STORM WATER ANNUAL REPORT ATTACHMENT

Neary Lagoon Summary Report

Dry Weather Diversion to WWTF

Dry Season: Line Cleaning, Monitoring Data

Wet Season: Pumping Summary, Discharge Report Forms, Beach Posting Summary

Neary Lagoon Summary

Dry Weather Diversion
Dry & Wet Season Summaries
Beach Postings

FY2017-2018

Dry Weather Diversion to WWTF

Dry Weather Diversion from Neary Lagoon to Wastewater Treatment Facility (previously SWMP BMP #MO-17)

During the dry season, Neary Lagoon discharge is diverted to the Wastewater Treatment Facility (WWTF) via a 12-inch bypass line (located just below the weir) so that this water is treated prior to discharge into the Pacific Ocean. The bypass line runs only if the water level is high enough in the lagoon. The City may divert lagoon water to the WWTF during the "wet weather season" if the treatment plant has adequate capacity, including both hydraulic and organic loading, at that time. This is done upon occasion to maintain consistent lagoon levels, and to minimize pump operation and discharges to the beach, in addition to treating the water prior to discharge. Thus, lagoon water is diverted to the WWTF until rains force the gravity outlet opening. Diversion also occurs during periods of dry weather in the winter and spring months.

The dry weather diversion is important for receiving water quality because in spring and summer the bacteria levels in Neary Lagoon tend to increase due to the reduced freshwater flows into the lagoon and the presence of many birds and fish at the lagoon. Thus, this water is diverted to the treatment plant in lieu of being discharged at Cowell Beach.

During the permit year, lagoon water was diverted to the WWTF on the following dates: 7/1/17 to 11/17/17 and from 5/2/18 to 6/30/18. Thus, lagoon water was diverted approximately 199 days.

Dry Season

Clean Neary Lagoon Storm Drain Lines and Discharge Bacteria Laden Water to the Sanitary Sewer System (previously SWMP BMP #MO-18)

Public Works Wastewater/Storm Water Collection staff cleans the Neary Lagoon 66" force main and 66" gravity lines by a flushing process annually in order to clean the lines prior to the rainy season. This effort is done to reduce bacteria levels that may have built up in the lines over the summer months, and thus prevent the discharge of bacterial laden water to Cowell Beach if/when pump operations occur or the gravity line opens during the winter months. The water in the pipelines and from the flushing process is discharged to the sanitary sewer system. This year, maintenance efforts, discharge volume, and monitoring are summarized as follows:

A. Neary Lagoon storm drain maintenance:

- Line Flushing was conducted October 18-October 23, 2017.

- The line flushing process discharged approximately 100,000 gallons of water to the sanitary sewer
- The Neary pump station was cleaned on October 24, 2017.

B. Monitoring:

Environmental Compliance/Laboratory staff collected the "before" line cleaning samples on 10/17/17 just prior to the Wastewater/Storm Water Collection Division cleaning/flushing of the Neary storm drain pipelines. Staff then collected the "after" sample on 10/25/17. These laboratory results are attached.

Please note that the installation of the slide gates on the Neary Lagoon storm drain culverts, which run under the railroad tracks in late Spring 2014, as part of a Clean Beaches Initiative Grant project, has allowed the City to better clean both 66" gravity and force main pipelines.

Wet Weather Season

The City Wastewater /Storm Water Collection staff manually turns on the pump station pumps as needed during the wet season to prevent flooding. The brief operation of the pumps helps to remove the accumulation of sand blocking the Neary gravity storm drain line pipe opening at the beach outlet vault and thus allows lagoon water to flow/exit from this pipeline at Cowell Beach. Pump operation is typically 5-30 minutes each time. During the permit year, the pumps were operated (1) time during the wet season as described below.

A. Neary Lagoon Pump Operations:

- The Neary slide gates, on the culverts running under the railroad tracks, were opened on 10/18/17 although Neary flows were still being diverted to the WWTF at this time.
- There was a total of 1 pumping event. Pumping operations occurred on the following date(s):
    - January 2018: 1/8/18
- Please see the (attached) Neary Lagoon Discharge Report Forms for details of each pumping event.

B. Beach Postings: As required, coinciding with the first discharge of the wet weather season that requires operation of the flood control pumps, staff posted Cowell Beach as follows:

- Wastewater Collection/Storm Water Collection staff placed a Notice on the metal railing near the concrete stairs leading to Cowell Beach with the following wording: "Please stay out of flow to ocean. This water may have elevated bacteria levels. This may elevate bacteria levels in the ocean." The Notice was posted just prior to the first planned pump operation of the wet season on January 8, 2018. The Notice was posted for a minimum of 48 hours after the release due to pump operation as required.

- Parks and Recreation Wharf staff also placed signage near and adjacent to the storm water discharge channel/flow from the Neary Lagoon beach outlet vault to Cowell Beach at the first operation of the pumps on January 8, 2018. The signs remained posted for a minimum of 48 hours after the first pump operations release. The signs are adjusted if there are high tides or big waves present.

  As required, the signage has a graphic illustrating a child playing/recreating at the beach with a "stamp out" line through it. The purpose is to notify the public that playing in the discharge flow is not advised.

  The photos below were taken on 1/8/2018.

City of Santa Cruz Wastewater Laboratory

Client: City of Santa Cruz - Storm Water Management Program

Contact: Suzanne Healy

Project Title: Storm Water Management Program - Neary Lagoon

Sampling Event: 10-17-2017
Samplers: FB/JM

Analytical Method				SM 5310 B	SM4500-NH3 D	SM 9222 D	EPA 1600	EPA 4500-H+	
Date/Time Collected	Sample Type	Sample Description	LIMS ID	TOC (mg/L)	NH_3 (mg/L as N)	Fecal Coliforms (CFU/100ml)	Enteroccous (CFU/100ml)	Field pH	SAMPLING OBSERVATIONS
10-17-17 @ 0740	Grab	Beach Vault	AA86781	7	0.6	16	2,800	8.2	Beer can outside vault, no trash inside
10-17-17 @ 0810	Grab	Force Main	AA86779	4	0.6	3	148	8.0	no comment
10-17-17 @ 0817	Grab	Gravity Main	AA86780	4	2.6	37	12	7.2	no comment
10-17-17 @ 0827	Grab	Pump House	AA86778	5	1.1	154	135	7.6	Collections just started pumping before sample collected
Quality Control									
Method Blank				<1	<0.1	<1	<1		
Media Controls						pass	pass		
CRM %Recovery				97.2%	104%				
Spike %Recovery				93%	96.2%				
Spike RPD				6.8%					
Duplicate RPD				4.6%	0.0%				

Lab Manager: Akin Babatola

Digitally signed by Akin Babatola
Date: 2018.09.10 13:31:07 -07'00'

QC Chemist Jennie Munster

Digitally signed by Jennie Munster
DN: cn=Jennie Munster, o=City of Santa Cruz, ou=WWTF Laboratory, email=jmunster@cityofsantacruz.com, c=US
Date: 2018.09.10 14:17:13 -07'00'

City of Santa Cruz Wastewater Laboratory

Client: City of Santa Cruz - Storm Water Management Program

Contact: Suzanne Healy

Project Title: Storm Water Management Program - Neary Lagoon

Sampling Event: 10-25-2017
Sampler: JM

Analytical Method				SM 5310 B	SM4500-NH3 D	SM 9222 D	EPA 1600	EPA 4500-H+	
Date/Time Collected	Sample Type	Sample Description	LIMS ID	TOC (mg/L)	NH_3 (mg/L as N)	Fecal Coliforms (CFU/100ml)	Enteroccous (CFU/100ml)	Field pH	SAMPLING OBSERVATIONS
10-25-17 @ 0900	Grab	Beach Vault	AA87060	5	0.7	19	30,600	7.2	no comment
10-25-17 @ 0840	Grab	Force Main	AA87058	4	0.7	7	3,000	7.4	no comment
10-25-17 @ 0850	Grab	Gravity Main	AA87059	3	1.2	5,950	1,600	6.9	no comment
10-25-17 @ 0915	Grab	Pump House	AA87057	4	1.6	2,300	118	7.4	no comment
Quality Control									
Method Blank				<1	<0.1	<1	<1		
Media Controls						pass	pass		
CRM %Recovery				99.2%	101%				
Spike %Recovery				103%	98.7%				
Spike RPD				0.7%					
Duplicate RPD				3.6%	0.0%				

Lab Manager: Akin Babatola

Digitally signed by Akin Babatola
Date: 2018.09.07 10:11:40 -07'00'

QC Chemist Jennie Munster

Digitally signed by Jennie Munster
DN: cn=Jennie Munster, o=City of Santa Cruz, ou=WWTF Laboratory, email=jmunster@cityofsantacruz.com, c=US
Date: 2018.09.05 15:29:57 -07'00'

CITY OF SANTA CRUZ

DEPARTMENT OF PUBLIC WORKS
WASTEWATER MAINS

NEARY LAGOON DISCHARGE REPORTING FORM

Date form completed: 1-9-2018

Name of person completing form: Rome Norman

Public Works Division (or other): WW Collection / Flood Control

Date of discharge: 1-8-2018

1. Is the flow pump or gravity discharge, or both? Pump
2. Estimated amount of total discharge (gallons). 594,000
3. Estimated duration of total discharge. 6 minutes
   Pump time: #1 .1 hrs #2 .1 hrs #3 .1 hrs
4. Time of day or night (military time). 1739
5. Treatment plant influent flow rate (gallons) 16.88
6. Weather: Actual Rain Forecasted Rain
7. Information indicating a potential flood condition in lagoon area.
   Neary Lagoon level at 7.11 Ft. MSL
   Heavy Rain is Forcasted 1" to 2" than the Next day
8. Comments and observations on beach usage, signage, ocean conditions, etc.:
   Cowels Beach was Closed
   NO SWIMERS IN the water
   Signs posted at outfall

* To be completed as soon as possible following observation of pump operation or gravity discharge on a daily basis. Submit weekly to Assistant Director of Public Works. Annual discharge report to be submitted to Regional Water Quality Control Board by May 15th of each year by Assistant Director.