bags, wrappers,         3. High (11-25)      % Recyclables-not plastic (paper, glass         4. Somewhot Darge (26.50)      % notel)
	4. Somewhat Dense (20-30)       5. Dense (>50)         5. Dense (>50)      % Large items (appliances, cars, tires)
	Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes / no)Other Observations: Fish: yes no0. None1. < 5%Main algae type: % film algaeBirds: yes no
and the second	2.     5-2578    /0 mm agac     Other        3.     25-50%    % turf algae     Number of homeless:       4.     50-75%    % macroalgae     Evidence of dumping: yes no       5.     > 75%
	* <u>Field</u> Water Temp (°C) 32.9 Conductivity 580 mS /us (Circle appropriate units) Screening pH (pH units) 4.75
	*Laboratory       Fecal Coliform(MPN)       E.Coli(MPN)         Analysis       Enterococcus       (MPN)         (MPN)       Total Coliform(MPN)
c-l	Lab Samples taken Yes/ No Bottle ID#'s
	Comments

## Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

		• •		•								
$D = \Gamma$	)enth of wat	er a	= area of w	ater in nartia	lly filled nin	P.	- <u></u>					
d = d	iameter of th	venine T	a = Tabulata	d Value						. •		
u u		ic pipe i	u rubuluk									
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09		
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350		
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039		
0.2	0.1118	0.1199	0.1281	0.1365	0.1440,	0.1535	(0.1623	0.1711	0.1800	0.1890		
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836		
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827		
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820		
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780		
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660		
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360		
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	.0.7710	0.7750	0.7790	0.7820	0.7840		
	AREA v	VELOCI	TV	TIME RE	QUIRED	TO FILL /	1 ARE	EA x VELC	CITY			
		, LLOCI		KNOWN	<b><i>VOLUME</i></b>					e se		
					OTTLEN	CTUON		PARTIALI	VEILIED	DIDE		
<u>(C</u>	REEK/CHA	NNEL ME	THOD)	(FILL A B	OLILEM	ETHOD).	8 1 S 2 8 1		I TIŬELD			
a.	Measure the w	idth, depth, and	l velocity of	1. De	termine volum	e/capacity of th	e   1) A	Il measurement r	nust be conver	ted to a		
t	he water.			sample bottle.			c	common unit before calculation (ft, in, or cm).				
b. <sup>.</sup>	Convert each v all measuremen	value to a comm nts converted to	non unit (i.e. 5 cm, ft, or	2. Measure time required to fill the bottle.			2) L	2) Let D = water depth.				
	in.).		. ,	a 51			( 3) L	.et d = inside pipe	e diameter			
				3FR vo	ow will be deter lume units:	rmined by initia	4   4) C	Calculate D/d				
C.	Multiply the w	idth * depth * v	velocity to	volume units.								
	determine flow	ι		• mL/s			5) F	5) Find the tabulated (Ta) value on the partiall filled pipe formula chart above using the F				
· d.	Multiply the flo	ow by 0.8 for c	reek	•	·,			value. (i.e. if D/c	l = 0.263 then 3	$\Gamma a = .1623$ ).		
	measurements	-or 0.9 for co	encrete	4. Co	onvert to desired	l value.			1			
	channel roughr	iess.										
							6) F	ind the area using	g the formula			
e.	The results if n	neasured in										
				· ·				7) Multiply area (a) by the water velocity.				
•	$Ft = Ft^{-}/sec$ $cm = cm^{3}/sec$ (	mL/sec)					8) Convert to desired value.					
•	$in = in^3/sec$											
f.	Convert to desi	ired value.										
	•			]		·		······				
SA	E / Metric	Unit Conve	rsion							-		
0.0	83 ft =	<u>1 in</u> =	2.54 cm									
0.1	337 ft <sup>3</sup> =	1 gal =	128 oz									
			3.785 L									
0.0	078  gal =	loz   =	0.0011 ft									
	00 cm =		1000mL									
L				ł`								
				· · · · · · · · · · · · · · · · · · ·						<u>_</u>		
							•					

NAME OF j É 1.1 

i.

Dominguez Channel Bacterial Monitoring Data and	Observation Sheet
GPS Coordinates: $\frac{18919.86}{220}$ W W US 19.930 SESTI	mated 9P5 Site ID: 19 061707 12:118
Weather Information: Field Crew:	Nguyun C. Warn S. Enz
Light Conditions:SunnyOvercastPartly CloudyLast Rain:> 72 hours< 72 hours< 3 hoursPrecing	<u>pitation:</u> > 0.1" < 0.1"
Site Description: Location: É, Drm ing new Channel (Wyds A Earthen Drainage Concrete Channel Outfall Manhole Catchbasin	OtherRCP
Flow Estimation: Flow Yes / No / Ponded/Trickle Evidence of overland flow near s	ampling location?: Yes
Area X Velocity (creek / channel)Filling a Bottle $01\% ft^3$ 1.Width (cm - ft - in)1.Volume $50\%$ (mL L - oz)	Area X Velocity (pipe) 1. Pipe Diameter
2. Depth (cm - ft - in) 2. Time $(sec)$	2. Depth
3. Velocity (cm - ft - in / sec) $-$	3. Velocity
4. Flow .002 flys	***See formula on back
Visuals:         Photo Taken:         yes/ no         Roll#/Pic#         35           Oder         Chemical         Sawara         Rotten Face         Non/Other	Draw sample location if no photo:
Color Grevish Greenish Browish NoneOther	
Clarity Clear Cloudy Other	
Floatables Oily TRainbow Trash Bubbles None/Other	· 1 .
Vegetation Limited Extensive None/Other	
Biology Mosquitos Algae Snails / Fish None-Other	
Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)1. Light (<5)% Plastics (cups, straws, bags, wrappers, bottles, junk)2. Moderate (6-10)5 % Recyclables-not plastic (paper, glass bottles, metal)3. High (11-25)5 % Recyclables-not plastic (paper, glass bottles, metal)4. Somewhat Dense (26-50)% Large items (appliances, cars, tires)	
Drain Assocaited Algae:	ations:
Algae coverage (circle):Algae outside of flow?: (yes / no)Fish: yes0.NoneSnails: yesSnails: yes1.< 5%Main algae type:Birds: yes2.5-25%% film algaeOther:3.25-50%% turf algaeNumber of hom4.50-75%%macroalgaeEvidence of du	rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid rid
* <u>Field</u> Water Temp (°C) <u>25</u> Conductivity <u>1370</u> mS (us)(Circ <u>Screening</u> pH (pH units) <u>37</u>	le appropriate units)
*Laboratory AnalysisFecal Coliform Enterococcus(MPN)E.Coli Total Coliform	(MPN) (MPN)
Lab Samples taken Yes / No Bottle ID#'s	
Comments Colored Like #18	·

## Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

		l - Charles Maria - State - Charles State - State -								,		
D = I	Denth of wat	er a	= area of w	ater in partia	lly filled pip	e		<u> </u>				
d = d	iameter of th	ne pipe 7	a = Tabulat	ed Value			Then a	= Ta*d2				
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09		
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350		
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039		
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	(0.1623	0.1711	0.1800	0.1890		
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836		
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0:3428	0.3527	0.3627	0.3727	0.3827		
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820		
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780		
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660		
0.8	0.6740	0.6810	0.6890	0.6970	0.7040 ·	0.7120	0.7190	0.7250	0.7320	0.7360		
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840		
		WELOCI	TY	TIME RE	OUIRED	TOFILL	A ARI	AXVELO	OTTY			
ar ys 10 mBacailte		A ELOCI	.∎.⊒. 	KNOWN	<b>VOLUME</b>							
				- MICHIN	- vonomn							
(C)	REEK/CH/	NNEL ME	THOD)	(FILL A B	OTTLE M	ETHOD)		PARHALL	Y FILLED	RIRE)=		
a. t	Measure the w he water.	idth, depth, and	l velocity of	I.         Determine volume/capacity of the sample bottle.         I)         All meas common					must be conver re calculation (	ted to a ft, in, or cm).		
b.	Convert each w	alue to a comn	non unit (i.e.	2. Me	easure time requ	ired to fill the	2) L	et D = water dep.	th.			
	all measureme	nts converted to	o cm, ft, or	ьо	ttle.			(1,2) , $1$ at $d = inside nine diameter$				
	in.).			3. Flow will be determined by initial				3) Let d = inside pipe diameter				
				vo	lume units:	·	4) (	4) Calculate D/d.				
C.	Multiply the w	idth * depth * ' '	velocity to		mī /s		S F	and the tabulated	(Ta) value on t	he nartially		
	determine now			•	oz/s		5) 1	filled pipe formula chart above using the D				
d.	Multiply the fl	ow by 0.8 for c	reek					value. (i.e. if D/o	1 = 0.263 then '	Γa = 1623).		
	channel measu	-or 0.9 for co rements to acco	ount for	4. Co	onvert to desired	value.						
	channel rough	ness.			v							
							6) F	ind the area usin	g the formula			
e.	The results if n	neasured in						a~la'u.				
	- 1							7) Multiply area (a) by the water velocity.				
•	Ft = Ft'/sec	mI /cec)		· .				8) Convert to desired value.				
	$in = in^3/sec$	mL/sec)							, and the	:		
	· · · · ·											
<u>t.</u>	Convert to des	ired value.	·			- <b>-</b>	l					
I SA	F / Metric	Unit Conve	rsion									
	$\frac{12}{183}$ $\hat{H} =$		= 2.54 cm									
	$337 \text{ ft}^3 =$	1 gal =	= 128 07		۰.							
= 3.7851												
0.0	078 gal =	1 07 =	= 0.0011 f									
10	1000000000000000000000000000000000000	11 =	= 1000mL	<u> </u>				t				
						•						
L												

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ΓΓ							
6*	Domi	inguez Cha	nnel Bact	erial Monit	bring Data	and Observ	ation Sheet
	GPS Coordina	test 118° r	1.990'	W 100yds A	s. of	Site I	D:
		<u>33° c</u>	3000	N my	Date/1	rime: <u>061702</u>	(3:20
	Weather Infor	mation:		Field C	rew: <u>La Carls</u>	in K. Nguen /	C. Warn / Ericka
	<u>Light Conditio</u> Last Rain:	Sunny > 72 hc	ours < 72	cast Partly C hours < 3 hou	cloudy rs	Precipitation: >	> 0.1" < 0.1"
8.4 8.4	<u>Site Descriptio</u> Earthen Draina	n: Location: 2 ge Concrete Ch	Dyds N. C annel Outfa	of tunnel ant Manhole	Catche	asin Other	
	Flow Estimatio	on: Flow Yes	/ No / Ponded/T	ickle <u>Evidence</u>	e of overland flov	v near sampling loca	ation?: Yes T
	Area 2 1. Width	X Velocity (creek / n (cm - ft - in)	' channel)	Filling	a Bottle	Ft <sup>3</sup> Dz) 1. Pipe D	Area X Velocity (pipe)
	2. Depth	n (cm - ft - in)		2. Time	(sec)	2. Depth	
	3. Veloc	city (cm - ft - in / se	:c)		90%	3. Veloci	ty
200	4. Flow	9,1 e-4 ft	<u>'/s</u>	***See formula	on back	***See to	rmula on back
	Visuals:	<u>Photo Taken:</u>	yes / no	Roll#/Pic#	134	Draw san	nple location if no photo
	Odor	Chemical	Sewage	Browish	None/Other		
	Clarity	Clear	Cloudy	Drowish	Other	·····	۰
69	Floatables	Oily / Rainbow	Trash	Bubbles (	None/Other	·····	
	Vegetation	Limited	Extensive		(None Other	· ] · _ ·	
83	Biology	Mosquitos	Algae	Snails / Fish	None/Other		
	Trash In Vicin	ity of Drain (Circ	<u>le): Type: (</u>	(% of number not t	otal volume of ite	ems):	
ß	Light ( $<5$ )		100	%Plastics (cups, stra	ws, bags, wrappe	rs,	
	<ol> <li>Moderate (</li> <li>3. High (11-2)</li> </ol>	(6-10) (5)		bottles, junk) % Recyclables-not p	lastic (paper, glas	s	
<b>6</b> 33	4. Somewhat	Dense (26-50)	,	bottles, metal)	ianaaa aana tinaa)		
	5. Dense (>50	J) .		% Large items (appr	lances, cars, thes	<u> </u>	
<b>6</b> 33	Drain Assocait Algae coverage	ted Algae: (circle):	Algae outside	e of flow?: (yes no)	) <u>Other</u> Fish:	<u>Observations:</u> yes	
ALC: NO.	0. None		Main algos ti		Snails:	yes	
	2. 5-25%		% film al	lgae	Other:	yes no Gra	ff-t-!
	3. 25-50% 4. 50-75%		// turf al // macroa	gae	Numbe Eviden	er of homeless:A	no
1923 1923	5. > 75%			. 0			
ALC: NOT	* <u>Field</u> <u>Screening</u>	Water Temp (°C pH (pH units)	) 23. 6 8. 9	Conductivity <u></u>	<u>57 7</u> mS <i>[</i> /	uS (Circle appropria	te units)
	* <u>Laboratory</u> <u>Analysis</u>	Fecal Coliform_ Enterococcus		(MPN) (MPN)	E.Coli Total C	Coliform	(MPN) (MPN)
Sie La	Lab Samples t	aken Yes/N	Io Bott	le ID#'s			
	Comments Observations	Brist	CONFED C	stams on	emint )	spider het	es
1997			······	······································			

# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

		San an a	en en 1. <u>En 1. 1. A</u> bre e e Ma	nit		· .					
D = I	Depth of wat	er a	= area of w	ater in partia	lly filled pip	ie .					
d = d	iameter of th	ne pipe T	°a = Tabulat	ed Value	- • •		Then a =	= Ta*d2			
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350	
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039	
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	(0.1623	0.1711	0.1800	0.1890	
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836	
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	, 0.3827	
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820	
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780	
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660	
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360	
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0,7840	
ند ن	AREA X	VELOCI	TY THOD)	TIME RE KNOWN (FILL A B	QUIRED VOLUME SOTTLE M	<i>TO FILL .</i> ETHOD)	4 <b>ARE</b> (1	A x VELO PARTIALL	OCITY Y FILLED	PIPE)	
a. t	Measure the w he water.	idth, depth, and	l velocity of	1. De sample	e bottle.	e/capacity of th		<ol> <li>All measurement must be converted to a common unit before calculation (ft, in, or cm).</li> </ol>			
b.	Convert each v all measureme in.).	value to a comm nts converted to	on unit (i.e. cm, ft, or	2. Measure time required to fill the bottle.			2) Le	<ul> <li>2) Let D = water depth.</li> <li>3) Let d = <i>inside</i> pipe diameter</li> </ul>			
c. d.	<ul> <li>c. Multiply the width * depth * velocity to determine flow.</li> <li>d. Multiply the flow by 0.8 for creek measurements -or 0.9 for concrete channel measurements to account for channel roughness.</li> </ul>				<ol> <li>Flow will be determined by initial volume units:</li> <li>mL/s</li> <li>oz/s</li> <li>4. Convert to desired value.</li> </ol>			Iculate D/d. Id the tabulated lied pipe formu alue. (i.e. if D/d ad the area usin	(Ta) value on t la chart above t d = 0.263 then 1	he partially ising the D/d Fa = 1623).	
e.	The results if $r$	neasured in					7) Mi	<ul> <li>a = Ta*d<sup>2</sup>.</li> <li>7) Multiply area (a) by the water velocity.</li> </ul>			
•	$cm = cm^{3}/sec$ ( in = in <sup>3</sup> /sec	mL/sec)					8) Co	nvert to desired	i value.		
f.	Convert to des	ired value.		·····				. <u>.</u>			
SA 0.0 0.1 0.0 10	$\frac{E / Metric}{283 ft} = 337 ft^3 = 0078 gal = 00 cm^3 = 00000000000000000000000000000000000$	Unit Conver 1 in = 1 gal = 1 oz = 1 L =	rsion 2.54 cm 128 oz 3.785 L 0.0011 ft 1000mL	3		·.	<u>.</u>				

~ ~						·					
	Don	<u>ninguez Cha</u>	nnel Bact	erial Moni	toring Data an	d Observation Sheet					
	GPS Coordin	nates: 118° 2	0.050	_W 300 yds	Not intrad Date/Time	Site ID: $2/$					
	Weather Info	ormation:	· · ·	Field (	crew: L. Carlan	L. Nguen / C. Warn /J. Ericker					
	<u>Light Condit</u> Last Rain:	ions: > 72 ho	Overc ure < 72 h	ast Partly nours < 3 ho	Cloudy ours <u>Pr</u>	$\frac{0}{\text{ecipitation:}} > 0.1$					
	Site Descript Earthen Drain	ion: Location ( age Concrete Ch	Sde Inder annel Outfal	-tunnel D. ( Il Manho		erthod South entrance					
	Flow Estimat	tion: Flow Yes	/ No / Ponded/	rickle <u>Eviden</u>	ce of overland flow nea	ar sampling location?: Yes / No					
	Area 1. = 8 ft Wid 2.=,105 ftDep 3. Velo	th (cm - ft $(r)$ ) th (cm - ft $(r)$ )	channel) (-44+1), 	Fillin 1. Volume 2. Time	g a Bottle (mL - L - oz) (sec)	Area X Velocity (pipe) 1. Pipe Diameter (ft/in) 2. Depth 3. Velocity					
	4. Flov	* .02 ft3/s		***See formu	la on back	***See formula on back					
	<u>Visuals:</u> Odor Color	<u>Photo Taken:</u> Chemical Grevish	(ves)/ no Sewage Greenish	Roll#/Pic# Rotten Eggs Browish	None/Other/Musty	Draw sample location if no photo					
	Clarity	Clear	Cloudy		Other						
1	Floatables Vegetation	Limited	Trash Extensive	Bubbles	NoneOther						
	Biology	Mosquitos	Algae	Snails / Fish	None/Other						
E	Trash In Vic None Light (<5 2. Moderate 3. High (11- 4. Somewha 5. Dense (>2	inity of Drain (Circ ) ; (6-10) -25) at Dense (26-50) 50)	l <u>e): Type: ('</u> % % %	<ul> <li>% of number not</li> <li>% Organic (food)</li> <li>% Plastics (cups, st bottles, junk)</li> <li>% Recyclables-not bottles, metal)</li> <li>% Large items (applicable)</li> </ul>	total volume of items) raws, bags, wrappers, plastic (paper, glass pliances, cars, tires)						
<u>-</u>	Drain Assoca           Algae coverage           0.         None           1.         < 5%           2.         5-25%           3.         25-50%           4.         50-75%           5.         > 75%	<u>uited Algae:</u> ge (circle):	Algae outside Main algae ty % film alg % turf alg %macroal	of Now?: (yes) pe: gae ae gae	b) Other Observations Fish: yes Snails: yes Birds: yes Other: Number of Evidence of	ervations: s 10 s no s no f dumping: yes po					
	* <u>Field</u> <u>Screening</u>	Water Temp (°C pH (pH units)	121.6	Conductivity	7-36 (mS) (15) (1	Circle appropriate units)					
	* <u>Laboratory</u> <u>Analysis</u>	Fecal Coliform_ Enterococcus_	D - 441	(MPN) (MPN)	E.Coli Total Colife	(MPN)					
	Lad Samples Comments Observations	сакеп (yes/N	o Bottle	baghet	ont						
	<u> </u>	Calcul	ating the	e Area (	a) of the	Cross Se	ect	ion of	a Circul	lar Pipe	
-----------	---------------------------	-----------------------------------------	----------------------------------------	---------------------------------------	-----------------------------	-------------------	-------------------	------------------------------------------------	-------------------------------	-------------------------------------	----------------------------
				FI	owing Pa	artially I	Eul	ll <sup>i</sup>			
			n antigues Artication Artication				Č.				
D = [	Depth of wat	er a	= area of w	ater in partia	ally filled pip	e					
d = d	iameter of th	ne pipe T	a = Tabulate	ed Value				Then a =	= Ta*d2		
D/d	0.00	0.01	0.02	0.03	0.04	0.05	1	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	C	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	C	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	6	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450		0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428		).3527	0.3627	0.3727	. 0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	110	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400		0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	++!	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	1	J. / 190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610		10.7/10	<u>   </u> 夕宮博	J.//20			0./840
	AREAx	VELOCI	TY	I IME AL	VOINED	IO FILL /	4  .	ARE	A X VELC	<b>ЛСТТ Х.</b>	
		19 - 18 - 18 - 18 - 18 - 18 - 18 - 18 -			VOLUME			S. 199			
(C	REEK/CH/	NNEL ME	THOD)	(FILL A E	BOTTLE M	ETHOD)		<u>, i (</u> P	ARTIALL	Y FILLED.	PIŖE)
a.	Measure the w	idth, depth, and	f velocity of	I. D sampl	etermine volum e bottle.	e/capacity of th	e	1) All	measurement in nmon unit befo	nust be convert re calculation (	ed to a ft, in, or cm).
	Comment and	studita a same			·	uland to fill the		2) $\int et D = water depth$			
D.	all measureme	nts converted to	or unit (i.e.	2. M bo	easure time requi	uired to fill the		2) Lei	i D = water dep	(n. ,	
	in.).	,		2 51				3) Let	t d = <i>inside</i> pipe	diameter	
	4 .			volume units:				4) Ca	lculate D/d.		
с.	Multiply the w	idth * depth * y	velocity to					5) E:-	م داد د ال	(T-)	h
	determine now	·.		•	oz/s			filled pipe formula chart above using the D/d			
đ.	Multiply the fl	ow by 0.8 for c	reek					value. (i.e. if $D/d = 0.263$ then Ta = 1623).			
	channel measu	-or 0.9 for co	ount for	4. Co	onvert to desired	i value.		ļ			
·	channel rought	iess.							4 at		
								(6) Fin	a = Ta*d <sup>2</sup>	g the formula	
e.	The results if n	neasured in			,						:
•	Ft = Ft <sup>3</sup> /sec							/) Mu	illiply area (a) t	by the water vel	ocity.
•	$cm = cm^{3}/sec$ (	mL/sec)						8) Co	nvert to desired	value.	
•	in = in'/sec										
<u>f.</u>	Convert to des	red value.		· · · · · · · · · · · · · · · · · · ·				<u> </u>			
	F / Matric	Init Convo	reior	]		•				,	
	83 ft =		= 2.54 cm								
0.1	337 ft <sup>3</sup> =	1 gal =	128 oz •								
		=	= 3.785 L		-						
0.0	078 gal =	1 oz =	• 0.0011 A	3		· · ·					· .
10	$00 \text{ cm}^3 =$	1L =	1000mL			,					•
		<u> </u>	— T	ل:							
				·····							
							•				

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# **Dominguez Channel Bacterial Monitoring Data and Observation Sheet**

	Dominguez Channel Bacterial Monitoring Data and Observation Sheet
	GPS Coordinates: $118^{2}, 20, 103$ W Site ID: $22$
	<u>Weather Information:</u> <u>Weather Information:</u> Light Conditions: Supproved Decrease N Date/Time: <u>OB L HOL</u> <u>L</u> <u>J</u> <u>L</u> <u>L</u> <u>J</u> <u>L</u> <u>C</u> <u>L</u> <u>C</u> <u>L</u> <u>Supproved</u> <u>L</u> <u>Supproved <u>L</u> <u>Supproved</u> <u>L</u> <u>Supproved <u>L</u> <u>Supproved</u> <u>L</u> <u>Supproved <u>L</u> <u>Supprove</u></u></u></u>
	Last Rain: $>72$ hours $<72$ hours $<3$ hours     Precipitation: $>0.1"$
and the second se	Site Description:       Location:       Contract       Contrat       Contract       Contract
	Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)1.5.92 fl Width (cm - ft (in)) $108$ $11$ $108$ $11$ $108$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$ $112$
	3.7.13  fl Velocity (cm (ft -)n (sec))
6	4. Flow $105 \text{ f} + 3/5$ ***See formula on back ***See formula on back
	Visuals:     Photo Taken:     yes no     Roll#/Pic#     Draw sample location if no photo:       Odor     Chemical     Sewage     Rotten Eggs     None/Other     Musture
	ColorGreyishGreenishBrowishIlinitatione/OtherClarityClearCloudyOther
	Floatables     Oily / Rainbow Trash     Bubbles     None/Other       Vegetation     Limited     Extensive     None/Other
	Biology Mosquitos Algae Snails / Fish None/Other
	Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)1. Light (<5)% Plastics (cups, straws, bags, wrappers, bottles, junk)2. Moderate (6-10)% Plastics (cups, straws, bags, wrappers, bottles, junk)3. High (11-25)% Recyclables-not plastic (paper, glass bottles, metal)4. Somewhat Dense (26-50)% Large items (appliances, cars, tires)
	Drain Assocaited Algae: Algae coverage (circle): Algae outside of flow?: (ves (fo))
	$N_{igac}$ coverage (energy) $N_{igac}$ coverage (energy) $N_{igac}$ coverage (energy) $0.$ None $Snails:$ res $no$ $1. < 5\%$ Main algae type:Birds: res $2.$ 5-25% $-\%$ film algaeOther:
	3. $25-50\%$ $(DO) \%$ turf algaeNumber of homeless: $DO$ 4. $50-75\%$ $\%$ macroalgaeEvidence of dumping: yes $DO$ $(5) > 75\%$ $(5) > 75\%$
	* <u>Field</u> Water Temp (°C) 21.5 Conductivity 1567 mS (uS)(Circle appropriate units) <u>Screening</u> pH (pH units) 7.01
	*Laboratory       Fecal Coliform(MPN)       E.Coli(MPN)         Analysis       Enterococcus(MPN)       Total Coliform(MPN)
	Lab Samples taken (Yes / No Bottle ID#'s
	Comments Observations
15.	

# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

			an a	alize to the		•					
D = [	Depth of wat	er a	= area of w	ater in partia	lly filled pip	e					
_d = d	iameter of th	ie pipe T	`a = Tabulate	ed Value			Then	a = Ta*d2			
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350	
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039	
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890	
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836	
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827	
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820	
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780	
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660	
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360	
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840	
	AREA x	VELOCI	TY	TIME RE	QUIRED	TO FILL /	1   AR	EA x VELO	)CITY		
100				KNOWN	VOLUME						
		NINITY NAT	TUON	(FILL A B	OTTLE M	ETHOD	S S S	(PARTIALL	Y FILLED.	PIPE)	
	KEEK/CHA	MNINEGEMMIE	HUD)	<u>1/2.475.50.505</u> 763405		1997 (March 1997)					
a. . t	Measure the water.	idth, depth, and	l velocity of	I. Determine volume/capacity of the sample bottle.			e   1)	<ol> <li>All measurement must be converted to a common unit before calculation (ft, in, or cm).</li> </ol>			
b.	Convert each v all measuremer	alue to a comm	on unit (i.e. cm, ft, or	2. Mo	easure time requ ttle.	aired to fill the	2)	Let D = water dep	th.		
	in.).			2 El		uning her in the	3)	Let d = <i>inside</i> pipe	e diameter		
				5. FIC V0	lume units:	mined by initia	4)	Calculate D/d.			
<b>c</b> .	Multiply the w	idth * depth * v	elocity to				5) Find the tabulated (Ta) value on the next is				
	determine flow	•		•	mL/s oz/s		filled pipe formula chart above using the D/				
d.	Multiply the flo	ow by 0.8 for c	reek		023			Γa =. 1623).			
	measurements - channel measurements	-or 0.9 for co rements to acco	ncrete	4. Co	nvert to desired	l value.					
	channel roughn	iess.									
							6)	Find the area using $a = T_0 * d^2$	g the formula		
e.	The results if m	neasured in						a∼ ra∙u.			
	Di - Etilana						7)	Multiply area (a) ł	by the water vel	ocity.	
•	$cm = cm^{3}/sec$ (i	mL/sec)					8) (	Convert to desired	value.	•	
•	in = in <sup>3</sup> /sec										
f.	Convert to desi	red value.							<u></u>		
SA	F / Metric I	Init Conve	rsion								
0.0	83 ft =	1 in $ $ =	2.54 cm							,	
0.1	$337 \text{ ft}^3 =$		128 oz								
		=	3.785 L								
0.0	078 gal =	1 oz =	0.0011 ft	3							
100	$00 \text{ cm}^3 =$	L   =	1000mL								
										······	
				•							

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E.	Doi	<u>minguez C</u>	hannel Bac	terial Moni	toring Data and	d Observati	on Sheet
	GPS Coord	inates: <u>  8</u>	20,099	W	• •	Site ID:	23
		330	53.229	N	Date/Time:	061702	14:17
	Weather In	formation:		Field (	Crew: (_, <u>Aginger/L</u>	· Carlson	
	<u>Light Condi</u> Last Rain:	itions: Su	$\frac{1}{2}$ hours $\frac{1}{2}$	rcast Partly hours < 3 ho	Cloudy Pre	$\frac{\text{cipitation:}}{2} > 0.1$	< 0.1"
e	<u>Site Descrip</u> Earthen Drai	inage Concret	n: Dom ngun e Changel Out	fall Manho	in <u>Channel</u> At le Catchbasin	Manhattan Other	Beach Blid
特許	Flow Estima	<u>ation:</u> Flow (	Yes No / Ponded/	Trickle <u>Eviden</u>	<u>ce of overland flow near</u>	sampling location	<u>?:</u> Yes /Nd
	Are 1. <sup>+</sup> W	ea X Velocity (cr idth (cm - ft - in)	eek / channel) <u>107 = 8</u> , 92	Fillin FH 1. Volume	<b>g a Bottle</b> (mL - L - oz)	Area 1. Pipe Diame	X Velocity (pipe) ter (ft/in)
R	2. De	epth (cm - ft - (n)	654	+ 2. Time	(sec)	2. Depth	
	3. Ve	elocity (cm $ft$ ) i	n/sec)	***See formu	la on back	3. Velocity	a on back
		5,58+	<u>°15</u>				
	<u>Visuals:</u> Odor	Photo Take	e <u>n:</u> (yes)/ no Sewage	Roll#/Pic# <u></u> Rotten Eggs	Nope/Other	Draw sample	location if no photo:
	Color	Greyish	Greenish	Browisk	NoneOther		
E.	Clarity	Clear	Cloudy	•	Other		
	Floatables	Oily / Rainl	oow Trash	Bubbles	None Other		
	Vegetation	Limited	Extensive		Mone Other		
<b>E</b> 3	Biology	Mosquitos	Algae	Snails / Fish	None/Other		
	Trash In Vi	icinity of Drain (	Circle): Type:	(% of number not	total volume of items):		
e?	$(\hat{\Gamma})$ Light (<	<5)		_% Organic (1000) _%Plastics (cups, st	raws, bags, wrappers,		
	2. Modera	te (6-10) 1-25)	5~	bottles, junk) 2% Recyclables-not	plastic (paper glass	4	
	4. Somewl	hat Dense (26-50)		bottles, metal)	plustie (puper, Bluss	4	
	5. Dense (	>50)		_% Large items (app	oliances, cars, tires)	· · · · · · · · · · · · · · · · · · ·	·
6	Drain Assoc	caited Algae:	Algon outsid	a of flow? (Mas In	Other Obser	rvations:	
	0. None	age (circle).	Algae outsid	e of tiow (yes (in	Snails: yes	no	
E.S.	1. < 5% 2 5-25%		Main algae 1	ype:	Birds: yes Other:		
	3. 25-50%		$(\alpha)$ % turf a	Igae	Number of h	omeless:	•
	4. 50-75% (5.) > 75%	•	%macro	algae	Evidence of a	dumping: yes no	
	* <u>Field</u> Screening	Water Tem pH (pH uni	$p(^{\circ}C) 31.9$ (s) 9.27	Conductivity_	6.51_ms rus ci	ircle appropriate uni	ts)
	* <u>Laborator</u>	y Fecal Colife	orm	(MPN)	E.Coli	· • •	(MPN)
	<u>Analysis</u> Lab Sample	es taken $\sim$	ns No Boti	tle ID#'s		In	(MPN)
100	Comments	· Force	n in what	 	· 1		
	Observation	ns		<u> </u>	······	·	
					1		· · · · · · · · · · · · · · · · · · ·

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#### **Methods of Flow Measurement** Calculating the Area (a) of the Cross Section of a Circular Pipe **Flowing Partially Full** a = area of water in partially filled pipe D = Depth of waterTa = Tabulated Value Then a = Ta\*d2d = diameter of the pipeD/d 0.00 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.0192 0.0242 0.0294 0.0037 0.0069 0.0105 0.0147 0.0000 0.0013 0.0350 0.0 0.0817 0.1 0.0409 0.0470 0.0534 0.0600 0.0668 0.0739 0.0885 0.0951 0.1039 0.1623 0.1118 0.1199 0.1281 0.1365 0.1440 0.1535 0.1711 0.1800 0.1890 0.2 0.3 0.1982 0.2074 0.2187 0.2280 0.2355 0.2450 0.2540 0.2642 0.2780 0.2836 0.3527 0.2934 0.3032 0.3130 0.3220 0.3328 0.3428 0.3627 0.3727 0:3827 0.4 0.5 0.3980 0.4030 0.4130 0.4230 0.4330 0.4430 0.4520 0.4620 0.4720 0.4820 0.4920 0.5020 0.5120 0.5210 0.5310 0.5400 0.5500 0.5590 0.5690 0.5780 0.6 0.7 0.5870 0.5960 0.6050 0.6140 0.6230 0.6320 0.6400 0.6490 0.6570 0.6660 0.7190 0.6740 0.6810 0.6890 0.6970 0.7040 0.7120 0.7250 0.7320 0.7360 0.8 0.7450 0.7500 0.7560 0.7610 0.7660 0.7710 0.7750 0.7790 0.7820 0.7840 0.9 TIME REOUIRED TO FILL A AREA x VELOCITY AREA x VELOCITY KNOWN VOLUME (PARTIALLY FILLED PIPE) (FILL A BOTTLE METHOD) (CREEK/CHANNEL METHOD) Measure the width, depth, and velocity of Determine volume/capacity of the 1) All measurement must be converted to a 1 sample bottle. common unit before calculation (ft, in, or cm). the water. Convert each value to a common unit (i.e. 2 Measure time required to fill the 2) Let D = water depth. b. all measurements converted to cm, ft, or bottle. in.). 3) Let d = inside pipe diameter 3. Flow will be determined by initial volume units: 4) Calculate D/d. Multiply the width \* depth \* velocity to C. determine flow. 5) Find the tabulated (Ta) value on the partially mL/s filled pipe formula chart above using the D/d oz/s Multiply the flow by 0.8 for creek value. (i.e. if D/d = 0.263 then Ta = 1623). d measurements -- or -- 0.9 for concrete 4. Convert to desired value. channel measurements to account for channel roughness. 6) Find the area using the formula $a = Ta^*d^2$ The results if measured in e. 7) Multiply area (a) by the water velocity. Ft = Ft<sup>3</sup>/sec $cm = cm^{3}/sec (mL/sec)$ 8) Convert to desired value. $in = in^{3}/sec$ Convert to desired value SAE / Metric Unit Conversion 0.083 ft = 1 in = 2.54 cm 0.1337 ft<sup>3</sup> 1 gal == 128 oz = 3.785 L 0.0011 ft<sup>3</sup> 0.0078 gal = l oz = $1000 \text{ cm}^3$ 1 L 1000mL = =

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Dominguez Channel Bacterial Monitoring Data and Observation Sheet
GPS Coordinates: $\frac{1}{22}$ $\frac{8}{52}$ $\frac{29}{52}$ $\frac{99}{23}$ W Site ID: $\frac{24}{14!35}$
Weather Information: Light Conditions: Light Conditions: Field Crew: L. Danyen/L. Cacbon/C. Warn fl. Erick Partly Cloudy
Light Conditions:SummyOvercastFaity CloudyLast Rain:> 72 hours< 72 hours< 3 hours $\underline{Precipitation:}$ > 0.1" $< 0.1$ "< 0.1< 0.1< 0.1< 0.1< 0.1
Site Description: Location: Jac Culvert, Wirkey Jon. Ch. at Manhatta Deach Diva Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other Box Culmt
Flow Estimation: Flow (Fest No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No
$1 \neq 1  \text{Gradewidth (cm - ft - (m) / 27 } (22 ) 2. \text{ Time} \qquad (mL - L - oz) \qquad 1. \text{ Pipe Diameter} (ft/in)$
3. $nD8fWelocity (cm - fi) in /sec) \frac{74}{74} - \frac{7}{2}$ deef 3. Velocity $\frac{1}{1000}$ $\frac{1}{1$
4. riow [1.41+27/5] See formula on back The see formula on back
Visuais.     Filoto Faken.     Voint/Fich     I definition       Odor     Chemical     Sewage     Rotten Eggs     None/Other
Color Greyish Greenish Browlsh gllow Coner Clarity Clear Cloudy Other
Floatables     Oily / Rainbow     Trash     Bubbles     None/Other       Vegetation     Limited     Extensive     None/Other
Biology Mosquitos Algae Snails / Fish None/Other
1. Light (<5)       1. Dight (<5)
Moderate (6-10)       bottles, junk)         High (11-25)       % Recyclables-not plastic (paper, glass bottles, metal)
5. Dense (>50)% Large items (appliances, cars, tires)
Drain Assocaited Algae:       Other Observations:         Algae coverage (circle):       Algae outside of flow?: (ves / no)       Fish: yes       no         0. None       Snails: ves       no       Snails: ves       no         1. < 5%       Main algae type:       Birds: ves       no
2.     5-25%     % film algae     Other:       3.     25-50%     107% turf algae     Number of homeless:       4.     50-75%     %macroalgae     Evidence of dumping: yes
(3) > 75%
* <u>Field</u> Water Temp (°C) <u>&gt; 0</u> Conductivity <u>T</u> mS ( <i>iS (</i> Circle appropriate units) <u>Screening</u> pH (pH units) <del>S 3 /</del>
*Laboratory AnalysisFecal Coliform Enterococcus(MPN)E.Coli Total Coliform (MPN)(MPN)
Lab Samples taken Yes No Bottle ID#'s
Comments Observations

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# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

		Less Arress	<u></u>	<u></u>	<u> </u>	<u> </u>		·	<u> </u>			
D = [	Depth of wat	er a	= area of w	ater in partia	lly filled pip	e		• • •				
d = d	iameter of th	ne pipe – T	'a = Tabulat	ed Value	Value Then $a = Ta^*d2$							
					<u>.</u>							
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09		
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350		
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039		
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890		
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836		
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0:3428	0.3527	0.3627	0.3727	0.3827		
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820		
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780		
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660		
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0 7120	0 7190	0.7250	0.7320	0.7360		
0.0	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0 7790	0.7820	0.7840		
3.2 ( 1929)			TX/	TIMERE	OUREN	TOFILI	ARE	VEP/	<b>CITV</b>			
	AREAX	VELOCI	<b>T</b> X	KNOWN	VOLUME							
	(1) <u></u>				1 OLOML	ana ang sang sang sang sang sang sang sa			. <u>1</u> . (.)			
(C)	REEK/CHA	NNEL ME	THOD)	(FILL A B	OTTLE M	ETHOD)	(P	ARTIALL	Y FILLED	RIPE)		
								to the second second	2013 - 2010 - 10 Albert 1994 - 2994 - 2994 - 2994 - 2994 - 2994 - 2994 - 2994 - 2994 - 2994 - 2994 - 2994 - 29	AND THE PLATE STATES		
a.	Measure the wi	idth, depth, and	velocity of	1. De	termine volume	capacity of the	e   I) All	measurement i	nust be convert	ed to a		
	ne water.			Smith	- oome.			anon una octo	re calculation (			
b:	Convert each v	alue to a comm	ion unit (i.e.	2. Me	easure time requ	nired to fill the	2) Let	D = water dep	th.			
	all measurement	its converted to	o cm, ft, or	bottie. 3) Let $d = inside$ pipe diameter								
	···· <i>j</i> .			3. Flow will be determined by initial								
	Multiply the sy	dth * donth * s	valagitu ta	VO	lume units:	•	4) Cal	culate D/d.				
. с.	determine flow	iain * aepin * v '.	locity to	•	mL/s		5) Fin	d the tabulated	(Ta) value on t	he nartially		
				٠	oz/s		fil	filled pipe formula chart above using the D/d				
d.	Multiply the flo	ow by 0.8 for ci or 0.9 for co	reek	value. (i.e. if $D/d = 0.263$ then Ta = 1623).						°a ≔.1623).		
	channel measur	rements to acco	unt for	4. CU		value.						
	channel roughr	iess.					0.5					
							6) Find the area using the formula $a = Ta^{2}d^{2}$					
e.	The results if m	neasured in			•							
	Et - Et <sup>3</sup> /con		•		¢.		7) Mu	7) Multiply area (a) by the water velocity.				
	$cm = cm^3/sec$ (1	mL/sec)					8) Con	8) Convert to desired value				
•	in = in <sup>3</sup> /sec	,										
£	Convert to desi	red value		•								
			I									
SA	E / Metric I	Unit Conve	rsion									
0.0	83 ft =	1 in =	2.54 cm									
0.1	$337 \text{ ft}^3 =$	l gal =	128 oz									
		=	3.785 L									
0.0	078 gal =	1 oz =	0.0011 ft	3								
100	$00 \text{ cm}^3 =$	1L =	1000mL									
		•••••••••••••••••••••••••••••••••••••••	·····									
			•									
			•							. <u></u>		

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	<b>Dominguez Channel Bacterial Monitoring Data and Observation Sheet</b>
	GPS Coordinates:       III P DSO W       Site ID: 2.5         Meather Information:       Date/Time:       04702 / 1435         Weather Information:       Field Crew:       0.1702 / 1435         Light Conditions:       Sunny Overcast       Partly Cloudy         Last Rain:       272 hours       472 hours       43 hours         Site Description:       Location:       0.172 hours       40 hours         Site Description:       Location:       0.182 Culter HW. Dorugue Channel Amanhaltan Beach Block         Flow Estimation:       Flow       Yes/No / Ponded/Trickle       Evidence of overland flow near sampling location?:       Yes / No         Area X Velocity (creek / channel)       Filling a Bottle       Area X Velocity (pipe)
	1.Width (cm - ft - (n) / 3 q = 11.58 ft 1. Volume(mL - L - oz)1. Pipe Diameter(ft/in)2.Depth (cm - ft - (n) / 2 G ( $\overline{f}_{F}, \overline{o}7ft_2$ . Time(sec)2. Depth3.Velocity (cm (ft ) n (sec) / ft ) (ft/in)3. Velocity (cm (ft ) n (sec) / ft ) (ft/in)4.Flow $\overline{st_1 ft_2}$ ***See formula on back
(	Visuals:       Photo Taken:       Ves/ no       Roll#/Pic#       Draw sample location if no photo:         Odor       Chemical       Sewage       Rotten Eggs       None/Other       Draw sample location if no photo:         Color       Greyish       Greenish       Browish       Vestor       None/Other       Draw sample location if no photo:         Clarity       Clear       Cloudy       Other       Draw sample location if no photo:         Floatables       Othy / Rainbow       Trash       Bubbles       None/Other         Vegetation       Limited       Extensive       None/Other         Biology       Mosquitos       Algae       Snails/ Fish       None/Other         0.       None       % Organic (food)       % Organic (food)       % Phastics (cups, straws, bags, wrappers, bottles, junk)         2.       Moderate (6-10)       % Phastics (cups, straws, bags, wrappers, bottles, junk)       % Phastics (cups, straws, bags, wrappers, bottles, junk)
	4. Somewhat Dense (26-50)       bottles, metal)         5. Dense (>50)
	5. > 75%         *Field       Water Temp (°C) 2 7 3         Screening       pH (pH units) 7 2 7         *Laboratory       Fecal Coliform (MPN)         Analysis       Enterococcus (MPN)         Total Coliform (MPN)
	Lab Samples taken Res / No Bottle ID#'s

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# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

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							;	,	· · ·		
<u>р = Г</u>	Depth of wat	er a	= area of w	ater in partia	lly filled pip	e		· · · · · · · · · · · · · · · · · · ·			
d = d	iameter of th	ne pipe T	`a = Tabulate	ed Value			The	n a = Ta*d2			
		· ·						·	····-	· · · · · · · · · · · · · · · · · · ·	
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.00	5 0.07	0.08	0.09	
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.019	0.0242	0.0294	0.0350	
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0,08	0.0885	0.0951	0.1039	
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.162	0.1711	0.1800	0.1890	
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.254	10 0.2642	0.2780	0.2836	
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.352	0.3627	0.3727	0.3827	
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.452	0.4620	0.4720	0.4820	
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.550	0 0.5590	0.5690	0.5780	
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.640	0 0.6490	0.6570	0.6660	
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.719	0.7250	0.7320	0.7360	
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.77	50 0.7790	0.7820	0.7840	
	AREA x	VELOCI	ТҮ	TIME RE	QUIRED	TO FILL .	4     A]	REA x VELO	OCITY		
				KNOWN	VOLUME						
				ETT A B	OTTLE M	FTHOD		(PARTIALL	Y FILLED	PIPE	
<u>(C</u> )	REEK/CH/	NNEL ME	THOD)		OT TED III			AND TO THE MARKE			
a. t	Measure the w	idth, depth, and	l velocity of	I. De sample	etermine volume	e/capacity of th	e    1)	All measurement	must be conver	ted to a	
				sample bothe.				2) Let $D = water don'th$			
Ь.	Convert each v	value to a comm	non unit (i.e.	2. Measure time required to fill the bottle.				(2) Let $D =$ water depth.			
	in.).							3) Let d = inside pipe diameter			
	·			3. Fl	ow will be deter	rmined by initia		Coloulate D/d			
С.	Multiply the w	idth * depth * v	velocity to	• mL/s				(4) Calculate D/0.			
	determine flow	<i>.</i>						5) Find the tabulated (Ta) value on the partially			
d	Multiply the fl	ow by 0.8 for c	reek	•	oz/s			filled pipe formula chart above using the D/ value (i.e. if D/d = 0.263 then $Ta = 1623$ )			
<b>Q</b> .	measurements	-or 0.9 for co	oncrete	4. Convert to desired value.					1	.u .1025).	
	channel measu	rements to acco	ount for				4				
	channel rough	iess.					6)	Find the area usin	g the formula		
		, 19.						$\mathbf{a} = \mathbf{T}\mathbf{a}^*\mathbf{d}^2.$			
e.	The results if n	neasured in						() Multinly area (a) by the water velocity			
•	$Ft = Ft^3/sec$										
•	cm = cm'/sec (	mL/sec)					(8)	Convert to desired	l value.		
•	m - m /sec					,	ľ			•	
f	Convert to des	ired value.			·						
			<u> </u>								
SA	E / Metric	Unit Conve	rsion								
	$\frac{183 \pi}{227 A^3} =$	1  in =	2.54 cm								
	557 II   -		3 7851								
	078 001 -		0.0011 A	3							
	$\frac{1070 \text{ gal}}{10 \text{ cm}^3} =$	11 =	= 1000mT	<u> </u>							
			1 TOODINL								
										· · .	
									· · · · · · · · · · · · · · · · · · ·		

Dominguez Channel Bacterial Monitoring Data and Observation Sheet
GPS Coordinates: $18^{\circ}17.025$ W $33^{\circ}51.705^{\circ}$ N Date/Time: $6/18/02/0830$
Weather Information:       Field Crew: C. Warn, L. Ng uyen, J. Er: ckson         Light Conditions:       Sunny         Overcast       Partly Cloudy
Last Rain:       > 72 hours       < 3 hours
Earthen Drainage       Concrete Channel       Outfall       Manhole       Catchbasin       Other         Flow Estimation:       Flow       Yes       No / Ponded/Trickle       Evidence of overland flow near sampling location?:       Yes       Yes
Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)1.Width (cm $(ft)$ in)1.Volume(mL - L - oz)1.2.Depth (cm $(ft)$ in)2.Time(sec)2.Depth
3. Velocity (cm (ft) in / sec) 0.05 UP 4. Flow 16.6 ft <sup>3</sup> /5 *Flow'rel:d at this pt of Greek only
Visuals:         Photo Taken:         Vestino         Roll#/Pic# 1/28         Draw sample location if no photo           Odor         Chemical         Sewage         Rotten Eggs         None/Other         Draw sample location if no photo
Color     Greyish     Greenish     Browish     None/Other       Clarity     Clear     Cloudy     Other
Floatables     Oily / Rainbow Trash     Bubbles     None/Other       Vegetation     Limited     Extensive     None/Other       Biology     Mosquitos     Alger     Snails / Fish     None/Other
Trash In Vicinity of Drain (Circle):       Type: (% of number not total volume of items):         % Organic (food)
1. Light (<5)
Drain Assocaited Algae:
Algae coverage (circle):       Algae outside of flow?: (yes) no)       Fish: yes no       No         0. None       1. < 5%       Main algae type:       no         2. < 55%       0. % film algae       0. % film algae
$\begin{array}{cccccccccccccccccccccccccccccccccccc$
*Field ScreeningWater Temp (°C)25.8 25.8Conductivity Sultworker - vermS / uS (Circle appropriate units)ScreeningpH (pH units)7.61Sultworker - verSultworker - ver
*Laboratory       Fecal Coliform(MPN)       E.Coli(MPN)         Analysis       Enterococcus(MPN)       Total Coliform(MPN)
Lab Samples taken (Yes) No Bottle ID#'s
Comments <u>Dampled from Idridge</u> Observations

		Calcul	ating th	e Area ( F	a) of the lowing P	Cross So artially I	ect Fu	ion of ll	a Circu	lar Pipe	
D - 1	)		<u></u>		alla, <b>f</b> illa '		· ·			. · ·	
d = d	iameter of th	er a 1e pipe T	a rea of w a = Tabulat	ed Value	any med pip	e		Then a =	- Ta*d2		
D/d	0.00	0.01	0.02	0.03	0.04	0.05		0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147		0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739		0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450		0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	Π	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	Π	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400		0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320		0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	11	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710		0.7750	0.7790	0.7820	0.7840
	APEAN	VELOCI	TV	TIME RI	OUIRED	TO FILL	4	ARE	A x VELC	OCITY	
17 <b>25</b> - 573 - 575 - 575	ALLAX	ALLOCI	1.1.1. (a)	KNOWN	ĨŨŎĿŬMŦ			a de la com			
	ang Langung ang ang ang ang ang ang ang ang ang a	Geographie				No. Ser.			ADTIALLY	VEULED	DIDE
(C)	REEK/CHA	NNEL ME	THOD)	(FILL A I	BOTTLE M	ETHOD)		L.	ARTIALL	I, FILLED	rire)
a. t	Measure the with the water.	idth, depth, and	l velocity of	I. D samp	etermine volum le bottle.	e/capacity of th	e	I) All con	measurement i nmon unit befo	یے must be conver re calculation (	ted to a ft, in, or cm).
b.	Convert each v all measuremen	alue to a comm	non unit (i.e. 5 cm, ft, or	2. Measure time required to fill the bottle.				2) Let	D = water dep	th.	
	in.).			3. Flow will be determined by initial volume units:				3) Let	d = <i>inside</i> pipe	e diameter	
С.	Multiply the w determine flow	idth * depth * v	velocity to	• mL/s				5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d			
d.	Multiply the flo measurements	ow by 0.8 for c -or 0.9 for co	reek	oz/s     Convert to desired value.				filled pipe formula chart above using th value. (i.e. if D/d = 0.263 then Ta = 16			
	channel measur channel roughr	rements to acco	ount for					1			
	B							6) Fin	d the area using	g the formula	
e.	The results if n	neasured in						7) ) (1)	$\mathbf{a} = \mathbf{T}\mathbf{a}^*\mathbf{d}^2.$		
•	Ft = Ft <sup>1</sup> /sec	•			-			/) Mu	ittipiy area (a) c	by the water ve	ocity.
•	$cm = cm^3/sec$ (	mL/sec)						8) Co	nvert to desired	value.	
•	in = in <sup>3</sup> /sec							}	•		
<u>f</u> .	Convert to desi	red value.									
SA	E / Metric	Unit Conve	rsion	<u> </u>							,
0.0	83 ft =	1 in $=$	2 54 cm								
0.1	$\frac{337}{337}$ ft <sup>3</sup> =	1  gal =	= 128 oz								
		=	3.785 L			·					
0.0	078 gal =	1 oz =	0.0011 fi	3-1							
100	$00 \text{ cm}^3 =$	1L =	1000mL								
•••••						•					
	······				······································						
	,								· .	•	

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	<b>Dominguez Channel Bacterial Monitoring Data and Observation Sheet</b>
	GPS Coordinates: $\frac{118^{\circ} 17.034}{33^{\circ} 51.700^{\circ}}$ W Site ID: $\frac{27}{100^{\circ}}$ Site ID: $\frac$
	Weather Information: Field Crew: C. Warn, L. Ngugen, J. Erickson
	Light Conditions:SunnyOvercastPartly CloudyLast Rain:> 72 hours< 72 hours< 3 hoursPrecipitation:
$\langle$	Site Description: Location: /90 +* St. Bridge- Ce.tor Channel Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other
	Flow Estimation: Flow (Yes) / No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes No
	Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)1.Width (cm $(P-in)$ $P = 1$ 1.Volume (mL - L - oz)1.Pipe Diameter (ft/in)2.Depth (cm $(ft)$ in) $(a = 1)$ 2.Time (sec)2.Depth3.Velocity (cm - ft) in / sec) $ib \leq U p$ 3.Velocity3.Velocity4.Flow $24.9 ft^{3}/5$ $ft$ $ft$ $ft$ $ft$ $ft$ $ft$ $ft$
-	Visuals:     Photo Taken:     (ves) no     Roll#/Pic#     // 2.1     Draw sample location if no pho       Odor     Chemical     Sewage     Rotten Eggs     None/Other     Draw sample location if no pho
	Color Greyish Greenish Browish None/Other Yellouil
	Clarity Clear Cloudy Other
	Floatables Oily / Rainbow Trash Bubbles None Other
	Vegetation     Limited     Extensive     None/Other       Biology     Mosquitos     Algae     0     back Snails / Fish     None/Other
	Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None $\cancel{0}$ % Organic (food)1. Light (<5) $\cancel{0}$ % Plastics (cups, straws, bags, wrappers, bottles, junk)2. Moderate (6-10) $\cancel{0}$ % Recyclables-not plastic (paper, glass3. High (11-25) $\cancel{0}$ % Recyclables-not plastic (paper, glass4. Somewhat Dense (26-50) $\cancel{0}$ % Large items (appliances, cars, tires)
	Drain Assocaited Algae:       Other Observations:         Algae coverage (circle):       Algae outside of flow?: (yes) no)       Other Observations:         0       None       Snails: yes       No
	0.NoneMain algae type:Birds: yes1.< 5%
-	$\frac{5.75\%}{\frac{\text{Field}}{\text{Screening}}} Water Temp (^{\circ}C) \underbrace{23.5}_{\text{pH (pH units)}} Conductivity} \underbrace{\text{ms /us}}_{\text{ous}} (Circle appropriate units)}$
	*Laboratory       Fecal Coliform(MPN)       E.Coli(MPN)         Analysis       Enterococcus(MPN)       Total Coliform(MPN)
	Lab Samples taken Yes No Bottle ID#'s Comments Observations

# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

		ang sa	Ant				<u></u>		· · ·	
D = D	epth of wat	er a	= area of w	ater in partia	Illy filled pip	e	<u></u>			
d = di	ameter of th	ne pipe T	a = Tabulat	ed Value			Then	a = Ta*d2	:	
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
).1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	(0.1623	0.1711	0.1800	0.1890
).3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
).4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0:7360
).9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
	AREA x	VELOCI	ТҮ	IIME RE	QUIRED	IOFILLA	1    AR	EA X VELC	)CITY,	
94. 1				.KNOWN	VOLUME					
in.	DEEV/CH	NNET ME	THOM	(FILL A B	OTTLE MI	ETHOD)		(PARTIALL)	Y FILLED	RIPE)
a. tl b. c. d. e.	Measure the w ne water. Convert each v all measureme in.). Multiply the w determine flow Multiply the fl measurements channel measu channel rough The results if n Ft = Ft <sup>3</sup> /sec cm = cm <sup>3</sup> /sec ( in = in <sup>3</sup> /sec	idth, depth, and value to a comm nts converted to idth * depth * v ow by 0.8 for c -or 0.9 for co rements to acco ness. neasured in (mL/sec) ired value.	velocity of ion unit (i.e. o cm, fl, or velocity to reek norete punt for	I. De sampl 2. M bo 3. Fil. vo 4. Co	termine volume e bottle. easure time requ title. ow will be deter lume units: mL/s oz/s onvert to desired	/capacity of the	e 1) 2) 3) 4) 5) 6) 7) 8)	All measurement r common unit befo Let $D =$ water dep Let $d = inside$ pipe Calculate D/d. Find the tabulated filled pipe formu value. (i.e. if D/c Find the area using $a = Ta^{+}d^{2}$ . Multiply area (a) th Convert to desired	nust be convert re calculation ( th. e diameter (Ta) value on t la chart above u l = 0.263 then g the formula by the water vel value.	ied to a ft, in, or cm). he partially ising the D/d Γa = 1623).
SA 0.0 0.1 0.0 100	E / Metric         83 ft       =         337 ft <sup>3</sup> =         078 gal       =         00 cm <sup>3</sup> =	Unit Conve 1 in = 1 gal = 1 oz = 1 L =	rsion 2.54 cm 128 oz 3.785 L 0.0011 f 1000mL	1 <sup>3</sup>						
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Dominguez Channel Bacterial Monitoring Data and Observation Sheet         Operation of the state of the s	
GPS Coordinate: $\frac{11}{9} \frac{1}{9} \frac{1}{33^2} \frac{1}{51 \cdot 108}^{1} \frac{1}{108} \frac{1}{$	<b>Dominguez Channel Bacterial Monitoring Data and Observation Sheet</b>
Field Crew: L. Nautor, J. ErickSon         Light Condition:         Light Condition:       72 hours         Vencas:       Party Cloudy         State Preservition:       Location:         Location:       74 ft Ar. Lie         Vencas:       Concrete Channel         Outful       Mathole         Earthen Drainage       Concrete Channel)         Location:       74 ft Ar. Lie         Vencity Creek / channel)       Mathole         Area X Velocity Creek / channel)       I. Volume (mL - L - co)         Width (cm - 0) in / #2       Time (see)         Depth (cm ft) in / sec)_0.5       Velocity         ***See formula on back       ***See formula on back         Velocity (cm ft) in / sec)_0.5       ***See formula on back         Visuals:       Photo Taken:       Y no         Oder       Chernical Sewage       Rotten Eggs         Color       Greyish       Greenish       Browish         None/Other       Sole Severation (foot)       Sole Severation (foot)         Light (<3)       Sole Creek (stansive       Sole Severation (foot)         Visuals:       Photo Taken:       Ye for Sole formula on back       ****See formula on back         Visuals:       Photo Ta	GPS Coordinates: <u> 1180</u> /7.042 <u> 33°51.698</u> N Date/Time: <u>6/18/02</u> <u> 852</u>
Light Conditions:       Sumy       Overall       Party Cloudy       Precinitation:       > 0.1"       < 0.1"         Site Description:       Location:       94 ft fridge       North State       Party Cloudy       Precinitation:       > 0.1"       < 0.1"       < 0.1"         Site Description:       Location:       94 ft fridge       North State       Outfall       Manhole       Catchhasin       Other         Flow Estimation:       Flow       (m) n. Jep       1.       Volume       (mL-L-oz)       1. Pipe Dianter:       (Mit         2.       Depth (cm ft) in Jec)       0.5 CV       State       State State       State State       State State         3.       Velocity (cmek / channel)       Flow       Flow       (Mit - 0.1)       Pipe Dianter:       (Mit         3.       Velocity (cmek / channel)       Pipe Dianter:       (Mit       Pipe Dianter:       (Mit         4.       Flow       (Mit - 0.2)       State       Pipe Dianter:       (Mit         4.       Flow       (Mit - 0.2)       State       Pipe Dianter:       (Mit         5.       Velocity (cm ft) in / sec)       0.5 CV       State       State       State       State         5.       Velocity       Flow	Weather Information: Field Crew: L. Naugen, C. Warn, J. Erickson
Step Prevention:       /96 <sup>44</sup> Bridge - North Fide (Werter         Earthen Drainage       Concrete Channel       Outfall       Mahole       Catchbasin       Other         Flow Estimation:       (Flow)       Concrete Channel       Outfall       Mahole       Catchbasin       Other         Area X Velocity (creek / channel)       Flilling a Bottle       Area X Velocity (creek / channel)         1.       Widh (um (0) in)       4       2. Time       (see)       2. Depth       (mit)       (mit) <th>Light Conditions:SunnyOvercastPartly CloudyLast Rain:&gt; 72 hours&lt; 72 hours&lt; 3 hoursPrecipitation:&gt; 0.1"&lt; 0.1</th>	Light Conditions:SunnyOvercastPartly CloudyLast Rain:> 72 hours< 72 hours< 3 hoursPrecipitation:> 0.1"< 0.1
Flow Estimation: Flow       (a) No / Ponded/Trickle       Evidence of overland flow near sampling location?: Yes (A)         Area X Velocity (creek / channel)       Filling a Bottle       Area X Velocity (creek / channel)         1.       Width (cm · ① in ) · ②       2.       Time(sec)       2. Depth       .       Pipe Diameter(R)         2.       Depth (cm @) in / sec) . 0.5       V/       3.       Velocity (cm @) in / sec) . 0.5       V/         3.       Velocity (cm @) in / sec) . 0.5       V/       3.       ***See formula on back       ****See formula on back       Dette formula on back       Dette formula on back       See	<u>Site Description</u> : Location: <u>198 st Bridge</u> - North Side Western Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other
Area X Velocity (creek / channel)       Filling a Bottle       Area X Velocity (pipe)         1.       Width (cm - 0) in ) 2       1.       Volume(mL - L - oz)       1.       Pipe Diameter(R/a)         2.       Depth (cm @ in / sec) _ 0 5       Y       3.       Velocity (cm @ in / sec) _ 0 5       Y         3.       Velocity (cm @ in / sec) _ 0 5       Y       3.       Velocity (cm @ in / sec) _ 0 5       Y         4.       Flow       [lo b A2](s _ X Floo Val. of At Hois Of A of Hois Of At Hois Of A of Hois Of A	Flow Estimation: (Flow) (es) No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes (No
2. Depart (in (2 in) is $2 + 1$ in (2 in) in (2 in) is $2 + 1$ in (2 in) in	Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pip1. Width (cm - $t$ ) in)21. Volume(mL - L - oz)1. Pipe Diameter(ft2Depth (cm ( $ft$ ) in)42Time(sec)2Depth
4.       Flow       If to A3/5       ***See formula on back       ***See formula on back         4.       Flow val. d At H is pt only       Photo Takes: vst / no       Roll#/Pic# //26       Draw sample location if no photo the pt only         Visuals:       Photo Takes: vst / no       Roll#/Pic# //26       Draw sample location if no photo the pt only         Odor       Chemical       Sewage       Rotten Eggs       Work/Other       Draw sample location if no photo the pt only         Clarity       Clear       Cloudy       Other       Draw sample location if no photo the pt only         Ploate Takes:       Cloudy       Other       Draw sample location if no photo the pt only         Picatables       Oily / Rainbow Trash       Bubbles       None/Other         Biology       Mosquitos       Algeb       Snails / Fish       None/Other         Trash In Vieinity of Drain (Circle):       Type: (% of number not total volume of items):       %       %         0.       None       Somewhat Dense (26-50)       Somewhat Dense (26-50)       %       % and lage type:         1.       Light (<5)	$\frac{3}{2} = \frac{1}{2} = \frac{1}$
Visuals:       Photo Taken: $yr / no$ Roll#/Pic#       ///2/2       Draw sample location if no phe         Odor       Chemical       Sewage       Rotten Eggs       None/Other	4. Flow $16.6 + 73/5$ ***See formula on back ***See formula on back ***See formula on back
Odor       Chemical       Sewage       Rotten Eggs       Other         Color       Greyish       Greenish       Browish       None/Other         Clarity       Clear       Cloudy       Other         Fleatables       Oily / Rainbow       Trash       Bubbles       None/Other         Vegetation       Limited       Extensive       None/Other         Biology       Mosquitos       Algab       Snails / Fish       None/Other         Trash In Vicinity of Drain (Circle):       Type: (% of number not total volume of items):       % Organic (food)         1.       Light (<5)	Visuals: Photo Taken: yes / no Roll#/Pic# //26 Draw sample location if no pl
Color       Greyish       Greenish       Browish       None/Other ye /by?         Clarity       Clear       Cloudy       Other	Odor Chemical Sewage Rotten Eggs None/Other
Clarity       Clear       Cloudy       Other	Color Greyish Greenish Browish None/Other ye hour
Floatables       Oily / Rainbow       Trash       Bubbles       None/Other	Clarity Clear Cloudy Other
Vegetation       Limited       Extensive       Component         Biology       Mosquitos       Alga       Snails / Fish       None/Other	Floatables Oily / Rainbow Trash Bubbles None Other
Distribution       Integration       Integration       Integration       Integration         Trash In Vicinity of Drain (Circle):       Type: (% of number not total volume of items):       % Organic (food)         0. None       Softward       Softward       % Organic (food)         1. Light (<5)	Riology Mosquitos Algae Spails / Fish None/Other
Train (Circle):       Type: ( $x_0$ of number not total volume of items):         0. None $\frac{1}{5}$ Organic (food)         1. Light (<5)	
Drain Assocaited Algae: Algae coverage (circle):       Algae outside of flow?: (ce) no)       Other Observations: Fish: yes flow         0. None       Main algae type:       Snails: yes flow         1. < 5%       Main algae type:       Birds: yes flow         2. 5-25%       % film algae       Birds: yes flow         3. 25-50%       % turf algae       Number of homeless:       Image: flow         4) 50-75%       Some flow       Some flow       Some flow         5. > 75%       Conductivity       ms / us (Circle appropriate units)         Screening       pH (pH units)       7. 9 3         *       Field       Water Temp (°C)       23. 4         Screening       pH (pH units)       7. 9 3         S a thoulds       Some flow       MPN)         Laboratory       Fecal Coliform       (MPN)         Lab Samples taken       Yes No       Bottle ID#'s	Itrash in vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)1. Light (<5)50 %Plastics (cups, straws, bags, wrappers, bottles, junk)2. Moderate (6-10)50 %Plastics (cups, straws, bags, wrappers, bottles, junk)3. High (11-25)50 % Recyclables-not plastic (paper, glass bottles, metal)4. Somewhat Dense (26-50)50 % Large items (appliances, cars, tires)
0. None       Main algae type:       Snails: yes       Birds: yes       Birds: yes         2. 5-25%      % film algae       Birds: yes       Dother:          3. 25-50%      % turf algae        Number of homeless:          4) 50-75%      % macroalgae       Evidence of dumping: yes          *Field       Water Temp (°C)       23.4       Conductivity        mS / uS (Circle appropriate units)         Screening       pH (pH units)       7.93       Sultwuls - oue limit	Drain Assocaited Algae:       Other Observations:         Algae coverage (circle):       Algae outside of flow?: (vest no)       Fish: yes no
2. $5-25\%$ % film algae       Other:         3. $25-50\%$ % turf algae      % turf algae         4. $50-75\%$ % macroalgae       Evidence of homeless:         *Field       Water Temp (°C) 23.4       Conductivity       mS / uS (Circle appropriate units)         screening       pH (pH units) 7. 93       Conductivity       mS / uS (Circle appropriate units)         *Laboratory       Fecal Coliform       (MPN)       E.Coli       (MPN)         Analysis       Enterococcus       (MPN)       Total Coliform       (MPN)         Lab Samples taken       Yes) No       Bottle ID#'s	0. NoneSnalls: yes1. < 5%
(4) $50-75\%$ $50-75\%$ $50-75\%$ $Evidence of dumping: yes no         *Field       Water Temp (°C)       23, 4       Conductivity       mS / uS (Circle appropriate units)         Screening       pH (pH units)       7, 93       Sultwuls       ove 1 init         *Laboratory       Fecal Coliform       (MPN)       E.Coli       (MPN)         Analysis       Enterococcus       (MPN)       Total Coliform       (MPN)         Lab Samples taken       Ves       No       Bottle ID#'s      $	2. 5-25% <u>% film algae</u> Other: <u>Number of homeless</u>
*Field       Water Temp (°C) 23.4       ConductivitymS / uS (Circle appropriate units)         Screening       pH (pH units) 7.93       ConductivitymS / uS (Circle appropriate units)         *Laboratory       Fecal Coliform(MPN)       E.Coli(MPN)         Analysis       Enterococcus(MPN)       Total Coliform(MPN)         Lab Samples taken       Ves No       Bottle ID#'s         Comments	(4)     50-75% On bruks
*Laboratory Analysis       Fecal Coliform (MPN)       E.Coli (MPN)         Analysis       Enterococcus (MPN)       Total Coliform (MPN)         Lab Samples taken       Ves No       Bottle ID#'s         Comments       Observations	*Field ScreeningWater Temp (°C) 23.4 pH (pH units) 7.93Conductivity mS / uS (Circle appropriate units) S withwate over limit
Lab Samples taken Ves No Bottle ID#'s Comments Observations	*Laboratory AnalysisFecal Coliform Enterococcus(MPN)E.Coli Total Coliform (MPN)
Comments	Lab Samples taken (Yes) No Bottle ID#'s
	Comments

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

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	·	1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 19		. Brokers	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·				
D = D	Depth of wat	er a	= area of wa	ater in partia	lly filled pip	e				
d = di	iameter of th	ie pipe – T	a = Tabulate	ed Value			Then a =	= Ta*d2		
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
	ADEAV	VELOCI	ту -	TIME RE	OUIRED:	TO FILL 2	4 ARE	A x VELO	)CITY	
		<b>THOOL</b>		KNOWN	VOLUME	5. S. S. A.				
				CEILT A D		ETHÔN	all a	PARTIAL	Y FILLED	PIPE)
<u>(C</u> ]	REEK/CH/	NNEL ME	THOD)	ITILL A B		стпору				
a.	Measure the w	idth, depth, and	velocity of	I. De sample	termine volume bottle.	c/capacity of th	e   1) Al	I measurement i mmon unit befo	must be convert	ted to a ft. in. or cm).
b.	Convert each v	alue to a comm	ion unit (i.e.	2. Me	asure time requ	ured to fill the	2) Le	t D = water dep	th.	
	all measurement	nts converted to	o cm, ft, or	bot	tle.		3) Le	t d = <i>inside</i> pipe	e diameter	
				3. Flo	w will be deter	mined by initia	at	, a monde pipe		
	Multinlu the w	deb * daneb * e	vala altru ta	vol	ume units:		4) Ca	lculate D/d		
C.	determine flow	iain * acpin * v V	elocity to	•	mL/s		5) Fir	nd the tabulated	(Ta) value on t	he partially
		1 0.0 6		•	oz/s		fi	lled pipe formu	la chart above $\iota$	ising the D/d
. <b>d</b> .	Multiply the flo measurements	ow by 0.8 for ci -or 0.9 for co	ncrete	4 Co	nvert to desired	l value	V.	alue. (i.e. if D/c	1 = 0.263 then 1	a =.1623).
	channel measu	rements to acco	ount for	1. 00			l	······································		
	channel roughr	iess.			· ·	- ·	6) Fir	nd the area using	the formula	
	,							$a = Ta^*d^2$	g	
e.	The results if n	neasured in					7) M	ultinly area (a) l	av the water vol	o aitu
•	Ft = Ft <sup>3</sup> /sec						() [1]	unipiy area (a) i	Jy the water ver	ocity.
•	$cm = cm^{3}/sec$ (	mL/sec)				·	8) Co	onvert to desired	value.	
•	in = in'/sec									
<u>f.</u>	Convert to desi	ired value.								
				·						
SA	E / Metric	Unit Conve	rsion	· ·						
0.0	$\frac{83 \text{ ft}}{100000000000000000000000000000000000$	1 in $ $ =	2.54 cm				× .			
0.1	$337 \text{ ft}^{-3}$ =	l gal   =	128 oz							
			3.785 L				,			
	$\frac{0.78 \text{ gal}}{100 \text{ gal}} =$	0z   =	0.0011 ft				·			
	$ U \text{ cm}^{-}  =$	I L   =	1000mL							
L		·····								
<u> </u>	• • • • • • • • • • • • • • • • • • • •						· · ·			
	· ·									
				•						
						· · · · · · · · · · · · · · · · · · ·				

<b>Dominguez Channel Bacterial Monitoring Data and Observation Sheet</b>
GPS Coordinates: 1/8/7.046 w Site ID: 29 33°51.695 N Date/Time: 6/18/02 905
Weather Information: Field Crew: C. Warn, L. Ngugen, J. Erickson
Light Conditions: Sunny Overcast Partly Cloudy
$\frac{\text{Last Rain:}}{19.46 \text{ CL}} < 72 \text{ hours} < 3 \text{ hours} \frac{\text{Precipitation:}}{10.46 \text{ CL}} < 0.1 < 0.1$
Site Description:       Location:       Image       Site Description:       Image       I
Flow Estimation: Flow Yes / No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No
Area X Velocity (creek / channel) Volume (m) / Filling a Bottle Area X Velocity (pipe) Volume (m) / Pine Diameter (ft/m)
2. Depth (cm - $(t - jn)$ <b>3 2</b> . Time (sec) <b>2</b> . Depth
3. Velocity (cm - ft - in / sec) $0.37 d_{0.7}$ 3. Velocity
4. Flow 13. 32ft3/s ***See formula on back ***See formula on back
Visualar   Photo Tokon: (vo)/no Poll#/Pio# //)5
Odor Chemical Sewage Rotten Eggs None/Other
Color Greyish Greenish Browish None Other
Clarity Clear Cloudy Other
Floatables Oily / Rainbow Trash Bubbles None Other
Vegetation Limited Extensive None/Other
Biology Mosquitos Algae Snails / Fish None Other Dwalde
Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0.Nono% Organic (food)1.Light (<5)% Plastics (cups, straws, bags, wrappers,2.Moderate (6-10)bottles, junk)3.High (11-25)% Recyclables-not plastic (paper, glass4.Somewhat Dense (26-50)bottles, metal)
5. Dense (>50)% Large items (appliances, cars, tires)
Drain Assocaited Algae:       Algae outside of flow?: (yes/ho)       Other Observations:         Algae coverage (circle):       Algae outside of flow?: (yes/ho)       Fish: yes no         0. None       Snails: yes no       Snails: yes no         1. < 5%       Main algae type:       Birds: yes no         2. < 5-25%      % film algae       Other:         2. < 5-25%      % film algae       Other:
3.     23-50%     Indificience       4.     50-75%     Source       5.     > 75%
*Field Water Temp (°C) 25.2 Conductivity mS / uS (Circle appropriate units) Screening pH (pH units) 7.36 Conductivity mS / uS (Circle appropriate units)
*Laboratory       Fecal Coliform       (MPN)       E.Coli       (MPN)         Analysis       Enterococcus       (MPN)       Total Coliform       (MPN)
Lab Samples taken Yes / No Bottle ID#'s
Comments Luteral on Southeast Dankot Don, Chunnel

<b></b>							· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	• -	· · ·
		Calcul	ating the	e Area (s	i) of the	<b>Cross Se</b>	ection	of a Circu	lar Pipe	
· .	· · · · ·			FI	owing Pa	artially I	Tull			
		e e e e e e e e e e e e e e e e e e e	, in the second s			· · · · · · · · · · · · · · · · · · ·			·	
$D = \Gamma$	Denth of wat	er a	= area of w	ater in partia	lly filled nin	e				
d = d	iameter of th	ne nine T	a = Tabulate	ed Value		•	Ther	n a = Ta <b>*d2</b>		
		·· r·r·								
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.019	2 0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.081	7 0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.162	3 0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.254	00.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.352	7 0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.452	0 0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.550	0 0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.640	0 0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.719	0 0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.775	0   0.7790	0.7820	0.7840
1.1953	AREA x	VELOCI	TY	IME RE	QUIRED	I.O FILE2	4     Al	(EA X VEL(	JCHY	
		- 10		KNOWN	YOLOME					
C	RFFK/CHA	NNEI ME	тнору	(FILL A B	OTTLE M	ETHOD)		(PARTIALL	Y FILLED	PIPE)
Contract Contract				2007 State State State State Of State of Pro-	and an electric color and an ender state	( Ar verille der der Ansterner	2,9,2% (6) (1) (2) (2) (2)			. Market and a street of the second street of the second second second second second second second second second
a. t	Measure the w he water.	idth, depth, and	i velocity of	I. De sample	termine volum bottle.	e/capacity of the	e    1)	All measurement common unit befo	must be convert ore calculation (	ed to a ft, in, or cm).
b.	Convert each v	alue to a comm	non unit (i.e.	2. Me	easure time req	uired to fill the	2)	Let D = water dep	oth.	
Į	all measuremen	nts converted to	o cm, ft, or	bo	ttle,		3	Let $d = inside$ nin	e diameter	
	<i>.</i>		ĺ	3. Flo	w will be deter	mined by initia	d    57	Der u mojue pip	e dianeter	
	Multiply the w	idth * denth * 1	velocity to	vo	lume units:		4)	Calculate D/d.		
С.	determine flow	iam · depui · v	velocity to	•	mL/s		5)	Find the tabulated	l (Ta) value on t	he partially
4	Multiply the fl	ow hu 0 9 for a	rook	•	oz/s			filled pipe form	la chart above u	sing the D/d
u.	measurements	-or 0.9 for co	oncrete	4. Co	nvert to desired	i value.		value. (i.e. ii D/		a = .1023).
	channel measur	rements to acco	ount for				4			
	channel rought	iess.					6)	Find the area usin	g the formula	
	The							$a = Ta^*d^2.$	• •	
e.	The results II n	leasured in					7)	Multiply area (a)	by the water vel	ocity.
•	$Ft = Ft^3/sec$						0)	Convert to desire	- Lucius	
	$cm = cm^{-}/sec$ ( in = in <sup>3</sup> /sec	mL/sec) .					0,	Convent to desired	J value.	
										, ,
t.	Convert to desi	red value.					·			······
SA	E / Metric	Unit Conve	rsion							
0.0	83 ft =	1  in  =	= 2.54 cm							
0.1	$337 \text{ ft}^3 =$	l gal =	= 128 oz							
		=	3.785 L							
0.0	078 gal =	1 oz =	0.0011 ft	3						
100	$00 \text{ cm}^3 =$	1L =	1.000mL			4				
L			···						<u> </u>	
L		· · · ·		······································		·				•

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Dominguez Channel Bacterial Monitoring Data and Observation Sheet	
GPS Coordinates: $118 16 306$ W Site ID: $30$ 33 51.331 N Date/Time: $6/18 102$ /Dx D	-
Weather Information: 50, 893 Field Crew: C. Warn, L. Nguben, J. Erickson	-
Light Conditions: Last Rain:Sunny > 72 hoursOvercast < 72 hours	
Site Description: Location: Main St. Brilge - Colverton SC Dunk Lateral Swofmain Stones (Earthen Drainage) Concrete Channes Outfall Manhole Catchbasin Other Sox Colvert	<u>Ø</u> S
Flow Estimation: Flow Yes / No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No	
Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)1.Width (cm - $(ff)$ - in)1.Volume (mL - L - oz)1.Pipe Diameter (ft/in)2.Depth (cm - $(ff)$ (in) $4 = 33 + 1$ 2.Time (sec)2.Depth	)
3.     Velocity (cm ft in / sec)	
4. Flow 1.65ft <sup>3</sup> /s ***See formula on back ***See formula on back	
Visuals:     Photo Taken:     yes     no     Roll#/Pic#     //     Draw sample location if no photo       Odor     Chemical     Sewage     Rotten Eggs     None/Other     Draw sample location if no photo	<u>0:</u>
Color Greyish Greenish Browish NoneOther	
Clarity     Clear     Cloudy     One/Other       Floatables     Oily / Rainbow Trash     Bubbles     None/Other       Vegetation     Limited     Extensive     Volt row       Biology     Mosquitos     Algae     Snails	
Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)1. Light (<5)% Plastics (cups, straws, bags, wrappers,2. Moderate (6-10)% Plastics (cups, straws, bags, wrappers,3. High (11-25)% Recyclables-not plastic (paper, glass4. Somewhat Dense (26-50)% Large items (appliances, cars, tires)	
Drain Assocaited Algae:       Algae outside of flow?: (yes / no)       Other Observations:         Algae coverage (circle):       Algae outside of flow?: (yes / no)       Snails: yes       no         0. None       Main algae type:       Birds: yes       no         1. < 5%      % film algae       Other:          2. 5-25%      % film algae       Other:          3. 25-50%      % turf algae       Other:          4. 50-75%      %macroalgae       Evidence of dumping: yes	
* <u>Field</u> Water Temp (°C) <u>4.6</u> Screening pH (pH units) Conductivity $10.47$ (S) / uS (Circle appropriate units)	
*Laboratory AnalysisFecal Coliform Enterococcus(MPN)E.Coli (MPN)(MPN)*Laboratory AnalysisEnterococcus (MPN)(MPN)(MPN)	
Lab Samples taken Yes/No Bottle ID#'s Comments Lateral flowing through Victoria County Golf Course, between Main C Observations Auchan upstream of Oct And Bridge Construction	-
Flow, stunning unter convete n'y capon site of pom. Chanet	

ſ				i dan sami da	<u> </u>	0 0			<u> </u>	e In the State	
	· •	Calcul	ating the	e Area (a	) of the	Cross Se	ctio	n of	a Circu	lar Pipe	
				FI	owing Pa	artially I	full				
	÷				e Alexandre alexandre					- 	
D = I	Depth of wat	er a	= area of w	ater in partia	lly filled pip	e					
d = d	iameter of th	ne pipe – T	`a = Tabulat	ed Value		,	Th	en a =	= Ta*d2	·	
					- W 4- M. M	<del></del>			·····		
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.0	6.	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.01	92	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.08	17	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.16	23	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.25	40	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.35	27	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.42	20	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.53	00	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.0320	0.64	00	0.6490	0.6570	0.6660
0.8	0.0740	0.0810	0.0890	0.0970	0.7040	0.7120	0.71	90	0.7250	0.7320	0.7360
0.9	0.7430	0.7300	0.7300	<u>0.7010</u>		TOFU	10.77 孫国公太	<u> </u>			0.7840
and the second	AKEAX	VELOCI	1 Y	KNIOWN	VOLUME					<b>ALL I</b>	
					KOLOMIT						en Maria de la
(C)	REEK/CHA	NNEL ME	THOD)	(FILL A B	<b>OTTLE M</b>	ETHOD)		• ~ (F	ARTIALL	YFILLED	PIPE)
	<b>)</b> (	:		L Day		- /:•			· · · · · · · · · · · · · · · · · ·		•
a. t	he water.	idin, depin, and	velocity of	sample	bottle.	e/capacity of the		Ç01	nmon unit befo	re calculation (	ed to a ft, in, or cm).
b.	Convert each v	alue to a comm	non unit (i.e.	2. Me	asure time requ	uired to fill the	2)	Le	t D = water dep	th.	
	in.).		, <b>c</b> ini, ii, ci				3)	Let	t d = <i>inside</i> pipe	diameter	
				3. Flo vol	w will be deter ume units:	mined by initia	1 1 4)	Ca	Iculate D/d		
<b>c</b> .	Multiply the w	idth * depth * v	elocity to								
	determine flow	·.		• •	mL/s		5	) Fir fi	nd the tabulated	(Ta) value on t la chart above u	he partially sing the D/d
d.	Multiply the flo	ow by 0.8 for c	reek					va	alue. (i.e. if D/d	l = 0.263 then T	`a =.1623).
	measurements channel measure	-or 0.9 for co rements to acco	ount for	4. Co	nvert to desired	l value.	L		·····		
	channel rought	iess.									
							6)	Fin	id the area using a = Ta*d <sup>2</sup>	g the formula	
e.	The results if m	neasured in									
	$Ft = Ft^3/sec$						7)	Мι	iltiply area (a) b	y the water vel	ocity.
•	$cm = cm^3/sec$ (1	mL/sec)					8)	Co	nvert to desired	value.	
•	$in = in^3/sec$										
f.	Convert to desi	red value.									
											······································
SA	E / Metric	Unit Convei	rsion								
	$\frac{83 \text{ft}}{227 \text{e}^3} =$	1 m  =	2.54 cm								
0.1	337 ft   -		3 785 1					`	·		
	079 and =	1.07 =	0.0011 0	3							
	$0.70 \text{ gar} = 0.00 \text{ cm}^3$	102 - 11	1000mL								
						•					
!											•
L <u>a</u> .		<u> </u>					<u>-</u>			·····	
									4		
										•••	

• : 2. -

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	<b>Dominguez Channel Bacterial Monitoring Data and Observation Sheet</b>
No. of Street	GPS Coordinates: 118 16,055 W Site ID: 31
No.	Weather Information: Weather Information: Field Crew: L. Ngugen, C. Warn, J. Erickson
	Light Conditions:SunnyOvercastPartly CloudyLast Rain:72 hours< 72 hours
	<u>Site Description:</u> Loention: Lateral Dewastrement Del Amo Brilie Construction - East Jide Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other
eri Mer	Flow Estimation: Flow Yes No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No
£25333	Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)1.Width (cm - ft - in) $2 - 47 = 20$ $25 + 11$ Volume(mL - L - oz)1. Pipe Diameter (ft/in)2Depth (cm - ft - in) $3/4/7 = 20625 + 25$ Time(sec)2. Depth
	2.       Depin (cm + t + m) $(-f) = f$ 3.       Velocity (cm - ft - in / sec) $(0,5)$ 4.       Flow $(a_2, f \downarrow 3/c)$ ***See formula on back
anoleen) Demole	Visuals:     Photo Taken:     (es) no     Roll#/Pic#     1/2 3       Draw sample location if no photo:
	Odor     Chemical     Sewage     Rotten Eggs     None/Other       Color     Grevish     Greenish     Browish     None/Other       Clarity     Clear     Cloudy     Other
	Floatables     Oily / Rainbow     Trash     Bubbles     None/Other       Vegetation     Limited     Extensive     None/Other
	Biology Mosquitos Algae Snails / Fish None/Other
	0. None      % Organic (food)         1. Light (<5)      % Plastics (cups, straws, bags, wrappers, bottles, junk)         3. High (11-25)       / 0 % Recyclables-not plastic (paper, glass
	4. Somewhat Dense (26-50)       bottles, metal)         5. Dense (>50)      % Large items (appliances, cars, tires)
	Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes / no)Other Observations: Fish: yes no Snails: yes no Birds: yes no0.None NoneMain algae type:Birds: yes no Birds: yes no
	2.5-25%—% film algaeOther:3.25-50%% turf algaeNumber of homeless:Ø4.50-75%%macroalgaeEvidence of dumping:yes5.> 75%%macroalgaeNumber of homeless:Ø
States and a second	* <u>Field</u> Water Temp (°C) $27.7$ Conductivity $10.98$ mS/ uS (Circle appropriate units) <u>Screening</u> pH (pH units) $9.57$
	*Laboratory       Fecal Coliform       (MPN)       E. Coli       (MPN)         Analysis       Enterococcus       (MPN)       Total Coliform       (MPN)
	Lab Samples taken (Yes) No Bottle ID#'s Comments
Carrie 1	Observations

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full , t

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D = D	Depth of wat	er a	= area of wa	ater in partia	ly filled pip	e				
d = d	iameter of th	e pipe – T	a = Tabulate	ed Value			Then a =	= Ta*d2		
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627.	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
	AREA x	VELOCI	ТҮ	TIME RE	QUIRED.	TO FILL /	4 <b>ARE</b>	A x VELC	)CITY	
			TT .	KNOWN	VOLUME					
		a daga sa		(FILT A B		TUON	- Про страници и страни Страници и страници и ст Страници и страници и стр	ARTIALL	YFILLED	PIPFI
<u>(C</u> )	REEK/CHA	NNEL ME	THOD)			LI HODJ				
a. . t	Measure the w he water.	idth, depth, and	velocity of	1. Det sample	termine volume pottle.	c/capacity of the	e   1) All cor	measurement r nmon unit befo	nust be convert re calculation (	ed to a ft, in, or cm).
b.	Convert each v	alue to a comm	ion unit (i.e.	2. Me	asure time requ	ired to fill the	2) Let	D = water dep	th.	
	in.).		,,				3) Let	: d = inside pipe	e diameter	
				3. Flo	w will be deter	mined by initia		loulate D/d		
C.	Multiply the w	idth * depth * v	elocity to	VOI	une units.			iculate D/d.		
	determine flow			• •	mL/s	,	5) Fin	d the tabulated	(Ta) value on t	he partially
d.	Multiply the fle	ow by 0.8 for c	reek	• •			. va	ilue. (i.e. if D/c	I = 0.263 then T	a = .1623).
	measurements	-or 0.9 for co	ncrete	4. Co	nvert to desired	value.			1	
	channel rought	ienenis to acco								
-							6) Fin	d the area using $a = Ta^*d^2$ .	g the formula	
e.	The results if $\Pi$	easured in				•	7) Mu	ltiply area (a) b	by the water vel	ocity.
•	rt = rt/sec $cm = cm^{3}/sec$ ( $in = in^{3}/sec$	mL/sec)					8) Co	nvert to desired	value.	-
f.	Convert to desi	red value.								
· · · · · · · · · · · · · · · · · · ·							· · · · · · · · · · · · · · · · ·		·····	
SA	E / Metric	Unit Conve	rsion	·						
0.0	83 ft =	<u>  1 in   =</u>	2.54 cm	<sup>•</sup> ]						
0.1	$337 \text{ ft}^3 =$	1 gal   =	128 oz			,				
			3.785 L	-						
	0.78  gal =		0.0011 ft							
	$00 \text{ cm}^{-1}$ =	<u>  L  =</u>	TUOOML	]					•	
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		···								]
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<u> </u>							· · · · · · · · · · · · · · · · · · ·			

Dominguez Channel Bacterial Monitoring Data and Observation Sheet	
$GPS Coordinates: \frac{118}{72.55} \frac{16.055}{74.5} W$ Site ID: 31	
$\frac{3530,743}{N} N \qquad Date/Time: \frac{0}{18} \frac{1}{02} \frac{1}{035}$	
Weather Information: Field Crew: L. Nguken, C. Warn, J. Erickson	<del>.</del>
Light Conditions:         Sunny         Overcast         Partly Cloudy           Last Rain:         72 hours         < 72 hours	<b>``</b>
<u>Site Description:</u> Loention: Lateral Powerteenst DelAmo Brilse Construction - East Jide Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other	
Flow Estimation: Flow Yes)No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No	
Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe1.Width (cm - ft - in) $247 = 20.25$ ft 1.Volume(mL - L - oz)1.1.Pipe Diameter $(ft/2)$ 2. $3414^{1/2} = 0.125$ ft 1.The second se	:) 'in)
2. Depth (cm - ft - in) $\frac{777}{2}$ $\frac{7002572}{2}$ . Time (sec) 2. Depth	
4.       Flow	
Demical Sewage Rotten Eggs NoneOther	<u>ioto:</u>
Color Grevish Greenish Browish None/Other Ve //2	
Clarity Clear Cloudy Other	•
Electables Oily / Rainbow Trash Bubbles None/Other	
Vegetation Limited Extensive None/Other	
Biology Mosquitos Algae Snails / Fish None/Other	
<u>0.</u> None <u>1 rash in vicinity of Drain (Circle):</u> <u>1 vpe: (% of number not total volume of items):</u> <u>0.</u> None <u>%</u> Organic (food)	
(1.) Light (<5)%Plastics (cups, straws, bags, wrappers, bottles iunk)	
3. High (11-25) $\sqrt{0.0}$ Recyclables-not plastic (paper, glass	
4. Somewhat Dense (26-50) bottles, metal) 5. Dense (>50) % Large items (appliances cars tires)	
Drain Assocaited Algae: Algae coverage (circle) Algae outside of flow?: (ves / no) Fish: ves (no)	
0. None Snails: yes no	•
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	
3. 25-50%% turf algae Number of homeless:	
4. 50-75%%macroalgae Evidence of dumping: yes (no)	
* Field Water Temp (°C) $27.7$ Conductivity $10.98$ mS/ uS (Circle appropriate units) Screening pH (pH units) $9.57$	
*Laboratory       Fecal Coliform       (MPN)       E.Coli       (MPN)         Analysis       Enterococcus       (MPN)       Total Coliform       (MPN)	
Lab Samples taken (Yes) No Bottle ID#'s	
Comments	Sheet Sheet Kaon < 0.1" e Yes / No ocity (pipe) (ft/in) ack on if no photo: MPN) MPN) MPN)
Observations	

Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

					- 					
D = [	Depth of wat	er a	= area of wa	ater in partia	lly filled pip	e			······································	
d = d	iameter of th	ie pipe T	a = Tabulate	ed Value			Then a =	= Ta*d2		
						·				
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623 (	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0:7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
	ARÉA x	VELOCI	TY	TIME RE	QUIRED	TO FILL /	4     ARE.	A x VELO	OCITY.	
		200 - CO	11. N.Y.	KNOWN	VOLUME					
	OPPR/CITA	NNEL ME	THODY	(FILL A-B	OTTLE M	ETHOD)	·    · · · (P	ARTIALL	Y FILLED	PIPE)
୍ଥାଙ୍କ	KEEN/CHA	VNINISIZAVIU	που		1955-09-1990-06-1990 		<u> 1988 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998 - 1998</u>			
a. • t	Measure the with he water.	idth, depth, and	velocity of	I. De sample	termine volume bottle.	e/capacity of th	e   1) All . cor	measurement in mon unit befo	must be convert re calculation (	ed to a ft, in, or cm).
b.	Convert each v all measuremer	alue to a comm	ion unit (i.e.	2. Me bol	asure time requ tle.	uired to fill the	2) Let	D = water dep	th.	
	in.).						3) Lei	t d = inside pipe	e diameter	ĺ
				3. Flo	w will be deter	rmined by initia	4) Ca	Iculate D/d		
c.	Multiply the w	idth * depth * v	elocity to				.,			
	determine flow	<b>'</b> .	ĺ	•	(Ta) value on t	he partially sing the D/d				
d.	Multiply the flo	ow by 0.8 for c	reek	•			va va	alue. (i.e. if D/c	1 = 0.263 then 7	°a =.1623).
	measurements	-or 0.9 for co	ncrete	4. Co	nvert to desired	l value.			1	
	channel roughr	iess.	All IOI							
		,				. • .	6) Fin	d the area using $a = T a^* d^2$	g the formula	
e.	The results if n	neasured in				•		a – Ta·U.		
							7) Mu	ltiply area (a) l	by the water vel	ocity.
•	rt = rt/sec $cm = cm^3/sec$ (	mL/sec)					8) Co	nvert to desired	value.	
<b>.</b> •	$in = in^3/sec$					•		· ·		
f	Convert to desi	ired value								
				1	1		k			
SA	E / Metric	Unit Conve	rsion							
0.0	83 ft =	1 in =	2.54 cm						•	
0.1	$337 \text{ ft}^3 =$	1 gal =	128 oz							
	·····	=	3.785 L	<u></u> ]						
0.0	078 gal =	1 oz =	0.0011 ft							
100	$00 \text{ cm}^3$ =	<u>  L  =</u>	1000mL							
L			· · · ·	J						
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	Domir	nguez Cha	innel Bact	<u>erial Moni</u>	toring Data a	nd Observation Shee	<u>et</u>
	GPS Coordinate	s: 1/8/5 3350	. \$78 , 48l	W N	Date/Tim	site ID: 32 e: AFG 6/18/02 / AD	
	Weather Inform	ation:	· · ·	 Field	Crew: J. Enickso	m. C. Warn. L. Nauky	
	Light Conditions	s: Sunny	> Over	cast Partly	Cloudy	<u> </u>	
	Last Rain:	72 ho	ours < 72	hours < 3 h	ours <u>P</u>	recipitation: > 0.1"	< 0.1"
163) 1631	Site Description: Earthen Drainage	Concrete Ch	Torrace L nannel Outfa	uteral at A II Manho	<u>Don Chanel</u> De Catchbasii	n Other	
the state	Flow Estimation	Flow Yes	/ No / Ponded/T	rickle <u>Eviden</u>	ce of overland flow n	ear sampling location?: Yes / 1	No
	Area X 1. Width (	Velocity (creek (cm (ft )in)_/	/ channel) 	<b>Fillin</b> 1. Volume _	<b>g a Bottle</b> (mL - L - oz)	Area X Velocity 1. Pipe Diameter	( <b>pipe)</b> _ (ft/in)
	2. Depth (	cm - ft (in)	<u>7 = ,58ft</u>	2. Time _	(sec)	2. Depth	_'
	3. Velocit	y (cm -ft )in / se	ec)	4.1		3. Velocity	
ల	4. Flow	6.96ft3/s	· · ·	***See formu	la on back	***See formula on back	
	Visuals:	Photo Taken:	(yes) no	Roll#/Pic#	1/22	Draw sample location if n	o photo:
1	Odor d	Chemical	Sewage	Rotten Eggs	None Other MUST	Ly	
	Color	Greyish	Greenish	Browish	NoneOther		
63	Clarity (	Clear	Cloudy		Other	( `	
	Floatables	Oily / Rainbow	Trash	Bubbles	None/Other		
1	Vegetation	Limited	Extensive	•	None/Other/		
	Biology	Mosquitos	Algae	Snails / Fish	None/Other <u>Mollo</u>	11/21	
	<u>Trash In Vicinit</u> 0. None 1. Light (<5)	y of Drain (Ċirc	<u>cle):</u> <u>Type:</u>	% of number no % Organic (food) %Plastics (cups, support	<u>t total volume of items</u> traws, bags, wrappers,		
	3. High (11-25)	)	79	% Recyclables-no	t plastic (paper, glass		
	4. Somewhat D 5 Dense (>50)	ense (26-50)	<u> </u>	bottles, metal) % Large items (ap	pliances, cars, tires) J	lopping cuts	
23	Drain Assocaite	d Algae:	· · · · · · · · · · · · · · · · · · ·		Other Ob	servations:	<u> </u>
	Algae coverage (	circle):	Algae outside	of flow?: (yes / n	o) Fish: y Snails v	es no	
	1. < 5%		Main algae ty	pe:	Birds: y	es no	
5	2. 5-25% 3. 25-50%	, _	$\sim$ % film al	gae	Other:	f homeless:	
	4 50-75% 5. > 75%		%macroa	lgae	Evidence	of dumping: yes ho	÷
	* <u>Field</u> Screening	Water Temp (°C pH (pH units)	27,2 8.37	Conductivity_	//. ZZ(mS)/uS,	(Circle appropriate units)	
	* <u>Laboratory</u> <u>Analysis</u>	Fecal Coliform_ Enterococcus		(MPN) (MPN)	E.Coli Total Coli	(MPN) form(MPN)	
R.	Lab Samples tal	ken (Yes)/N	lo Bottl	e ID#'s		· · · · · · · · · · · · · · · · · · ·	
	Comments Observations	Wate A	lowing lown	stream (mys	by at a, ffle	e - may be old the	lengter
			· · · · · · · · · · · · · · · · · · ·	1			

 $\{ P_i \}_{i \in I}$ 

				·		·····	<del> </del>	· · · · · · · · · · · · · · · · · · ·		
		Calcul	ating the	e Area (a	) of the	<b>Cross Se</b>	ection of	'a Circu	lar Pipe	
	· · · · ·			FI	owing P	artially l	Bull			
				A						
) = [	Depth of wat	er a	= area of wa	ater in partia	lly filled pip	e	<u> </u>	- <u>,</u>	······································	
= d	iameter of th	ne pipe 7	ra = Tabulate	ed Value			Then a =	= Ta*d2		
							-	<u></u>		
)/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
.9 Kasa	0.7450	0.7500	0.7560	U./010		10.7/10				0.7840
	AREA x	VELOCI	ITY	INC KE	POINED			AX VELU	JULII	Ciel in
		$M_{\rm eff} = M_{\rm eff}$		. WWOWN	NOLOME	14. S.		- 262 - 25	s frei fier	
(C	ŔEEK/CH/	NNEL ME	THOD)	(FILL A B	OTTLE M	ETHOD)	_    (F	PARTIALL	Y FILLED.	PIPE).
с. с. d.	Convert each v all measurements in.). Multiply the w determine flow Multiply the flow measurements channel measu channel rought The results if n Ft = Ft <sup>3</sup> /sec cm = cm <sup>3</sup> /sec ( in = in <sup>3</sup> /sec	ratue to a comm ints converted to idth * depth * -or 0.9 for co rements to acco neasured in mL/sec) ired value.	non unit (i.e. o cm, ft, or velocity to preek ount for	2. Me bo 3. Fic vol • • 4. Co	will be deter ume units: nL/s oz/s nvert to desired	uired to fill the rmined by initia d value.	<ul> <li>2) Le</li> <li>3) Le</li> <li>4) Ca</li> <li>5) Fir fi va</li> <li>6) Fir</li> <li>7) Ma</li> <li>8) Co</li> </ul>	t D = water dep t d = <i>inside</i> pip- lculate D/d. ad the tabulated lled pipe formu- alue. (i.e. if D/d- alue. (i.e. if D/d- alue. area usin a = Ta*d <sup>2</sup> . altiply area (a) l nvert to desired	be calculation ( (Ta) value on the formula of the formula of the formula of the water velocities of the formula of the formula of the water velocities of the formula of the water velocities of the formula of the water velocities of the water	the partially using the D/d Ta = 1623).
SA 0.0 0.1	$\begin{array}{c c} \mathbf{E} / \mathbf{Metric} \\ \hline 83 \ \mathbf{ft} \\ \hline 337 \ \mathbf{ft}^3 \\ \hline 60 \\ \hline 60 \\ 78 \\ \mathbf{gal} \\ 60 \\ 78 \\ \mathbf{rs} \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 \\ 78 $	Unit Conve	ersion = 2.54 cm = 128 oz = 3.785 L = 0.0011 ft = 1000mL	3						•
			· .			· · · · · · · · · · · · · · · · · · ·				

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Do	minguez Channel Bacterial Monitoring Data and Observation Sheet
GPS Coore	dinates: $\frac{118}{73}$ / $\frac{16}{50}$ / $\frac{766}{50}$ w Site ID: $\frac{33}{73}$ Date/Time: $\frac{0}{9}$ / $\frac{93}{1125}$
Weather I	nformation: Field Crew: C. Warn, L. Nguden, J. Eri (KSM)
Light Cone Last Rain:	ditions:         Sunny         Overcast         Partly Cloudy           22 hours         < 72 hours
Site Descri Earthen Dr	iption: Location: Action & Anter O Min Jt ainage Concrete Channel Outfall Manhole Catchbasin Other
Flow Estin	nation: Flow (Yes) No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No
An 1. V	rea X Velocity (creek / channel)Filling a BottleArea X Velocity (pipeVidth (cm - ft - (n) $64 = 5.33$ ft 1. Volume (mL - L - oz)1. Pipe Diameter (ft/iDorth (cm - ft (n) $7/8 = 5.71$ ft 2. Time (sec)2. Denth
3. ··· V	/elocity (cm - ft - in / sec)
4. F	'low .377 fl3/5 ***See formula on back ***See formula on back
<u>Visuals:</u> Odor	Photo Taken: yes/no Roll#/Pic# 1/2 Draw sample location if no ph Chemical Sewage Rotten Eggs None/Other
Color	Grevish Greenish Browish None/Other Yollow, h
Clarity	Clear Cloudy Other
Floatables Vegetation	Limited Extensive NoneOther
Biology	Mosquitos Algae Snails / Fish None Other
Trash In V	Vicinity of Drain (Circle): Type: (% of number not total volume of items):
1. Light (	(<5) $50$ % Organic (1000) $50$ % Plastics (cups, straws, bags, wrappers,
2. Moder 3. High (	ate (6-10) 11-25) $\underline{J^{b}}_{\infty}$ Recyclables-not plastic (paper, glass
4.) Somev 5. Dense	what Dense (26-50)bottles, metal)(>50)% Large items (appliances, cars, tires)
Drain Ass	ocaited Algae: Other Observations:
Algae cove 0. None	rage (circle): Algae outside of flow?: (yes / no) Fish: yes No Snails: yes D
<ul> <li>5%</li> <li>5-25%</li> </ul>	Main algae type:
3. 25-509	%% turf algae Number of homeless:
$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	by idence of dumping. yes ino
* <u>Field</u> Screening	Water Temp (°C) 29.8 Conductivity 67 47 mS / 15 Circle appropriate units) pH (pH units) 27.05 1097
* <u>Laborato</u> Analysis	rryFecal Coliform(MPN)E.Coli(MPN)Enterococcus(MPN)Total Coliform(MPN)
Lab Samp	les taken Yes No Bottle ID#'s

# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

-201

									<u> </u>		
D = I	Depth of wat	er a	= area of wa	ater in parti	ally filled pip	e					
d = d	iameter of th	ne pipe 7	'a = Tabulate	ed Value			Then a	a = Ta*d2			
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	
0.0	0.00	0.0013	0.02	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350	
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039	
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	(0.1623	0.1711	0.1800	0.1890	
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836	
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827	
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720 .	0.4820	
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780	
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660	
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360	
0.9	0.7450	0.7500	0.7560			0.7710	0.7750	0.7790	0.7820	0.7840	
	AREA x	VELOCI	TY	TIME R	LVOLUME	IO FILL?	4   AR	LAXVLLU	JCI I Y		
	1997			MINOWA MINOWA	, VOLUME						
(C)	REEK/CHA	NNEL ME	THOD)	(FILL A	BOTTLE M	ETHOD)		(PARIIALL	Y FILLED.	FIFF)	
a.	Measure the w	idth, depth, and	l velocity of	1. Samp	etermine volume le bottle.	e/capacity of th	e   1) /	All measurement common unit befo	must be convert are calculation (	ed to a ft, in, or cm).	
b.	Convert each v all measuremer	alue to a comm	non unit (i.e. cm, ft, or	2. <u> </u>	Measure time required to fill the ottle.			2) Let D = water depth.			
	in.).			2 1	low will be deter	وتغاسب المرد تسافيه	3) 1	Let d = inside pipe	e diameter		
				з. т v	olume units:	mined by mills	" (4) (	Calculate D/d.			
C.	Multiply the w determine flow	idth * depth * v	elocity to		ml /s		5	Find the tabulated	(Ta) value on t	he nartially	
				•	oz/s			filled pipe formu	la chart above i	ising the D/d	
d.	Multiply the flo measurements	ow by 0.8 for c -or 0.9 for co	reek ncrete	4	onvert to desired	l value `		value. (i.e. if D/	d = 0.263 then 1	fa = 1623).	
	channel measu	rements to acco	ount for								
	channel roughr	iess.					6) 1	Find the area usin	g the formula		
	The results if m	easured in						$\mathbf{a} = \mathbf{T}\mathbf{a}^*\mathbf{d}^2.$	-		
С.	Flic festilis fr fr	icasurcu ili	,		•		7)	Multiply area (a) ł	by the water vel	ocity.	
•	$Ft = Ft^{3}/sec$	ml /sec)					8) (	Convert to desired	I value.		
•	$in = in^3/sec'$	111 <u>2</u> 300)		•		·					
f. (	Convert to desi	red value.				•					
		· · · · · · · · · · · · · · · · · · ·			:			<u></u>			
SA	E / Metric	Unit Conve	rsion								
	$\frac{83 \text{ ft}}{227  0^3} =$	l in $ $ =	2.54 cm		ĺ						
	$55/\pi$ =		128 OZ			•					
0.0	078 gal =	1  oz =	0.0011 ft	3							
100	$0 \text{ cm}^3 =$	1 L =	1000mL								
									~		
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			•								
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			······································	······································				·		·····	

					······	·····	·	
	<u>Domin</u>	<u>guez Channe</u>	<u>l Bacteria</u>	<u>l Monit</u>	oring Data a	and Obs	ervation	Sheet
GP	'S Coordinates eather Informa	: <u>//8 /4,5</u> <u>33 49,44</u>	<u>36     w</u> 1 <u>4        n</u>	Field C	Date/Ti rew: <u>L. N<b>q</b>u<b>y</b> c</u>	me: <u>6/18/0</u> n, J.Er	Site ID: 34 2 /11-14 ickson (	2. Wary
Lig	ght Conditions	: Summy	Overcast	Partly	Cloudy J J			
	st Rain:	2 > 72 hours	< 72 hours	< 3 hou	irs	Precipitation	<u>1:</u> > 0.1"	< 0.1"
Site	e Description:	Location: At	Wilmingtor	1223 ro	St. South	east Othe		
Ear	rthen Drainage		Outlast		<u>e</u> Catenoa			
Fie	WEstimation: Area X V	Flow Yes/No/ /elocity (creek/chan	Ponded/Trickle	<u>Evidenc</u> Filling Volume	a Bottle	near samplin	g location?: Area X V	elocity (pipe)
	Depth (c	m - fr = in)	2.	Time	(sec)	2, D	Depth	(*****
¥ 3.	Velocity	(cm - (ft - ) in / sec)	15 20		· · · ·	3. V	/elocity _	
4.	Flow	136.8 f13/5	× ,**	*See formula	a on back	***(	See formula on	back
	suals:	Photo Taken: yes	no Ro	11#/Pic# _ ]	20	<u>Dra</u>	w sample loca	tion if no photo:
Od Co Cla Flo	lor blor arity patables	Chemical Sew Grevish Gre Clear Clou Oily/Rainbow Tra:	rage Ro enish Br udy sh Bu	owish nge	None/Other None/Other Other None/Other	Algal		<b>x</b> ,
Ve Bio <u>Tr</u> 0. 1. 2. 3.	egetation ology rash In Vicinity None Light (<5) Moderate (6- High (11-25)	Limited Ext Mosquitos Alg of Drain (Circle): 10)	ensive ae Sn <u>Type: (% of</u> <u>% Org</u> <u>75</u> %Plass bott <u>5</u> % Rec	ails / Fish number not anic (food) tics (cups, str les, junk) yclables-not	None/Other None/Other total volume of ite aws, bags, wrappers plastic (paper, glass	<u>ms):</u> <sup>5</sup> ,		
5	Somewhat Do Dense (>50)	ense (26-50) along Shore	bot % Lar	tles, metal) ge items (app	liances, cars, tires)			
	rain Assocaited Igae coverage (c None 55% 5525%	l Algae: circle): Alg Ma	ae outside of flo in algae type: _% film algae	w?:(yes/)no	) Fish: Snails: Birds: Other:	yes no yes no yes ho	)	
4.	23-30% 50-75% > 75%		<u>v</u> /o turi aigae _%macroalgae		Evidenc	e of dumping:	yes nd	
* <u>F</u> 	Field Screening	Water Temp (°C) 29 pH (pH units) 5	3, 2 co	onductivityS	altwaterms /1	IS (Circle app)	ropriate units)	•
* <u>I</u>	Laboratory Analysis	Fecal Coliform Enterococcus	(	(MPN) MPN)	E.Coli_ Total C	oliform		_(MPN) _(MPN)
	ab Samples tak omments bservations	sen (Yes) No Sampling	Bottle ID#	's	· · · · · · · · · · · · · · · · · · ·			

# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

D = [	Depth of wat	er a	= area of w	ater in partial	ly filled pip	e				
_d = d	iameter of th	ne pipe – T	a = Tabulate	ed Value			Then a =	= Ta*d2		,
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
(C)	AREA x reek/ch4	VELOCI	TY THOD)	TIME REG KNOWN (FILL A BO	DUIRED OLUME ITTLE M	<i>TO FILL 2</i> ETHOD)	ARE (I	A x VELO ?ARTIALL	OCITY Y FILLED	PIPE).
a. ti b. c. d. e. f.	Measure the w he water. Convert each v all measurement in.). Multiply the w determine flow Multiply the fl measurements channel measu channel rough The results if n Ft = Ft <sup>3</sup> /sec cm = cm <sup>3</sup> /sec ( in = in <sup>3</sup> /sec	idth, depth, and value to a comm nts converted to idth * depth * v ow by 0.8 for c -or 0.9 for co rements to acco ness. neasured in mL/sec) ired value.	I velocity of non unit (i.e. o cm, ft, or velocity to reek morete punt for	<ol> <li>Detessample</li> <li>Meabott</li> <li>Meabott</li> <li>Flow volu</li> <li>n</li> <li>0</li> <li>4. Com</li> </ol>	ermine volume bottle. sure time requ le. will be deten me units: nL/s z/s vert to desired	e/capacity of the uired to fill the rmined by initia 1 value.	e 1) All col 2) Le 3) Le 4) Ca 5) Fir fi vi 6) Fir 7) Ma 8) Co	I measurement i mmon unit befo t D = water dep t d = <i>inside</i> pipe dculate D/d. ad the tabulated lied pipe formu alue. (i.e. if D/c ad the area using a = Ta*d <sup>2</sup> . ultiply area (a) to nvert to desired	nust be convert re calculation ( th. diameter (Ta) value on t la chart above u i = 0.263 then T ] g the formula by the water vel value.	ed to a ft, in, or cm). he partially ising the D/d ?a = 1623). ocity.
<b>SA</b> 0.0 0.1 0.0 100	<b>E / Metric</b> 83 ft = 337 ft <sup>3</sup> = 078 gal = $00 \text{ cm}^3$ =	Unit Conve 1 in = 1 gal = 1 oz = 1 L =	rsion 2.54 cm 128 oz 3.785 L 0.0011 ft 1000mL	3			•			
									·	

 $\left( \begin{array}{c} \\ \\ \\ \\ \\ \\ \end{array} \right)$ 

Doi	minguez Cha	nnel Bacter	ial Monit	oring Data and	l Observatio	n Sheet
GPS Coordi Weather Inf	inates: <u>  8  4</u> ; <u>33 49</u> ; formation:	540 <u>.</u> 443	V N Field C	Date/Time:_ Crew:_J.EriUSOA,	Site ID: 3 6/18/02 H C. Warn, L. N	5 44 1200 Jgugen
Light Condi Last Rain:	itions: Sunny	Overcast	rs $< 3$ ho	Cloudy urs <u>Prec</u>	cipitation: > 0.1"	< 0.1"
Earthen Drai	ation: Flow Yes	nannel Outfall	Manho de <u>Eviden</u>	le Catchbasin	Other	Yes /No
Are           1.         Wi           2.         De           3.         Ve           4.         Flor	ea X Velocity (creek idth (cm - ft) in) epth (cm - ft) in) elocity (cm - ft) in / s ow $256.5 ft^{3/3}$	/ channel) <u>14</u> <u>5</u> ec)_0,15 up ¥flow.	Filling 1. Volume 2. Time ***See formul (~.d at	g a Bottle (mL-L-oz) (sec) la on back f h is point or	Area X 1. Pipe Diamete 2. Depth 3. Velocity ***See formula	Velocity (pipe) r (ft/in) 7 on back
Visuals: Odor Color Clarity Floatables Vegetation Biology	Photo Taken: Chemical Greyish Clear Oily / Rainbow Limited Mosquitos	yes no Sewage Greenish Cloudy Trash Extensive Algae	Roll#/Pic# Rotten Eggs Browish Bubbles Snails / Fish	None/Other None/Other Other None/Other None/Other None/Other	<u>Draw sample lo</u>	cation if no photo
Trash In Vi           0.         None           1.         Light (<           2.         Modera           3.         High (1           4.         Somewight           5.         Dense (1)	icinity of Drain (Cire 5) te (6-10) 1-25) hat Dense (26-50) >50) نامیدو م	<u>cle):</u> <u>Type: (%</u> <u>%</u> <u>75</u> % <u>6</u> 1 8 1 1 1 1 1 1 1 1 1 1 1 1 1	of number not Drganic (food) lastics (cups, str ottles, junk) Recyclables-not pottles, metal) Large items (app	total volume of items): raws, bags, wrappers, plastic (paper, glass pliances, cars, tires)		
Drain Asso           Algae cover           0. None           1. < 5%           2. 5-25%           3. 25-50%           4. 50-75%           5. > 75%	<u>caited Algae:</u> age (circle):	Algae outside of Main algae type: ( D % film algae	flow?: (Fes / no	b) Other Obser Fish: yes Snails: yes Birds: yes Other: Number of he Evidence of c	omeless:	<b>)</b>
* <u>Field</u> <u>Screening</u> *Laborator	Water Temp (°( pH (pH units)_ <u>y</u> Fecal Coliform	C) 269	Conductivity	Mms/us(Ci Sw/huter E.Coli	ircle appropriate units	) (MPN)
Analysis Lab Sample Comments Observatio	Enterococcus_ es taken () ns	No Bottle I	_(MPN) D#'s	Total Colifor	m	(MPN)

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# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

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						<b>,</b>					
р <u>–</u> Г	Donth of wat	or a	= area of w	ater in nartia	ly filled nin	<u>е</u>					
d = d	isput of wat	ci a Venine T	arca or wa 'a = Tabulate	ater ni partia. >d Value	ly med pip		Then a =	= Ta*d2			
u – u		ic pipe - i	a rabulat				i non u				
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350	
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039	
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	(0.1623	0.1711	0.1800	0.1890	
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836	
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827	
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820	
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780	
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660	
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360	
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840	
	AREAX	VELOCI	ŤΥ	TIME RE	<i><b>QUIRED</b></i>	TO FILL 2	4 ARE	A x VELO	)CITY		
				KNOWN	<b>VOLUME</b>	tion in the					
				FILL A B		ETHODI	(P	PARTIALL	Y FILLED	PIPE)	
<u>(C</u>	REEK/CH4	NNEL ME	THOD)	<u>(dapp v p</u>	<b>Printers</b> of			YER AND A			
a. t	Measure the w	idth, depth, and	l velocity of	1. De sample	termine volume bottle.	e/capacity of th	e   1) All cor	l measurement i mmon unit befo	must be convert re calculation (	ed to a ft. in. or cm).	
										, , ,	
b.	Convert each v all measuremen	value to a commented to	on unit (i.e.	2. Me bot	asure time requ tle.	aired to fill the	2) Lei	t D = water dep	th.		
	in.).		, , ,				3) Lei	t d = inside pipe	e diameter		
				3. Fio	w will be deter	mined by initia		lculate D/d			
c.	Multiply the w	idth * depth * v	velocity to			·	.,			1.4	
	determine flow	<i>.</i>	· .	•	mL/s		5) Fir	nd the tabulated	(Ta) value on t	he partially	
d.	Multiply the flo	ow by 0.8 for c	reek	•	52/5		va	alue. (i.e. if D/	1 = 0.263 then 1	Γa,≃.1623).	
	measurements	-or 0.9 for co	oncrete	4. Co	nvert to desired	l value.					
	channel roughr	iess.									
							6) Fin	nd the area using $a = Ta \star d^2$	g the formula		
е.	The results if n	neasured in						a = 1a.u.			
							7) Mi	ultiply area (a) ł	by the water vel	ocity.	
•	rt = rt/sec $cm = cm^3/sec$ (	mL/sec)					8) Co	nvert to desired	value.		
•	in = in <sup>3</sup> /sec	·····,									
f	Convert to desi	ired value									
- <u>-</u>							· · · ·				
SA	E / Metric	Unit Conve	rsion								
0.0	83 ft =	1 in =	2.54 cm								
0.1	$\overline{337} \text{ ft}^3 =$	1 gal =	128 oz								
		=	3.785 L								
0.0	078 gal =	1 oz =	0.0011 ft								
[ 100	$00 \text{ cm}^3 =$	L   =	1000mL								
L	· ·										
						•			·	]	
	۰,										
	······		<u></u> .					<u> </u>			

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	Doi	ninguez Channel Bacterial Monitor	ring Data and Obs	ervation Sheet
	GPS Coordi	nates: <u>118 14, 547</u> w 33 49, 434 N	Date/Time: 6/18/0	Site ID: <u>36</u>
	Weather Inf	ormation: Field Crev	w: C. Warn, J. Erid	Kson, T. Naugen
	Light Condi	tions: Sunny Overcast Partly Clo	budy	
	Last Rain:	72 hours < 72 hours < 3 hours	Precipitation	<u>1:</u> > 0.1" < 0.1"
	Site Descrip Earthen Drai	nage Coperste Channel Outfall Manhole	Catchbasin Othe	une
and the second	Flow Estima	tion: Flow Yes No / Ponded/Trickle Evidence o	of overland flow near samplin	g location?: Yes / No
	Are 1. Wi	a X Velocity (creek / channel) Filling a dth (cm - (ft) in) // // 1. Volume	Bottle (mL - L - oz) 1. P	Area X Velocity (pipe) ipe Diameter (ft/in)
	2. De	pth (cm $(f, j_{in})$ $(f, j_$	(sec) 2 [	Depth
	3. ve	locity (cm $\Pi$ $\Pi$ $I \Pi$ $/$ sec) $U^{III}$ $U^{III}$ $U^{IIII}$ $U^{IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII$	n hack ***!	elocity
<b>5</b> 83	4. 11	162.45 + E75 flow valid for this/	point only	
	<u>Visuals:</u>	Photo Taken: yes/ no Roll#/Pic# ///	<u>9</u> <u>Dra</u>	w sample location if no photo:
E	Odor	Chemical Sewage Rotten Eggs	None Other	
	Color	Greyish Greenish Browish	NonerOther	•
	Floatables	Oily / Rainbow Trash Bubbles	None Other	
	Vegetation	Limited Extensive	None/Other	
	Biology	Mosquitos Algae Snails / Fish	NoneXOther	
	<u>Trash In Vi</u>	cinity of Drain (Circle): Type: (% of number not tot	al volume of items):	·
	0. None 1. Light (<	5) % Organic (food) 75 % Plastics (cups, straw	s, bags, wrappers,	
	2. Moderal	e (6-10) bottles, junk)	stic (naner glass	
	4 Somewl	at Dense (26-50)	stie (paper, glass	
	6. Dense (2	<sup>50</sup> on him KS% Large items (applian	nces, cars, tires)	
Ţ	Drain Assoc Algae covera	aited Algae: ge (circle): Algae outside of flow? (ye) / no)	Other Observations: Fish: yes to	
	0. None	Main algae type:	Birds: yes no	
	2 5-25% 3. 25-50%	$\frac{70}{90\%}$ film algae	Other: Number of homeless:	()
	4. 50-75% 5. > 75%	%macroalgae	Evidence of dumping:	yes flo
	*IField	Water Tomp (°C) ) (e) la Conductivity	() A ms (us (Circle onny	oprioto unita)
	<u>Screening</u>	pH (pH units) <b>7.</b> 00	(ultruter	
62	* <u>Laborator</u>	y Fecal Coliform(MPN)	E.Coli	(MPN)
Š	<u>Analysis</u>	Enterococcus (MPN)	Total Coliform	(MPN)
<b>使</b> 风 秋雨	Lab Sample	s taken (Ves)No Bottle ID#'s		
	Comments			
	Observation	S	· · · · · · · · · · · · · · · · · · ·	
tin an		· · · · · · · · · · · · · · · · · · ·		

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# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

<u>88</u>01

		n An an tao ta			· · ·						
D = [	Depth of wat	er a	= area of w	ater in partial	ly filled pin	e					
d = d	iameter of th	nepipe T	a = Tabulate	ed Value	Then $a = Ta^*d2$						
u, u		ie pipe - i									
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350	
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039	
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	(0.1623	0.1711	0.1800	0.1890	
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836	
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827	
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820	
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780	
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660	
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360	
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840	
	ADEAx	VELOCI	TV	TIME RE	DUIRED	TO FILL	ARE	A x VELO	OCITY		
		., nnoer	• •	KNOWN	<b>VOLUME</b>						
		an in the second			Dere sec	<u>ti do</u> fe		DADTIALT	VEILED	DIDE	
<u>(C</u>	REEK/CHA	NNEL ME	THØD)	(FILL A BO	<b>MITEW</b>	ETHOD)					
a. t	<ul> <li>a. Measure the width, depth, and velocity of the water.</li> <li>b. Convert each value to a common unit (i.e. all measurements converted to cm, ft, or bott in b.</li> </ul>					e/capacity of th uired to fill the	e   1) A co 2) Lo 3) Lo	ll measurement ommon unit befo et D = water dep et d = <i>inside</i> pipe	must be convert re calculation ( th. e diameter	ed to a ft, in, or cm).	
c. d.	<ul> <li>in.).</li> <li>c. Multiply the width * depth * velocity to determine flow.</li> <li>d. Multiply the flow by 0.8 for creek measurements -or 0.9 for concrete channel measurements to account for absence.</li> </ul>				w will be deter ine units: n_/s z/s wert to desired	mined by initia	4) C 5) Fi	<ul> <li>4) Calculate D/d.</li> <li>5) Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d value. (i.e. if D/d = 0.263 then Ta = .1623).</li> </ul>			
e. • •	The results if n $Ft = Ft^{3}/sec$ $cm = cm^{3}/sec$ (in = in <sup>3</sup> /sec	neasured in mL/sec)					6) Fi 7) M 8) C	nd the area usin a = Ta*d <sup>2</sup> . Iultiply area (a) t onvert to desired	g the formula by the water vel value.	ocity.	
f	Convert to desi	red value						·			
					1		I	r			
SAE / Metric Unit Conversion $0.083 \text{ ft}$ =       1 in       =       2.54 cm $0.1337 \text{ ft}^3$ =       1 gal       =       128 oz         =       3.785 L       =       3.785 L $0.0078 \text{ gal}$ =       1 oz       =       0.0011 ft^3         1000 cm³       =       1 L       =       1000mL						•		· · ·			
					1						

<b>1</b>		
	Dominguez Channel Bacterial Monitoring Data and	<b>Observation Sheet</b>
	GPS Coordinates: //8 /4/3 \$72 wGPS Coordinates: //8 /4/3 \$72 wDate/Time: GWeather Information:Field Crew: T. Ngu yen, JLight Conditions:SunnyLight Conditions:SunnyLight Rain:> 72 hours< 72 hours	Site ID: <u>37</u> /18/02 /224 Erickson, C. Warn pitation: >0.1" < 0.1"
	Site Description: Location: Lateralon West Jile of Pom. Chmnel Earthen Drainage Concrete Channel Outfall Manhole Catchhasin	Upstremof 34,85,36
	Flow Estimation: Flow (res) No / Ponded/Trickle Evidence of overland flow near s	ampling location?: Yes(No)
N N N	Area X Velocity (creek / channel) 1. Width (cm - ft (in) /// = 9.25 ft 1. Volume (mL - L - oz) 2. Depth (cm - ft (in) $3 = 25 \text{ ft} 2$ Time (cec)	Area X Velocity (pipe) 1. Pipe Diameter (ft/in) 2. Depth
	3. Velocity (cm - ft $\beta$ in / sec) /.37 4. Flow 3.17 ft 3/5 ***See formula on back	3. Velocity ***See formula on back
	Visuals:     Photo Taken:     yes / no     Roll#/Pic#       Odor     Chemical     Sewage     Rotten Eggs     None/Other	Draw sample location if no photo:
	ColorGreyishGreenishBrowishNone/OtherClarityCleatCloudyOther	
	FloatablesOily / RainbowTrashBubblesNone/OtherVegetationLimitedExtensiveNone/OtherBiologyMosquitosAlgaeSnails / FishNone/Other	
	Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0None% Organic (food)1.Light (<5)% Plastics (cups, straws, bags, wrappers,2.Moderate (6-10)% Plastics (cups, straws, bags, wrappers,3.High (11-25)% Recyclables-not plastic (paper, glass4.Somewhat Dense (26-50)% Large items (appliances, cars, tires)	
	Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes / no)Other Observe Fish: yes Snails: yes Birds: yes Other:0.None 1. < 5%Main algae type: % film algae % furf algaeBirds: yes Other:3.25-50% % turf algae % macroalgaeMumber of hom Evidence of due	ations: h0 t2 t0 meless: imping: yes
	* <u>Field</u> Water Temp (°C) <u>25.7</u> Conductivity <u>550</u> mS / <u>(S)</u> Circ <u>Screening</u> pH (pH units) <u>J.12</u>	cle appropriate units)
Contraction of the second	*Laboratory       Fecal Coliform       (MPN)       E.Coli         Analysis       Enterococcus       (MPN)       Total Coliform	(MPN)
	Lab Samples taken (Yes) No Bottle ID#'s Comments Excessive flow - very fast Observations	

30.

# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

**3**322

		17 7 - 12 - 13								
D = [	Depth of wat	er a	= area of w	ater in partia	ly filled pip	e				
d = d	iameter of th	ne pipe – T	`a = Tabulat	ed Value			Then a =	= Ta*d2	·	
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	, 0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
	AREA x	VELOCI	TY 👘	TIME RE	QUIRED	TO FILL /	4    ARE.	A x VELC	)CITY	
				KNOWN	<b>YOLUME</b>			in an		
	DEEV/CUL	NINTEL	THON	(FILL A B	OTTLE M	ETHOD)	(P	ARTIALL	Y FILLED.	PIPE)
SS (C.	KEEN/CHA	NNINDISIVIT	<u>1HUD)</u>	<u>TO PANAL CRANKS</u>				Antonia antonia		
a. t	Measure the with the water.	idth, depth, and	velocity of	1. Det sample	ermine volume bottle.	c/capacity of the	e I) All cor	measurement i nmon unit befo	nust be convert	ed to a
	Convert reality		and the first		:	in the country				
D.	all measuremen	nts converted to	$o  \mathrm{cm},  \mathrm{ft},  \mathrm{or}$	z. Me	aștire time requ tle.	ined to mi the	() 2) Lei	D = water dep	(n	
	in.).			2 51			3) Let	: d = <i>inside</i> pipe	e diameter	
				3. FIO	w will be deter	mined by initia	4) Ca	culate D/d		
C.	Multiply the w	idth * depth * v	elocity to							
	determine flow		1	• •	nL/s		5) Fin	d the tabulated	(Ta) value on the chart above up	ne partially sing the D/d
d.	Multiply the flo	ow by 0.8 for c	reek				va	due. (i.e. if D/d	I = 0.263 then T	a = 1623).
	measurements - channel measu	-or 0.9 for co rements to acco	ncrete	4. Cor	wert to desired	value.	L			
	channel roughn	iess.								
						•.	6) Fin	d the area using	g the formula	
e.	The results if m	neasured in						a - Ta'u,		
•	Ft = Ft <sup>3</sup> /sec				7) Multiply area (a) by the water w					ocity.
•	$cm = cm^{3}/sec$ (	mL/sec)				•	8) Co	nvert to desired	value.	
٠	in = in'/sec									
<u>f.</u>	Convert to desi	red value.								
	<u>E / Metric  </u>	Unit Conver	rsion							
	$\frac{83 \text{ ft}}{227         $	lm =	2.54 cm							
0.1	55/11 -		128 0Z					•		
0.0	078 and -		0.0011 4	<del>,</del> .						
	$\frac{0.0 \text{ gal}}{0.0 \text{ cm}^3} =$	102 =	1000m1			• .				]
				J   .		•				
									`	
					· · · · ·	··-	<u>.</u>	<u> </u>		
	•		•		н 			. •	•	
·									<u> </u>	

	Dominguez Channel Bacterial Monitoring Data and Observation Sheet
	GPS Coordinates: $\frac{118}{33}$ $\frac{14.459}{46.628}$ W Site ID: $\frac{38}{120}$ Date/Time: $\frac{1802}{1802}$ $\frac{120}{120}$
	Weather Information: Field Crew: See greenous
	Light Conditions:SunnyOvercastPartly CloudyLast Rain:> 72 hours< 72 hours< 3 hoursPrecipitation:> 0.1"
	Site Description: Location: Henry Ford Bridge - Southers above cast Basing
	Flow Estimation: Flow Ves No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No
800%	Area X Velocity (creek / channel)       Filling a Bottle       Area X Velocity (pipe)         1.       Width (cm - ft/- in) / 30       1.       Volume (mL - L - oz)       1.       Pipe Diameter (ft/in)         2.       Depth (cm (ft/- in) / 0       2.       Time (sec)       2.       Depth
	3. Velocity (cm - ft - in / sec) ().() 3. Velocity
	4. Flow 780ft3/5 *flow valid for this point only ***See formula on back
	Visuals:     Photo Taken:     yes / no     Roll#/Pic#     //b       Odor     Chemical     Sewage     Botten Eggs     None/Other
	Color Greyish Greenish Browish NoneOther
	Clarity Clear Cloudy Other
	Floatables Oily / Rainbow Trash Bubbles None/Other
<b>1</b> .3	Biology Mosquitos Algae Snails Fish None/Other <u>m.ll.</u> Burnules
	Trash In Vicinity of Drain (Circle):0. None70 Organic (food)1. Light (<5)90 %Plastics (cups, straws, bags, wrappers,2. Moderate (6-10)90 %Plastics (cups, straws, bags, wrappers,3. High (11-25)90 % Recyclables-not plastic (paper, glass4. Somewhat Dense (26-50)bottles, metal)
	5. Dense (>50)% Large items (appliances, cars, tires)
	Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes / no)Other Observations: Fish: (yes / no)0. None1. < 5%Main algae type: D% film algaeSnails: yes no Other: MolificationSnails: yes no Snails: yes no 
Contraction of the	* <u>Field</u> Water Temp (°C) <u>24.9</u> Conductivity <u>ON</u> mS / uS (Circle appropriate units) <u>Screening</u> pH (pH units) <u>7.64</u> <i>Suldwarter</i>
	*Laboratory AnalysisFecal Coliform(MPN)E.Coli(MPN)Enterococcus(MPN)Total Coliform(MPN)
	Lab Samples taken Yes No Bottle ID#'s
	Observations

Ϊ.
Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

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D = Depth of water       a = area of water in partially filled pipe         d = diameter of the pipe       Ta = Tabulated Value       Then a = Ta*d2         D/d       0.00       0.01       0.02       0.03       0.04       0.05       0.06       0.07       0.08         0.0       0.0000       0.0013       0.0037       0.0069       0.0105       0.0147       0.0192       0.0242       0.0294         0.1       0.0409       0.0470       0.0534       0.0600       0.0668       0.0739       0.0817       0.0885       0.0951	0.09 0.0350 0.1039 0.1890
d = diameter of the pipe       Ta = Tabulated Value       Then a = Ta*d2         D/d       0.00       0.01       0.02       0.03       0.04       0.05       0.06       0.07       0.08         0.0       0.0000       0.0013       0.0037       0.0069       0.0105       0.0147       0.0192       0.0242       0.0294         0.1       0.0409       0.0470       0.0534       0.0600       0.0668       0.0739       0.0817       0.0885       0.0951	0.09 0.0350 0.1039 0.1890
D/d         0.00         0.01         0.02         0.03         0.04         0.05         0.06         0.07         0.08           0.0         0.0000         0.0013         0.0037         0.0069         0.0105         0.0147         0.0192         0.0242         0.0294           0.1         0.0409         0.0470         0.0534         0.0600         0.0668         0.0739         0.0817         0.0885         0.0951	0.09 0.0350 0.1039 0.1890
D/d         0.00         0.01         0.02         0.03         0.04         0.05         0.06         0.07         0.08           0.0         0.0000         0.0013         0.0037         0.0069         0.0105         0.0147         0.0192         0.0242         0.0294           0.1         0.0409         0.0470         0.0534         0.0600         0.0668         0.0739         0.0817         0.0885         0.0951	0.09 0.0350 0.1039 0.1890
0.0         0.0000         0.0013         0.0037         0.0069         0.0105         0.0147         0.0192         0.0242         0.0294           0.1         0.0409         0.0470         0.0534         0.0600         0.0668         0.0739         0.0817         0.0885         0.0951	0.0350
<b>0.1</b> 0.0409 0.0470 0.0534 0.0600 0.0668 0.0739 0.0817 0.0885 0.0951	0.1039
	0.1890
<b>0.2</b> 0.1118 0.1199 0.1281 0.1365 0.1440 0.1535 0.1623 0.1711 0.1800	
<b>0.3</b> 0.1982 0.2074 0.2187 0.2280 0.2355 0.2450 0.2540 0.2642 0.2780	0.2836
<b>0.4</b> 0.2934 0.3032 0.3130 0.3220 0.3328 0.3428 0.3527 0.3627 0.3727	0.3827
<b>0.5</b> 0.3980 0.4030 0.4130 0.4230 0.4330 0.4430 0.4520 0.4620 0.4720	0.4820
<b>0.6</b> 0.4920 0.5020 0.5120 0.5210 0.5310 0.5400 0.5500 0.5590 0.5690	0.5780
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.0000
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.7360
$\frac{10.9}{10.7450} = 0.7500 = 0.7500 = 0.7600 = 0.7600 = 0.7700 = 0.7750 = 0.7790 = 0.7820$	0.7840
AREAX VELOCITY	
(CREEK/CHANNEL METHOD) (FILL & BOTTLE METHOD) (PARDALLY FIELEL	D PIPE)
a. Measure the width, depth, and velocity of 1. Determine volume/capacity of the 1) All measurement must be conv the water. common unit before calculation	erted to a 1 (ft, in, or cm).
b. Convert each value to a common unit (i.e. 2. Measure time required to fill the 2) Let D = water depth. all measurements converted to cm. ft. or bottle.	
in.). 3. Flow will be determined by initial	
volume units: 4) Calculate D/d.	
e. Multiply the width + depth + velocity to determine flow. • mL/s 5) Find the tabulated (Ta) value of	n the partially
oz/s     filled pipe formula chart above     oz/s	e using the D/d
a. Multiply the now by 0.8 for creek measurements -or 0.9 for concrete 4. Convert to desired value.	$n \ 1a = .1623$ ).
channel measurements to account for	· ·
6) Find the area using the formula	<u> </u>
$a = Ta^*d^2$ .	
7) Multiply area (a) by the water y	elocity.
• $Ft = Ft^3/sec$	
• cm = cm <sup>-/</sup> /sec (mL/sec) • in = in <sup>3</sup> /sec	•
f. Convert to desired value.	
SAF / Metric Unit Conversion	
0.083  ft = 1  in = 2.54  cm	
$0.1337 \text{ ft}^3 = 1 \text{ gal} = 128 \text{ oz}$	
= 3.785 L	
$0.0078 \text{ gal} = 1 \text{ oz} = 0.0011 \text{ ft}^3$	
$1000 \text{ cm}^3 = 1 \text{ L} = 1000 \text{ mL}$	1
	•

GP Lig Las Situ	PS Coordin eather Inf ght Condin st Rain: e Descript	nates: <u>3</u> Formation: tions:	/18  4 3 4 (	,461 ,634	W			1		•		
We Lig Las Site	eather Inf ght Condi st Rain: e Descript	 Formation: tions:		2,031	N				10	Site ID:	59	
	eather Inf ght Condi st Rain: e Descript	<u>formation:</u> tions:			IN;		<b>c</b>	Date/Tim	e:/	JUNDE	1201	2
Lig La: Site Ear	<u>st Rain:</u> e Descript	<u>tions:</u>	Commun	0		Field	Crew:	reepia	1907			
	e Descrip		>72 hot	0v	ercast 2 hours	Parti < 3 h	y Cloudy nours	<u>P</u>	recipitat	<u>ion:</u> > 0	9.1"	< 0.1"
	rthen Drain	tion: nage Cor	cation: ncrete Cha	Henry Fr nnel Ou	tfall	Lee Manh	<u>Cen</u>	fer cham Catchbasir		other		
<u>Flo</u>	ow Estima	<u>ation:</u> Flow	v (Yes)	No / Ponded	/Trickle	Evider	nce of ove	erland flow ne	ear samp	ling locati	on?:	Yes / 🚺
1.	Are Wi	a X Velocit	y (creek /	channel)	1. N 2. 1	Fillin ∕olume _	ng a Bott	le (mL - L - oz) (sec)	1	Ar . Pipe Dia . Depth	ea X Vel meter	ocity (pipe) (ft/in)
3.	Ve	locity (cm -	ft in / sec	0.60			· · · · · · · · · · · · · · · · · · ·		3	. Veločitv		
4.	Flo	2w 1248	fl3ks	J+Flo	***: <u>w val</u>	See form	ula on bac this P	ik o.nt only	*	**See forn	nula on b	ack
<u>Vis</u> Od	<u>suals:</u> lor	<u>Photo</u> Chemic	<u>Taken:</u> cal	ves/ no Sewage	Roll/ Rotte	#/Pic# en Eggs	/ / J     / J 	/Other		eraw samp	ole locati	on if no phot
Col Cla	olor arity	Greyisl Ofear	1	Greenish Cloudy	Brov	vish	Norfe Other	/Other	. 			
۶lo Ve	batables	Oily / I	Rainbow 4	Trash	Bubl	bles	None	Other				
Bic	ology	Mosqu	itos	Algae	Śnai	Is / Fish	None	/Other <u>molly</u>	Turn	Lahr		
<b>Tr</b> 0. 1. 2. 4. 5.	rash In Vie None Light (< Moderat High (1) Somewh Dense (>	<u>cinity of Dr.</u> 5) te (6-10) 1-25) nat Dense (20 >50)	ain (Circl 5-50)	e <u>): Type</u> 90 //	: (% of nu % Orgar %Plastic bottle: % Recyc bottle _% Large	imber no nic (food) es (cups, s s, junk) clables-nc es, metal) items (ap	o <u>t total vo</u> straws, ba ot plastic ( ppliances,	o <mark>lume of items</mark> gs, wrappers, (paper, glass cars, tires)	<u>.):</u>	• • • • •	· .	
Dr Alg 0. 1. 2. <b>3</b> 4. 5.	rain Assoc gae covera None < 5% 5-25% 25-50% 50-75% > 75%	taited Algae age (circle): ЫштКы	<u>.</u>	Algae outsi Main algae $\frac{5^{\circ}}{0}\%$ film $\frac{10}{0}\%$ turf $\frac{5}{0}\%$ macr	de of flow type: algae algae oalgae	?: (yes / ı	no)	Other Ob Fish: Y Snails: Y Birds: Y Other: Number of Evidence of	servatio es n es n m //u f homele of dumpi	ns: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ks D	
* <u>F</u>	<u>field</u> creening	Water pH (pF	Temp (°C) I units)	7,68	Con	ductivity_	<u>UN</u>	ms/us	(Circle a	ppropriate	units)	
* <u>L</u>	aboratory analysis	Y Fecal C Entero	Coliform coccus		(M (M	IPN) PN)		E.Coli Total Coli	form		(	MPN) MPN)
La	ıb Sample	es taken	Yes / No	Э <b>Во</b>	ttle ID#'s			<u></u>	-			
Co Ot	omments bservation	15			;	· · · · · · · · · · · · · · · · · · ·						

14-

# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

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 $[] \geq$ 

		· · · · ·				•			·	
D = [	Depth of wat	er a	= area of wa	ater in partial	ly filled pip	e.				
d = d	iameter of th	ie pipe – T	`a = Tabulate	ed Value			Then a =	= Ta*d2		
										r
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1305	0.1440	0.1535	0.1023	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2042	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3320	0.3420	0.3327	0.3027	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.5210	0.4330	0.4430	0.4520	0.4020	0.4720	0.4820
0.0	0.4920	0.5960	0.6050	0.6140	0.6230	0.5400	0.5500	0.5350	0.500	0.5760
0.7	0.5370	0.5900	0.6890	0.6970	0.7040	0.0320	0.7190	0.7250	0.7320	0.0000
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
	ADEAV	VELOCI	TV	TIME RE	QUIRED	TO FILL	ARE	A x VELC	OCITY	
	ANDAX	AFFOCI	11	KNOWN	VOLUME					
		lige of the second s		EVI I A D				ADTIATI		DIDEN
<u>(Ĉ</u>	REEK/CHA	NNEL ME	THOD)	(FILL A B	ULILE M	ETHOD) ».	<u> </u>	ANTIALL	I.T.ILLED	ГЦГ,В.) ->
a. ti	Measure the wi he water.	idth, depth, and	velocity of	i. Det sample	ermine volume bottle.	c/capacity of the	e    1) All cor	measurement i nmon unit befo	must be converted to the converted to th	ed to a ft, in, or cm).
b.	Convert each v all measuremer	alue to a comm ats converted to	on unit (i.e. cm, ft, or	2. Mer bott	asure time requ le	uired to fill the	2) Let	D = water dep d = inside pipe	th.	
c.	Multiply the w	idth * depth * v	elocity to	3. Flov volu	w will be deter ume units:	mined by initia	1 4) Cal	lculate D/d.	Granicici	
d.	determine flow Multiply the flo measurements	ow by 0.8 for c or 0.9 for co	reek ncrete	• n • a 4. Con	nL/s pz/s ivert to desired	i value.	5) Fin fil va	d the tabulated led pipe formu lue. (i.e. if D/c	(Ta) value on t la chart above t t = 0.263 then T	he partially ising the D/d Γa =.1623).
	channel measur channel roughn	rements to acco less.	unt for _				6) Fin	d the area using $a = Ta * d^2$	g the formula	
<b>e</b> . '	The results if m	neasured in						μ 10.0.		
	$Ft = Ft^3/sec$						7) Mu	ltiply area (a) t	by the water vel	ocity.
•	$cm = cm^3/sec$ (i	mL/sec)		•			8) Co	nvert to desired	value.	
•	$in = in^3/sec$									
f.	Convert to desi	red value.					r			
<b>SA</b> 0.0 0.1	$\frac{\mathbf{E} / \mathbf{Metric V}}{83 \text{ ft}} = \frac{1}{337 \text{ ft}^3} = \frac{1}{337 \text{ ft}^3}$	Unit Conver	rsion 2.54 cm 128 oz 3.785 L						÷.	
0.0	$078 \text{ gal} = 00 \text{ cm}^3 = 00 \text{ cm}^3$	1  oz = 1  L =	0.0011 ft 1000mL	3		·				
<del></del>	······································									
		,				ι.				·
						i.				
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			·······							

•	e
	<b>Dominguez Channel Bacterial Monitoring Data and Observation Sheet</b>
	GPS Coordinates: <u> 118 14.459</u> <u> 33 46.638</u> N Date/Time: <u> 18 14.459</u> Date/Time: <u> 18 14.459</u> Date/Time: <u> 18 14.459</u>
	Weather Information: Field Crew: Sel provision
	Light Conditions: Last Rain:SunnyOvercast < 72 hours
	Earthen Drainage Location: Itenry Ford Brilge Northeud Concrete Channel Outfall Manhole Catchbasin Other
	Flow Estimation: Flow Yes / No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No
	Area X Velocity (creek / channel)     Filling a Bottle     Area X Velocity (pipe)       1.     Width (cm - ft) - in)     3°     1.     Volume     (mL - L - oz)     1.     Pipe Diameter (ft/in)
8	2. Depth (cm (tf - in) / 2. Time (sec) 2. Depth $3$ Velocity (cm -ff) in / sec) $0/60$ 3. Velocity
	4. Flow $546 \text{ ft}^3/\text{S}$ ***See formula on back ***See formula on back ***See formula on back
	Visuals:     Photo Taken:     Vesting     No     Roll#/Pic#     1/2/     Draw sample location if no photo:
gy a	Odor Chemical Sewage Rotten Eggs None/Other
	Clarity Clear Cloudy Other
	Floatables Oily / Rainbow Trash Bubbles None/Other
	Vegetation     Limited     Extensive       Biology     Mosquitos     Algae     Snails / Fish
	Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)1. Light (<5)9% Organic (food)2. Moderate (6-10)9% bottles, junk)6. High (11-25)% Recyclables-not plastic (paper, glass4. Somewhat Dense (26-50)% Large items (appliances cars tires)
	Drain Assocaited Algae:
	Algae coverage (circle):Algae outside of flow?: (yes / no)Fish:yesno0. NoneSnails:yesNo1. < 5%Main algae type:Birds:yes
	2. $5-25\%$ $50\%$ film algaeOther: $\underline{m} \cdot ll_{4}Ll / 3wackl$ (3) $25-50\%$ $\underline{50}\%$ turf algaeNumber of homeless: $\underline{0}$ 4. $50-75\%$ $\underline{50}\%$ macroalgaeEvidence of dumping: yes no5.> 75\% $\underline{50}\%$
	*FieldWater Temp (°C) $\partial \lambda$ 7Conductivity $\mathcal{O}\Lambda$ mS / uS (Circle appropriate units)ScreeningpH (pH units)), 7? $\mathcal{O}_u$ $\mathcal{O}_u$ $\mathcal{O}_u$ $\mathcal{O}_u$ $\mathcal{O}_u$
	*Laboratory AnalysisFecal Coliform Enterococcus(MPN)E.Coli Total Coliform (MPN)(MPN)
<u>e</u> l	Lab Samples taken Yes/ No Bottle ID#'s
	Comments
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		Calcul	ating th	e Area (a	a) of the	Cross Se	ection o	f a Circu	lar Pipe	
				Fl	owing Pa	artially I	<b>Tull</b>	•		· .
			· · · · ·	199 199 199 - 199			· ·	·		
D = [	Depth of wat	er a	= area of w	ater in partia	lly filled pip	e				
d = d	iameter of th	ie pipe T	°a = Tabulate	ed Value		•	Then a	= Ta*d2	• .	
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	. 0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
	AREA x	VELOCI	TY	IME RE	QUIRED	IOFILEZ	4     ARI	LA x VEL(	JCITY.S	
	usta eta territoria			KNOWN	VOLUME			G. C. Star		
( <b>C</b> )	REEK/CHA	NNEL ME	THOD)	(FILL A B	OTTLE M	ETHOD)	-    ^ <b>(</b>	PARTIALL	Y FILLED	PIPE)
a. t b. c. d. e.	Measure the withe water. Convert each v all measurement in.). Multiply the with determine flow Multiply the flow Multiply the flow measurements channel measure channel roughn The results if m Ft = Ft <sup>3</sup> /sec cm = cm <sup>3</sup> /sec (n in = in <sup>3</sup> /sec	idth, depth, and value to a comm nts converted to idth * depth * v ow by 0.8 for co -or 0.9 for co rements to acco less. neasured in mL/sec) red value.	I velocity of non unit (i.e. o cm, fl, or velocity to reek mcrete point for	I. De sample 2. Mi bo 3. Filo vo • • 4. Co	etermine volume e bottle. easure time requ ttle. ow will be deter lume units: mL/s oz/s nvert to desired	e/capacity of the uired to fill the mined by initia	e 1) A (2) L (3) L (4) C (5) F (6) F (7) N (8) C	Il measurement ommon unit befo et $D =$ water dep et $d =$ <i>inside</i> pip calculate D/d. ind the tabulated filled pipe formuvalue. (i.e. if D/d ind the area usin $a = Ta^{+}d^{2}$ . fultiply area (a) f	must be conver ore calculation ( oth. e diameter (Ta) value on ( la chart above t d = 0.263 then g the formula by the water vel t value.	ted to a ft, in, or cm). he partially ising the D/d Γa =. 1 623). ocity.
SA 0.0 0.1 0.0 100	$\frac{E / Metric 0}{83 ft} = 337 ft^3 = 078 gal = 00 cm^3 $	Unit Conve 1 in = 1 gal = 1 oz = 1 L =	rsion 2.54 cm 128 oz 3.785 L 0.0011 ft 1000mL	3						
						·				

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<u>Do</u>	minguez Cha	annel Bac	terial wio	nitoring L	Jata and	Observatio	n Sheet
CDS Coord	(18 19	853	<b>N</b> /	•	•	Site ID.	41
GFS Coord	33 53	. 871	N	• •	Date/Time:	PJW 07	1440
Weather In	formation:	· · · · · · · · · · · · · · · · · · ·	Fie	ld Crew:	See prev	1001	
Light Cond	itions: Sunny	Ove Ove	rcast Pa	rtly Cloudy			
Last Rain:	C721	ours < 72	hours <:	hours	Precip	$\frac{\text{itation:}}{2} > 0.1$	< 0.1"
Site Descrip Earthen Drai	tion: Location: nage Concrete C	Between M hannel Out	fall Ma	nhole	Catchbasin	Other Sox	e W)
Flow Estim	ation: Flow Ye	No / Ponded/	Trickle <u>Evic</u>	lence of overlai	nd flow near sa	mpling location?:	Yes No
Are 1. W	a X Velocity (creek idth (cm - ft - (n) / 0	/ channel)	Fi Fi L.1. Volume	lling a Bottle (mL	$\frac{1}{10} \frac{1}{10} \frac$	<b>6 F</b> Area X 1 Pipe Diameter	Velocity (pipe) ri (ft/in)
2. De	epth (cm - ft - (n))	10,5 = ,0 ×	ft2. Time	_24(sec	)	2. Depth	· · · ·
3. Ve	locity (cm - ft - in / s	sec) <u>77.0</u> 00	***0			3. Velocity	
4. Flo	.008 ft3/3	<u>)</u>	***See for	mula on back		***See formula	on back
Visuals:	<u>Photo Taken:</u>	yes/ no	Roll#/Pic#	1/12		Draw sample lo	cation if no phot
Odor	Chemical	Sewage	Rotten Egg	s None/Oth	her/Nusty		
Color	Greyish	Greenish	Browish	None/Oth	her <u>Yellow</u> , wh		
Clarity	Clear	Cloudy	D. I.I.I.	Other	· · · · · · · · · · · · · · · · · · ·		
<ul> <li>Negetation</li> </ul>	Ully / Rainbow	Friensive	Buddles	NoneAOtr	her	,	
Biology	Mosquitos	Algae	Snails & Fis	h None/Oth	ier		
Trash In Vi	cinity of Drain (Cir	cle). Type:	(% of number	not total volum	e of items).		
0. None			_% Organic (foc	d)	<u>e or nems,</u>		
I. Light (< 2. Modera	5) te (6-10)		_%Plastics (cups bottles, junk)	s, straws, bags, v	vrappers,		
3. High (1 A Somewi	1-25) hat Dense (26-50)	96	% Recyclables- bottles met:	not plastic (pap	er, glass	·	
5. Dense (	>50)		_% Large items	(appliances, cars	s, tires)		
Drain Asso	caited Algae:			N.	Other Observa	tions:	· <u> </u>
Algae cover	age (circle):	Algae outsid	e of flow?: ()	(Jup)	Fish: yes	Op no	
1. < 5%		Main algae t	ype:		Birds: yes		
<ol> <li>2. 5-25%</li> <li>3. 25-50%</li> </ol>	•	<u> </u>	ligae Igae		Other:	eless: $\phi$	
4. 50-75% 5. > 75%		%macro	algae		Evidence of dur	nping: yes no	• .
* <u>Field</u> Screening	Water Temp (° pH (pH units)_	c) 23.1 . 8.14	Conductivi	ty_ <b>939</b>	_mS / SCircl	e appropriate units	)
* <u>Laborator</u> Analysis	Y Fecal Coliform Enterococcus		(MPN) (MPN)		E.Coli Total Coliform_	,	(MPN) (MPN)
Lab Sample	es taken Yes	No Bot	tle ID#'s			••••••••••••••••••••••••••••••••••••••	
Comments	<u> </u>	trae box 1	colvert env	stying into	Don. Um	nel	

#### Calculating the Area (a) of the Cross Section of a Circular Pipe **Flowing Partially Full** D = Depth of watera = area of water in partially filled pipe d = diameter of the pipe Then a = Ta\*d2Ta = Tabulated Value0.04 0.05 0.07 0.09 0.00 0.01 0.02 0.03 0.06 0.08 D/d 0.0013 0.0037 0.0069 0.0105 0.0147 0.0192 0.0242 0.0294 0.0350 0.0 0.0000 0.0534 0.0600 0.0668 0.0739 0.0817 0.0885 0.0951 0.1039 0.0409 0.0470 0.1 0.1118 0.1199 0.1281 0.1365 0.1440 0.1535 0.1623 0.1711 0.1800 0.1890 0.2 0.2450 0.2540 0.2642 0.1982 0.2074 0.2187 0.2280 0.2355 0.2780 0.2836 0.3 0.2934 0.3032 0.3130 0.3220 0.3328 0.3428 0.3527 0.3627 0.3727 0.3827 0.4 0.4520 0.4230 0.4330 0.4430 0.4620 0.4720 0.4820 0.3980 0.4030 0.4130 0.5 0.4920 0.5020 0.5120 0.5210 0.5310 0.5400 0.5500 0.5590 0.5690 0.5780 0.6 0.6400 0.6140 0.6230 0.6320 0.6490 0.6570 0.6660 0.5870 0.5960 0.6050 0.7 0.6740 0.6810 0.6890 0.6970 0:7040 0.7120 0.7190 0.7250 0.7320 0.7360 0.8 0.7660 0.7710 0.7750 0.7790 0.7450 0.7500 0.7560 0.7610 0.7820 0.7840 0.9 TIME REQUIRED TO FILL A AREA x VELOCITY AREA x VELOCITY KNOWN VOLUME (FILL A BOTTLE METHOD) (PARTIALLY FILLED PIPE) (CREEK/CHANNEL METHOD) Determine volume/capacity of the Measure the width, depth, and velocity of 1. 1) All measurement must be converted to a а sample bottle. common unit before calculation (ft, in, or cm). the water. Measure time required to fill the Convert each value to a common unit (i.e. 2. 2) Let D = water depth. h all measurements converted to cm, ft, or bottle. 3) Let d = inside pipe diameter. in.). Flow will be determined by initial 3. volume units: 4) Calculate D/d. Multiply the width \* depth \* velocity to C. determine flow. mL/s Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/d oz/s Multiply the flow by 0.8 for creek value. (i.e. if D/d = 0.263 then Ta = 1623). d measurements -- or -- 0.9 for concrete Convert to desired value. 4. channel measurements to account for channel roughness. Find the area using the formula 6) $a = Ta^{*}d^{2}$ . The results if measured in e 7) Multiply area (a) by the water velocity. $Ft = Ft^3/sec$ $cm = cm^{3}/sec (mL/sec)$ 8) Convert to desired value. in = in<sup>3</sup>/sec Convert to desired value. **SAE / Metric Unit Conversion** 0.083 ft 1 in 2.54 cm 0.1337 ft<sup>3</sup> l gal 128 oz = Ħ ~ 3.785 L 0.0078 gal 0.0011 ft<sup>3</sup> l oz = 1000 cm<sup>3</sup> = 11 = 1000mL

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	Dominguez Channel Bacterial Monitoring Data and Observation Sheet
	GPS Coordinates:     11819.544     W     Site ID:     42       3354.321     N     Date/Time:     1455
	Weather Information: Field Crew: See grevitus
	Light Conditions:SunnyOvercastPartly CloudyLast Rain:< 72 hours< 72 hours< 3 hoursPrecipitation:
	Site Description: Location: Between Rosecrus & 135th St - Stud Box Cultur Felle Pock Cultur-t-E Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other Box Cultur-t-E
T.W.	Flow Estimation: Flow Ves No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No
	Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)1.Width (cm - ft - (in)) $1/23 = 10.25$ ft 1.Volume(mL - L - oz)1.1.Pipe Diameter(ft/in)
	2. $(3f)$ Depth (cm - ft - (m) $(8 / 7 / 6 - 5 / 7 / 2)$ . Time (sec) 2. Depth
	3. Velocity (cm $(tt)$ in / sec) $(2/2)$
	4. Flow 32.44 ft 42/s See formula on back
	Visuals:     Photo Taken:     ye) / no     Roll#/Pic#     // (1       Odor     Chemical     Sewage     Rotten Eggs     None/Other
8	Color Grevish Greenish Browish None/Other Ve/low
	Clarity Clear Cloudy Other
	Floatables Oily/Rainbow Trash Bubbles None/Other
	Vegetation Limited Extensive
	Biology Mosquitos Algae Snails Fish None/Other / Myne insect
	Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)
6	1. Light (<5) <u>(%</u> Plastics (cups, straws, bags, wrappers, bottles, junk)         2. Moderate (6-10) <u>bottles, junk</u>
	3. High (11-25) <u>30</u> % Recyclables-not plastic (paper, glass
	(4.) Somewhat Dense (26-50)       bottles, metal)         5. Dense (>50)      % Large items (appliances, cars, tires)
63	Drain Assocaited Algae: Other Observations:
	0. None Snails: (yes) no Snails: (yes) no
6	1. < 5% Main algae type: Birds: yes no
(F)	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
الا من المراجع الا من المراجع	4. 50-75%    %macroalgae     Evidence of dumping: yes is       5. > 75%
C. ALL	* <u>Field</u> Water Temp (°C) <u>J</u> 3.8 Conductivity <u>J</u> 66 mS / uS (Circle appropriate units) <u>Screening</u> pH (pH units) <u>7.94</u>
	*Laboratory Fecal Coliform (MPN) E.Coli (MPN)
60 1	Analysis     Enterococcus     (MPN)       Lab Samples taken     Yes / No     Bottle ID#'s
	Comments
	Observations
. B	

# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

							• •			4 - E
D = [	Depth of wat	er a	= area of w	ater in partia	illy filled pip	e				
d = d	iameter of th	ne pipe T	'a = Tabulat	ed Value			Then a	a = Ta*d2	•	
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	(0.1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
	AREAN	VELOCI	TV	TIME RE	QUIRED	TO FILL 2	4 AR	EA x VELO	OCITY	No. and State
		, DHOCI		KNOWN	<b><i>VOLUME</i></b>				$\{i,j\} \in \{i,j\}$	
	et i e se s					ETUOD		PARTIAL	V FILI FD	PIPEN
(C)	REEK/CH/	NNEL ME	THOD)		OT THE MI	ETEOD				
a. t	Measure the w he water.	idth, depth, and	l velocity of	l. De sampl	etermine volume e bottle.	e/capacity of th	e    1) /	All measurement common unit befo	must be conver ore calculation (	led to a ft, in, or cm).
b.	Convert each v	alue to a comm	ion unit (i.e.	2, M	easure time requ	uired to fill the	2) 1	.et D = water dep	th.	
	all measureme	nts converted to	o cm, ft, or	bo	ttle.			· · · ·		
	in.).			3 FI	ow will be deter	rmined by initis	,    3) I	Let d = inside pipe	e diameter	
				vo	lume units:	initied by filter		Calculate D/d.		
<b>c</b> .	Multiply the w	idth * depth * v	velocity to					and the tobulated	(Ta) value and	h a
	determine now	γ.		•	mL/s		) 1	filled pipe formu	la chart above i	ne partially ising the D/d
d.	Multiply the fl	ow by 0.8 for c	reek					value. (i.e. if D/o	d = 0.263 then 1	ſa ≕.1623).
	measurements channel measu	-or 0.9 for co rements to acco	ount for	4. Co	onvert to desired	i value.	ļ			
	channel rough	ness.								
				· ·			6) F	Find the area usin	g the formula	
e.	The results if r	neasured in					· .	a la u.		
	EL - ENIG		•		· · ·		7) 1	Aultiply area (a) I	by the water vel	ocity.
•	rt = rt/sec $cm = cm^3/sec$ (	mL/sec)	ĺ	, 			8) (	Convert to desired	l value.	
•	in = in <sup>3</sup> /sec									
ŕ	Convert to dea	ired volue								
<u> </u>	Convent to des	ireu value.			···		<u>_</u>		<u> </u>	
SA	E / Metric	Unit Conve	rsion							
0.0	83 ft =	1 in   =	2.54 cm							
0.1	$337 \text{ ft}^3 =$	1 gal =	128 oz							
		-	3.785 L					•		·
0.0	078 gal =	<u> 1 oz</u> =	0.0011 f	2				· .		
100	$00 \text{ cm}^3 =$	1L =	1000mL							
			` <u>`</u>			•				
	4.		÷ .		•			1		
					•					

Dominguez Channel Resterial Monitoring Data and Observation Shoot
Dominguez Channel Dacterial Monitoring Data and Observation Sheet
GPS Coordinates: $\frac{118/954}{2254}$ W. Site ID: $\frac{43}{1000}$
$\frac{3397.544}{1575}$ N Date/Time: 75000 C /575
Weather Information: Field Crew: See previous
Light Conditions:         Sunny         Overcast         Partly Cloudy           Last Rain:         > 72 hours         < 72 hours
Site Description: Location: SELecteral @ 1354 St Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other 32 WX / J / H
Flow Estimation: Flow Yes No / Ponded/Trickle Evidence of overland flow near sampling location?: Yes / No
Area X Velocity (creek / channel)Filling a BottleArea X Velocity (pipe)1.Width (cm - ft - (m) $22 = 1.83$ ft 1.Volume (mL - L - oz)1.1.Pipe Diameter (ft/indiameter)(ft/indiameter)(ft/indiameter)
2. Depth (cm - ft - in) $78014 - 2$ . Time (sec) 2. Depth
3. Velocity (cm - tt - in / sec) $\frac{1}{2} c \cdot Q c \epsilon$
4. Flow ***See formula on back ***See formula on back
Visuals:       Photo Taken:       yes       no       Roll#/Pic#       ///       Draw sample location if no photo         Odor       Chemical       Sewage       Rotten Eggs       Nong/Other       Draw sample location if no photo
Color Greyish Greenish Browish None/Other
Clarity Clear Cloudy Other
Floatables Oily / Rainbow Trash Bubbles None/Other
Vegetation Limited Extensive None/Other
Biology Mosquitos Algae (Snails)/Fish None/Other Cosed larve
Trash In Vicinity of Drain (Circle):       Type: (% of number not total volume of items):         0. None      % Organic (food)
1. Light (<5) <u>80</u> %Plastics (cups, straws, bags, wrappers, battles, iunk)
2. Moderate (6-10)       Dottes, junk)         C. High (11-25)       ZO % Recyclables-not plastic (paper, glass
4. Somewhat Dense (26-50) bottles, metal)
5. Dense (>50)% Large items (appliances, cars, tires)
Drain Associated Algae: <u>Other Observations:</u> Fish: use
0. None Snails: yes no
1. < 5% Main algae type: Birds: yes no
2/ 5-25%     50% film algae     Other:       3. 25-50%     50% turf algae     Number of homeless:
4. 50-75%%macroalgae Evidence of dumping: yes no
<u>5. &gt; /5%</u>
* <u>Field</u> Water Temp (°C) 23.5 Screening pH (pH units) 9.82 Conductivity 3.41 (mS) uS (Circle appropriate units)
*Laboratory AnalysisFecal Coliform Enterococcus(MPN)E.Coli (MPN)(MPN)Total Coliform (MPN)(MPN)(MPN)
Lab Samples taken Yes No Bottle ID#'s
CommentsObservations

# **Calculating the Area (a) of the Cross Section of a Circular Pipe** Flowing Partially Full

	• •		· · ·			-					{
D = I	Denth of wat	er a	= area of w	ater in nartia	lly filled pin	e.					
d = d	iameter of th	enine T	a = Tabulat	ed Value				Then a -	= Ta*d2		·. ]
u u		ie pipe - i								:	
D/d	0.00	0.01	0.02	0.03	0.04	0.05		0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	(	).0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	(	).0817	0.0885	0.0951	0.1039
0.2	0 1118	0 1 1 9 9	0.1281	0.1365	0.1440	0.1535	/	).1623	0.1711	0.1800	0.1890
03	0 1982	0 2074	0.2187	0.2280	0.2355	0.2450		).2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428		).3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	$\square$	).4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400		0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320		).6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120		0.7190	0.7250	0.7320	0.7360
0.0	0.7450	0.7500	0.7560	0.7610	0.7660	0 7710	$\exists$	7750	0.7790	0.7820	0.7840
	<u>0.7450</u>			TIMERE	OUIRED	TOFIL		ARE		ICITV.	
	AREAX	VETACI	1, Y	KNOWN	VOLUME						
				MNOMIN	VOD0ML						
(C	REEK/CHA	NNEL ME	THOD)	(FILL A E	BOTTLE M	ETHOD)		(F	'ARTIALL'	Y FIELED	PIRE)
<u></u>									· ·		
a.	Measure the w	idth, depth, and	l velocity of	I. De sampl	etermine volum e hottle	e/capacity of the	e	I) All	measurement i mmon unit hefo	nust be conver re calculation (	ted to a
•				Junp					inținon unit ooto	·······································	it, iii, or entj.
b.	Convert each w	alue to a comn	non unit (i.e.	2. M	easure time req	uired to fill the		2) Le	t D = water dep	th.	
	in.).	nis converted to	5 cm, n, or		attic.			3) Le	t d = inside pipe	e diameter	
	,			3. Fl	ow will be deter	rmined by initia	il [				· . ·
· c	Multiply the w	idth * denth * y	velocity to	vo	dume units:			4) Ca	lculate D/d.	· · ·	
Ψ.	determine flow	/.		•	mL/s			5) Fir	nd the tabulated	(Ta) value on (	the partially
, A	Multiply the fl	and has 0.8 for a	-ook	•	oz/s			fi	lled pipe formu	la chart above i	using the D/d $\Gamma_{\rm c} = 1(22)$
a.	measurements	-or 0.9 for co	oncrete	4. C	onvert to desire	d value		V.	alue. (I.e. II D/C	1 ~ 0.205 then	1a = .1023).
	channel measu	rements to acco	ount for				·.			·	
	channel rough	iess.						6) Fir	d the area using	a the formula	
			,						$a = Ta^{*}d^{2}$ .		
e.	The results if n	neasured in						-			
•	$Ft = Ft^{1}/sec$							/) Mi	ultiply area (a) t	by the water ve	locity.
•	$cm = cm^3/sec$ (	mL/sec)						8) Co	nvert to desired	value.	
•	$in = in^3/sec$										
f.	Convert to des	ired value.									
								L		· · · · · · · · · · · · · · · · · · ·	
SA	E / Metric	Unit Conve	rsion								
0.0	)83 ft =	1 in =	= 2.54 cm								
0.1	$ 337 ft^3  =$	1 gal =	= 128 oz								
	÷	=	= 3.785 L			,				· · ·	
0.0	)078 gal =	1 oz =	= 0.0011 f	P				•			
10	$00 \text{ cm}^3$ =	1 L =	= 1000mL								
L		· · · · · · · · · · · · · · · · · · ·									
		·									х.
÷											
		•		,						. ·	· .
					•						•

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				noring	Data anu		II SHEEL	
GPS Coordi	nates: 1/8 /9	547	<b>W</b>			Site ID:	44	
	33 54	.760	 N	•	Date/Time:	See previl	000 /8 JUN	102 /
Weather Inf	ormation:	•	Field	Crew:	-	Z'		
Light Condi	ions: Sunn	Over	cast Partl	y Cloudy				
<u>Last Rain:</u>	(> 72	10urs < 72	hours $< 3 \text{ h}$	nours	Prec	$\frac{\text{ipitation:}}{1} > 0.1$ "	< <u> </u>	0.1"
Site Descript Earthen Drain	ion: hage Concrete C	hannel Outfa	<u>l Between</u> all Manh	<u>El Seg</u>	Catchbasin	Other D	12'WX to K	6'H
<u>Flow Estima</u>	tion: Flow Ye	s No / Ponded/T	rickle <u>Evider</u>	nce of over	land flow near	sampling location?	<u>:</u> Yes / No	0
Are 1. Wi	a X Velocity (creel oth (cm - R - in)	$\frac{94''=7.83}{4}$	Fillin 3ft1. Volume_	ng a Bottle (r	nL - L - oz)	Area X	K Velocity (p	<b>ipe)</b> (ft/in)
2. De	oth (cm - )- in)	18" = .01	H2. Time _	(s	ec)	2. Depth		
3. Vel	ocity (cm - ① in / :	sec)			•	3. Velocity		
4. Flo	" 1.04 ft3/s		***See form	uia on back		***See formula	on back	
Visuals:	Photo Taken:	(yes) no	Roll#/Pic# (	[ 9		Draw sample le	ocation if no	photo
Odor	Chemical	Sewage	Rotten Eggs	(None)	Other			
Color	Greyish	Greenish	Browish	None/	ther			
Clarity	Clear	Ċloudy		Other_				
Floatables	Oily / Rainbow	/ Trash	Bubbles	Mone	Other			
Vegetation	Limited	Extensive		None/C	Other			
Biology	Mosquitos	Algae	Snails / Fish	None/C	Other			
Trash In Vie	inity of Drain (Cir	cle): Type:	(% of number no	ot total volu	ime of items):			
1, Light (<	5)		%Plastics (cups, s	straws, bags	, wrappers,			
<ol> <li>Moderat</li> <li>High (1)</li> </ol>	e (6-10) -25)	·	bottles, junk) % Recyclables-nc	ot plastic (pa	aper, glass			
4. Somewh	at Dense (26-50)		bottles, metal)		-Per, Brass			
5. Dense (>	50)	······································	% Large items (ap	opliances, c	ars, tires)		· ·····	
Drain Assoc	aited Algae:	Algaa outside	of flow?• (vec /		Other Obser	vations:		
0. None	Po (onoio).	Angae outside		ッ	Snails: Ves	no		
1. < 5% 2. 5-2.5%		Main algae ty % film al	ype: Igae		Birds: yes Other:	<b>()</b>	,	
25-50%		10% turf al	gae		Number of ho	meless:	) )	
4. 50-75% 5. > 75%		%macroa	ligae		Evidence of d	umping: yes no		
*Field	Water Temp ( <sup>0</sup>	0 30.1	Conductivity	1/ 57	m\$ / u\$ (Ci	role appropriate unit	e) .	
Screening	pH (pH units)	10,37	Conductivity_		1110 / 140 (011			1
* <u>Laboratory</u>	Fecal Coliform	l	(MPN)		E.Coli		(MPN)	
<u>Analysis</u>	Enterococcus_		(MPN)		Total Coliforn	n	(MPN)	
Lab Sample	staken Yesy	No <b>Bott</b>	le ID#'s	· · · .				
· ·	$\bigcirc$					. 1		

#### Calculating the Area (a) of the Cross Section of a Circular Pipe **Flowing Partially Full** D = Depth of watera = area of water in partially filled pipe d = diameter of the pipeTa = Tabulated Value Then a = Ta\*d2D/d0.000.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.0000 0.0013 0.0037 0.0069 0.0105 0.0147 0.0192 0.0242 0.0294 0.0350 0.0 0.0409 0.0470 0.0534 0.0600 0.0668 0.0739 0.0817 0.0885 0.0951 0.1039 0.1 0.2 0.1118 0.1199 0.1281 0.1365 0.1440 0.1535 0.1623 0.1711 0.1800 0.1890 0.1982 0.2074 0.2187 0.2280 0.2355 0.2540 0.2450 0.2642 0.2780 0.2836 0.3 0.4 0.2934 0.3032 0.3130 0.3220 0.3328 0.3428 0.3527 0.3627 0.3727 0.3827 0.5 0.3980 0.4030 0.4130 0.4230 0.4330 0.4430 0.4520 0.4620 0.4720 0.4820 0.4920 0.5020 0.5120 0.5210 0.5310 0.5400 0.5500 0.5590 0.5690 0.5780 0.6 0.5870 0.5960 0.6050 0.6140 0.6230 0.6320 0.6400 0.6490 0.7 0.6570 0.6660 0.8 0.6740 0.6810 0.6890 0.6970 0.7040 0.7120 0.7190 0.7250 0.7320 0.7360 0.7610 0.7450 0.7500 0.7560 0.7660 0.7710 0.7750 0.7790 0.7820 0.9 0.7840 TIME REQUIRED TO FILL A AREA x VELOCITY AREA x VELOCITY KNOWN VOLUME. (PARTIALLY FILLED PIPE) (FILL A BOTTLE METHOD) (CREEK/CHANNEL METHOD) Measure the width, depth, and velocity of 1. Determine volume/capacity of the 1) All measurement must be converted to a sample bottle. common unit before calculation (ft, in, or cm). the water. Measure time required to fill the Convert each value to a common unit (i.e. 2 Let D = water depth. 2) h all measurements converted to cm, ft, or bottle. 3) Let d = inside pipe diameter in.). Flow will be determined by initial 3. volume units: 4) Calculate D/d. Multiply the width \* depth \* velocity to c. mL/s 5) Find the tabulated (Ta) value on the partially determine flow. filled pipe formula chart above using the D/d oz/s Multiply the flow by 0.8 for creek value. (i.e. if D/d = 0.263 then Ta = .1623). d measurements -or-- 0.9 for concrete 4. Convert to desired value. channel measurements to account for channel roughness. Find the area using the formula 6) $a = Ta^*d^2$ . The results if measured in 7) Multiply area (a) by the water velocity. $Ft = Ft^3/sec$ cm = cm<sup>3</sup>/sec (mL/sec) Convert to desired value. 8) $in = in^3/sec$

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1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 199

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Convert to desired value. f

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0.083 ft	=	1 in		2.54 cm
0.1337 ft <sup>3</sup>	=	l gal	=	128 oz
		-	=	3.785 L
0.0078 gal	=	1 oz	_ ==	0.0011 ft
1000 cm <sup>3</sup>	=	1 L	=	1000mL

Dor	ninguez Channel Bacterial Monitoring	Data and Observation Sheet
GPS Coordi	nates: 118 19, 545 W	Site ID: 45
	<u>N</u>	Date/Time: <u>78.50 × 7.5 50</u>
Weather Inf	Field Crew:	See privious
Light Condit Last Rain:	Ions:     Overcast     Party Cloudy       > 72 hours     < 72 hours	<u><b>Precipitation:</b></u> $> 0.1$ " $< 0.1$ "
Site Descript Earthen Drain	ion: Location: Mil Channel betwee El Scgu hage Concrete Channel Outfall Manhole	Catchbasin Other
Flow Estima	tion: Flow Yes No / Ponded/Trickle Evidence of overl	and flow near sampling location?: Yes / No
Are 1. Wi	a X Velocity (creek / channel) th (cm -ft)- in) <b>F</b> I. Volume (n	Area X Velocity (pipe) nL - L - oz) 1. Pipe Diameter (ft/in)
2. De	oth (cm - ft - (in)) $\frac{5}{3}\frac{7}{8}$ (see	ec) 2. Depth
3. Ve	ocity (cm - ft - in / sec) $0.7$	3. Velocity
4. Flo	***See formula on back	***See formula on back
<u>Visuals:</u> Odor	Photo Taken: ves/ no Roll#/Pic# // 8	Draw sample location if no photo
Color	Grevish Greenish Browish None/C	other Vellow
Clarity	Clear Cloudy Other	
Floatables	Oily / Rainbow Trash Bubbles None/O	Other
Vegetation	Limited Extensive (None)C	Dther
Biology	Mosquitos Algae Snails / Fish None/Q	)ther
Trash In Vie 0. None	inity of Drain (Circle): <u>Type: (% of number not total volu</u> % Organic (food)	<u>me of items):</u>
1. Light (<	5) <u><b>To</b></u> %Plastics (cups, straws, bags,	, wrappers,
2. Moderat	-25) bottles, junk) -25) / $\Im$ % Recyclables-not plastic (pa	aper, glass
4. Somewh 5. Dense (>	at Dense (26-50) bottles, metal) 50) % Large items (appliances, ca	ars, tires)
Drain Assoc	aited Algae:	Other Observations:
0. None	ge (circle): Algae outside of now :: (yes / no)	Snails: yes (ng)
1. < 5%	Main algae type:	Birds: yes ho
3. 25-50%	% turf algae	Number of homeless:
(f)         50-75%           5.         > 75%	%macroalgae	Evidence of dumping: yes to
* <u>Field</u> Screening	Water Temp (°C) $29.9$ Conductivity $538$ pH (pH units) $798$	_mS_uS_Circle appropriate units)
* <u>Laboratory</u> <u>Analysis</u>	Fecal Coliform (MPN) Enterococcus (MPN)	E.Coli(MPN) Total Coliform(MPN)
Lab Sample	s taken Yes / No Bottle ID#'s	
Comments Observation	s flowing	that channel-entire channel
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# **Calculating the Area (a) of the Cross Section of a Circular Pipe** Flowing Partially Full

	21 									
D = 1	Depth of wat	er a	= area of w	ater in partia	lly filled pin	e			····	
d = d	iameter of th	e pipe T	a = Tabulat	ed Value	,		Then	a = Ta*d2		
uu		ie pipe - i	n rubulut							
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	90.0
0.0	0,000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.00	0.0350
0.0	0.0000	0.0013	0.0534	0.0600	0.0668	0.0730	0.0817	0.0212	0.0254	0.0330
0.1	0.0409	0.0470	0.0334	0.0000	0.0000	0.0759	.0 1622	0.0885	0.0951	0.1039
0.2	0,1110	0.1199	0.1201	0.1303	0.1440	0.1555	0.1023	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2042	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627.	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
	AREA x	VELOCI	ТҮ .	TIME RE	QUIRED	TO FILL A	1     AR	EA x VELC	)CITY,	
			The standard and the	KNOWN	VOLUME					
				VEILT A D	OTTIE	ETHOD		(PARTIAL I	V FILLED	PIPE
(C)	REEK/CHA	NNEL ME	THOD)		UTILE M	EIRUD)				
9	Measure the wi	idth depth and	velocity of	l De	termine volume	e/canacity of the		All measurement r	nust he convert	ed to a
t t	he water.		i velocity of	sample	e bottle.	coupacity of the		common unit befo	re calculation (	ft, in, or cm).
	<b>6</b>	-1	· · · · · · · · · · · · · · · · · · ·	2 14						
b.	Convert each v	alue to a comm	non unit (i.e.	2. Mo	easure time requ	uired to fill the	2)	Let D = water dep	th.	
	in.).		, <b>o</b> ni, n, or	00		diameter				
				3. , Fk	ow will be deter	mined by initia				
ċ	Multinly the w	idth * denth * v	elocity to	vo	lume units:		(4)	Calculate D/d.		
Ο.	determine flow			•	mL/s		5)	Find the tabulated	(Ta) value on t	he partially
				•	oz/s			filled pipe formul	la chart above i	ising the D/d
d.	Multiply the flo	ow by 0.8 for ci 	ncrete	4 60	nvert to decired	l volue		value. (i.e. if D/c	I = 0.263 then 1	a = .1623).
	channel measu	rements to acco	ount for	4. CU		i value.				
	channel roughn	iess.				•				
							6)	Find the area using $a = Ta^* d^2$	g the formula	1
e.	The results if in	neasured in						u luju.		
							7)	Multiply area (a) b	y the water vel	ocity.
•	FI = FI / sec $cm = cm^3 / sec$ (1)	mi /sec)					8)	Convert to desired	value	
•	$in = in^{1}/sec$									
	<b>~</b>									
1.	Convert to desi	red value.	l			· · · · · · · ·		·····		
	E / Motrie I	Init Convo								
	P2 A -									
	$\frac{0.5 \text{ ft}}{3.27  \theta^{3}} =$	1  m =	128.07							
	55711	I gai	3 785 1							
	070 -01 -		0.0011.0	3						
	$\frac{0}{6} \frac{gal}{gal} = \frac{1}{2}$	1 0Z =	1000	<u> </u>						
			TUUUML	[			,			
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						<u> </u>				
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	Dominguez Channel Bacterial Monitoring Data and Observation Sheet
	GPS Coordinates: 1/8/9,539 W 3355.71 N Date/Time: 1850,02 1605
	Weather Information:         Field Crew:         JCe         previous           Light Conditions:         Overcast         Partly Cloudy
	Last Rain: (>72 hours) <72 hours <3 hours <u>Precipitation</u> : >0.1" <0.1" Site Description: Location: East side Dive Under Avilroud Driver between 120th st & D kgund
	Earthen Drainage Concrete Channel Outfall Manhole Catchbasin Other 76/CCP
	Area X Velocity (creek / channel)       Filling a Bottle       618 ++       Area X Velocity (pipe)         1.       Width (cm - ft - in)       1.       Volume       JOD (mL) - L - oz)       1.       Pipe Diameter       (ft/in)
	2. Depth (cm - ft - in / sec) 2. Time $0$ (sec) 2. Depth 3. Velocity (cm - ft - in / sec) 50% 50% 3. Velocity 4. Flow $006$ ft <sup>3</sup> /s ***See formula on back ***See formula on back
	Visuals:         Photo Taken:         yes / no         Roll#/Pic#         Draw sample location if no photo:           Odor         Chemical         Sewage         Rotten Eggs         None/Other
	Color     Greenish     Browish     Greenish       Clarity     Clear     Cloudy     Other
	Floatables     Oily / Rainbow     Trash     Bubbles     None/Other       Vegetation     Limited     Extensive     None/Other       Biology     Mosquitos     Algae     Snails
	Trash In Vicinity of Drain (Circle):       Type: (% of number not total volume of items):         0. None       % Organic (food)         ① Light (<5)       % Plastics (cups, straws, bags, wrappers, bottles, junk)         2. Moderate (6-10)       % Recyclables-not plastic (paper, glass         3. High (11-25)       % Recyclables-not plastic (paper, glass         4. Somewhat Dense (26-50)       bottles, metal)         5. Dense (>50)       % Large items (appliances, cars, tires)
	Drain Assocaited Algae: Algae coverage (circle):Algae outside of flow?: (yes no)Other Observations: Fish: yes so Snails: $O S$ no Birds: yes $O S$ 0. None 1) < 5%Main algae type: $S \cdot 5^{2} 5^{0}$ None $S \cdot 5^{2} 5^{0}$ None $S \cdot 5^{2} 5^{0}$ None $S \cdot 5^{2} 5^{0}$ 3. 25-50% 4. 50-75% $S \cdot 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0} + 5^{0}$
	* <u>Field</u> Water Temp (°C) <u>J5,1</u> Conductivity <u>072</u> mS /uS(Circle appropriate units) <u>Screening</u> pH (pH units) <u>7,23</u>
	* Laboratory       Fecal Coliform       (MPN)       E.Coli       (MPN)         Analysis       Enterococcus       (MPN)       Total Coliform       (MPN)
	Lab Samples taken (Yes) No Bottle ID#'s Comments Observations
<u> </u>	

	<u> </u>	Calard		. A		Cross Sa		ion of	o Charl	lon Ding	•
		Calcul	ating th	e Area (	a) of the	Uross de	CT	ION OI	a Circu	аг гіре	· .
	, ,	· ·	an a	<b>F</b> I	owing Pa	artially l	<b>u</b>	<b>.</b> .			
	· · · · · · · · · · · · · · · · · · ·		ne Ne <u>nista geog</u> tika	S. S							
D = [	Depth of wat	er a	= area of wa	ater in partia	ally filled pip	e					
d = d	iameter of th	ie pipe – T	a = Tabulat	ed Value				Then a =	Ta*d2		
D/d	0.00	. 0.01	0.02	0.03	0.04	0.05		0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	(	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	(	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	-f	).1623	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	(	).2540	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428		).3527	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430		0.4520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400		).5500	0.5590	0.5690	0.5780
0.7	0.58/0	0.5960	0.6050	0.6140	0.0230	0.6320		1.0400	0.6490	0.6570	0.7260
0.8	0.0740	0.0810	0.0890	0.0970	0.7040	0.7120	+	).7190	0.7250	0.7320	0.7360
0.9	0.7430	0.7300	0.7300					<b>ADE</b>			0.7840
2.5	AREA X	VEFOCI	IY	KNOWN	VOLUME				A A LEC		
	Mary and And C			MIGHIN	YOLOME						
( <b>Ć</b> ]	REEK/CH/	NNEL ME	THOD)	(FILL A E	BOTTLE M	ETHOD)		, (P	ARIIALL	Y FILLED.	LIKE)
a.	Measure the w	idth, depth, and	l velocity of	1. Di sampl	etermine volum e bottle.	e/capacity of the		1) All con	measurement i nmon unit befo	must be convert re calculation (	ed to a ft, in, or cm).
b.	Convert each v all measuremen	alue to a comm	non unit (i.e. 5 cm, ft, or	2. M bo	easure time requestile.	uired to fill the		2) Let	D = water dep	th.	
	in.).			3 FI	ow will be deter	mined by initia	,	3) Let	d = <i>inside</i> pipe	e diameter	
				vc	lume units:	innee by inna	'	4) Cal	culate D/d.		
С.	Multiply the w	idth * depth * v	velocity to		ml /c			S) Ein	d the tabulated	(Ta) value on t	he nortially
	determine now	•		•	oz/s			fil	led pipe formu	la chart above u	ising the D/d
đ.	Multiply the flo	ow by 0.8 for c	reek	4		4		va	lue. (i.e. if D/c	1 = 0.263 then 1	fa = 1623).
	channel measu	rements to acco	ount for	4. C	onvert to desired	i value.					
	channel roughr	less.						6) Ein	d the eres win.	- the fam	. 1
								0)	$a = Ta^*d^2$ .	g the formula	
e.	The results if n	neasured in						7) Mu	ltinly area (a) F	w the water vel	ocity
•	$Ft = Ft^3/sec$									.,	
.•	cm = cm <sup>3</sup> /sec (i in = in <sup>3</sup> /sec	mL/sec)						8) Cor	vert to desired	value.	
•	Convertito desi	rod voluo									
1.			I					l			· · · · · · · · · · ·
SA	E / Metric	Unit Conve	rsion								
0.0	83 ft =	1 in =	2.54 cm								
0.1	$3\overline{37}  \overline{ft^3} =$	1 gal =	128 oz								
		=	3.785 L								
0.0	078 gal   =	1 oz =	0.0011 ft								
100	00 cm <sup>2</sup> =	<u>  L</u> =	1000mL								•
		• .									
	<del>_</del>										

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Dor	ninguez Chan	<u>nel Bacterial Mo</u>	onitoring D	ata and Obse	rvation Sh	eet
GPS Coordi	nates: 118 20.	1 <u>19</u> w	- 	the Si	te ID: 47	
•	33 22,	438 N	D	ate/Time: 18 JUN	02 /b-	25
<u>Weather Inf</u>	ormation:	; F	ield Crew:	see previous		
<u>Light Condi</u> Last Rain:	tions: (Sunny) 72 hour	Overcast F < 72 hours <	artly Cloudy < 3 hours	Precipitation:	> 0.1"	< 0.1"
Site Descript Earthen Drain	ion: Location:	Pox Culvet ut end iel Outfall N	st V/CD1 J Ianhole Ca	<u>+</u> atchbasin Other	Box Culiert	
Flow Estima	tion: Flow Yes N	o / Ponded/Trickle <u>Ev</u>	idence of overland	I flow near sampling	<u>location?:</u> Yes	; / (()), ·
Are 1.=3.5ft Wi	a X Velocity (creek / cl dth (cm - ft - in)	$\frac{ \mathbf{annel}\rangle}{ \mathbf{f}_{1} } \xrightarrow{\mathbf{f}_{1}} \frac{\mathbf{f}_{2}}{ \mathbf{f}_{1} } = \mathbf{f}_{1} $	Filling a Bottle ne (mL -	- L - oz) 1. Pip	Area X Velocit	<b>ty (pipe)</b> (ft/in)
2.=.02 ft De	oth (cm - ft - in) $\frac{2}{2}$	$\frac{1}{5}$ $\frac{7}{6}$ $\frac{1}{6}$ $\frac{1}$	(sec)	2. De	pth	
3. Vel . 4. Flo	w $\frac{1035}{1000}$ fl3/s	***See fi	ormula on back	3. Ve ***Se	e formula on back	
Visuals:	Photo Taken: y	es / no Roll#/Pic	# 1/6	Draw	sample location i	if no phot
Odor	Chemical S	ewage Rotten Eg	ggs NoneOthe	r		
Color	Greyish C	reenish Browish	None/Othe	r <u>yelliu</u> th		
Clarity	Clear C	loudy	Other		•	
Floatables	· Oily / Rainbow 1	rash Bubbles	None/Othe	r	·	
Vegetation	Limited E	xtensive	NoneOthe	r		
Biology	Mosquitos A	Igae Snails F	ish None/Othe	r		
Trash In Vie	cinity of Drain (Circle)	<u>Type: (% of numbe</u>	r not total volume	of items):		
0. None	5)	→ Organic (fo	ood) ns straws bags wi	appers	•	
2. Moderat	e (6-10)	bottles, jun	k)	"		
(1) High (1)	-25) at Dense (26-50)	% Recyclable	s-not plastic (paper etal)	, glass		
5. Dense (>	•50)	% Large item	s (appliances, cars,	tires)		
Drain Assoc	aited Algae:		I 0	ther Observations:		
Algae covera	ge (circle):	Igae outside of flow?: (ye	es / no) Fi	ish: yes no		
1. < 5%	Γ	Aain algae type:	B	irds: yes no		
2. 5-25%		50 % film algae	0	ther:		
3, 25-50% (4) 50-75%	-	<u>3 ~ % turr algae</u> %macroalgae		vidence of dumping:	yes no	
5. > 75%	_					
* <u>Field</u> <u>Screening</u>	Water Temp (°C)_ pH (pH units)	$\frac{24.2}{7.01}$ Conducting	<b>ر کر ک</b> ر vityr	nS (US)(Circle approp	priate units)	
*Laborator	Fecal Coliform	(MPN)	, E	.Coli	(MP	N)
<u>Analysis</u>	Enterococcus	(MPN)	Ţ	otal Coliform	(MP	'N)
Lab Sample	s taken (Yes) No	Bottle ID#'s				
Commente		· · ·	· · ·			
Comments			······			

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	<u> </u>	Calcul	ating th	e Area (a	a) of the	Cross Se	ectio	n of	a Circu	lar Pipe	· ·
•	•			E.	owing ra	агнану і	şun				
D - I	Donth of wat	or 9	= area of w	ater in nartia	lly filled nin				<u> </u>		
d = d	iameter of th	ne pipe T	a = Tabulat	ed Value	iny nineu pip		Th	en a·=	= Ta*d2		
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.0	)6	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0	92	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.08	317	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.16	523	0.1711	0.1800	0.1890
0.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.25	640	0.2642	0.2780	0.2836
0.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.35	27	0.3627	0.3727	0.3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.45	520	0.4620	0.4720	0.4820
0.6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.55	500	0.5590	0.5690	0.5780
0.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.64	00	0.6490	0.6570	0.6660
0.8	0.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.71	90	0.7250	0.7320	0.7360
0.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.77	50	0.7790	0.7820	0.7840
	AREA x	VELOCI	TY	TIME RE	QUIRED	TO FILL .	4   A	RE	A x VELC	)CITY	
		an a		KNOWN	VOLUME						
		د دو در این این در اندینی در ۲۸ کرد		(FILL À B	ΟΤΤΙ Ε ΜΙ	тнору		· (P	ARTIALL	Y FILLED	PIPE)
<u>: (C</u> )	REEK/CH/	NNELME	THOD)			EIHODI		<u></u>			
a. t	Measure the w ne water.	idth, depth, and	velocity of	I. De sample	termine volume e bottle.	c/capacity of th	e    1)	All con	measurement r nmon unit befo	nust be conver re calculation (	ted to a ft, in, or cm).
b.	Convert each v all measureme	alue to a comm	on unit (i.e. cm, ft, or	2. Mo bo	easure time requ	ired to fill the	2)	Let	D = water dep	th.	
	in.).			3. Flo	ow will be deter	mined by initia	1    3)	Let	: d = <i>inside</i> pipe Iculate D/d	e diameter	
<b>C</b> .	Multiply the w determine flow	idth * depth * v '.	elocity to	•	mL/s		5	) Fin	d the tabulated	(Ta) value on t	the partially
d.	Multiply the fle	ow by 0.8 for c	reek	•	oz/s			fil va	lled pipe formul ilue. (i.e. if D/c	la chart above i l = 0.263 then 7	using the D/d $\Gamma a = 1623$
ч.	measurements channel measu	-or 0.9 for co rements to acco	ncrete ount for	4. Co	nvert to desired	value.	ļ				ra ~, rozs).
	channel roughr	iess.			•		6)	Fin	d the area using a = Ta*d <sup>2</sup> .	g the formula	
e. <sup>°</sup>	The results if m	neasured in					7)	Mu	ltinly area (a) h	v the water vel	locity
٠	Ft = Ft <sup>3</sup> /sec	•									oony.
•	cm ≕ cm³/sec (i in = in³/sec	mL/sec)					8)	Cor	nvert to desired	value.	
f.	Convert to desi	red value.	·					<u> </u>			
SA	E / Metric	Unit Conver	rsion								
0.0	83 ft =	1 in =	2.54 cm		· .						
0.1	$337 \text{ ft}^3 =$	1 gal =	128 oz								
		=	3.785 L		. · ·						*
0.0	078 gal =	1 oz =	0.0011 ft	3		• .					
100	$00 \text{ cm}^3 =$	1L =	1000mL								
						•				•	
			. <u></u>			,					
						•					

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<u>Don</u>	ninguez Cha	innel Bac	terial Moni	<u>toring Data an</u>	d Observation Sheet
GPS Coordin	ates: <u>118</u> 20 <u>3355</u>	./63 [477]	W N	Date/Time	Site ID: 4P :/85UNO2 1630
Weather Infe	ormation:	۰. ۱	Field	Crew: <u>Selpre</u>	lloine
<u>Light Condit</u> Last Rain:	ions: > 72 h	Over ours < 72	cast Partly hours < 3 ho	Cloudy ours <u>Pr</u>	<u>ecipitation:</u> > 0.1" < 0.1"
<u>Site Descript</u> Earthen Drain	ion: Location:_ age Concrete Cl	Sorth Lui nannel Outf	teral of Poub all Manho	le Box Culveton L	Nest side of Dom Chamel Other <u>Double Box Culue</u> t
Flow Estimat	ion: Flow (Yes	No / Ponded/1	Frickle <u>Eviden</u>	ce of overland flow nea	r sampling location?: Yes / No
Area 1. Wid	X Velocity (creek	/ channel)	Fillin I. Volume	g a Bottle (mL - L - oz)	Area X Velocity (pipe) 1. Pipe Diameter (ft/in)
2. Dep	th (cm - ft -(in)	<u>, 11 - 15</u>	<b>1</b> 2. Time	(sec)	2. Depth
3. Velo	$\frac{1}{10000000000000000000000000000000000$	ec) <u>[ , [ 7</u>			3. Velocity
4. Flov	× 2.66A3/5		***See formu	ila on back	***See formula on back
<u>Visuals:</u>	Photo Taken:	yes / no	Roll#/Pic#	1/5 Mitu	Draw sample location if no phot
Odor	Chemical	Sewage	Rotten Eggs	None/Other	-
Clority	Greyisi	Cloudy	DIUWISH	Other	-
Floatables	Qily / Rainbow	Trach	Bubbles	Vone Other	-
Vegetation	Limited	Extensive	Bubbles	None Other	-
Pieleau	Monguiton	Algoo	Spails / Fish	None/Other	-
DIOIOBA	Mosquitos				- · · · · · · · · · · · · · · · · · · ·
Trash In Vic           0.         None           1.         Light (<5	inity of Drain (Cir	<u>cle): Type:</u> 90	(% of number not % Organic (food) %Plastics (cups, st	t total volume of items) traws, bags, wrappers,	
<ul> <li>2 Moderate</li> <li>3. High (11)</li> <li>4. Somewhat</li> <li>5 Dense (&gt;)</li> </ul>	(6-10) -25) ht Dense <u>(</u> 26-50) 50)	10	bottles, junk) % Recyclables-not bottles, metal) % Large items (an	t plastic (paper, glass	
			, a BarBe trente (ab		
$\begin{array}{c c} \hline Drain Assoca \\ Algae coveral \\ \hline O & None \\ 1. < 5\% \\ 2 & 5-25\% \end{array}$	<u>lited Algae:</u> ge (circle):	Algae outsid Main algae t % film a	e of flow?: (yes / n ype: lgae	o) <u>Other Obs</u> Fish: yes Snails: yes Birds: yes Other	s no s no s no
3.         25-50%           4.         50-75%           5.         > 75%		% turf al %macro	lgae algae	Number of Evidence of	homeless: dumping: yes no
* <u>Field</u> <u>Screening</u>	Water Temp (° pH (pH units)_	c) <u>24.0</u> 7,91	Conductivity_	577 ms us (	Circle appropriate units)
* <u>Laboratory</u> <u>Analysis</u>	Fecal Coliform Enterococcus	·····	(MPN) (MPN)	E.Coli Total Colife	(MPN) prm(MPN)
Lab Samples	taken Yes	No Bott	le ID#'s		·
Comments	16 W	× 89" 11		· · · ·	
Observation	5	· · · · · · · · · · · · · · · · · · ·	i <i>d</i>	, 	· · · ·

 $1 \leq p_{1}$ 

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Flowing Partially-Equit         Depth of water       a = area of water in partially filled pipe         diameter of the pipe       a = area of water in partially filled pipe       Then a = Ta*d2         Depth of water       Then a = Ta*d2         Od00       0.01       0.026       0.027       0.028       0.027       0.028       0.027       0.028       0.0274       0.028       0.0310       0.1280       0.3282       0.3420       0.2420       0.2420       0.2420       0.2420       0.2420       0.2420       0.2420       0.2420       0.2420       0.2420       0.2420       0.2420       0.2420       0.2420       0.2420       0.2420       0.3527       0.3627       0.3627       0.3627       0.3520       0.5310       0.5310       0.5310       0.5310       0.5310       0.5310       0.5310       0.5310       0.5310       0.5310 <th col<="" th=""><th></th><th>·</th><th>Calcul</th><th>ating th</th><th>e Area (a</th><th>a) of the</th><th>Cross Se</th><th>ction of</th><th>a Circu</th><th>lar Pipe</th><th>·····</th></th>	<th></th> <th>·</th> <th>Calcul</th> <th>ating th</th> <th>e Area (a</th> <th>a) of the</th> <th>Cross Se</th> <th>ction of</th> <th>a Circu</th> <th>lar Pipe</th> <th>·····</th>		·	Calcul	ating th	e Area (a	a) of the	Cross Se	ction of	a Circu	lar Pipe	·····
Depth of water       a = area of water in partially filled pipe         diameter of the pipe       Ta = Tabulated Value       Then a = Ta*d2         0.000       0.011       0.002       0.03       0.04       0.05       0.060       0.0242       0.0294       0.0350         0.000       0.0013       0.0037       0.0069       0.0147       0.0192       0.0242       0.0294       0.0350         0.000       0.0470       0.0534       0.0668       0.0739       0.0817       0.0825       0.0520       0.1183         0.118       0.1199       0.1128       0.1365       0.1430       0.1523       0.1711       0.1800       0.1820         0.1982       0.2074       0.2187       0.2280       0.3322       0.3328       0.3428       0.3527       0.3627       0.3727       0.3827       0.3620       0.4490       0.6570       0.6400       0.6430       0.6570       0.6600       0.7100       0.7750       0.7820       0.7840         0.5870       0.5600       0.6140       0.6230       0.6140       0.6230       0.6430       0.6570       0.6660         0.5740       0.6810       0.6970       0.7660       0.7100       0.7750       0.7820       0.7840				• .	FI	owing P	artially F	ull				
Depth         a = area of water in partially filled pipe diameter of the pipe         Ta = Tabulated Value         Then a = Ta*d2 $0.000$ 0.001             0.002             0.003             0.003		·					· · · · ·	·	· <u> </u>			
The Ta = Tabulated Value       The a = Ta*d2         The n = Ta*d2         0.00       0.01       0.02       0.03       0.04       0.05       0.06       0.077       0.088       0.0294       0.0324       0.0324       0.0031       0.0351       0.0600       0.0666       0.0739       0.0137       0.0281       0.0351       0.0600       0.0666       0.0739       0.0885       0.0951       0.0385       0.0242       0.0234       0.0204       0.0234       0.0204       0.0234       0.0242       0.0234       0.0242       0.0234       0.0283       0.0327       0.0135       0.1118       0.1199       0.1281       0.1365       0.1440       0.1535       0.1623       0.1711       0.1890       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0242       0.0327       0.3720       0.3527       0.3527       0.3527       0.3527       0.3527       0.3527       0.3527       0.3527       0.3527       0.3527 <td>) = [</td> <td>Depth of wat</td> <td>er a</td> <td>= area of w</td> <td>ater in partia</td> <td>ally filled pip</td> <td>be</td> <td></td> <td></td> <td></td> <td></td>	) = [	Depth of wat	er a	= area of w	ater in partia	ally filled pip	be					
0.00         0.01         0.02         0.03         0.04         0.05         0.06         0.07         0.08         0.092           0.000         0.011         0.0031         0.0069         0.0105         0.0147         0.0182         0.0242         0.0242         0.0240         0.0254         0.0600         0.0685         0.0951         0.00855         0.0951         0.0000         0.0135         0.1118         0.1199         0.1281         0.1365         0.1440         0.1535         0.1623         0.1711         0.1800         0.1890         0.2885         0.0274         0.2280         0.2328         0.2235         0.2420         0.3267         0.2780         0.2280         0.2328         0.3227         0.3267         0.3770         0.3627         0.3727         0.3827           0.3980         0.4030         0.4130         0.4230         0.4330         0.4430         0.4520         0.4620         0.4720         0.4820           0.5870         0.5960         0.6610         0.6630         0.6140         0.6230         0.7500         0.7500         0.7500         0.7500         0.7500         0.7500         0.7500         0.7500         0.7500         0.7500         0.7500         0.7500         0.7500	= d	iameter of th	ne pipe 7	°a = Tabulat	ed Value			Then a =	= Ta*d2			
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	)/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350	
0.1118       0.1199       0.1281       0.1365       0.1440       0.1535       0.1623       0.1711       0.1800       0.1800         0.1982       0.2074       0.2187       0.2280       0.2355       0.2450       0.26240       0.26240       0.2780       0.2325         0.3980       0.4030       0.4130       0.4230       0.4330       0.4430       0.4520       0.3627       0.3727       0.3827       0.3727       0.3827       0.3727       0.3827       0.3727       0.3827       0.3727       0.3827       0.3727       0.3827       0.3727       0.3827       0.3727       0.3820       0.4430       0.4520       0.4620       0.4570       0.6660       0.570       0.5660       0.570       0.5650       0.570       0.5650       0.570       0.5650       0.570       0.5650       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.570       0.5750 <td>.1</td> <td>0.0409</td> <td>0.0470</td> <td>0.0534</td> <td>0.0600</td> <td>0.0668</td> <td>0.0739</td> <td>0.0817</td> <td>0.0885</td> <td>0.0951</td> <td>0.1039</td>	.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039	
0.1982       0.214       0.2187       0.2280       0.2355       0.2450       0.2540       0.2624       0.2780       0.2836         0.2934       0.3322       0.3130       0.4320       0.4320       0.4320       0.4320       0.4320       0.4320       0.4320       0.4320       0.4320       0.4320       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.4520       0.6560       0.5600       0.5600       0.5600       0.5600       0.5600       0.5600       0.5780       0.7500       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7560	.2	0.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890	
0.2934       0.3032       0.3120       0.3220       0.3328       0.3428       0.3527       0.3627       0.3727       0.3827         0.3980       0.4030       0.4130       0.4230       0.4330       0.4430       0.4520       0.4620       0.4720       0.4820         0.4920       0.5020       0.5120       0.510       0.5400       0.5590       0.5690       0.5700       0.6660         0.7430       0.7500       0.7500       0.7700       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750       0.7750	.3	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836	
0.3980       0.4030       0.4130       0.4230       0.4330       0.4430       0.4520       0.4620       0.4720       0.4620       0.4720       0.4820         0.4920       0.5900       0.5900       0.6500       0.5570       0.6650       0.6700       0.7100       0.7120       0.7190       0.7250       0.7320       0.7360         0.6740       0.6810       0.6890       0.6970       0.7040       0.7120       0.7190       0.7250       0.7320       0.7360         0.7450       0.7500       0.7500       0.7610       0.7660       0.7110       0.7750       0.7790       0.7820       0.7840         AREA X VELOCITY         TIME REQUIRED TOFIL!: 4         (PARTALLED FIPE):	.4	0.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	, 0.3827	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820	
0.5870       0.5960       0.6140       0.6230       0.6320       0.6400       0.6490       0.6570       0.66400         0.6740       0.6810       0.6820       0.6970       0.7040       0.7120       0.7190       0.7250       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320       0.7320	6	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	.7	0.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660	
0.74500.75600.75600.75600.77100.77200.78200.7840 <b>AREA X VELOCITY</b> KNOWN VOULME(FILL A BOOTLE METHOD)Measure the width, depth, and velocity of the water.Convert each value to a common unit (i.e. all measurements converted to cm, ft, or 	8	0.6740	0.6810	0.6890	0.6970	0:7040	0.7120	0.7190	0.7250	0.7320	0.7360	
AREA × VELOCITYTIME REQUIRED TO FILL A KNOWN VOLUMEAREA × VELOCITYSREEK/CHANNEL METHOD)(FILL A BOTTLE METHOD)(PARTIALLY FILLED PIPE)Measure the width, depth, and velocity of the water.1Determine volume/capacity of the sample bottle.1Convert each value to a common unit (i.e. all measurements converted to en, fl, or in.).1Determine volume/capacity of the sample bottle.1Multiply the width * depth * velocity to determine flow.1Determine dby initial volume units:1Multiply the flow by 0.8 for creek measurements to account for channel roughness.Flow will be determined by alue.1The results if measured in FI = Ft?/sec or $= on //sec$ (mL/sec) in = in/secFind the area using the formula a = Ta*d*.6Find the area using the formula a = Ta*d*.1Multiply area (a) by the water velocity. 8)Convert to desired value.2.54 cm = 3.785 L 00078 gal = 1 to = 0.0011 R <sup>3</sup>	.9	0.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840	
KNOWN VOLUME (FILL A BOTTLE METHOD)(PARTIALLY FILLED PIPE)Measure the width, depth, and velocity of the water.1Determine volume/capacity of the sample bottle.1All measurement must be converted to a common unit before calculation (ft, in, or cmConvert each value to a common unit (i.e. all measurements converted to cm, ft, or in.).1Measure time required to fill the bottle.1All measurement must be converted to a common unit before calculation (ft, in, or cmMultiply the width * depth * velocity to determine flow.1Sind the tabulated (Ta) value on the partially filed pipe formula chart above using the D/A value. (i.e. if D/d = 0.263 then Ta = 1.623).Multiply the flow by 0.8 for creek measurements concord for channel roughness.mL/s to 2/sSind the tabulated (Ta) value on the partially filed pipe formula chart above using the D/A value. (i.e. if D/d = 0.263 then Ta = 1.623).The results if measured in FI = FI/sec convert to desired value.6)Find the area using the formula a = Ta*d*.AE / Metric Unit Conversion $033 ft = 1$ in $= 2.54$ cm $1337 ft^3 = 1$ gal $= 1.28$ oz $= 3.785 L$ $00078$ gal $= 1$ oz $= 0.00011$ ft²0078 gal $= 1$ oz $= 1$ (0.00011 ft²)		ARÉA x	VELOCI	TŶ	TIME RE	QUIRED	TO FILL A		4 x VEL(	<b>JCITY</b>		
CHEL A BOTTLE METHOD)       (PARTIALIX FILLED PIPE)         Measure the width, depth, and velocity of the water.       I. Determine volume/capacity of the sample bottle.       I. All measurement must be converted to a common unit (i.e. all measurements converted to cm, ft, or in.).         Multiply the width * depth * velocity to determine flow.       I. Measure time required to fill the bottle.       I. Measure time required to fill the bottle.       I. Let D = water depth.         Multiply the width * depth * velocity to determine flow.       II. Signed and the determined by initial volume units.       I. Et d = inside pipe diameter         Multiply the flow by 0.8 for creek measurements to account for channel roughness.       I. Convert to desired value.       If the tabulated (Ta) value on the partially filled pipe formula fact and boxe using the D// value. (i.e. if D/d = 0.263 then Ta = 1.623).         The results if measured in Ft = Ft/Sec (mL/sec) in = in r/sec       If the tare using the formula in a = Ta*d <sup>2</sup> .         Multiply area (a) by the water velocity.       Is Convert to desired value.       Is Convert to desired value.         Multiply area (a) in the intervent intervent intervent in the intervent intervent intervent in the intervent int					KNOWN	VOLUME			•			
Measure the width, depth, and velocity of the water.1.Determine volume/capacity of the sample bottle.1.All measurement must be converted to a common unit before calculation (ft, in, or emConvert each value to a common unit (i.e. all measurements converted to em, ft, or in.).1.Measure time required to fill the bottle.1.All measurement must be converted to a common unit before calculation (ft, in, or emMultiply the width * depth * velocity to determine flow.1.Ite d = inside pipe diameter2.Let d = inside pipe diameterMultiply the flow by 0.8 for creek measurements to account for channel measurements to account for channel roughness.2.Convert to desired value.5.Find the tabulated (Ta) value on the partially filled pipe formula chart above using the D/u value. (i.e. if D/d = 0.263 then Ta = 1.623).The results if measured in Ft = Ft?sec cm = m?sec (mL/sec) in = in?secFind the area using the formula a = Ta*d*.6.Find the area using the formula a = Ta*d*.AE / Metric Unit Conversion 083 ft = 1 in = 2.54 cm 11337 r <sup>2</sup> = 1 gal = 128 oz = 3.785 L 0078 gal = 1 oz = 0.00011 R <sup>2</sup> 3.785 L 1000mL	( <b>C</b> )	REEK/CH4	NNEL ME	THOD)	(FILL A B	IOTTLE M	ETHOD)	(P	ARTIALL	Y FILLED	PIPE)	
AE / Metric Unit Conversion $083 \text{ ft}$ =       1 in       =       2.54 cm $1337 \text{ ft}^3$ =       1 gal       =       128 oz $=$ $3.785 \text{ L}$ = $3.785 \text{ L}$ $0078 \text{ gal}$ = $1 \text{ oz}$ = $0.0011 \text{ ft}^3$ $)00 \text{ cm}^3$ = $1 \text{ L}$ = $1000 \text{ mL}$	t b. c. d.	he water. Convert each v all measurement in.). Multiply the w determine flow Multiply the flime measurements channel measurements channel measurements channel rough The results if m Ft = Ft <sup>3</sup> /sec cm = cm <sup>3</sup> /sec ( in = in <sup>3</sup> /sec	value to a comm nts converted to idth * depth * v ow by 0.8 for c -or 0.9 for co rements to acco ness. neasured in mL/sec) ired value.	non unit (i.e. o cm, ft, or velocity to reek oncrete bunt for	sampl 2. M bo 3. Flu vo 4. Co	e bottle. easure time req ttle. ow will be dete: lume units: mL/s oz/s onvert to desired	uired to fill the rmined by initia d value.	<ul> <li>cor</li> <li>2) Let</li> <li>3) Let</li> <li>4) Cai</li> <li>5) Fin fil va</li> <li>6) Fin</li> <li>7) Mu</li> <li>8) Cor</li> </ul>	nmon unit before D = water dep d = inside pip deculate D/d. d the tabulated hed pipe formulue. (i.e. if D/ d the area using $a = Ta^*d^2$ . Hiply area (a) in nvert to desired	bre calculation ( bth. e diameter I (Ta) value on t that chart above t d = 0.263 then T g the formula by the water velowed that value.	ft, in, or cm). he partially using the D/d Γa = 1623). ocity.	
$\frac{083 \text{ ft}}{1337 \text{ ft}^3} = \frac{1 \text{ gal}}{1 \text{ gal}} = \frac{2.54 \text{ cm}}{128 \text{ oz}}$ $= \frac{1}{3.785 \text{ L}}$ $\frac{0078 \text{ gal}}{000 \text{ cm}^3} = \frac{1 \text{ oz}}{1 \text{ L}} = \frac{0.0011 \text{ ft}^3}{1000 \text{ mL}}$	<u>SA</u>	<u>E / Metric</u>	<u>Unit Conve</u>	rsion					· .			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\frac{0.0}{0.1}$	$85 \Pi = 237 \Phi^3 = -$		2.54 cm								
$\frac{0078 \text{ gal}}{000 \text{ cm}^3} = \frac{1 \text{ oz}}{1 \text{ L}} = \frac{0.0011 \text{ ft}^3}{1000 \text{ mL}}$	U. I	557 R =		120 OZ								
$\frac{102}{100} \text{ cm}^3 = 1 \text{ L} = 1000 \text{ mL}$	0 0	078 gal -		0.0011 4	3						•	
	100	$\frac{0.00 \text{ gar}}{100 \text{ cm}^3} =$	$\frac{102}{11} =$	· 1000m1	<u></u>							
		L_		1 10001115								
			<u></u>	<u></u>	, <del>_</del>				·····			
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	Dominguez Channel Bacterial Monitoring Data and	Observation Sheet
	SPS Coordinates: //1 20,164 W	Site ID: 49
	<u>3355.480</u> N Date/Time:	1850402 1640
	Weather Information: Field Crew: Jee pre-	2001
per-s	Light Conditions: Overcast Partly Cloudy	Ditation: $> 0.1$ " < $0.1$ "
	Sin Drawling Alasta ( + and) of Os the Bax Culve	+ Theating to Church
	Earthen Drainage Concrete Channel Outfall Manhole Catchbasin	Other Double Box Cilient
and the second	Flow Estimation: Flow Yes / No / Ponded/Trickle Evidence of overland flow near s	ampling location?: Yes / No
	Area X Velocity (creek / channel) Width (cm = ft = in)	Area X Velocity (pipe)
	2 Depth (cm = ft = in) $7p = .16ft = 2$ Time (sec)	2 Denth
2	3. Velocity (cm - ft - in / sec) $(.37)$	3. Velocity
	4. Flow 2 (12 Clater +**See formula on back	***See formula on back
e		
	Visuals: Photo Taken: (es) no Roll#/Pic# (/ 4	Draw sample location if no photo:
	Odor Chemical Sewage Rotten Eggs None/Other (1/2014)	
	Color Greyish Greenish Browish None Other	
Ci-	Clarity Clear Cloudy Other	
	Vocatables Only Rainbow Trash Bubbles None Other	
ų	Biology Mosquitos Algae Snails / Fish None/Other	
6	Trash In Vicinity of Drain (Circle):Type: (% of number not total volume of items):0. None% Organic (food)	
6	1. Light (<5) 90 %Plastics (cups, straws, bags, wrappers,	<i>,</i>
1.1.1	3. High (11-25) 6 bottles, julk) 6 Recyclables-not plastic (paper, glass	
	4. Somewhat Dense (26-50) bottles, metal) 5. Dense (250) % Large items (appliances, cars, tires)	
	Drain Assocaited Algae: Algae coverage (circle): Algae outside of flow?: (yes / no) Fish: yes	ations: Go
	O None Snails: yes	₩.
ί <u></u>	1. < 5%Main algae type:Birds: yes2. 5-25%% film algaeOther:	RØ
	3. 25-50%% turf algae Number of hor	neless:
	4. $50-75\%$ %macroalgae Evidence of du 5. > $75\%$	imping: yes no
	* <u>Field</u> Water Temp (°C) $27.8$ Conductivity $29^{2}$ ms (us)(Circ <u>Screening</u> pH (pH units) $7.8P$	cle appropriate units)
	*Laboratory AnalysisFecal Coliform Enterococcus(MPN)E.Coli Total Coliform	(MPN) (MPN)
1	Lab Samples taken Yes / No Bottle ID#'s	·
	Comments 66 W P9"H	1
ر- نه ا	Observations	
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				FÌ	owing Pa	artially I	lull			· .
D = Dept d = diame	h of wate eter of the	er a e pipe T	= area of w a = Tabulat	ater in partia ed Value	lly filled pip	e	Then a	= Ta*d2		
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0 0	.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1 0	.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2 0	.1118	0.1199	0.1281	0.1365	0.1440	0.1535	0.1623	0.1711	0.1800	0.1890
0.3 0	.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.4 0	.2934	0.3032	0.3130	0.3220	0.3328	0.3428	0.3527	0.3627	0.3727	, 0.3827
0.5 0	.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0.4720	0.4820
0.6 0	.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.7 0	.5870	0.5960	0.6050	0.6140	0.6230	0.6320	0.6400	0.6490	0.6570	0.6660
0.8 0	.6740	0.6810	0.6890	0.6970	0.7040	0.7120	0.7190	0.7250	0.7320	0.7360
<u>0.9 0</u>	.7450	0.7500	0.7560	0.7610	0.7660	0.7710	0.7750	0.7790	0.7820	0.7840
AI	REA x	VELOCI	TY	TIME RE KNOWN	<i>QUIRED</i> <i>VOLUME</i> OTTLE M	<i>TO FILL,2</i> Ethod)		A x VELO PARTIALL	OCITY Y FILLED	PIPE)
<ul> <li>b. Convall min.).</li> <li>c. Mult deter</li> <li>d. Mult meas chann chann</li> <li>e. The r</li> <li>e. The r</li> <li>f. Conv</li> </ul>	iply the win mine flow. iply the flow iply the flow urements – nel measure nel roughne results if me Ft <sup>3</sup> /sec cm <sup>3</sup> /sec (nin <sup>3</sup> /sec	the to a comm ts converted to dth * depth * v w by 0.8 for cr or 0.9 for col ements to acco iss. easured in nL/sec) ed value.	on unit (i.e. cm, ft, or elocity to eek ncrete unt for	2. Ma bo 3. Flo vo • • 4. Co	easure time requ ttle. ow will be deter lume units: mL/s oz/s nvert to desired	uired to fill the mined by initia	<ol> <li>2) Le</li> <li>3) Le</li> <li>4) Ca</li> <li>5) Fin fi vi</li> <li>6) Fin</li> <li>7) Mu</li> <li>8) Co</li> </ol>	t D = water dep t d = <i>inside</i> pipe lculate D/d. Id the tabulated lled pipe formu alue. (i.e. if D/c alue. (i.e. area using a = Ta*d <sup>2</sup> . altiply area (a) t nvert to desired	th c diameter (Ta) value on ( la chart above ) d = 0.263 then 7 g the formula by the water velocity of the water velocity of the second seco	the partially sing the D/d fa = 1623).
SAE / 1 0.083 f 0.1337 0.0078 1000 c1	$\begin{array}{c c}     Metric U \\     t &= \\     ft^3 &= \\     gal &= \\     m^3 &= \\   \end{array}$	$\begin{array}{ c c c c } \hline \text{(nit Conver} \\ \hline 1 \text{ in } & = \\ \hline 1 \text{ gal} & = \\ & = \\ \hline 1 \text{ oz } & = \\ \hline 1 \text{ L} & = \\ \hline \end{array}$	sion           2.54 cm           128 oz           3.785 L           0.0011 ft           1000mL	<u>-</u>	·					

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GPS Coordi	nates: (17 26	1. 201	W		·	Site ID:	50
	335	5.650	N	. Da	nte/Time: 18	JUNOZ	1650
Weather Inf	formation:	······	 Field (	Crew: Se	e previvu	د	
Light Condi	itions: Sunsy	Over	cast Partly	Cloudy	0-1		
<u>Last Rain:</u>	> 72 h	ours) < 72	hours < 3 ho	ours	Precipitati	<u>on:</u> > 0.1"	< 0.1"
<u>Site Descrip</u> Earthen Drai	tion: Location: nage Concrete Cl	Beginning Jannel Outfa	of Pom. Ill Manho	Chunch- Die Car	tchbasin Ot	her <u>Posble</u>	Extern SxCulvert
Flow Estima	ation: Flow Yes	No / Ponded/T	rickle <u>Eviden</u>	ce of overland	flow near sampl	ing location?:	Yes / No
Are 1. Wi	ea X Velocity (creek idth (cm - ft - in)	$\frac{1}{60}$ channel) $\frac{1}{5}$ ff	Fillin 1. Volume	g a Bottle (mL -	L-oz) l.	Area X Y Pipe Diameter	Velocity (pipe) (ft/in)
2. De	pth (cm - ft - in)	<i>Ya" = .</i> 13f	2. Time	(sec)	2.	Depth .	
3. Ve	locity (cm - ft - in / s	ec)	· ,		3.	Velocity	
4. Flo	.33f13/s		***See formu	la on back	**	*See formula o	n back
Visuals:	<u>Photo Taken:</u>	yes / no	Roll#/Pic#	12		aw sample loc	ation if no phot
Odor	Chemical	Sewage	Rotten Eggs	None Other			
Color	Greyish	Greenish	Browish	None/Other	Vellowich	• •	
Clarity	Clear	Cloudy		Other	<u> </u>	· · ·	•
Floatables	Oily / Rainbow	Trash	Bubbles	None/Other	· · · · · · · · · · · · · · · · · · ·		
Vegetation	Limited	Extensive	Spails / Fish	Along/Other			
	Mosquitos			Noncrother			
<u>Trash In Vi</u> 0. None	<u>cinity of Drain (Circ</u>	<u>:le): Type: (</u>	<u>% of number not</u> % Organic (food)	t total volume o	of items):		
1. Light (<	(5) (6,10)	96	%Plastics (cups, st	raws, bags, wra	ppers,		
<ol> <li>Wodera</li> <li>High (1</li> </ol>	1-25)	13	% Recyclables-not	t plastic (paper,	glass		
4 Somewl	nat Dense (26-50) >50)		bottles, metal) % Large items (ap	nliances, cars, t	ires)		· .
			ve EniBe itemie (up	pinanoos, cars, c			
Drain Asso Algae cover	age (circle):	Algae outside	of flow?: (yes / n	o) Ot Fis	her Observation h: yes no	$\sum_{i=1}^{i}$	
0. None $1 \leq 5\%$	-	Main algoe ti	(0.0)	Sn	ails: yes	5	
1.     < 578		50% film al	gae	Oti	her:	·	
3. 25-50% 4. 50-75%		<u>50</u> % turf alg %macroa	gae ;	Nu Ev	mber of homeless idence of dumpin	g: ves no	,
5) > 75%	·				· · · · · · · · · · · · · · · · · · ·	6° )	
* <u>Field</u> Screening	Water Temp (°( pH (pH units)_	3,15	Conductivity_	602 m	IS /US Circle ap	propriate units)	
* <u>Laborator</u> <u>Analysis</u>	Y Fecal Coliform Enterococcus	·	(MPN) (MPN)	E.C To	Coli tal Coliform		_(MPN) _(MPN)
Lab Sample	es taken Yes / 1	No <b>Bott</b>	e ID#'s		۱ 		
Comments	$\left( 2 \right) \left( \right)$	37" 6	X /018"	4	·		

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# Calculating the Area (a) of the Cross Section of a Circular Pipe Flowing Partially Full

			and the second			·		•		
D = [	Depth of wat	ier a	= area of w	ater in partia	lly filled pip	e				
d = d	iameter of th	ne pipe . T	`a = Tabulate	ed Value			Then a	= Ta*d2		
u u	••••••									
D/d	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0013	0.0037	0.0069	0.0105	0.0147	0.0192	0.0242	0.0294	0.0350
0.1	0.0409	0.0470	0.0534	0.0600	0.0668	0.0739	0.0817	0.0885	0.0951	0.1039
0.2	0.1118	0.1199	0.1281	0.1365	0:1440	0.1535	(0.1623	0.1711	0.1800	0.1890
0.2	0.1982	0.2074	0.2187	0.2280	0.2355	0.2450	0.2540	0.2642	0.2780	0.2836
0.5	0.2934	0 3032	0 3130	0.3220	0.3328	0 3428	0.3527	0 3627	0.3727	0 3827
0.5	0.3980	0.4030	0.4130	0.4230	0.4330	0.4430	0.4520	0.4620	0 4720	0.4820
0.5	0.4920	0.5020	0.5120	0.5210	0.5310	0.5400	0.5500	0.5590	0.5690	0.5780
0.0	0.4920	0.5020	0.5120	0.5210	0.6230	0.5400	0.5500	0.6490	0.5070	0.5700
0.7	0.5870	0.5900	0.0000	0.6070	0.0230	0.0320	0.0400	0.0450	0.0370	0.0000
0.8	0.0740	0.0810	0.0090	0.0970	0.7040	0.7120	0.7150	0.7250	0.7320	0.7300
0.9	0.7450	0.7500	0.7300			$\frac{0.7710}{TO DH}$				0.7840
	AREA x	VELOCI	TY		QUIKED	IOFILL/		A X VELU	JULL Y	
				ĸnqwn	VOLUME					
	DEEK/CUL	NNEL ME	TUOD	(FILL A B	OTTLE M	ETHOD)	(	PARTIALL	Y FILLED.	PIPE)
્રાષ્ટ	REENCH		inobj	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -				ener anver av a	<u> Alexandra Angela</u>	
<b>a</b> .	Measure the w	idth, depth, and	velocity of	I. De	etermine volum	e/capacity of the	e    1) A	II measurement i	must be conver	ted to a
. <b>t</b>	he water.			sample	e bottle.		C(	ommon unit befo	re calculation (	ft, in, or cm).
b.	Convert each v	value to a comm	ion unit (i.e.	2. M	easure time requ	uired to fill the	2) L	et D = water dep	th.	
	all measureme	nts converted to	o cm, ft, or	bo	ttle.			-57		
	in.).			3 FI	will be deter	mined by initia	3) L	et d = <i>inside</i> pipe	e diameter	
				vo	lume units:	mined by mina	4) C	alculate D/d.		
C.	Multiply the w	vidth * depth * v	elocity to							
	determine flow	ν.		•	mL/s		5) Fi	ind the tabulated	(Ta) value on 1 la chart above i	he partially using the D/d
d.	Multiply the fl	ow by 0.8 for c	reek	•	023			alue. (i.e. if D/c	1 = 0.263 then 1	$\Gamma a = .1623$ ).
	measurements	-or 0.9 for co	ncrete	4. Co	nvert to desired	l value.			1	
	channel measu	rements to acco	ount for						J	
	channel tougin	1033.					6) Fi	ind the area using	g the formula	
				•				$a = Ta^*d^2$ .	-	
e.	The results if r	neasured in					7) M	lultinly area (a) b	w the water vel	ocity
•	$Ft = Ft^3/sec$								by the water ver	ocity.
•	$cm = cm^{3}/sec$ (	(mL/sec)					8) C	onvert to desired	value.	
•	in = in³/sec									
f.	Convert to desi	ired value.				•				
							£			
SA	E / Metric	Unit Conve	rsion							
0.0	83 ft =	1 in =	2.54 cm							
0.1	$337 \text{ ft}^3 =$	1 gal =	128 oz							
		=	3.785 L							
0.0	078 gal =	1 oz =	0.0011 ft	<u>,     ,</u>						
10	$00 \text{ cm}^3 =$	1 L =	1000mL							
•										
				•						

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Domin	guez Cha	nnel Bacte	erial Monit	oring Data	and Obse	ervation She	eet
GPS Coordinate	118 20 33 55	. 27J , 700	_W _ N	Date/7	S Sime:/8	Nite ID: 51 50NOZ	700
Weather Inform	ation:		Field C	Crew:	epretion,	<u>ر</u>	
Light Conditions Last Rain:	Sunny > 72 ho	Overca ars < 72 h	ast Partly ours < 3 ho	Cloudy urs	Precipitation	<u>:</u> > 0.1"	< 0.1"
Site Description: Earthen Drainage	Location: Concrete Cha	Beginne Outfall	<u>sf Dom. C</u> Manho	Lunal- ( le Catchb	Annel Ce asin Othe	enter r	
Flow Estimation	Flow Yes	No / Ponded/Tr	ickle <u>Evidenc</u>	e of overland flov	v near sampling	g location?: Yes	/ No
Area X 1. Width (	Velocity (creek/ cm - ft - in) 6	$\frac{\text{channel}}{P = 5.67 \text{ ft}}$	Filling 1. Volume	(1995) <b>a Bottle</b>	oz) 1. Pi	Area X Velocit	y (pipe) (ft/in)
2. Depin (	(om f in / on	$\frac{q}{1}$	2. Time	(sec)	2. D		
4. Flow	.06 ft <sup>3</sup> /s		***See formul	a on back	,***S	elocity	
Visuals:	Photo Taken:	ves / no	Řoll#/Pic#	11	Drav	w sample location if	f no phot
Odor	Chemical	Sewage	Rotten Eggs	None Other	<del>,,</del> ,		
Color	Greyish	Greenish	Browish	None/Other	loung		
Clarity	Clear	Cloudy	,	Other	·		
rloatables	Oily / Rainbow	Trash	Bubbles	None/Other		-	
Vegetation	Limited	Extensive	:	NoneOther			
Biology	Mosquitos	Algae	Snails / Fish	None/Other			
Trash In Vicinit           0. None           1. Light (<5)           2. Moderate (6-           3. High (11-25)           4. Somewhat D           (50)	y of Drain (Circl 10) ense (26-50)		6 of number not 6 Organic (food) 6 Plastics (cups, str bottles, junk) 6 Recyclables-not bottles, metal) 6 Large items (apr	total volume of ite aws, bags, wrappe plastic (paper, glas pliances, cars, tires)	e <u>ms):</u> rs, s		
	1 4 10001			l Other	Observations:	. <del> </del>	
Algae coverage ( $0.$ 0.       None         1.       < 5% $(2)$ 5-25% $3.$ 25-50% $4.$ 50-75%	t chunnel	Algae outside Main algae typ <u>20</u> % film alg <u>20</u> % turf alga %macroal	of flow?: (yes) no be: ae ae gae	Fish: Snails: Birds: Other: Numbe Eviden	yes no yes no yes no er of homeless: ce of dumping:	yes no	
( <u>5.)</u> > 75% (^ * <u>Field</u> <u>Screening</u>	<b>ն<sub>ր</sub> եձ չ</b> Water Temp (°C pH (pH units)	27 Þ.83	Conductivity	<u>-764 ms (</u>	uS)Circle appro	opriate units)	
* <u>Laboratory</u> Analysis	Fecal Coliform_ Enterococcus		(MPN) (MPN)	E.Coli Total (	Coliform	(MP)(MP)	N) N)
🛛 📋 Lab Samples tal	<b>ten</b> Yes/N	o <b>Bottle</b>	ID#'s			·	
Comments Observations	Jampled 1	just dow	nstrem of	Channel !	eg. Mins	out double	
,	50 x Lulver	<u>\</u>			· · · · · · · · · · · · · · · · · · ·		

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#### Calculating the Area (a) of the Cross Section of a Circular Pipe **Flowing Partially Full** D = Depth of watera = area of water in partially filled pipe Ta = Tabulated Value Then a = Ta\*d2d = diameter of the pipe0.04 0.05 0.06 0.00 0.01 0.02 0.03 0.07 0.08 0.09 D/d 0:0037 0.0069 0.0105 0.0000 0.0013 0.0147 0.0192 0.0242 0.0294 0.0350 0.0 0.0409 0.0470 0.0534 0.0600 0.0668 0.0739 0.0817 0.0885 0.0951 0:1039 0.1 0.1118 0.1199 0.1281 0.1365 0.1440 0.1535 0.1623 0.1711 0.1800 0.1890 0.2 0.2074 0.2187 0.2280 0.2355 0.2450 0.2540 0.1982 0.2642 0.2780 0.2836 0.3 0.2934 0.3032 0.3130 0.3220 0.3328 0.3428 0.3527 0.3627 0.3727 0.3827 0.4 0.3980 0.4030 0.4130 0.4230 0.4330 0.4430 0.4520 0.5 0.4620 0.4720 0.4820 0.5020 0.5120 0.5210 0.5310 0.5400 0.5500 0.4920 0.5590 0.6 0.5690 0.5780 0.5870 0.5960 0.6050 0.6140 0.6230 0.6320 0.6400 0.7 0.6490 0.6570 0.6660 0.6740 0.6890 0.6970 0.7040 0.7120 0.7190 0.6810 0.7250 0.7320 0.8 0.7360 0.7450 0.7500 0.7560 0.7610 0.7660 0.7710 0.7750 0.7790 0.7820 0.9 0.7840 TIME REQUIRED TO FILL A AREA X VELOCITY AREA x VELOCITY KNOWN VOLUME (PARTIALLY FILLED PIPE) (FILL A BOTTLE METHOD) (CREEK/CHANNEL METHOD) Measure the width, depth, and velocity of Determine volume/capacity of the a. 1 1) All measurement must be converted to a sample bottle. the water. common unit before calculation (ft, in, or cm). Measure time required to fill the Convert each value to a common unit (i.e. Let D = water depth. 2. 2) b all measurements converted to cm, ft, or bottle. 3) Let d = inside pipe diameter in.). Flow will be determined by initial 3. volume units: Calculate D/d. 4) Multiply the width \* depth \* velocity to C. determine flow. Find the tabulated (Ta) value on the partially mL/s 5) filled pipe formula chart above using the D/d oz/s d. Multiply the flow by 0.8 for creek value. (i.e. if D/d = 0.263 then Ta = 1623). measurements -or-- 0.9 for concrete 4. Convert to desired value. channel measurements to account for channel roughness. Find the area using the formula 6) $a = Ta^*d^2$ . The results if measured in e Multiply area (a) by the water velocity. 7) $Ft = Ft^3/sec$ $cm = cm^{3}/sec (mL/sec)$ 8) Convert to desired value. $in = in^{1}/sec$ Convert to desired value. SAE / Metric Unit Conversion 0.083 ft == = 1 in 2.54 cm $0.1337 \text{ ft}^3$ z 1 gal = 128 oz 3.785 L = 0.0011 ft<sup>3</sup> 0.0078 gal = 1 oz = 1000 cm<sup>3</sup> = 1 L ----1000mL

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