



January 13, 2020

TECHNICAL SSO REPORT

City of Laguna Beach WDID 9SSO10653

Subject: North Coast Interceptor - SSO Event #863226

TECHNICAL CONTENT OUTLINE:

In compliance with WRCB Order No. WQ 2013-0058-EXEC the City of Laguna Beach submits the following SSO Technical Report. This report includes the following:

EXECUTIVE SUMMARY for SSO Event # 863226

SECTION 1 - Causes and Circumstances of the SSO:

- a) Complete and detailed explanation of how and when the SSO was discovered.
- b) Diagram showing the SSO failure point, appearance point(s), and final destination(s).
- c) Detailed description of the methodology employed and available data used to calculate the volume.
- d) Volume of the SSO and, if applicable, the SSO volume recovered.
- e) Detailed description of the cause(s) of the SSO.
- f) Copies of original field crew records used to document the SSO. Historical maintenance records for the failure location.

SECTION 2 - City's Response to SSO:

- a) Chronological narrative description of all actions taken by enrollee to terminate the spill.
- b) Explanation of how the City's SSOREP was implemented to respond to and mitigate the SSO.
- c) Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.

SECTION 3 - Water Quality Monitoring:

- a) Description of all water quality sampling activities conducted including analytical results and evaluation of the results.
- b) Detailed location map illustrating all water quality sampling points.

EXECUTIVE SUMMARY for SSO Event # 863226

Collection System Overview: The City of Laguna Beach provides sewer service to the businesses and residents from Irvine Cove to the west, north along Laguna Canyon Road up to the condominiums along El Toro Road, and south down to Cardinal Drive. The City has a population of 23,000 and an additional six million visitors each year. The southern portions of the City are operated and maintained by the South Coast Water District. The City's wastewater sewer system consists of four primary elements, the gravity pipe collection system, the pumping systems (25 Lift Stations), odor control systems, and the Coastal Treatment Plant.

The City of Laguna Beach operates and maintains a collection system that supports the northern section of the City limits. The City's wastewater collection system consists of approximately 88 miles of collection system pipeline, 25 lift stations, and 7 miles of transmission pipelines. The number of lift stations necessary to provide wastewater collection service for the City includes more lift stations per capita than any other city in California. The transmission system consists of two (of the 25) lift stations, 3 miles of the Trunk Line #2 on the north side, and 4 miles of the **North Coast Interceptor (NCI)** to the south. The transmission system transports all the collected wastewater from the City's service district to the **South Orange County Wastewater Authority's (SOCWA)** Coastal Treatment Plant. The NCI varies in material type, constructed of both 27-in. fiberglass reinforced pipe as well 24-in asbestos cement pipe.

General Incident Description - An active sewer spill was reported to be witnessed by the Ben Browns Golf Course Groundskeeper at approximately 1130 hrs on Wednesday, November 27, 2019. The general location of the spill was in Aliso Woods Canyon about 2,600 feet downstream from the Coastal Treatment Plant between the canyon wall and a golf course maintenance path. The point of the spill was inside an access vault providing service access to the 24-inch ACP North Coast Interceptor transmission pipeline. The vault location is remote. The site is in the rear portion of the golf course (See Map Exhibit #2 – Location of Incident). The short stem (3-inch long) of a decommissioned valve assembly was discovered to have ruptured. The apparent cause of the rupture is corrosion. Initially, the sewer spill was channeled to the Aliso Creek, where it discharges approximately 3,900 feet downstream to the Pacific Ocean.

Summary Incident Response: - Within two hours of the initial report, an Emergency Response Team was fully engaged. The response team included a general contractor, Don Jamison Engineering Contractors, Charles King Dewatering, and staff members of the South Orange County Wastewater Authority and the South Coast Water District. Stopping the spill

as soon as possible was of paramount importance to all parties to protect public health and safety, as well as the environment. After evaluating multiple options to bypass the pressurized pipeline, it was determined by the experts at the scene, that the best course of action was to bypass the transmission pipeline at the Bluebird SOCWA Lift Station located approximately at the Coast Highway and Calliope (see Map Exhibit #3 – Bypass Location Map). From that location, wastewater was piped directly to the 84-inch storm drain that discharges at the Bluebird Canyon outlet. The resulting action minimized the exposure to the public and provided rapid draining of the transmission pipeline. Once the NCI was depressurized, the vault was drained, and the ruptured valve stem capped, and bulkheaded off. The decision to drain the NCI and depressurize the force main was the quickest solution, and it prevented as much as an additional three million gallons from being discharged. The spill was stopped by Friday, November 29, @ 1230 hrs.

Volume Estimation Summary – The estimated spill was initially reported to CIWQS, in the 15-day report, as 1.4 million gallons. This was based on the information available immediately after the spill.

The estimated spill volume is being revised to reflect further flow meter data, pump run times, and a higher level of analysis. The total estimated spill volume is 1.87 million gallons and is detailed in Attachment 2.

Water Quality Monitoring - In an immediate response to the SSO, SOCWA staff was engaged to implement the Standard Operating Procedure Biological Resources Damage Assessment For Treated and Untreated Wastewater Spills. Monitoring was initiated during the spill to obtain real-time data to evaluate the acute conditions and gain a baseline of flow water quality in Aliso Creek above and below the spill entering the creek. See Attachment 6 City of Laguna Beach Monitoring Assessment - Technical Report dated January 10, 2020, prepared by Amber Baylor, Director of Environmental Compliance, SOCWA. The monitoring report is accompanied by Attachment 6 "Appendix C" - Biological Impact Assessment by Environmental and GIS Services LLC.

The results of the monitoring conclude that due to the prompt action of the response team, and as a result of the significant storm event, impacts of the spill were minimized. The inclement weather caused the beaches to be posted for a Rain Advisory and eliminated the recreational use of the coastline during the storm. The results of the report show that the stormwater dilution significantly accelerated the recovery from the SSO. The **Orange County Health Care Agency (OCHCA)** engaged beach closures immediately after learning of the spill; the afternoon of November 27, 2019. OCHCA lifted all beach closures at approximately 1200 hours on Monday, December 2, 2019 as a result of two consecutive days, Saturday and

Sunday, samples determined to be in compliance with California Ocean Water-Contact Sports Standards for bacteria.

FUNDING IMPROVEMENTS TO ELIMINATE VULNERABILITIES - It is important to note that the City Council initiated increasing sewer user charges at their meeting of November 12, 2019. In the December 3, 2019 incident brief, the City Council directed staff to come back to consider further increases to address potential vulnerabilities in the North Coast Interceptor. An award of contract for a full NCI condition assessment and improvement recommendations brought to the City Council, on or about February 25, 2020.

The City Council is scheduled to set the sewer user rates at their meeting in June 2020.

END EXECUTIVE SUMMARY

SECTION 1

Causes and Circumstances

Section 1a) The spill occurring on November 27, 2019, was first witnessed by a golf course groundskeeper at approximately 11:30 a.m. The supervising groundskeeper called the observation in to prompt emergency response. The initial call was made to the South Coast Water District. Field verifications were conducted by SCWD staff where they were able to confirm the source of the leak; the response was then passed to the on-duty City Wastewater Division staff at approximately 2:00 p.m. for immediate action. By 3:30 p.m., a full response team was engaged in mobilizing to the scene.

The vault is located near the 6th hole of the Ben Brown's golf course just off of the groundskeeping maintenance road. The location of the vault is at the center of a pinch-point in the canyon, where several underground utilities necessitated identification to determine which utility was leaking.

Section 1b) The map below shows the location of the vault relative to the SOCWA Coastal Treatment Plant and the Coast Highway. (See Map Exhibit #2 – Location of Incident)

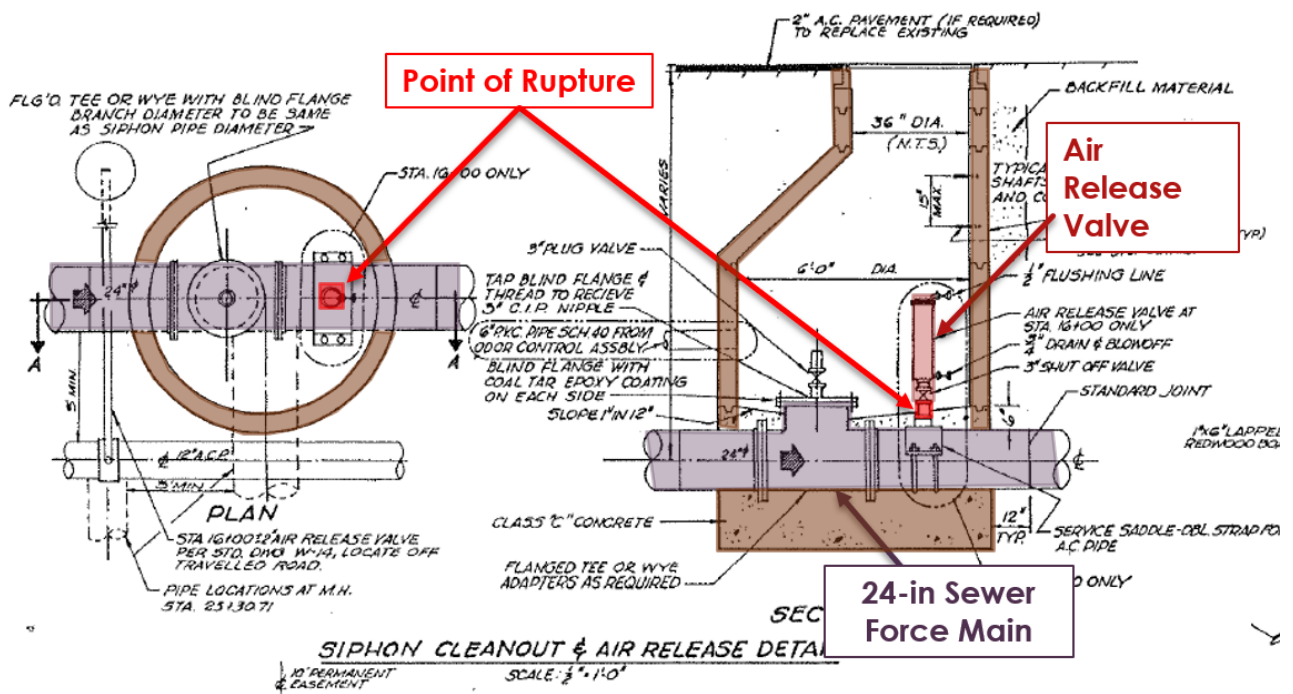
Map Exhibit #2—Location of Incident



Section 1b) continued

The point of failure was identified as a decommissioned air/vacuum relief valve (AVRV) vault. As discussed in more detail below, this AVRV was replaced in 2014. There is no other valve stem in the NCI system like this. It is unique because normally when an air/vac release valve assembly (or any valve assembly) is replaced, the prior assembly would be either removed or decommissioned and isolated from the active line. However, this small length of the valve stem was left intact because the bypass that would have been necessary would have caused severe disruption to the Ben Brown Golf Course and the Ranch at Laguna Beach. The bypass would have required pipe fusing operations to build a high-line pipe around the vault, which would have resulted in noise, odors, traffic, and potential property damage to the golf course maintenance pathways and the overall disruption of the Ranch and the surrounding community.

Moreover, at the time of the system replacement, the AVRV system was inspected and appeared to be in a serviceable condition. The decommissioned AVRV system was deemed to be of low risk of failure since gases were no longer circulating in the system to cause corrosion.



The inspection frequency of facilities is scheduled according to the age, marine exposure, and expected service life of the equipment. For example, when equipment is new, the inspection frequency is much less than older equipment, which may require monthly inspections. This AVRV system had not been inspected since 2014 since it was

Section 1b) continued

decommissioned because (1) it is not an active part of the NCI, (2) it was found to be in serviceable condition at the time of decommissioning, and (3) risk of corrosion was minimal since no gases were circulating in the system. *Note that even if the AVRV system was recently inspected, it is highly unlikely that an inspector would have detected the potential for failure of the 3-inch valve stem. The valve stem was not easily visible under the air release valve.*

Section 1c/d) The methodology employed to calculate the volume of SSO and the SSO calculations are described in Attachment 2 “SSO Volume Estimation Methodology (revised from CIWQS 15-day report)”. Due to the influence of rain infiltration, the data used is accompanied by a set of flow rate statements to define how the calculations were prepared. Note that as described in Attachment 2, the calculated Laguna Beach Effluent and consistently reads about .2 MGD higher than the flow meter receiving flow at the Coastal Treatment Plant. Because the meter at the Coastal Treatment Plant is of a higher grade of technology and was installed with the necessary pipe lengths upstream of the meter, the volume data recorded by the CTP flow meter is likely more accurate. That is recognized in “Adjustment* by .2 MGD for the consistent measured difference between SOCWA and Laguna Flowmeters” of the spreadsheet where the unaccounted flow is adjusted by .2 MGD for the consistent measured difference between Laguna’s flow calculation and SOCWA’s measured influent.

Section 1e) The cause of the spill is attributed to a 3-inch tall section of 3-inch diameter pipe functioning as the valve stem to a decommissioned air/vacuum release valve assembly installed in approximately 1989. This AVRV was not owned or maintained by the City until approximately October 1990.

In October 2008, the NCI developed a leak inside an air-vacuum release valve vault. As a result, beginning in 2009, as a preventative measure, all seven of the air-vacuum release valve assemblies were replaced. The old cast iron air-vacuum release valve assemblies were replaced with lighter and more durable stainless-steel assemblies. Careful inspections were completed at each of the locations during the replacement projects.

As discussed above, the AVRV at issue was replaced in 2014 and the decommissioned AVRV was the only AVRV that was not removed because it would have resulted in severe disruption to the golf course, the Ranch, and the community. Because the AVRV was deemed to be in good condition and there was little risk of corrosion, it was left intact. However, unknown to the City and despite the inspection in 2014, the 3-inch valve stem appears to have been corroded which led to the leak.

Section 1f) The historical maintenance records for the NCI are as follows (please note that we may supplement this list):

- April 2003 - Assessment of City Lift Stations and North Coast Interceptor (Attachment 13) – a comprehensive evaluation of the NCI was conducted. Recommendations were suggested, and improvements prioritized as described in Attachment 13. As discussed in more detail below, many of the recommendations were implemented among all the improvement projects for the City’s wastewater collection system. In total, the City has spent over \$38,000,000 since 2003 on the wastewater system.
- December 2006 - replaced both NCI surge tanks
- 2006 - 2007, the City replaced a 700 foot section that posed a risk of failure beneath the Victoria Place overpass of the Coast Highway. That section of pipeline had been patched for a leak but not repaired. 700 feet of the NCI was diverted in a high-line bypass along the middle of Coast Highway and the pipeline replaced in a new alignment. The new pipeline eliminated all future risk at that location. A second bypass involved a small leak of a joint seal in Galen Drive. That section, too, was bypassed and the leaking section replaced.
- May 2007 – approximate 40-foot section of the NCI along Galen Drive was replaced as a result of a small leak of a joint seal.
- October 2008, the NCI developed a leak inside an air-vacuum release valve vault. Immediate action was taken to replace all seven of the air-vacuum release valve assemblies. Careful inspections were completed at each of the locations during those replacement projects.
- January 2009 – NCI Sewer Pipe Evaluation (Attachment 14)- sections of the NCI were removed and sent to a forensics materials laboratory to be tested to determine the condition of the NCI. The section in Coast Highway was 27-inch FRP, fiberglass reinforced pipe and the section from Galen Drive was 24-inch ACP, asbestos cement pipe. Both pipe segments were found to be in good condition.

The NCI is approximately 22,000 ft (4.1 miles) in length. Along that length, only about 5,900 ft operates in a gravity state. Significant effort has been placed on upgrading sections of the NCI transmission system to include nearly \$9 million (of the \$38M) in capital projects over the last 14 years:

1. Replacement of 700 ft of 27-inch pipeline in Coast Highway at Victoria Place overpass.
2. Replacement of all Air/Vacuum Release Valves along the 4-mile length of the NCI.

Section 1f) continued

3. Rehab of the Bluebird SOCWA Lift Station and bypass to the NCI.
4. Rehab of the Laguna SOCWA Lift Station and bypass to the NCI.
5. Addition of SuperOxygenation system to minimize corrosion and odors along the NCI between Bluebird SOCWA Lift Station and the Coastal Treatment Plant.
6. Addition of SuperOxygenation system to minimize corrosion and odors along the NCI between the Laguna SOCWA Lift Station and the Bluebird SOCWA Lift Station.
7. Addition of Odor and Corrosion Control System at Laguna SOCWA Lift Station.
8. Addition of Odor and Corrosion Control System at Bluebird SOCWA Lift Station.
9. Replace of NCI Surge Tank at both Laguna and Bluebird SOCWA Lift Stations.

As previously discussed, as a preventative measure, beginning in 2009, the old cast iron air-vacuum release valve assemblies were replaced with lighter and more durable stainless steel assemblies. Each of the assembly vaults was entered, and an inspection performed. The assemblies are swapped out with an identical assembly that has been cleaned and received maintenance at the workshop. As discussed above, the AVR at issue was replaced in 2014. There are seven air-vacuum relief valve assemblies operating along the 4 mile stretch of the NCI.

The City is currently working to replace its aged work order system with a greatly improved Cartegraph work order system. In the new system, the City will be placing all elements of Attachment 5 "NCI Utility Service Access Vault List" to track routine inspections at each of the listed locations successfully. The maintenance records from the, soon to be replaced work order system, are provided in Attachment 11 "NCI Work Order Records and Improvement History." The report shows the 6-month cycle of air-vacuum relief valves replaced with identical valves that are taken back to the maintenance shop for thorough cleaning and inspection.

SECTION 2

City's Response

Section 2a) The report of the active spill was first received by City staff at 1:47 p.m. on November 27, 2019. The Wastewater Division Senior Operations Supervisor took the call where immediately actions were engaged in mobilizing to the site. The Director of Water Quality was on vacation but was called immediately following a visual confirmation of the situation. At 2:20 p.m., the Director was informed, which triggered multiple phones to engage a full emergency response team and resource pool. Attachment 4 recounts the key response actions, and Attachment 10 lists the cellular communication directly addressing the emergency response. The response team included multiple agencies responding in a mutual aid and support capacity they are as follows:

1. South Orange County Wastewater Authority
2. South Coast Water District
3. Laguna Beach County Water District
4. Orange County Lifeguards
5. WEROC – Water Emergency Response of Orange County (MWDOC)
6. Santa Margarita Water District

Nearly all Departments within the City of Laguna Beach played a part in the response, including:

1. City Manager and Administration (PR support with Social media staff too)
2. Water Quality Department
3. Marine Safety
4. Fire Department
5. Police Department
6. Public Works, and
7. Community Development

Within two hours of the initial report, the entire Emergency Response Team was engaged, including a general contractor, Don Jamison Engineering Contractors (JEC), and Charles King Dewatering (CKD).

Stopping the spill was paramount to protecting the public health and safety as well as the environment along the coastal zone.

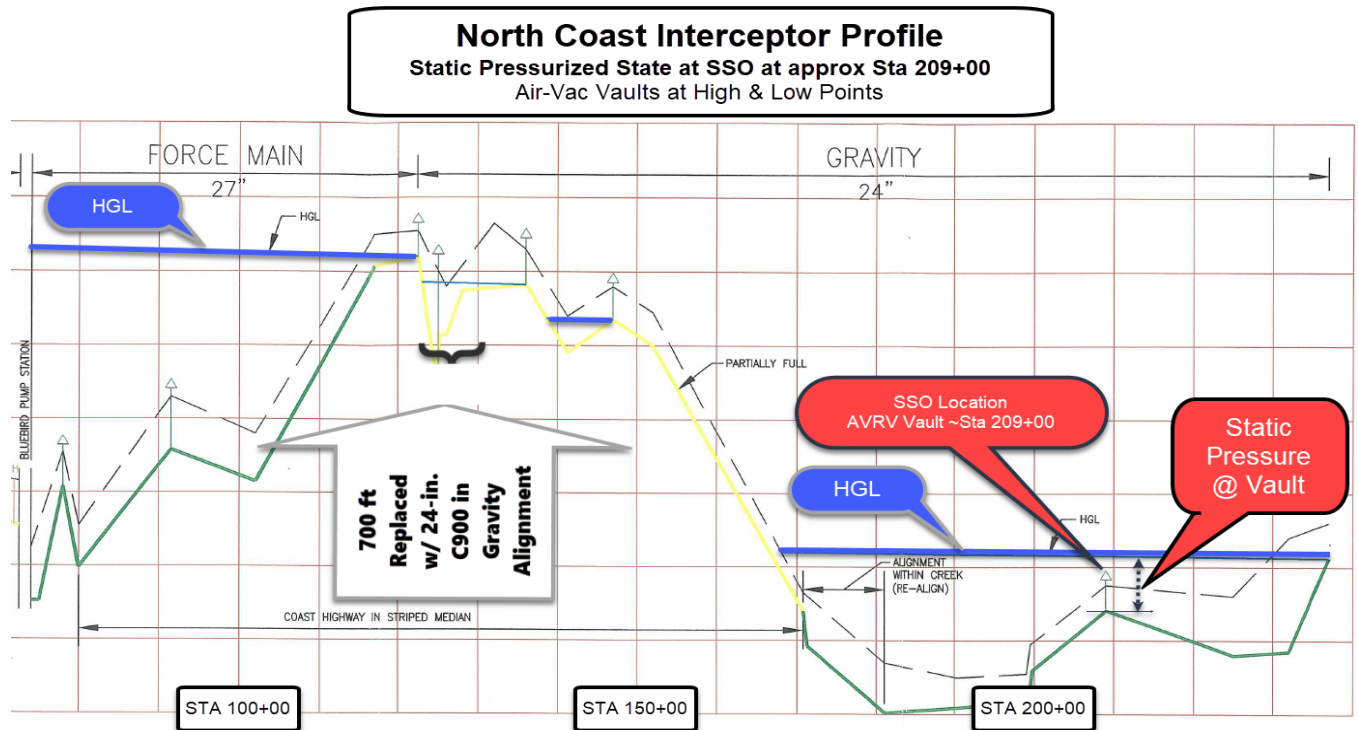
Section 2a) continued

The conditions faced at the active spill were difficult. Several elements worked against the response team; they are described as follows:

- A. Remote location within the canyon.
- B. No true roads to support heavy equipment traffic.
- C. The location is in a flood-prone location.
- D. Rain began to peak through the watershed causing real concerns for flooding and worker safety.
- E. The soft ground made bringing in excavation equipment complicated.
- F. No cellular service in the canyon area. Communications were significantly limited. Workers were forced to shuttle messages by traveling out of the canyon.
- G. Nightfall had come while resources were arriving at the site of the active SSO.
- H. Timing of the spill against the Thanksgiving Holiday created extreme difficulty in locating available workers, supplies, and equipment!

Section 2a) continued

In the first evening of 11/27/19, Water Quality staff worked with JEC to attempt to evacuate the vault during the nighttime low-flow period. However, the team was unable to evacuate water quickly enough to gain a visual confirmation of the source of the leak. Despite the use of pumps and vactors, the hydraulics, unique to the vault location, resulted in an unsuccessful first effort.



Momentary Evacuation of Vault Followed by Hydraulic Rebound

Section 2a) continued

Multiple methods to bypass the pressurized pipeline were evaluated location by location. The experts within the response team concluded that the best course of action was to bypass the transmission pipeline at the Bluebird SOCWA Lift Station located approximately at the Coast Highway and Calliope (see Map Exhibit #3 Bypass Location Map and Attachment 3 “Analysis of Bypassing Options”). From that location, wastewater was piped directly into the 84-inch storm drain that discharges at the Bluebird Canyon outlet. The resulting action minimized the exposure to the public and provided the successful draining of the transmission pipeline. Once the NCI was depressurized, the vault was drained, and the ruptured valve stem capped, and bulkheaded off.

Once the valve stem was capped, an immediate call was made to shut down the bypass at the Bluebird SOCWA Lift Station. Because the system was hard piped and driven by pumps, the process to shut down the bypass was rapid. The bypass valve stopping flow from entering the lift station wet well was slowly reopened. The station was placed back into operation and operating within normal operating conditions by 12:30 p.m. on November 29, 2019.

The decision to drain the NCI and depressurize the force main, saved time, and as much as three million gallons was prevented from spilling. The spill was stopped by Friday, November 29, 2019 @ 1230 hrs.

Section 2b) The SSMP Overflow Emergency Response plan (OERP) was implemented as follows:

1. Water Quality staff immediately engaged OERP section 7.4 “Initial Response” (response for large spills found beginning on page 11 of 87). Key actions by the first responder were as follows:
 - a. Note arrival time at the site of the overflow/backup.
 - b. Verify the existence of a public sewer system spill or backup.
 - c. Determine if the overflow or blockage is from a public or private sewer.
 - d. Identify and assess the affected area and extent of the spill.
 - e. Contact reporting party if time permits.
 - f. If the spill is large or in a sensitive area, document conditions upon arrival with photographs.
 - g. Initiate containment measures for large spills where containment is anticipated to be difficult – proceed by calling for additional assistance and implement containment measures at the earliest opportunity

Section 2b) continued -

2. Response Roles were engaged as outlined in sections 7.7 for emergency services (Fire and Police), including immediate coordination with the City Marine Safety staff to immediately coordinate the closure of the beaches in the vicinity of Aliso Creek.
 - a. The protocol for communications of Incident Command Responsibility was immediately established.
 - b. All staff are equipped and prepared with emergency contact information.
3. Mutual Aid calls were initiated by 2:57 pm. where SOCWA, SCWD executive staff were contacted.
 - a. SOCWA staff initiated the Regulatory Agency Notifications
4. Furthermore, WEROC was later utilized to procure 24-inch PVC pipe needed for repair contingency preparations.
5. The spill volume was minimized by expecting the action to bypass...
6. Ocean Water Quality Sampling and Testing were scheduled immediately by OCHCA in accordance with Section 9.2 of the City's Overflow Emergency Response Plan.
7. Water Quality Monitoring and Biological Resources Damage Assessment began on the day of the spill to assess environmental impact. These analyses were accompanied by coordinated sampling along Aliso Creek. Pre and Post photographs and observations were also made at Bluebird Beach.
8. A robust public information and outreach campaign was initiated on the day of the spill. Five media releases were distributed to ten local media outlets over the course of six days. Media reach was greatly expanded and redistributed due to placement on the newswire. Information was dispatched locally on Nixle (10,230 subscribers), Nextdoor (12,878 subscribers), Facebook (6,877 followers), and Twitter (5,450 followers). These opt-in texts and social media outlets were engaged immediately to spread the word about the spill and beach closures. On November 28, 2019, after 10:30 am, alerts were sent out via Press Release, Nixle, Nextdoor, Twitter, and Facebook requesting residents to reduce water usage through Friday morning voluntarily. On Friday at approximately 9:40 am, the City updated these alerts requesting that residents North of Nyes Place (the area draining to the sewer spill) continue to conserve water. These requests were made in an effort to reduce the amount of volume entering the sanitary sewer system so that crews could access and repair the pipe failure more quickly and in an attempt to decrease the spill volume, lessening the environmental impact. Letters were hand-delivered to properties surrounding the Bluebird lift station and beach area, notifying residents and business owners of the discharge to Bluebird beach. Examples of these outreach campaigns and their reach can be found in Attachment 16 "Social Media & Press Releases".

Section 2c) While the final corrective action for the spill was completed when the ruptured valve stem was capped and the bypass was terminated, as described above, because of this

Section 2c) continued

incident and due to the advancing age of the facilities, all vaults along the NCI are scheduled to be thoroughly inspected in the next 30 days. Any immediate concerns will be addressed as emergency repairs. These vaults will subsequently be inspected at least once a year. The incident occurred during significant rainstorms rendering normal cleanup operations impractical.

The cleaning operations that were engaged included the following efforts:

- a) Cleanup of the emergency site scraped the ground in areas exposed to wastewater that come potentially come into human contact.
- b) Consulted with National Plant Services (experts in environmental infrastructure cleanup) to determine if the Bluebird Canyon outfall storm drain could be cleaned by mechanical washing. It was determined to be not feasible.
- c) Cleaned the areas at the Bluebird SOCWA Lift Station of any spillage.

Staff presented an incident brief of the SSO Event to the City Council on December 3, 2019. After presenting the brief, the City Council responses supportive to consider further rate increases to fund capital improvements that will eliminate the vulnerabilities of the North Coast Interceptor.

Through the direction of the City Manager, the Director of Water Quality and staff have released a Request for Proposals to evaluate the NCI. The scope of the evaluation will be to conduct and prepare the following:

- 1. Field evaluation of the North Coast Interceptor
- 2. Documentation of findings
- 3. Recommendations for improvements beyond repairing existing facilities
- 4. Prioritization of improvements
- 5. Preparation of Magnitude of Costs for budgeting to aid in setting rates

The preliminary report is due in April 2020 to assist with setting future sewer user charge rates. The resulting revenue would help pay for the capital improvements and loans necessary to improve the North Coast Interceptor. The City Council is scheduled to set the rates for sewer user charges at their meeting in June 2020.

Section 2c) continued

The scope of the work is expected to include consideration of the following:

- A. installing parallel systems along the sections of pressurized "force" main
- B. suggestions for bypass facilities where applicable.
- C. Analysis of micro-tunneling to eliminate the entire length of the NCI.

Other appropriate ideas

The magnitude of costs may range from \$15 million to \$30 million. Timing of the projects would be scheduled for work to begin in two years after regulatory entitlements are secured.

SECTION 3

Water Quality Monitoring

Section 3a/b) The Orange County Health Care Agency (OCHCA) implements ocean water closure procedures per their Ocean and Bay Closure Posting and Rain Advisory Procedures Policy. Per this policy, and the initial 4-million-gallon estimation of sewage released, OCHCA initiated immediate closures along 15 miles of coastline on November 27, 2019. A more thorough analysis determined a reduction in the estimated spill volume which prompted a reduction in the ocean closure postings to 9 miles along the coast on November 29th. A rain advisory had already been issued on November 27th which lasted through December 3rd (one day after the beaches were reopened). Attachment 8 Provides each of the four relevant Recreational Water Updates.

Water quality monitoring commenced after crews were able to stop the spill. OCHCA staff and support staff collected samples at 17 stations along the coast (Map Exhibit #4) and analyzed them for Total Coliform, Fecal Coliform, and Enterococcus Bacteria. Samples were collected on November 30th and December 1st. All of the sample results were within the State's acceptable limits for bacteria. Since the results were within acceptable limits on two consecutive days, the closures were removed on December 2nd. Even though the closure postings were removed, a rain advisory was still in effect until December 3rd.

In addition to the OCHCA ocean water monitoring effort, SOCWA assisted the City with an effort to understand the water quality and biological impacts to Aliso Creek and the beach areas at the point of discharge. Pursuant to the S.O.P. "Biological Resources Damage Assessment for Treated and Untreated Wastewater Spills," the City requested SOCWA staff to begin sampling efforts on the day of the spill immediately. It also included a contract with Environmental & GIS Services, LLC, a firm that specializes in environmental impact assessment, to determine the biological impacts. A "multiple lines of evidence approach" was taken to determine their conclusions on the impact of the spill. Details of these efforts and their conclusions can be found in Attachment 6, Appendix C. Report Titled "Biological Resources Damage Assessment for the North Coast Interceptor Force Main Spill."

List of Map Exhibits:

1. Map Exhibit #1 – Vicinity Map
2. Map Exhibit #2 – Location of Incident
3. Map Exhibit #3 – Bypass Location Map
4. Map Exhibit #4 – Ocean Water Quality Sampling Locations

List of Attachments:

1. Attachment 1 Staff_Report Item 9 Wastewater System Finance Plan
Nov_12_2019
2. Attachment 2 SSO Volume Estimation Methodology (Revised from 15-Day
Report)
3. Attachment 3 Analysis of Bypassing Options
4. Attachment 4 Chronological List of Emergency Response Activities
5. Attachment 5 NCI Utility Service Access Vault List
6. Attachment 6 City of Laguna Beach Monitoring Assessment Jan_10_2020
Appendix A. Sample Field Data Sheet (pg 15)
Appendix B. Sample locations in relation to the spill (pg 16)
Appendix C. Final Environmental & GIS Services, LLC Report
Appendix D. SOP Biological Resources Damage Assessment for
Treated and Untreated Wastewater Spills
7. Attachment 7 SOCWA Coastal Treatment Plant Rain Gauge Data for November
2019
8. Attachment 8 Orange County Health Care Agency Recreation Updates and
Water Quality Monitoring Data
9. Attachment 9 Orange County Rain Gauge Data
10. Attachment 10 Cellular Phone Logs During Emergency Response
11. Attachment 11 NCI Work Order Records and Improvement History
12. Attachment 12 City of Laguna Beach Overflow Emergency Response Plan
13. Attachment 13 Assessment of City Lift Stations and North Coast Interceptor
14. Attachment 14 North Coast Interceptor Sewer Pipe Evaluation by Exponent
15. Attachment 15 Excerpt to Minutes of City Council Meeting December 3, 2019
16. Attachment 16 Social Media & Press Releases