NOTICE OF REGULAR MEETING
OF THE
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

ENGINEERING COMMITTEE
TELECONFERENCE MEETING

February 9, 2023
8:30 a.m.

Join Zoom Meeting by clicking on the link below:

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NOTICE IS HEREBY GIVEN that a Regular Meeting of the South Orange County Wastewater Authority (SOCWA) Engineering Committee was called to be held by Teleconference on **February 2, 2023.** SOCWA staff will be present and conducting the call at the SOCWA Administrative Office located at 34156 Del Obispo Street, Dana Point, California.

MEMBERS OF THE PUBLIC ARE INVITED TO PARTICIPATE IN THIS TELECONFERENCE MEETING AND MAY JOIN THE MEETING VIA THE TELECONFERENCE PHONE NUMBER AND ENTER THE ID CODE. THIS IS A PHONE CALL MEETING AND NOT A WEB-CAST MEETING SO PLEASE REFER TO AGENDA MATERIALS AS POSTED WITH THE AGENDA ON THE WEB-SITE WWW.SOCWA.COM. ON YOUR REQUEST, EVERY EFFORT WILL BE MADE TO ACCOMMODATE PARTICIPATION. IF YOU REQUIRE ANY SPECIAL DISABILITY RELATED ACCOMMODATIONS, PLEASE CONTACT THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY SECRETARY'S OFFICE AT (949) 234-5452 AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE SCHEDULED MEETING TO REQUEST DISABILITY RELATED ACCOMMODATIONS. THIS AGENDA CAN BE OBTAINED IN ALTERNATE FORMAT UPON REQUEST TO THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY'S SECRETARY AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE SCHEDULED MEETING.

AGENDA ATTACHMENTS AND OTHER WRITINGS THAT ARE DISCLOSABLE PUBLIC RECORDS DISTRIBUTED TO ALL, OR A MAJORITY OF, THE MEMBERS OF THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY ENGINEERING COMMITTEE IN CONNECTION WITH A MATTER SUBJECT FOR DISCUSSION OR CONSIDERATION AT AN OPEN MEETING OF THE ENGINEERING COMMITTEE ARE AVAILABLE BY PHONE REQUEST MADE TO THE AUTHORITY ADMINISTRATIVE OFFICE AT 949-234-5452. THE AUTHORITY ADMINISTRATIVE OFFICES ARE LOCATED AT 34156 DEL OBISPO STREET, DANA POINT, CA ("AUTHORITY

OFFICE"), BUT ARE NOT OPEN TO THE PUBLIC DURING THE PERIOD OF STAY AT HOME ORDERS. IF SUCH WRITINGS ARE DISTRIBUTED TO MEMBERS OF THE ENGINEERING COMMITTEE LESS THAN SEVENTY-TWO (72) HOURS PRIOR TO THE MEETING, THEY WILL BE SENT TO PARTICIPANTS REQUESTING VIA EMAIL DELIVERY. IF SUCH WRITINGS ARE DISTRIBUTED IMMEDIATELY PRIOR TO, OR DURING, THE MEETING, THEY WILL BE AVAILABLE IMMEDIATELY ON VERBAL REQUEST TO BE DELIVERED VIA EMAIL TO REQUESTING PARTIES.

AGENDA

1. Call Meeting to Order

2. Public Comments

   THOSE WISHING TO ADDRESS THE ENGINEERING COMMITTEE ON ANY ITEM LISTED ON THE AGENDA WILL BE REQUESTED TO IDENTIFY AT THE OPENING OF THE MEETING AND PRIOR TO THE CLOSE OF THE MEETING. THE AUTHORITY REQUESTS THAT YOU STATE YOUR NAME WHEN MAKING THE REQUEST IN ORDER THAT YOUR NAME MAY BE CALLED TO SPEAK ON THE ITEM OF INTEREST. THE CHAIR OF THE MEETING WILL RECOGNIZE SPEAKERS FOR COMMENT AND GENERAL MEETING DECORUM SHOULD BE OBSERVED IN ORDER THAT SPEAKERS ARE NOT TALKING OVER EACH OTHER DURING THE CALL.

PAGE NO.

Adjournment

I hereby certify that the foregoing Notice was personally emailed or mailed to each member of the SOCWA Engineering Committee at least 72 hours prior to the scheduled time of the Regular Meeting referred to above.

I hereby certify that the foregoing Notice was posted at least 72 hours prior to the time of the above-referenced Engineering Committee meeting at the usual agenda posting location of the South Orange County Wastewater Authority and at www.socwa.com.

Dated this 3rd day of February 2023.

Danita Hirsh/ Assistant Board Secretary
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

Agenda Item 3

Engineering Committee Meeting

Meeting Date: February 9, 2023

TO: Engineering Committee

FROM: David Baranowski, Director of Engineering

SUBJECT: Approval of Minutes

Overview

Minutes from the following meetings are included for review and approval by the Engineering Committee:

- November 10, 2022

Recommended Action: Staff recommends that the Engineering Committee approve Minutes as submitted.

MINUTES OF REGULAR MEETING
OF THE
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

Engineering Committee

DRAFT

November 10, 2022

The Regular Meeting of the South Orange County Wastewater Authority (SOCWA) Engineering Committee Meeting was held on November 10, 2022, at 8:30 a.m. via teleconferencing from the Administrative Offices located at 34156 Del Obispo Street, Dana Point, California. The following members of the Engineering Committee were present via Zoom Meeting:

DAVID SHISSLER	City of Laguna Beach
DAVE REBENSDORF	City of San Clemente
MIKE DUNBAR	Emerald Bay Service District
HANNAH FORD	El Toro Water District
ROD WOODS	Moulton Niguel Water District
DON BUNTS	Santa Margarita Water District
MARC SERNA	South Coast Water District
LORRIE LAUSTEN	Trabuco Canyon Water District

Absent:

KEVIN BURTON	Irvine Ranch Water District

Staff Present:

BETTY BURNETT	General Manager
DAVID BARANOWSKI	Director of Engineering
JIM BURROR	Director of Operations
AMBER BAYLOR	Director of Environmental Compliance
RONI YOUNG	Associate Engineer
MARY CAREY	Finance Controller
JEANETTE COTINOLA	Procurement / Contracts Manager
DINA ASH	HR Administrator
KONSTANTIN SHILKOV	Senior Accountant
NADYN KIM	Accountant
ANNA SUTHERLAND	Accounts Payable
SEAN PEACHER	Safety Risk Manager
MATT CLARKE	IT Administrator
DANITA HIRSH	Executive Assistant

Also Present:

ADRIANA OCHOA	Procopio Law
TARYN KJOLSING	South Coast Water District
SHERRY WANNINGER	Moulton Niguel Water District
DAVE LARSEN	Moulton Niguel Water District

1. Call Meeting to Order

   Mr. David Baranowski, Director of Engineering, called the meeting to order at 8:31 a.m.

2. Public Comments

   None.

3. Approval of Minutes

   a. Engineering Committee Meeting of September 8, 2022

ACTION
Motion was made by Ms. Ford and seconded by Mr. Serna to approve the Minutes as submitted.

Motion carried:	Aye 5, Nay 0, Abstained 3, Absent 1
Director Shissler	Abstain
Director Rebensdorf	Abstain
Director Dunbar	Abstain
Director Ford	Aye
Director Burton	Absent
Director Woods	Aye
Director Serna	Aye
Director Bunts	Aye
Director Lausten	Aye

   b. Engineering Committee Meeting of October 13, 2022

ACTION
Motion was made by Mr. Shissler and seconded by Mr. Dunbar to approve the Minutes as submitted.

Motion carried:	Aye 7, Nay 0, Abstained 1, Absent 1
Director Shissler	Aye
Director Rebensdorf	Aye
Director Dunbar	Aye
Director Ford	Aye
Director Burton	Absent
Director Woods	Aye
Director Serna	Abstain
Director Bunts	Aye
Director Lausten	Aye

4. Operations Report

Mr. Burror, Director of Operations, gave an update on the recent rainfall in South County and its impact on the Plants with a fair amount of mud on the Coastal Treatment access road which raised some concern for potential mudslides in the burn areas in the park. He also reported that staff has been working with the Moulton staff in transitioning the operation of the AWT, noting he is in receipt and is currently reviewing the Guidelines Agreement to make sure it is up to date with current practices. An open discussion ensued.

This was an information item; no action was taken.

5. Wastewater Discharge Request to Santa Margarita Water District (SMWD) and City of San Clemente (CSC) Sewerage Facilities

Ms. Amber Baylor, Director of Environmental Compliance, stated the agenda item was specifically for the City of San Clemente and Santa Margarita Water District as it relates to potential flows that would be accepted through SOCWA's Pretreatment ordinance. She gave a summary of the discharge request for wastewater from the Prima Deshecha Landfill (PDL) Gas Condensate Treatment System (CTS). An open discussion ensued.

Ms. Baylor stated she would distribute the tables to the City of San Clemente and Santa Margarita along with scheduling meetings with staff and the Member Agencies so that everyone is on the same page. There was no additional direction given by the Engineering Committee.

This was an information item; no action was taken.

6. JB Latham Salt Loading Model Follow up [Project Committee 2]

Ms. Baylor updated the Engineering Committee on the drivers of the Salt Study, Recycled Water vs. Potable Water Model inputs, and consideration of speciated TDS loading for cost allocation and future study. An open discussion ensued.

This was an information item; no action was taken.

7. Capital Improvement Construction Projects Progress and Change Order Report (*September*) [Project Committee Nos. 2, 15 & 17]

ACTION TAKEN
Motion was made by Mr. Bunts and seconded by Mr. Serna to approve Olsson Construction Change Order No. 63 for $14,797.83, No. 64 for $66,992.33, and No. 65 for $32,709.94 for a total of $114,500.10 with no additional day(s) for a revised contract value of $18,488,244.24 for the JB Latham Package B Project.

Motion carried:	Aye 3, Nay 0, Abstained 0, Absent 0	
	Director Woods	Aye
	Director Bunts	Aye
	Director Serna	Aye

8. Regional Treatment Plant (RTP) Emergency Power System Information [Project Committee 17]

Mr. Baranowski gave a presentation to the Engineering Committee about the emergency power system at the Regional Treatment Plant. The presentation included a history of power system modifications, the current power system configuration, a summary of a recent study of standby generation options, and presented potential modification options staff are considering. An open discussion ensued.

This was an information item; no action was taken.

Adjournment

There being no further business, Mr. Baranowski adjourned the meeting at 9:40 a.m.

I HEREBY CERTIFY that the foregoing Minutes are a true and accurate copy of the Minutes of the Regular Meeting of the South Orange County Wastewater Authority Engineering Committee of November 10, 2022 and approved by the Engineering Committee and received and filed by the Board of Directors of the South Orange County Wastewater Authority.

_____
Danita Hirsh, Assistant Board Secretary
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

Agenda Item 4

Engineering Committee Meeting

Meeting Date: February 9, 2023

TO: Engineering Committee

FROM: Jim Burror, Director of Operations

SUBJECT: Operations Report

Overview

Verbal update on operations and maintenance activities.

Recommended Action: Information Item.

Agenda Item 5

Engineering Committee Meeting

Meeting Date: February 9, 2023

TO: Engineering Committee

FROM: Amber Baylor, Director of Environmental Compliance

SUBJECT: FY 2023-24 Flows and Solids Initial Budget

Overview

The Budget flow allocation methodology has relied on historical practice for the allocation of costs. The intent of this agenda item is to review the methodology and summary flows and solids per project committee (PC) which is presented to the Engineering Committee members on an annual basis for review and comment for use in the annual Budget for FY 2023-24. Please note that to account for updated flows and solids after the close of the Use Audit, SOCWA staff is presenting the flows and solids for the calendar year 2022 (January through December).

Results

Captured herein are the methodologies employed and the results by member agency based on the raw and calculated data. Please note that PC-5 and PC-24 are attributed to fixed costs and are therefore not included.

PC-2

Member agency average flows for the FY were used in the flow allocation and applied proportionally from the total combined flow from each tributary trunk line. The PC-2 Budget uses FY flows and three-year FY average solid loadings to reconcile the budgeted amounts. Solids loadings are calculated by adding the average FY BOD and TSS and dividing by 2 and then multiplying the result by the flow and the 8.34 pounds conversion factor. In March 2018, PC-2 members Moulton Niguel Water District (MNWD) and Santa Margarita Water District (SMWD) came to an agreement on how to allocate solids for budgeting and Budget purposes. The new method captures the influent loading at Plant 3A as it was recognized that this allocation would isolate MNWD's solids contributions to JBL to a single variable. SMWD solids to JBL would then be the balance of solids contributed by the Oso Creek Water Reclamation Plant, 3A, and any other discharges to the Oso Trabuco line to JBL. Summary results for PC-2 are included in Table 1.

PC2 - JB Latham Plant			
Liquids Summary (mgd)			
	2022	2022	Total
Member	Total	Total Sum	Percent
Agency/Trunkline	Avg. Flow (mgd)	Billing Flow (mgd)	To Date
San Juan Trunkline	2.108		
MNWD (1)	Constant	1.400	18.26 %
SCWD	1.598	1.598	20.85 %
Trunkline/ SMWD (1)(2)	3.96	4.667	60.89 %
	7.665	7.665	100.00 %
Solids Summary Loading (mgd)			
	Total	Total	Total
Member	Avg. Loadings	Avg. Loadings	Percent
Agency/Trunkline	2022	Billing Loading	To Date
San Juan Trunkline	6202.26		
MNWD (1)(3)	Constant	5183.25	17.12 %
SCWD	5692.98	5692.98	18.80 %
SMWD (2)	18383.53	19402.54	64.08 %
	30278.77	30278.77	100.00 %
(1) Please refer to the MNWD & SMWD Agreement from 2018 for flow/solids splitting in the Oso-Trabuco line.			
(2) SMWD billing flow Includes flow from San Juan Creek trunkline flow plus Oso Trabuco flow split minus the 1.4mgd flow constant from MNWD			
(3) Loadings are calculated from the influent to 3A as a contributor to the Oso-Trabuco line with the 1.4mgd constant flow rate.			

Table 1: PC-2 Liquids and Solids Summary Table

PC-12

The PC-12 method of production is detailed by member agency in the following narrative. San Juan Capistrano is the acre-foot sum of the Rosembaum well, the Mission Street Well, and the total reclaimed water from the SMWD/CSJC intertie. For MNWD, it is the amount of reclaimed water produced from the Regional Treatment Plant (RTP) and the 3A Treatment Plant (split with SMWD as a percentage of total water set to the facility based on reports from MNWD). South Coast Water District (SCWD) is the total reclaimed water produced from the Coastal Treatment Plant (CTP). The Santa Margarita Water District (SMWD) is the combined sum of reclaimed water produced from the 3A Treatment Plant (split with MNWD), the Oso Creek Water Reclamation Plant (OCWRP), the Chiquita Water Reclamation Plant (CWRP), and the Nichols Water Reclamation Plant (NWRP). The Trabuco Canyon Water District (TCWD) is reclaimed water produced from the Robinson Ranch Water Reclamation Plant (RRWRP). Summary results for PC-12 are included in Table 2.

PC 12 Recycled Water		
Master Recycled Water Permit		
2022		
Member Agency	Region 9 Recyled Production (AF)	% RW Produced (2022)
MNWD	6553	43.97%
SCWD	965	6.47%
SMWD	6839	45.89%
TCWD	545	3.66%
Total	**14902**	**100%**

Table 2: PC-12 Recycled Water Production Table

PC-15

Due to the lack of solids handling capacity at the Coastal Treatment Plant (CTP), allocation methodology is based on flows to the treatment plant. In addition, there are no current flow meters installed to account for any flow sent to CTP from MNWD so no flow is being accounted for in this PC flow allocation methodology. The City of Laguna Beach (CLB) is the average annual flow into CTP (metered). The Emerald Bay Services District (EBSD) is the average annual flow into CTP (calculated from monthly meter reads from the lift station divided by the days in the month). The South Coast Water District (SCWD) is the average annual flow into CTP (metered). The meter calibration is performed annually in June. Summary results for PC-15 are included in Table 3.

PC 15 Actual Flows 2022 Coastal Treatment Plant		
Member Agency	Plant Flows MGD	Plant Flow Percent
CLB	1.43	53.67%
EBSD	.06	2.30%
SCWD	1.18	44.03%
MNWD	.00	0.00%
Total	2.67	100.00

Table 3: PC-15 Liquids and Solids Summary Table

PC-17

PC-17 has liquids and solids contribution. The liquids flow allocation is based on influent flow to the plant plus centrate generated during the processing of solids. The treatment plant's influent sewer flows are solely contributed by the MNWD. For the liquids flow from CTP, the centrate flow is divided by 5 and distributed to each agency, then summed to create a total liquid flow to RTP. The flows are then distributed on a proportional basis. The solids contribution is based on the total daily average pounds contributed by each agency distributed proportionally. Additional ETWD solids samples were programmed into the report. The meter calibration is performed annually in June. Summary results for PC-17 are included in Tables 4 and 5.

PC 17 Liquids Regional Treatment Plant FY 2022-2023				
Member Agency	**Plant Flow (MGD)**	**Centrate Flow (MGD)**	**Total Flow (MGD)**	**Liquid Flow (%)**
CLB	0.00	.0148	.0148	0.2040%
EBSD	0.00	.0006	.0006	0.0087%
SCWD	0.00	.0121	.0121	0.1665%
ETWD	0.00	.0181	.0181	0.2494%
MNWD	7.14	.0673	7.2096	99.3714%
Total	**7.14**	**.1129**	**7.26**	**100%**

Table 4

PC 17 Solids Regional Treatment Plant FY 2022-2023		
Member Agency	#/Day	%
CLB	375.66	15.38%
EBSD	16.14	0.66%
SCWD	307.60	12.59%
ETWD	14.27	0.58%
MNWD	1728.95	70.78%
Total	**2442.62**	**100%**

Table 5

Table 4 & 5: PC-17 Liquids and Solids Summary Tables

An excel spreadsheet with the flows and solids data will be circulated to the Engineering Committee members. Please reach out to staff with questions, recommendations, or changes by February 21, 2023, for inclusion of the results in the March 2, 2023, SOCWA Board meeting.

Recommended Action: Information Item.

Agenda Item 6

Engineering Committee Meeting

Meeting Date: February 9, 2023

TO: Engineering Committee

FROM: Amber Baylor, Director of Environmental Compliance

SUBJECT: Outfall Inspection Reports for Aliso Creek Ocean Outfall (ACOO) and San Juan Creek Ocean Outfall (SJCOO) [Project Committees 5 & 24]

Overview

At the September 1, 2022, SOCWA Board meeting, outfall inspections for Aliso Creek Ocean Outfall (ACOO) and San Juan Creek Ocean Outfall (SJCOO) were awarded to Subsea Global Solutions (SGS) with completion of the inspections November 14-18, 2022. The final reports and recommendations are included in this agenda item.

The California State Lands Commission included a condition in the lease agreement that SOCWA implement the maintenance recommendations described in the attached reports. At the December 8, 2022, Board Meeting, the Board directed staff to include funding in the budget to comply with the SLC lease condition. Staff plan to present the draft capital budget at the next Engineering Committee meeting and complete the report recommendations within the next two fiscal year periods.

Inspection History

The outfalls are inspected periodically to ensure proper maintenance, determine needs for port cleaning, ballast rock stabilization, and to identify if there is any structural damage that needs repair. Below is a history of inspections and projects for each of the outfalls. This table is based on reports and documentation Engineering staff found but does not represent all work on the outfalls.

Year	Description	ACOO	SJCOO
2021	Junction Structure Rehabilitation		X
2016	Port Cleaning	X	X
2015	External Inspection	X	X
2013	Internal Inspection	X	
2004	Internal Seal Replacement	X	
2001	Internal Inspection	X	
1999	External Inspection	X	X
1994	Underwater Improvements	X	X
1986	External Inspection		X
1985	Inspection		X
1979-81	Construction	X	X

Report Recommendations

The SGS report recommends the following repair and maintenance of ACOO:

1. In areas along the length of the ACOO where ballast is absent, install ballast such that the original design cross-sectional is maintained.
2. Using mechanical means and methods, clean each of the ACOO diffuser ports of marine growth and remove any obstructions.

The SGS report recommends the following repair and maintenance of SJCOO:

1. In areas along the length of the SJCOO where ballast is absent, install ballast such that the original design cross-sectional is being maintained.
2. Using mechanical means and methods, clean each of the SJCOO diffuser ports of marine growth and remove any obstructions.
3. Coordinate with NOAA to update their marine navigation chats to accurately show the location of the SJCOO outfall. The horizontal alignment of the SJCOO is shown incorrectly on the publicly available NOAA marine charts. Mariners rely on these charts when setting anchors, and without the SJCOO shown correctly, it is possible that a mariner might accidentally drop an anchor and damage the outfall.

The California State Lands Commission (SLC) included a condition in the lease agreement that SOCWA implement the maintenance recommendations described in the report. In the December 8, 2022, Board Meeting, the Board directed staff to include funding in the budget to comply with the SLC lease condition. Staff plan to present the draft capital budget at the next Engineering Committee meeting.

Recommended Action: Information Item.

SUBSEA GLOBAL
SOLUTIONS

Aliso Creek Ocean Outfall

External Inspection and Condition Assessment Survey

11/18/2022
Dana Point, CA

Client:

SOCWA

34156 Del Obispo Street
Dana Point, CA 92629

PO: 18297

Job Number: 5943

SUBSEA GLOBAL SOLUTIONS
SGS US WEST COAST, LLC

1725 West Pier D St.
Long Beach, CA 90802
Tel: 562-436-2701
Fax: 562-436-2767
longbeach@sgsdiving.com

www.subseaglobalsolutions.com

SUBSEA GLOBAL SOLUTIONS

Client: South Orange County Wastewater Authority

Date: January 24, 2023

Attn: Amber Baylor
Director of Environmental Compliance

Subject: Ocean Outfall External Inspection and Condition Survey of the ACOO

Dear Amber,

On November 18th, Subsea Global Solutions (SGS) performed an underwater inspection of the Aliso Creek Ocean Outfall (ACOO) for the South Orange County Wastewater Authority (SCOWA). The following is an accounting of our inspection activities.

Executive Summary

SGS conducted a detailed underwater inspection, focusing on the external condition of the ACOO. SGS utilized a remote operated vehicle (ROV), which was operated and piloted by our subcontractor, ProROV. The underwater inspection efforts were conducted over a single day on Friday November 18th, 2022.

The ROV utilized was a VideoRay Defender (VRD) manufactured by VideoRay LLC, Pottstown, Pennsylvania. The VRD vehicle was equipped with HD cameras, assorted lights, depth transducer, magnetic compass, GPS sensor and seven (7) thrusters for maximum maneuvering and thrust (4 vectored horizontal and 3 vertical). The VRD captured high-definition video and photos of the ACOO.

The horizontal and vertical alignment of the ACOO was documented during the inspection efforts. Underwater visibility varied throughout the water column but was generally good, ranging from between 5 ft and 10 ft. Maximum depth was less than 190 fsw.

Inspection Procedure

The inspection of the ACOO began by observing the end structure of the diffuser section. The VRD then proceeded along the north side of the outfall, observing the general condition of the outfall, pipe joints, ballast rock and discharge ports. Upon reaching the end of the diffuser section the VRD continued towards the shore, observing the outfall until it was fully covered by ballast. The VRD then switched to the south side of the outfall proceed back out to the end structure.

The numbering of the joints starts from the first joint closest to the end structure. For consistency, the nomenclature utilized matched the previous reports so that year on year observations can be made. An isometric drawing, showing the overall layout and the diffuser port nomenclature for the diffuser section of the ACOO is included below as Figure 1.

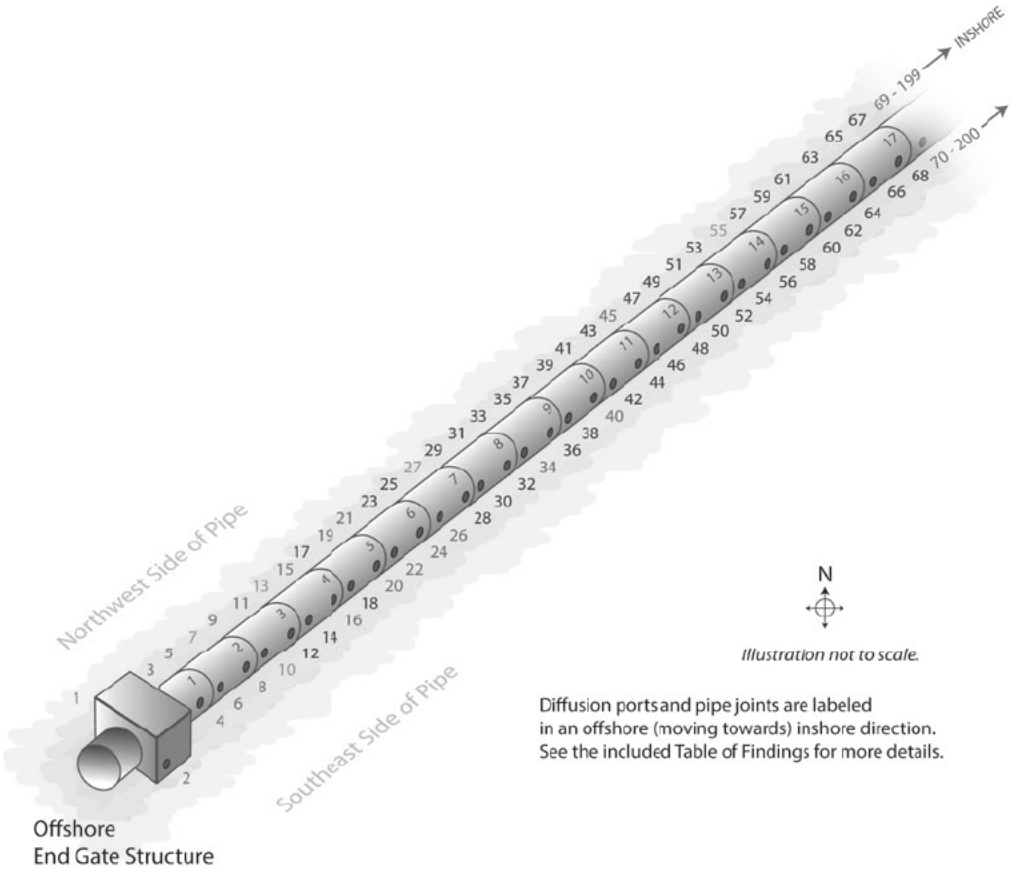


Figure 1 - Overview of ACOO Diffuser Section

Inspection Findings

During the performance of our inspection efforts, no critical findings, including significant undermining or gross damage to the outfall were observed. The outfall appeared to be generally in good condition and functioning properly during our inspection efforts.

Heavy marine growth was observed covering the entire exposed external face of the ACOO. The outfall was consistently ballasted with rock at or above the springline[1] for much of the observed length. The ACOO inspection data reveals approximately 50 linear feet along the outfall where ballast was observed to be absent. The missing ballast in these isolated areas has left the outfall pipe exposed below and well below the springline. The as-built cross section of the ACOO at the diffusers is shown for reference in Figure 3.

The ACOO diffuser ports were found to be in one of three following condition states:

1. Unobstructed and flowing freely
2. Obstructed and flowing
3. Obstructed and not flowing

[1] The springline is the horizontal line at the midpoint of the vertical axis of the pipe. This is shown for reference in Figure 2

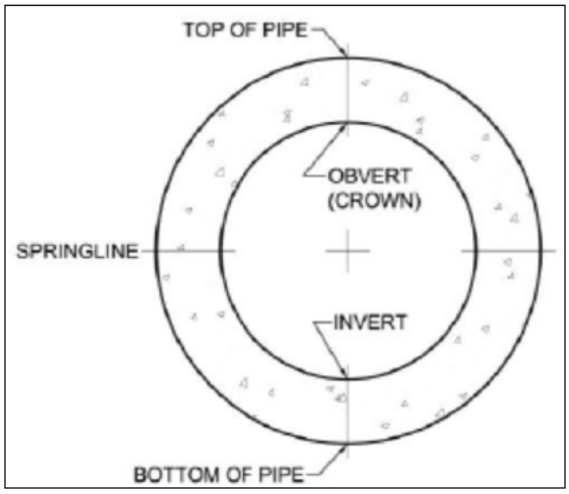


Figure 2 - Springline

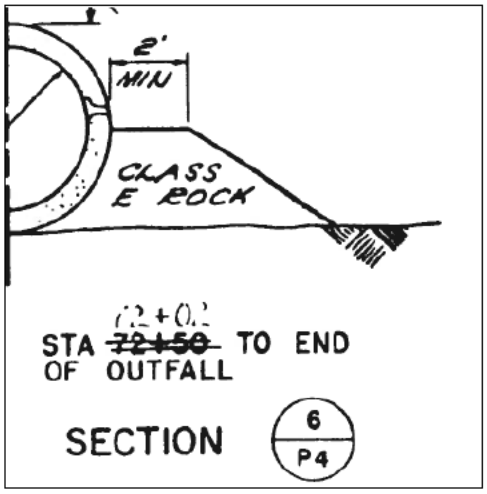


Figure 3 - ACOO As-Built Cross Section at Diffusers

Table of Findings

The following tables summarizes the inspection findings from November 18th, starting at the offshore diffuser section of the *Aliso Creek Ocean Outfall*. Findings are organized starting at the far end gate structure, heading east towards the shore.

Joint Number	Ports - Northwest Side of Pipe		Ports - Southeast Side of Pipe	
	Number	Findings	Number	Findings
1	1	Flowing	2	No Flow
	3	Flowing	4	Flowing
	5	Flowing (Buried in sand)	6	Flowing
2	7	No Flow	8	Flowing
	9	Flowing	10	Not visible (Buried in sand)
3	11	Flowing	12	Flowing (Buried in sand)
	13	Flowing	14	Not visible (Buried in sand)
4	15	Flowing	16	Flowing
	17	Flowing	18	Flowing
5	19	Flowing	20	Flowing
	21	Flowing	22	Flowing
6	23	Flowing	24	Flowing
	25	Flowing	26	Not visible (Buried in sand)
7	27	Flowing	28	Flowing
	29	Flowing	30	Flowing (Buried in ballast)
8	31	Flowing	32	Flowing
	33	Flowing	34	Flowing
9	35	Flowing	36	Flowing
	37	Flowing	38	Flowing
10	39	Flowing	40	Flowing
	41	Flowing	42	Flowing

Joint Number	Ports - Northwest Side of Pipe		Ports - Southeast Side of Pipe	
	Number	Findings	Number	Findings
11	43	Flowing	44	Flowing (+/- 10 ft of missing ballast)
	45	Flowing	46	Flowing
12	47	Flowing	48	Flowing (Sandbags Present Under ACOO)
	49	Flowing	50	Flowing (Sandbags Present Under ACOO)
13	51	Flowing	52	Flowing (Sandbags Present Under ACOO)
	53	Flowing	54	Flowing
14	55	Flowing	56	Flowing
	57	Flowing	58	Flowing
15	59	Flowing	60	Flowing
	61	Flowing	62	Flowing
16	63	Flowing	64	Flowing
	65	Flowing (Sandbags Present Under ACOO)	66	Flowing (+/- 10 ft of missing ballast)
17	67	Flowing (Sandbags Present Under ACOO)	68	Flowing
	69	Flowing (Sandbags Present Under ACOO)	70	Flowing
18	71	Flowing	72	Flowing
	73	Flowing	74	Flowing
19	75	Flowing (+/- 10 ft of missing ballast)	76	Flowing
	77	Flowing	78	Flowing
20	79	Flowing	80	Flowing
	81	Flowing	82	Flowing
21	83	Flowing	84	Flowing
	85	Flowing	86	Flowing
22	87	Flowing	88	Flowing
	89	Flowing	90	Flowing
23	91	Flowing	92	Flowing
	93	Flowing	94	Flowing
24	95	Flowing	96	Flowing
	97	Flowing	98	Flowing
25	99	Flowing	100	Flowing
	101	Flowing	102	Flowing
26	103	Flowing	104	Flowing
	105	Flowing	106	Flowing
27	107	Flowing	108	Flowing
	109	Flowing	110	Flowing
28	111	Flowing	112	Flowing
	113	Flowing	114	Flowing
29	115	Flowing	116	Flowing
	117	Flowing	118	Flowing
30	119	Flowing	120	Flowing
	121	Flowing	122	No Flow
31	123	Flowing	124	Flowing

Joint Number	Ports - Northwest Side of Pipe		Ports - Southeast Side of Pipe	
	Number	Findings	Number	Findings
	125	Flowing	126	Flowing
32	127	Flowing	128	Flowing
	129	Flowing	130	Flowing
33	131	Flowing	132	Flowing
	133	Flowing	134	Flowing
34	135	Flowing	136	Flowing
	137	Flowing	138	Flowing
35	139	Flowing	140	Flowing
	141	Flowing	142	Flowing
36	143	Flowing	144	Flowing
	145	Flowing	146	Flowing
37	147	Flowing	148	Flowing
	149	Flowing	150	Flowing
38	151	Flowing	152	Flowing
	153	Flowing	154	Flowing
39	155	Flowing	156	Flowing
	157	Flowing (+/- 10 ft of missing ballast)	158	Flowing
40	159	Flowing (+/- 10 ft of missing ballast)	160	Flowing
	161	Flowing	162	Flowing
41	163	Flowing	164	Flowing
	165	Flowing	166	Flowing
42	167	Flowing	168	Flowing
	169	Flowing	170	Flowing
43	171	Flowing	172	Flowing
	173	Flowing	174	Flowing
44	175	Flowing	176	Flowing
	177	Flowing	178	Flowing
45	179	Flowing	180	Flowing
	181	Flowing	182	Flowing
46	183	Flowing	184	Flowing
	185	Flowing	186	Flowing
47	187	Flowing	188	Flowing
	189	Flowing	190	Flowing
48	191	Flowing	192	Flowing
	193	Flowing	194	Flowing
49	195	Flowing	196	Not visible (Buried in sand)
	197	Flowing	198	Not visible (Buried in sand)
	199	Not visible (Buried in sand & ballast)	200	Not visible (Buried in sand & ballast)

Detailed snapshots along the length of the ACOO are included in at the end of this report as Appendix A. All photographic and video digital files will be made available for download by SCOWA. We have provided for reference a link to an interactive map, showing the outfall inspection location data at the ACOO in greater detail[2].

Maintenance Recommendations

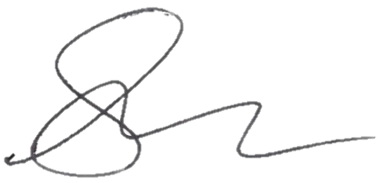
SGS recommends that SOCWA implement the following repair and maintenance at the ACOO:

1. In areas along the length of the ACOO where ballast is absent, install ballast such that the original design cross sectional is restored. The previous ballast repair efforts were observed to be in good condition. Utilizing the same means and methods would be a reasonable course of action to address the areas of missing ballast.
2. Using mechanical means and methods, clean each of the ACOO diffuser ports of marine growth and remove any obstructions.

Summary photo documentation is included below in the Photo Log. A photo location map, showing the location of each of the photos is also included as part of the Photo Log. Additional detailed photo documentation, taken along the length of the ACOO during the inspection efforts is included as Appendix A. A digital inspection running log, detailing all of the individual observation, is included as Appendix B.

If you have any questions regarding the information in this report, or to schedule additional services, please do not hesitate to contact me directly.

Best Regards,



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[2] https://www.google.com/maps/d/edit?mid=1NjEAy88t5kC2YtRD6slty7j_p25kHZk

Photo Log

Photo 1 – View at the ACOO end structure

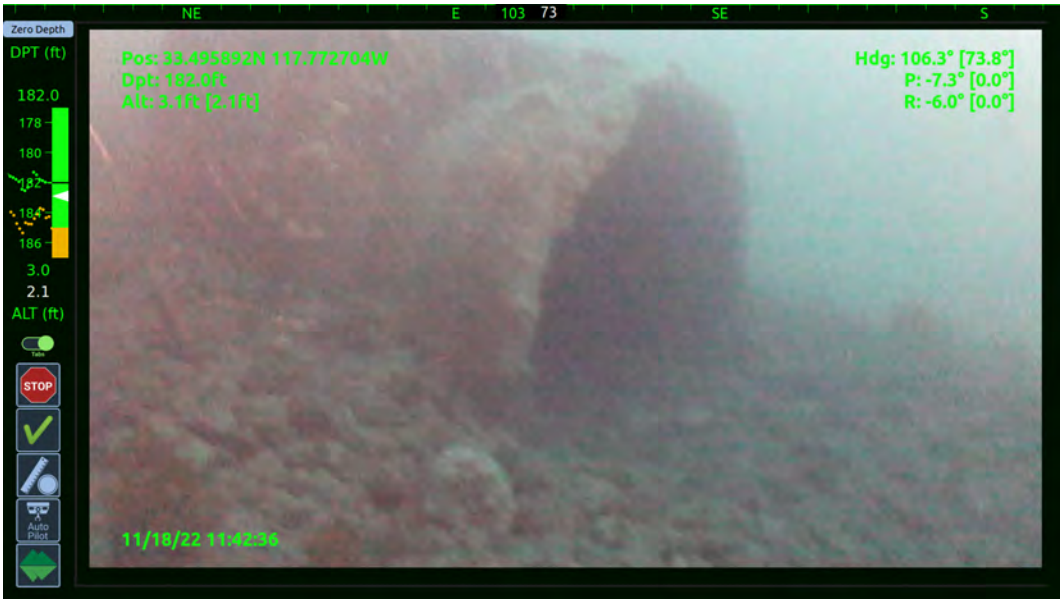


Photo 2 – View at the ACOO end structure

Photo 3 - View showing the typical external condition of the ACOO

Photo 4 – View showing the typical condition of a bell joint at the ACOO

Photo 5 – View of one of the ACOO diffuser ports, with effluent flowing

Photo 6 – View of an additional ACOO diffuser port, with effluent flowing

Photo 7 – View showing a section of the ACOO buried by sand

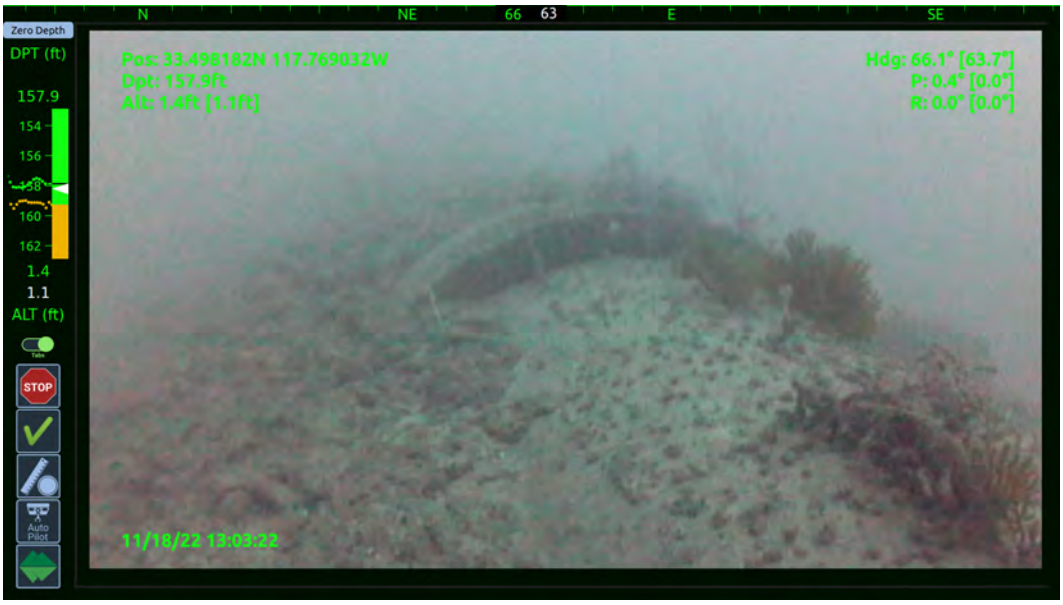


Photo 8 – Additional view showing a section of the ACOO buried by sand

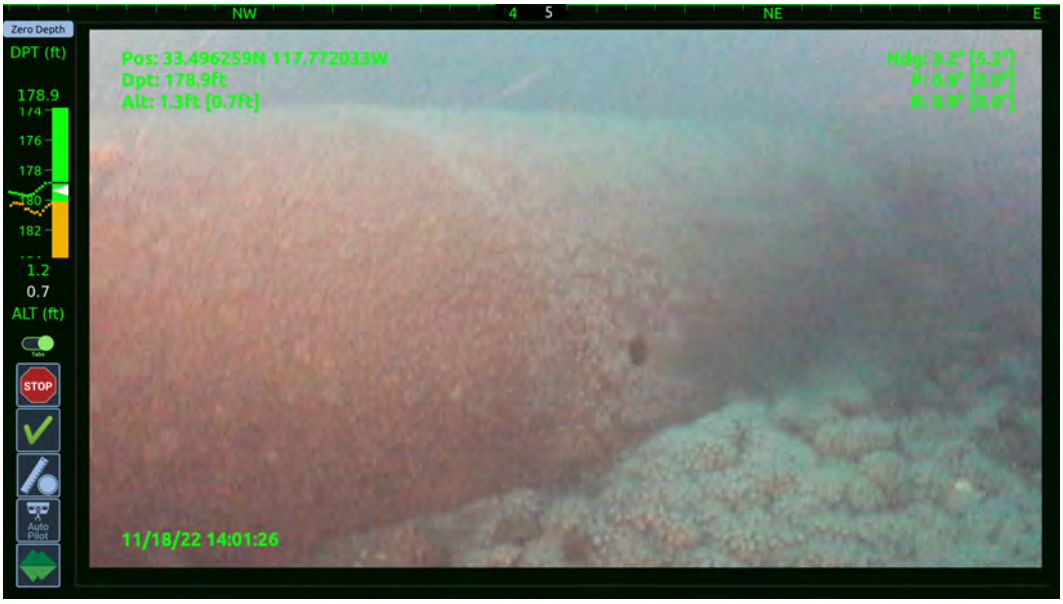


Photo 9 – View of an area along the ACOO that is missing ballast, well below the springline

Photo 10 – View of an area along the ACOO that is missing ballast, well below the springline

ACOO Photo Location Map

Appendix A - ACOO Digital Running Log

Entry	Time	Comments
1	11/18/22 11:34	Deployed ROV
2	11/18/22 11:35	Started recording/logging
3	11/18/22 11:40	At end structure, appear to be 15-20% buried
4	11/18/22 11:41	SS end structure
5	11/18/22 11:43	SS end structure
6	11/18/22 11:44	SS end structure and closed gate
7	11/18/22 11:44	SS end structure
0	11/18/22 11:45	Switch to checking diffusers
1	11/18/22 11:46	Diffuser 1 not flowing
2	11/18/22 11:48	SS Starting on Northwest side of pipe, D3 above spring line and flowing
3	11/18/22 11:48	SS flange 1
4	11/18/22 11:49	SS D5 flowing but buried
5	11/18/22 11:50	SS D7 above spring line flowing
6	11/18/22 11:51	SS flange 2
7	11/18/22 11:52	SS D9 above spring line flowing
8	11/18/22 11:52	SS D11 above spring line flowing
9	11/18/22 11:53	SS flange 3
10	11/18/22 11:53	SS D13 above spring line flowing
11	11/18/22 11:54	SS D15 above spring line flowing
12	11/18/22 11:54	SS flange 4, 1/2 buried
13	11/18/22 11:55	SS D17 above spring line flowing
14	11/18/22 11:55	SS D19 above spring line flowing
15	11/18/22 11:56	SS flange 5
16	11/18/22 11:56	SS D21 above spring line flowing
17	11/18/22 11:57	SS D23 above spring line flowing
18	11/18/22 11:57	SS flange 6 1/2 buried covered in line/rope
19	11/18/22 11:58	SS D25 above spring line flowing
20	11/18/22 11:59	SS D27 above spring line flowing
21	11/18/22 11:59	SS flange 7, no appearance of undercutting
22	11/18/22 12:00	SS D29 above spring line flowing
23	11/18/22 12:01	SS D31 above spring line flowing
24	11/18/22 12:01	SS flange 8, 1/2 buried
25	11/18/22 12:02	SS D33 below spring line flowing
26	11/18/22 12:03	SS D35 above spring line flowing
27	11/18/22 12:03	SS flange 9, 1/2 buried
28	11/18/22 12:03	SS D37 at spring line flowing

Entry	Time	Comments
29	11/18/22 12:04	SS D39 above spring line flowing
30	11/18/22 12:04	SS flange 10, 1/2 buried
31	11/18/22 12:05	SS D41 above spring line flowing
32	11/18/22 12:05	SS D43 above spring line flowing
33	11/18/22 12:05	SS flange 11, 1/2 buried
34	11/18/22 12:05	SS D45 above spring line flowing
35	11/18/22 12:06	SS D47 above spring line flowing
36	11/18/22 12:07	SS flange 12, no apparent undercutting
37	11/18/22 12:07	SS D49 above spring line flowing
38	11/18/22 12:07	SS D51 above spring line flowing
39	11/18/22 12:08	SS flange 13
40	11/18/22 12:09	SS D53 above spring line flowing
41	11/18/22 12:09	SS D53 above spring line flowing
42	11/18/22 12:10	SS flange 14
43	11/18/22 12:10	SS D55 above spring line flowing
44	11/18/22 12:11	SS D57 above spring line flowing
45	11/18/22 12:11	SS flange 15, 1/2 buried
46	11/18/22 12:11	SS D59 above spring line flowing
47	11/18/22 12:12	SS D61 above spring line flowing
48	11/18/22 12:12	SS flange 16
49	11/18/22 12:12	SS D63 above spring line flowing
50	11/18/22 12:13	SS D65 spring line flowing, with sandbags 3ft before diffuser
51	11/18/22 12:15	SS flange 17, with sandbags approx.. 4-ft past flange right before diffuser
52	11/18/22 12:15	SS D67 above spring line flowing, sandbags all along pipe to next diffuser
53	11/18/22 12:16	SS D69 above spring line flowing
54	11/18/22 12:16	SS flange 18
55	11/18/22 12:16	SS D71 above spring line flowing
56	11/18/22 12:17	SS D73 above spring line flowing
57	11/18/22 12:18	SS flange 19
58	11/18/22 12:18	SS D75 above spring line flowing
59	11/18/22 12:18	SS D77 above spring line flowing
60	11/18/22 12:19	SS flange 20
61	11/18/22 12:19	SS D79 above spring line flowing
62	11/18/22 12:19	SS D81 above spring line flowing
63	11/18/22 12:20	SS flange 21
64	11/18/22 12:20	SS D83 above spring line flowing
65	11/18/22 12:20	SS D85 above spring line flowing

Entry	Time	Comments
66	11/18/22 12:21	SS flange 22, 1/2 buried
67	11/18/22 12:21	SS D87 flowing above spring line flowing
68	11/18/22 12:22	SS D89 above spring line flowing
69	11/18/22 12:22	SS flange 23
70	11/18/22 12:24	SS D91 above spring line flowing with excessive growth around it
71	11/18/22 12:24	SS D93 above spring line flowing
72	11/18/22 12:24	SS flange 24
73	11/18/22 12:24	SS D95 above spring line flowing
74	11/18/22 12:25	SS D97 above spring line flowing
75	11/18/22 12:25	SS flange 25, 1/2 buried
76	11/18/22 12:26	SS D99 above spring line flowing
77	11/18/22 12:26	SS D101 above spring line flowing
78	11/18/22 12:26	SS flange 26
79	11/18/22 12:26	Stop and restart recording/logging
80	11/18/22 12:27	SS D103 above spring line flowing surrounded by rock
81	11/18/22 12:27	SS D105 above spring line flowing
82	11/18/22 12:28	SS flange 27
83	11/18/22 12:29	SS D107 above spring line flowing
84	11/18/22 12:29	SS D109 above spring line flowing
85	11/18/22 12:29	SS flange 28
86	11/18/22 12:30	SS D111 above spring line flowing
87	11/18/22 12:30	SS D113 above spring line flowing
88	11/18/22 12:31	SS flange 29
89	11/18/22 12:32	SS D115 below spring line flowing
90	11/18/22 12:32	SS D117 above spring line flowing
91	11/18/22 12:32	SS flange 30
92	11/18/22 12:33	SS D119 at spring line flowing
93	11/18/22 12:33	SS D121 at spring line flowing
94	11/18/22 12:33	SS flange 31
95	11/18/22 12:34	SS D123 above spring line flowing
96	11/18/22 12:34	SS D125 above spring line flowing
97	11/18/22 12:34	SS flange 32
98	11/18/22 12:35	SS D127 above spring line flowing
99	11/18/22 12:35	SS D129 above spring line flowing
100	11/18/22 12:35	SS flange 33
101	11/18/22 12:36	SS D131 above spring line flowing
102	11/18/22 12:36	SS D133 above spring line flowing

Entry	Time	Comments
103	11/18/22 12:36	SS flange 34
104	11/18/22 12:37	SS D135 above spring line flowing
105	11/18/22 12:37	SS D137 above spring line flowing
106	11/18/22 12:37	SS flange 35
107	11/18/22 12:38	SS D139 above spring line flowing
108	11/18/22 12:39	SS D141 above spring line flowing
109	11/18/22 12:39	SS flange 36, 1/2 buried
110	11/18/22 12:39	SS D143 below spring line flowing
111	11/18/22 12:39	SS D145 above spring line flowing
112	11/18/22 12:40	SS flange 37, 1/2 buried
113	11/18/22 12:40	SS D147 above spring line flowing
114	11/18/22 12:41	SS D149 above spring line flowing with growth around it
115	11/18/22 12:41	SS flange 38, 1/2 buried
116	11/18/22 12:41	SS D151 above spring line flowing
117	11/18/22 12:42	SS D153 above spring line flowing with growth around it
118	11/18/22 12:42	SS flange 39
119	11/18/22 12:42	SS D155 above spring line flowing
120	11/18/22 12:43	SS D157 above spring line flowing
121	11/18/22 12:43	SS flange 40, 1/2 buried
122	11/18/22 12:44	SS D159 above spring line flowing
123	11/18/22 12:45	SS D161 above spring line flowing
124	11/18/22 12:45	SS flange 41, 1/2 buried
125	11/18/22 12:45	SS D163 above spring line flowing
126	11/18/22 12:46	SS D165 above spring line flowing
127	11/18/22 12:46	SS flange 42
128	11/18/22 12:46	SS D167 at spring line flowing
129	11/18/22 12:47	SS D169 above spring line flowing
130	11/18/22 12:47	SS flange 43
131	11/18/22 12:47	SS D171 above spring line flowing with growth around it
132	11/18/22 12:48	SS D173 above spring line flowing
133	11/18/22 12:48	SS flange 44, 1/2 buried
134	11/18/22 12:48	SS D175 above spring line flowing with growth on it
135	11/18/22 12:49	SS D177 above spring line flowing
136	11/18/22 12:49	SS flange 45, 1/2 buried
137	11/18/22 12:50	SS D179 above spring line flowing
138	11/18/22 12:50	SS D181 above spring line flowing with growth
139	11/18/22 12:51	SS flange 46

Entry	Time	Comments
140	11/18/22 12:51	SS D183 above spring line flowing with growth around it
141	11/18/22 12:51	SS D185 above spring line flowing
142	11/18/22 12:52	SS flange 47, 1/2 buried
143	11/18/22 12:52	SS D187 above spring line flowing
144	11/18/22 12:53	SS D189 above spring line flowing with growth around it
145	11/18/22 12:53	SS flange 48, 1/2 buried
146	11/18/22 12:53	SS D191 above spring line flowing
147	11/18/22 12:54	SS D193 above spring line flowing
148	11/18/22 12:54	SS flange 49
149	11/18/22 12:54	SS D195 above spring line flowing
150	11/18/22 12:55	SS D197 above spring line flowing with growth on it
151	11/18/22 12:55	SS flange 50
152	11/18/22 12:57	SS flange 51
153	11/18/22 12:58	Starting to loose pipe into sand
154	11/18/22 13:00	SS pipe mound
155	11/18/22 13:01	SS pipe mound
156	11/18/22 13:02	SS top of pipe
157	11/18/22 13:02	SS top of pipe
158	11/18/22 13:03	SS top of pipe and flange
159	11/18/22 13:03	SS top of pipe
160	11/18/22 13:03	SS top of pipe
161	11/18/22 13:04	SS top of pipe
162	11/18/22 13:04	SS flange
163	11/18/22 13:06	SS of south side of pipe still heading towards shore
164	11/18/22 13:08	Possible effluent coming out of pipe at spring line
165	11/18/22 13:10	SS top of pipe
166	11/18/22 13:13	Stopped recording/logging
167	11/18/22 13:30	Started recording/logging
168	11/18/22 13:42	Starting on southeast side of pipe
169	11/18/22 13:42	Restarting recording/logging
170	11/18/22 13:43	SS D4 flowing above spring line
171	11/18/22 13:44	SS flange 1
172	11/18/22 13:45	SS D6 at spring line flowing
173	11/18/22 13:45	SS D8 at spring line flowing
174	11/18/22 13:47	SS pipe is buried at flange showing about 10% of flange 2
175	11/18/22 13:48	SS D12 at spring line flowing, **D10 is buried**
176	11/18/22 13:49	SS flange 3, 50% buried, pipe starts to get buried

Entry	Time	Comments
177	11/18/22 13:50	SS D14 is buried
178	11/18/22 13:50	SS D16 flowing above spring line
179	11/18/22 13:50	SS flange 4, 60% buried
180	11/18/22 13:51	SS D18 above spring line flowing
181	11/18/22 13:51	SS D20 above spring line flowing
182	11/18/22 13:52	SS flange 5, 50% buried
183	11/18/22 13:52	SS D22 above spring line flowing
184	11/18/22 13:53	SS D24 at spring line flowing surrounded by rocks
185	11/18/22 13:54	SS flange 6, 50% buried
186	11/18/22 13:55	SS D26 is buried
187	11/18/22 13:56	SS D28 at spring line flowing
188	11/18/22 13:56	SS flange 7, 60% buried
189	11/18/22 13:56	SS D30 at spring line flowing, surrounded by rocks
190	11/18/22 13:58	SS D32 flowing below spring line
191	11/18/22 13:58	SS flange 8, 80% buried
192	11/18/22 13:58	SS D34 above spring line flowing
193	11/18/22 13:59	SS D36 above spring line flowing
194	11/18/22 13:59	SS flange 9, 70% buried
196	11/18/22 14:00	SS D38 above spring line slow flowing
197	11/18/22 14:00	SS D40 above spring line flowing
198	11/18/22 14:01	SS flange 10, 50% buried
199	11/18/22 14:01	SS D42 above spring line flowing
200	11/18/22 14:02	SS D44 above spring line flowing
201	11/18/22 14:02	SS flange 11, 50% buried
202	11/18/22 14:02	SS D46 above spring line flowing
203	11/18/22 14:05	SS D48 above spring line flowing
204	11/18/22 14:06	SS flange 12, 30% buried with sand bags under it
205	11/18/22 14:06	SS D50 above spring line flowing
206	11/18/22 14:07	SS D52 above spring line flowing with sandbags under
207	11/18/22 14:08	SS flange 13, 50% buried
208	11/18/22 14:08	SS D54 above spring line flowing
209	11/18/22 14:08	SS D56 above spring line flowing
210	11/18/22 14:09	SS flange 14, 50% buried
211	11/18/22 14:09	SS D58 above spring line flowing
212	11/18/22 14:10	SS D60 above spring line flowing
213	11/18/22 14:10	SS flange 15, 50% buried
214	11/18/22 14:10	SS D62 above spring line flowing

Entry	Time	Comments
215	11/18/22 14:12	SS D64 above spring line flowing
216	11/18/22 14:12	SS flange 16, 50% buried
217	11/18/22 14:13	SS D66 above spring line flowing
218	11/18/22 14:13	SS D68 above spring line flowing
219	11/18/22 14:17	SS flange 17, 60% buried
220	11/18/22 14:17	SS D70 above spring line flowing
221	11/18/22 14:18	SS D72 above spring line flowing
222	11/18/22 14:19	SS flange 18, 50% buried
223	11/18/22 14:19	SS D74 above spring line flowing
224	11/18/22 14:19	SS D76 above spring line flowing
225	11/18/22 14:20	SS flange 19, 50% buried
226	11/18/22 14:20	SS D78 above spring line flowing
227	11/18/22 14:20	SS D80 above spring line flowing
228	11/18/22 14:21	SS flange 20, 50% buried
229	11/18/22 14:21	SS D82 above spring line flowing
230	11/18/22 14:22	SS D84 above spring line flowing
231	11/18/22 14:22	SS flange 21, 50% buried
232	11/18/22 14:23	SS D86 above spring line flowing
233	11/18/22 14:24	SS D88 above spring line flowing
234	11/18/22 14:24	SS flange 22, 40% buried
235	11/18/22 14:25	SS D90 above spring line flowing
236	11/18/22 14:25	SS D92 above spring line flowing
237	11/18/22 14:26	Ss flange 23
238	11/18/22 14:26	SS D94 above spring line flowing
239	11/18/22 14:29	Stop recording/logging
240	11/18/22 15:40	Lost thruster. Redeployed ROV with 3 lateral thrusters instead of 4
241	11/18/22 15:50	At flange 23
242	11/18/22 15:52	D96 above spring line
243	11/18/22 15:53	flange 24
244	11/18/22 15:54	D96 flowing
245	11/18/22 15:55	D98 flowing
246	11/18/22 15:55	flange 25
247	11/18/22 15:57	D100 above mud line flowing
248	11/18/22 15:59	D102 above mud line flowing
249	11/18/22 16:05	D104 above mud line flowing
250	11/18/22 16:05	D106 flowing above mud line
251	11/18/22 16:06	Flange 27

Entry	Time	Comments
252	11/18/22 16:06	D108 above mud line flowing
253	11/18/22 16:07	D110 above mud line flowing
254	11/18/22 16:09	Flange 28
255	11/18/22 16:10	D112 above mud line flowing
256	11/18/22 16:11	D114 above mud line flowing
257	11/18/22 16:11	Flange 29
258	11/18/22 16:12	D116 above mud line flowing
259	11/18/22 16:12	D118 above mud line flowing
260	11/18/22 16:13	Flange 30
261	11/18/22 16:13	D120 above mud line flowing
262	11/18/22 16:16	D122 not flowing
263	11/18/22 16:19	Flange 31
264	11/18/22 16:21	D124 above mud line and flowing
265	11/18/22 16:23	D126 above mud line and flowing
266	11/18/22 16:23	Flange 32
267	11/18/22 16:24	D128 above mud line and flowing
268	11/18/22 16:26	D130 above mud line flowing
269	11/18/22 16:26	Flange 33
270	11/18/22 16:27	D132 above mud line flowing
271	11/18/22 16:27	D134 above mud line flowing
272	11/18/22 16:27	Flange 34
273	11/18/22 16:29	D136 above mud line flowing
274	11/18/22 16:30	D138 above mud line flowing
275	11/18/22 16:30	Flange 35
276	11/18/22 16:30	D140 above mud line flowing
277	11/18/22 16:32	D142 above mud line flowing
278	11/18/22 16:32	Flange 36
279	11/18/22 16:33	D144 above mud line flowing
280	11/18/22 16:34	D146 above mud line flowing
281	11/18/22 16:34	Flange 37
282	11/18/22 16:35	D148 above mud line flowing
283	11/18/22 16:37	D150 above mud line flowing
284	11/18/22 16:37	Flange 38
285	11/18/22 16:39	D152 above mud line flowing
286	11/18/22 16:39	D154 above mud line flowing
287	11/18/22 16:39	Flange 39
288	11/18/22 16:40	D156 above mud line flowing

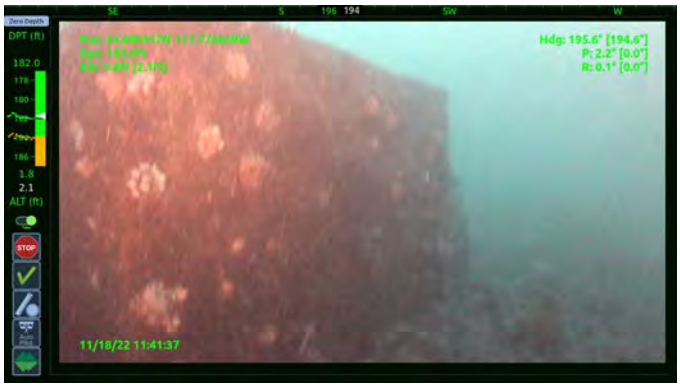
Entry	Time	Comments
289	11/18/22 16:41	D158 above mud line flowing
290	11/18/22 16:42	Flange 40
291	11/18/22 16:42	D160 above mud line flowing
292	11/18/22 16:43	D162 above mud line flowing
293	11/18/22 16:43	Flange 41
294	11/18/22 16:44	D164 above mud line flowing
295	11/18/22 16:45	D166 above mud line flowing
296	11/18/22 16:45	Flange 42
297	11/18/22 16:45	D168 above mud line flowing
298	11/18/22 16:46	D170 above mud line flowing
299	11/18/22 16:46	Flange 43
300	11/18/22 16:46	D172 above mud line flowing
301	11/18/22 16:48	D174 on spring line flowing
302	11/18/22 16:48	Flange 44
303	11/18/22 16:52	D176 above mud line flowing
304	11/18/22 16:54	D178 above mud line flowing
305	11/18/22 16:54	Flange 45
306	11/18/22 16:55	D180 above mud line flowing
307	11/18/22 16:56	D182 above spring line flowing
308	11/18/22 16:56	Flange 46
309	11/18/22 16:57	D184 above spring line flowing
310	11/18/22 16:57	D186 above spring line flowing
311	11/18/22 16:58	Flange 47
312	11/18/22 16:59	D188 above spring line flowing
313	11/18/22 16:59	D190 above spring line flowing
314	11/18/22 17:00	Flange 48
315	11/18/22 17:01	D192 above spring line flowing
316	11/18/22 17:02	D194 above spring line flowing
317	11/18/22 17:02	Flange 49
318	11/18/22 17:06	D196 not flowing
319	11/18/22 17:07	D198 not flowing
320	11/18/22 17:08	Flange 50
321	11/18/22 17:08	Pipe gets buried
322	11/18/22 17:13	Ended diffuser inspection on pipe. Going back to end junction
323	11/18/22 17:16	Stopped recording/logging
324	11/18/22 17:17	Deployed ROV, started recording/logging for waypoints of flanges
325	11/18/22 17:22	WP64 flange1

Entry	Time	Comments
326	11/18/22 17:23	WP65 flange 2
327	11/18/22 17:24	WP66 flange 3
328	11/18/22 17:25	WP67 flange 4
329	11/18/22 17:26	WP68 flange 5
330	11/18/22 17:27	WP69 flange 6
331	11/18/22 17:28	WP70 flange 7
332	11/18/22 17:29	WP71 flange 8
333	11/18/22 17:30	WP72 flange 9
334	11/18/22 17:30	WP73 flange 10
335	11/18/22 17:31	WP74 flange 11
336	11/18/22 17:32	WP75 flange 12
337	11/18/22 17:33	WP76 flange 13
338	11/18/22 17:34	WP77 flange 14
339	11/18/22 17:35	WP78 flange 15
340	11/18/22 17:35	WP79 flange 16
341	11/18/22 17:36	WP80 flange 17
342	11/18/22 17:37	WP81 flange 18
343	11/18/22 17:38	WP82 flange 19
344	11/18/22 17:39	WP83 flange 20
345	11/18/22 17:39	WP84 flange 21
346	11/18/22 17:41	WP85 flange 22
347	11/18/22 17:41	WP86 flange 23
348	11/18/22 17:41	WP87 flange 24
349	11/18/22 17:42	WP88 flange 25
350	11/18/22 17:44	WP89 flange 26
351	11/18/22 17:45	WP90 flange 27
352	11/18/22 17:45	WP91 flange 28
353	11/18/22 17:46	WP92 flange 29
354	11/18/22 17:48	WP93 flange 30
355	11/18/22 17:48	WP94 flange 31
356	11/18/22 17:48	WP95 flange 32
357	11/18/22 17:51	WP97 flange 33
358	11/18/22 17:51	WP98 flange 34
359	11/18/22 17:52	WP99 flange 35
360	11/18/22 17:52	WP100 flange 36
361	11/18/22 17:53	WP101 flange 37
362	11/18/22 17:53	WP102 flange 38

Entry	Time	Comments
363	11/18/22 17:55	WP103 flange 39
364	11/18/22 17:55	WP104 flange 40
365	11/18/22 17:56	WP105 flange 41
366	11/18/22 17:57	WP106 flange 42
367	11/18/22 17:57	WP107 flange 43
368	11/18/22 17:58	WP108 flange 44
369	11/18/22 17:58	WP109 flange 45
370	11/18/22 17:59	WP110 flange 46
372	11/18/22 18:00	WP111 flange 47
373	11/18/22 18:00	WP112 flange 48
374	11/18/22 18:01	WP113 flange 49
375	11/18/22 18:01	WP114 flange 50
376	11/18/22 18:02	Stop recording/logging
377	11/18/22 18:03	Ending inspection on ACOO

Appendix B - ACOO Photo Snap Shots

The following Snap Shots (SS) show each diffuser or where diffuser should be and are either buried or clogged and flange SS. The SS numbers follow the DJL above and indicate which diffuser or flange are indicated. All SS listed in the SS file on the thumb drive are not shown below as they may be duplicates, redundant, or show the same item but from a different angle / perspective and therefore only the best image was chosen for display purposes here. To find the actual image listed on the DJL, simply go to the PNG image in the Snap Shot file on the thumb drive and match the time of the image with the entry time on the DJL.



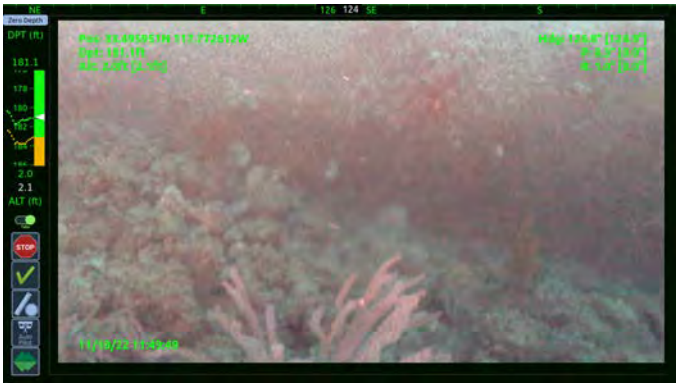
Entry 4 End Structure

Entry 5 End Structure

Entry 6 Gate Closed

Entry 7 North diffuser not flowing

Entry 3 Flange 1

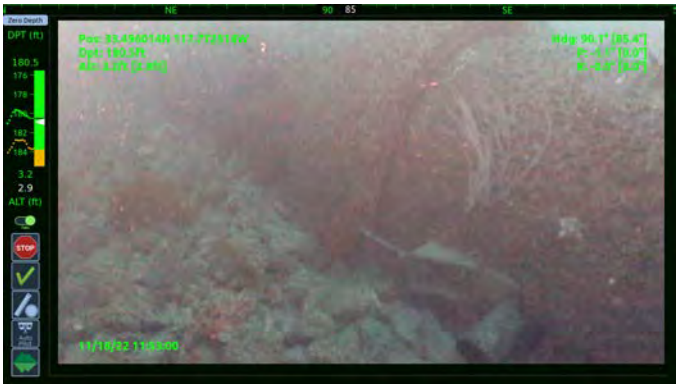


Entry 4 D5

Entry 6 Flange 2

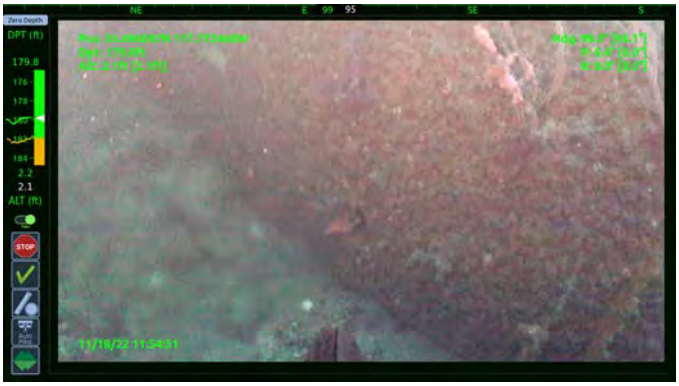
Entry 7 D9

Entry 8 D11



Entry 9 Flange 3

Entry 10 D13



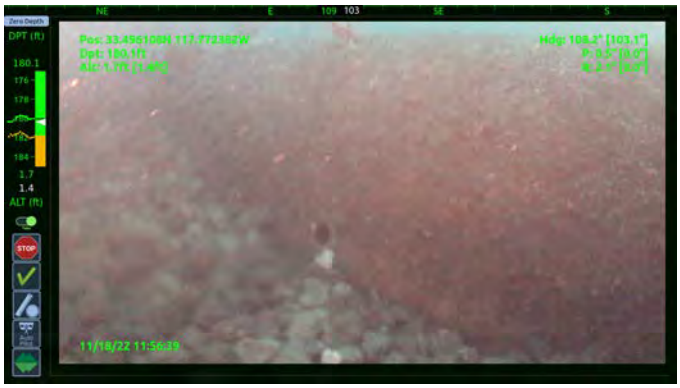
Entry 11 D15

Entry 12 Flange 4

Entry 13 D17

Entry 14 D19

Entry 15 Flange 5



Entry 16 D21

Entry 17 D23

Entry 18 Flange 6

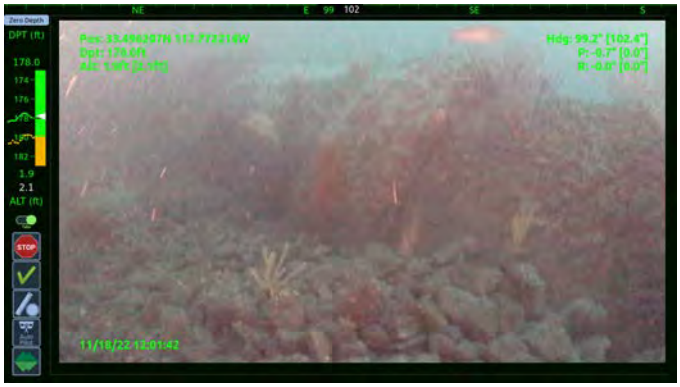
Entry 19 D25

Entry 20 D27

Entry 21 Flange 7

Entry 22 D29

Entry 23 D31

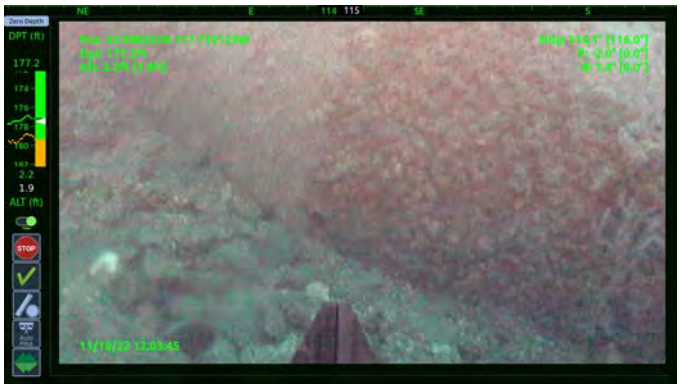


Entry 24 Flange 8

Entry 25 D33

Entry 26 D35

Entry 27 Flange 9



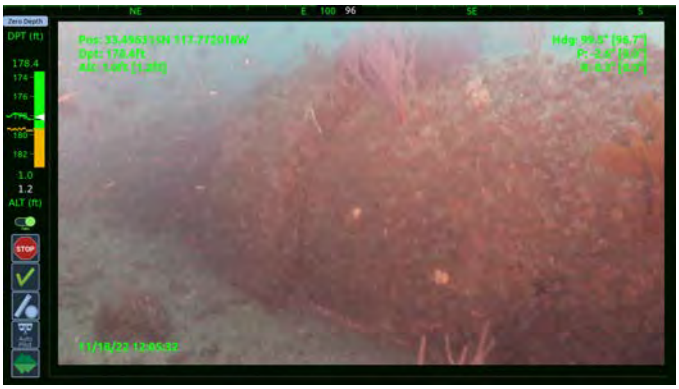
Entry 28 D37

Entry 29 D39

Entry 30 Flange 10

Entry 31 D41

Entry 32 D43



Entry 33 Flange 11

Entry 34 D45

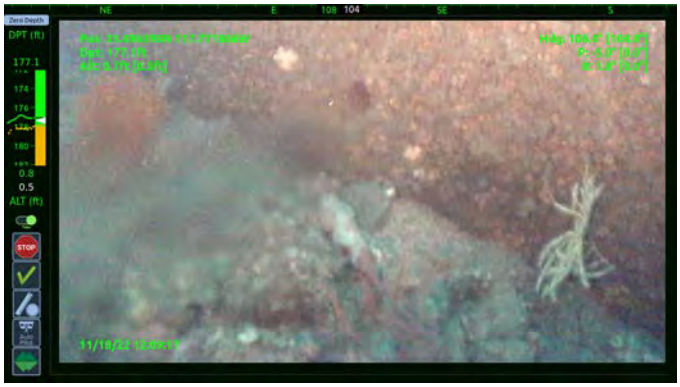
Entry 35 D47

Entry 36 Flange 12

Entry 37 D49

Entry 38 D51

Entry 39 Flange 13

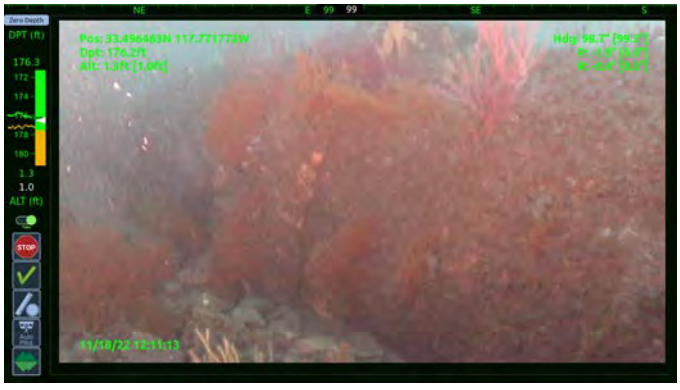


Entry 40 D53

Entry 42 Flange 14

Entry 43 D55

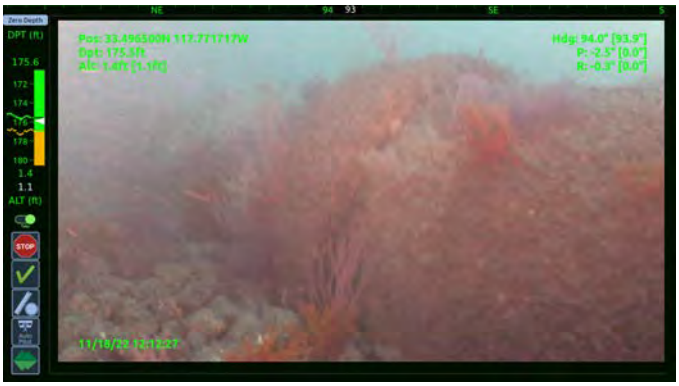
Entry 44 D57



Entry 45 Flange 15

Entry 46 D59

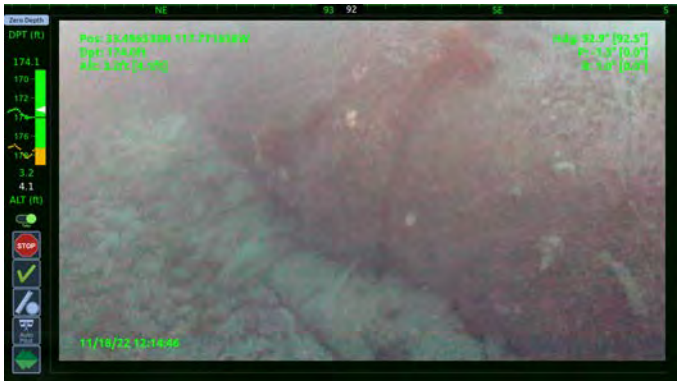
Entry 47 D61



Entry 48 Flange 16

Entry 49 D63

Entry 50 D65

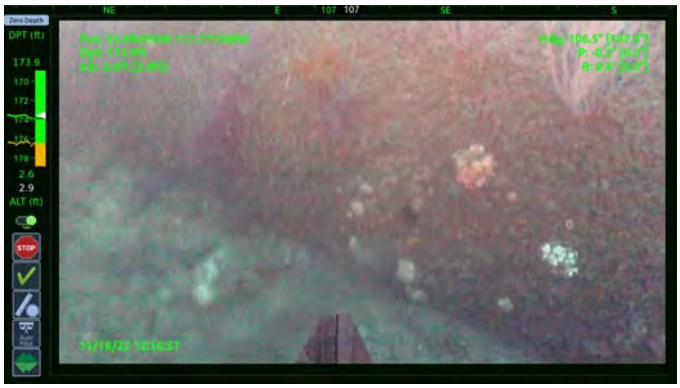


Entry 51 Flange 17

Entry 52 D67

Entry 53 D69

Entry 54 Flange 18



Entry 55 D71

Entry 56 D73

Entry 57 Flange 19

Entry 58 D75

Entry 59 D77

Entry 60 Flange 20

Entry 61 D79

Entry 62 D81

Entry 63 Flange 21

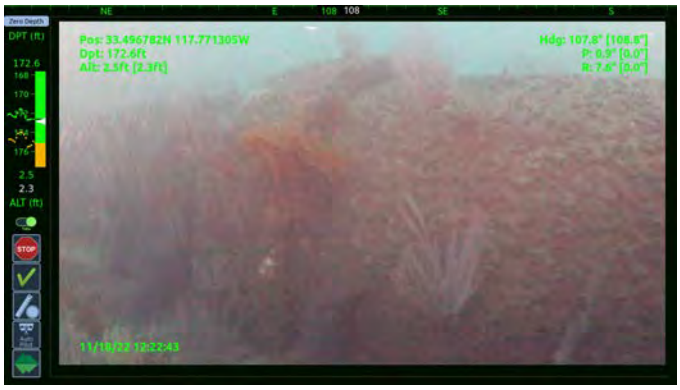
Entry 64 D83

Entry 65 D85

Entry 66 Flange 22

Entry 67 D87

Entry 68 D89

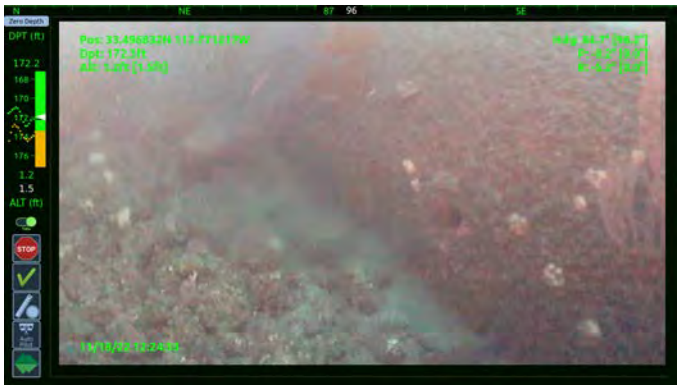


Entry 69 Flange 23

Entry 70 D91

Entry 71 D93

Entry 72 Flange 24



Entry 73 D95

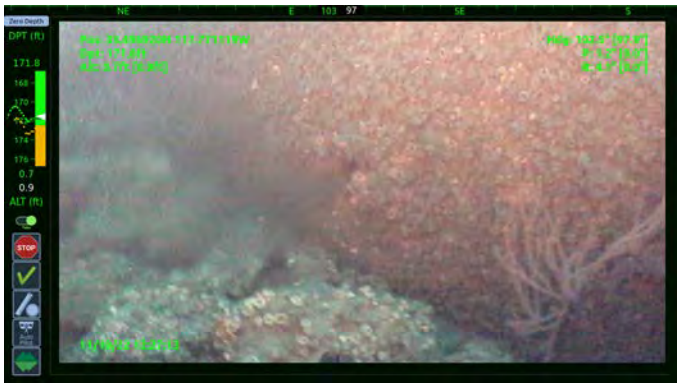
Entry 74 D97

Entry 75 Flange 25

Entry 76 D99

Entry 77 D101

Entry 78 Flange 26



Entry 80 D103

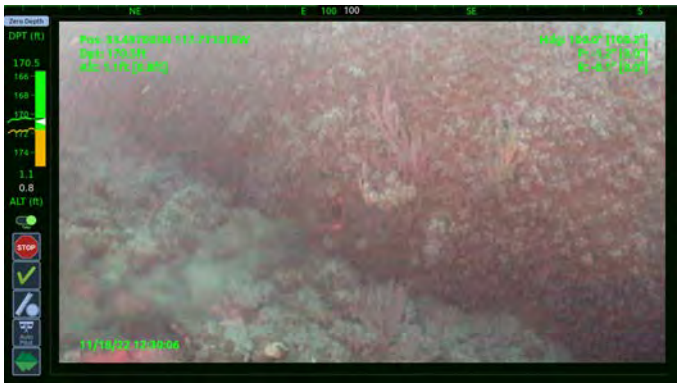
Entry 81 D105

Entry 82 Flange 27

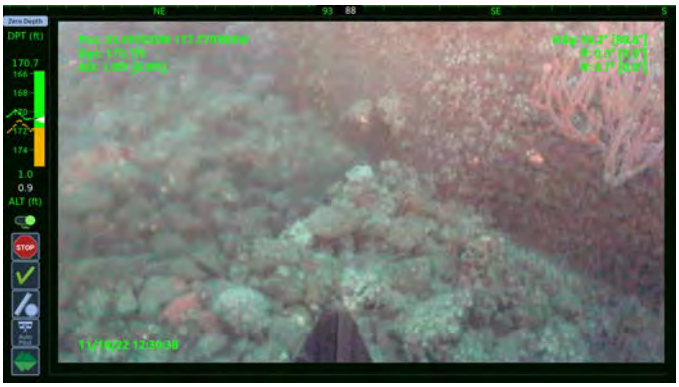
Entry 83 D107

Entry 84 D109

Entry 85 Flange 28

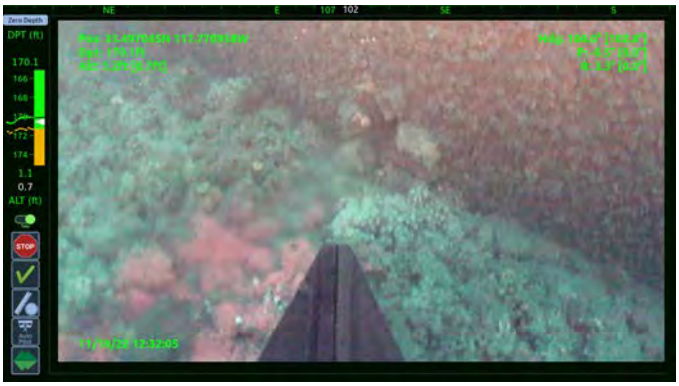


Entry 86 D111



Entry 87 D113

Entry 88 Flange 29



Entry 89 D115

Entry 90 D117

Entry 91 Flange 30

Entry 92 D119

Entry 93 D121

Entry 94 Flange 31

Entry 95 D123

Entry 96 D125

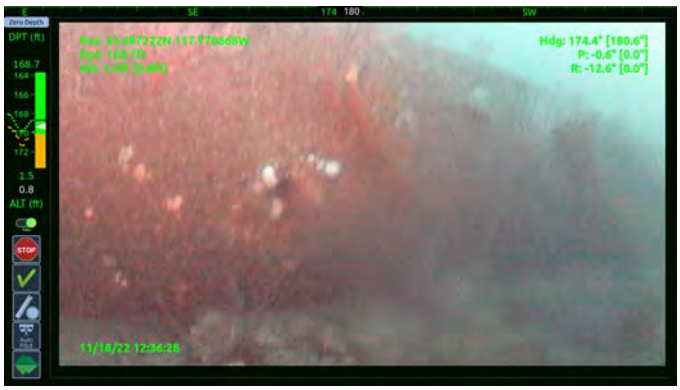
Entry 97 Flange 32

Entry 98 D127

Entry 99 D129

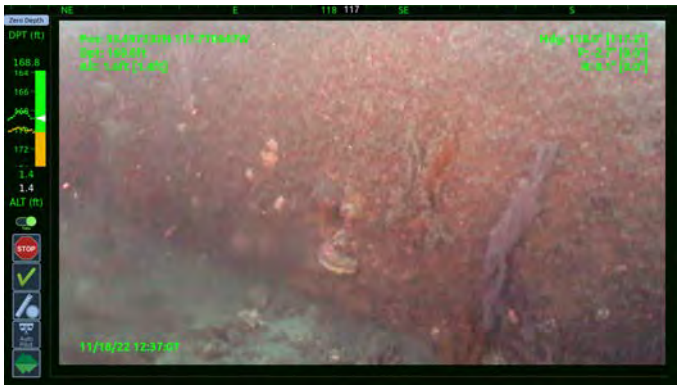
Entry 100 Flange 33

Entry 101 D131

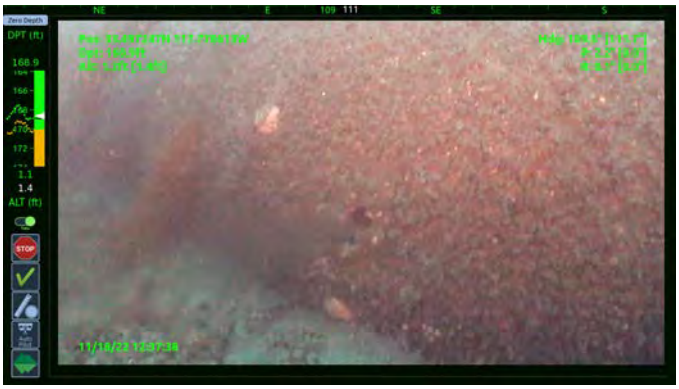


Entry 102 D133

Entry 103 Flange 34



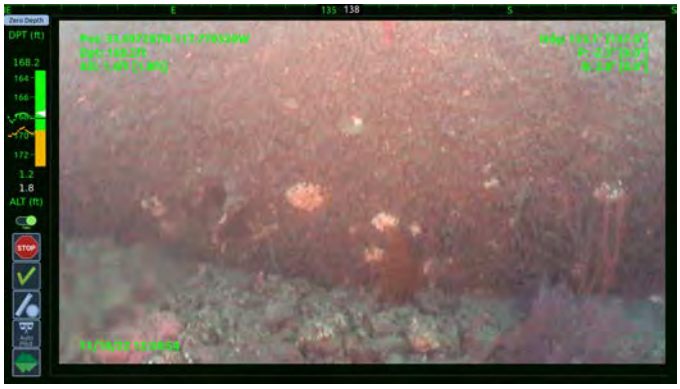
Entry 104 D135



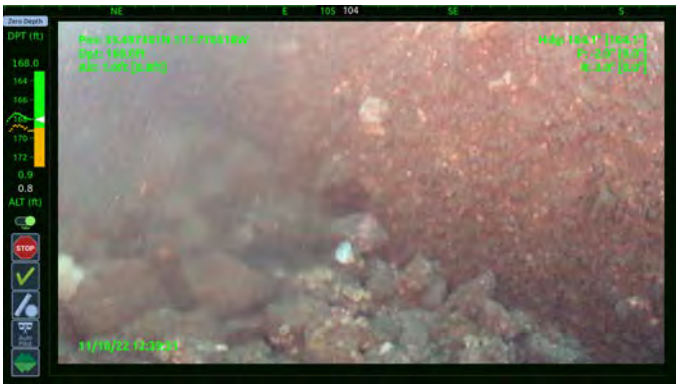
Entry 105 D137

Entry 106 Flange 35

Entry 107 D139



Entry 108 D141



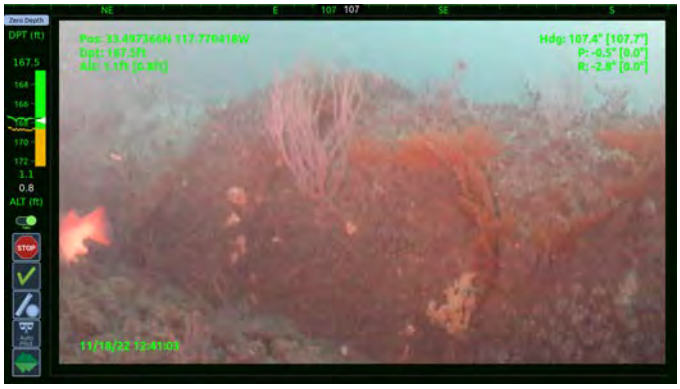
Entry 110 D143

Entry 111 D145

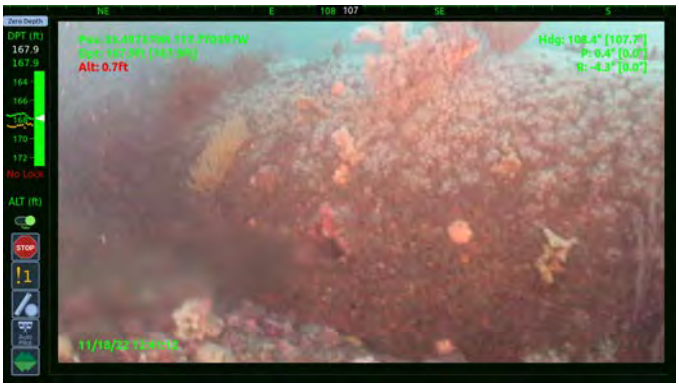
Entry 112 Flange 37

Entry 113 D147

Entry 114 D149



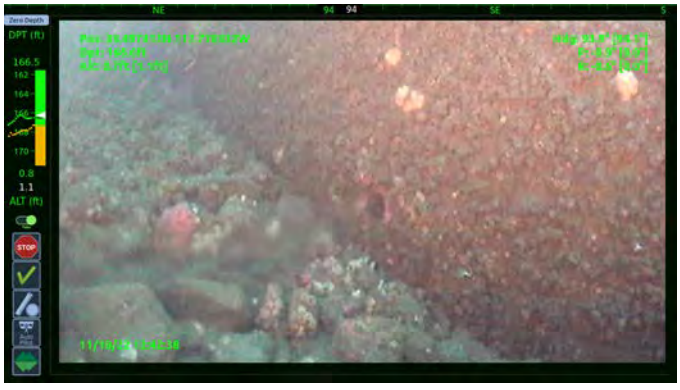
Entry 115 Flange 38



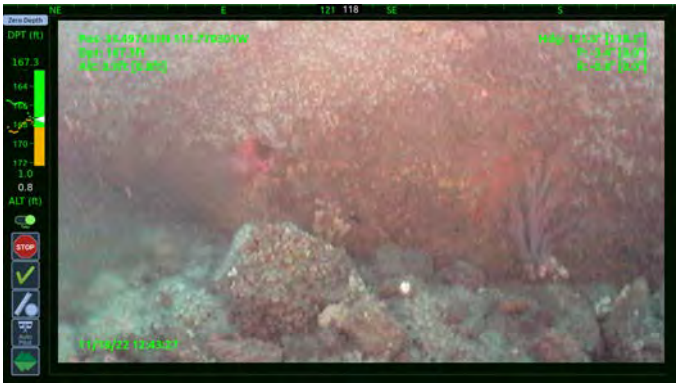
Entry 116 D151

Entry 117 D153

Entry 118 Flange 39

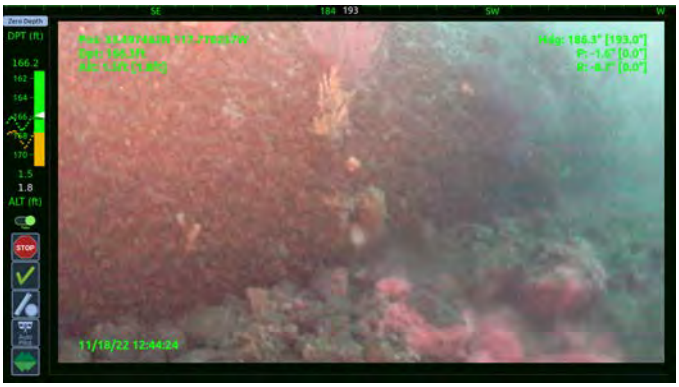


Entry 119 D155



Entry 120 D157

Entry 121 Flange 40



Entry 122 D159

Entry 123 D161

Entry 125 D163

Entry 126 D165

Entry 127 Flange 42

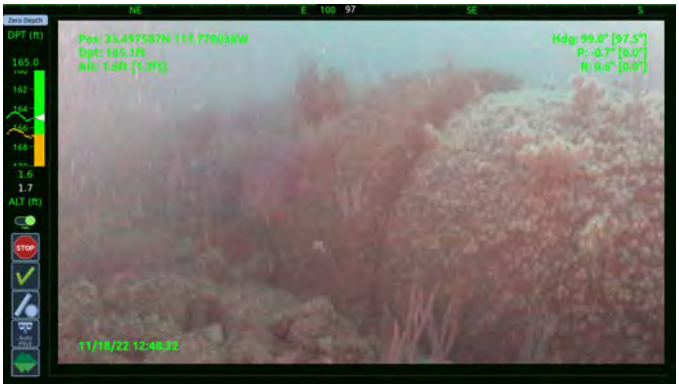
Entry 128 D167

Entry 129 D169

Entry 130 Flange 43

Entry 131 D171

Entry 132 D173



Entry 133 Flange 44

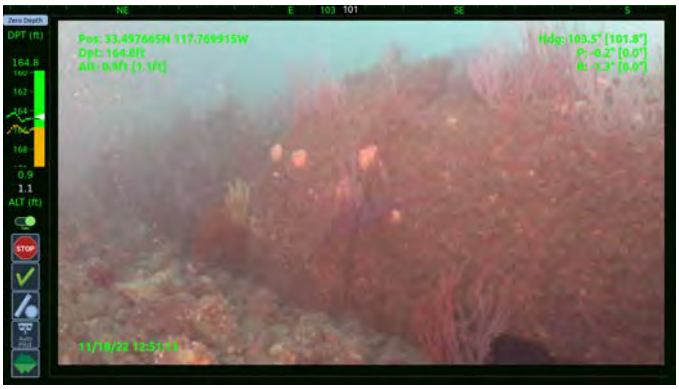
Entry 134 D175

Entry 135 D177

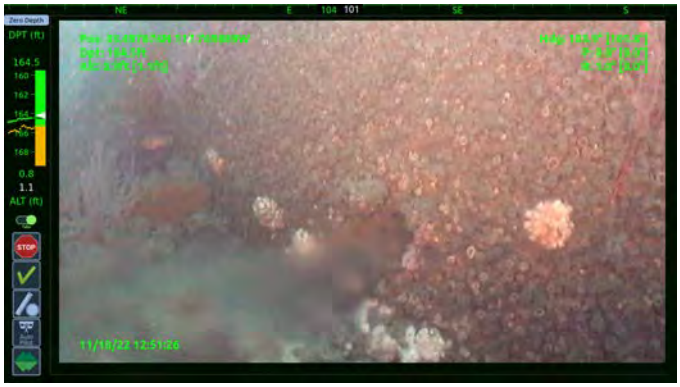
Entry 136 Flange 45

Entry 137 D179

Entry 138 D181



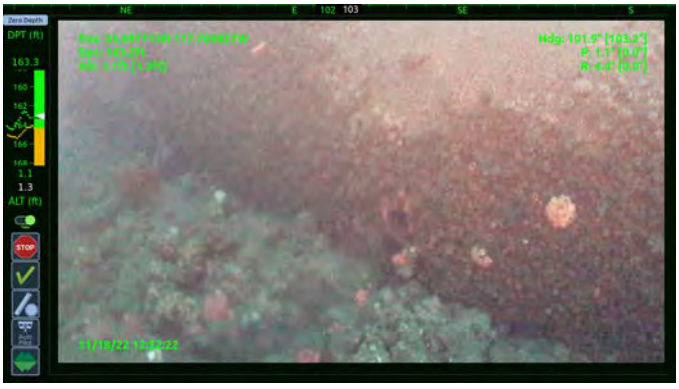
Entry 139 Flange 46



Entry 140 D183

Entry 141 D185

Entry 142 Flange 47



Entry 143 D187

Entry 144 D189

Entry 145 Flange 48

Entry 146 D191

Entry 147 D192

Entry 148 Flange 49

Entry 149 D195

Entry 150 D197

Entry 151 Flange 50

Entry 152 Flange 51

Entry 153 Going into sand

Entry 155 Getting buried

Entry 157 Getting more buried

Entry 161 In and out of sand

Entry 165 Last Flange

Entry 170 D4 Starting on southeast side

Entry171 Flange 1

Entry 172 D6

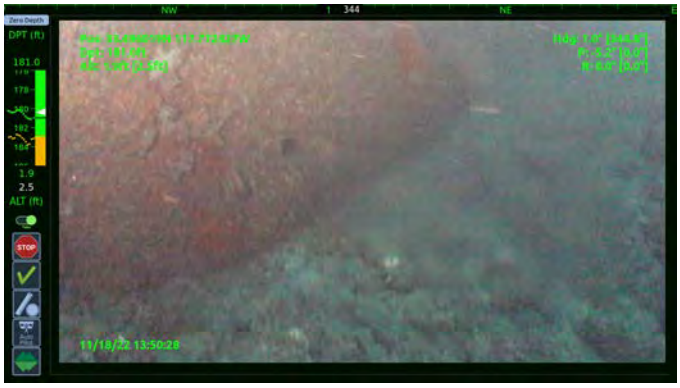
Entry 173 D8

Entry174 Flange 2 buried

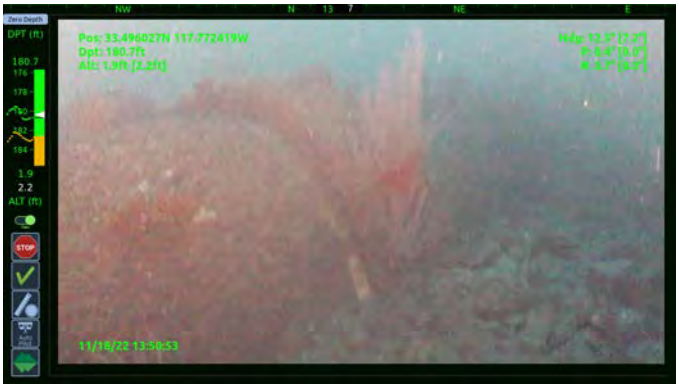
Entry 175 D12

Entry 176 Flange 3

Entry 177 D14 - Buried



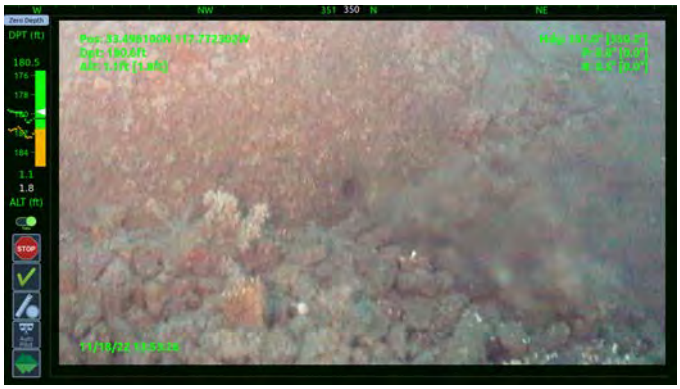
Entry 178 D16



Entry 179 Flange 4

Entry 180 D18

Entry 181 D20

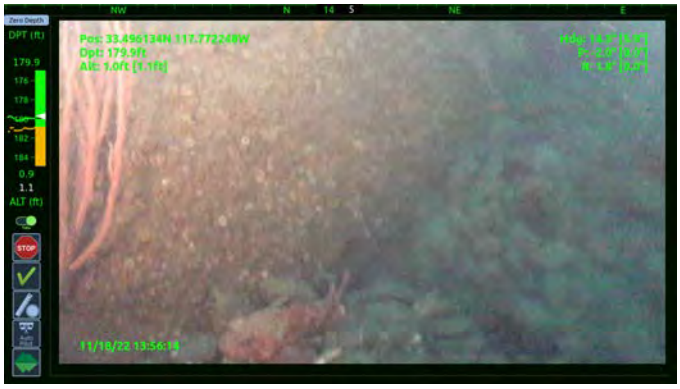


Entry 183 D22

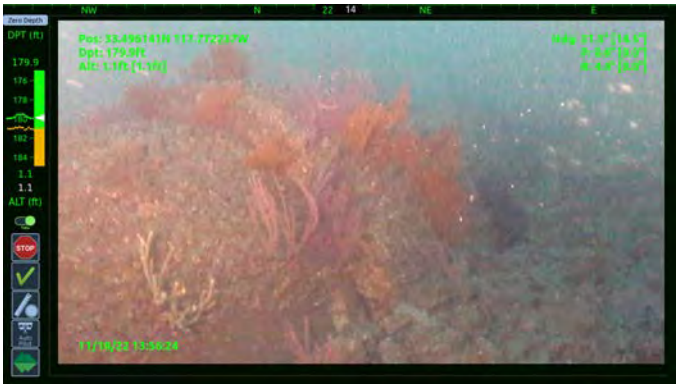
Entry 184 D24

Entry 185 Flange 6

Entry 186 D26 Buried



Entry 187 D28

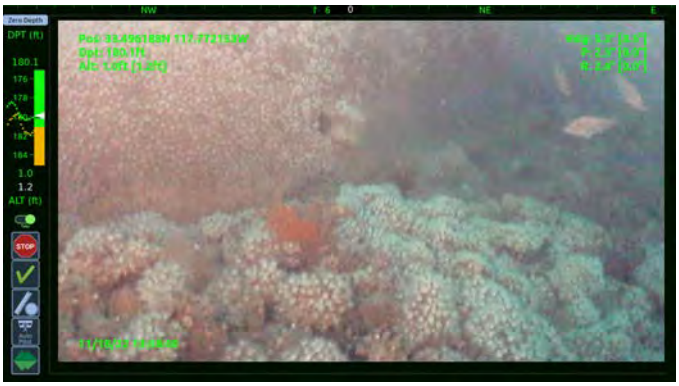


Entry 188 Flange 7

Entry 189 D30

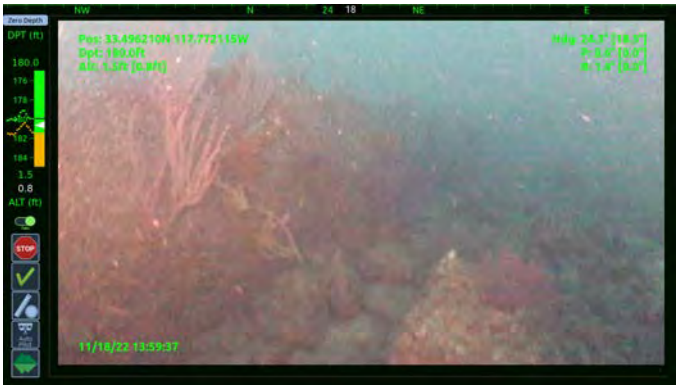
Entry 190 D32

Entry 191 Flange 8



Entry 192 D34

Entry 193 D36



Entry 194 Flange 9

Entry 196 D38

Entry 197 D40

Entry 198 Flange 10

Entry 199 D42

Entry 2090 D44

Entry 201 Flange 11

Entry 202 D46

Entry 203 D48

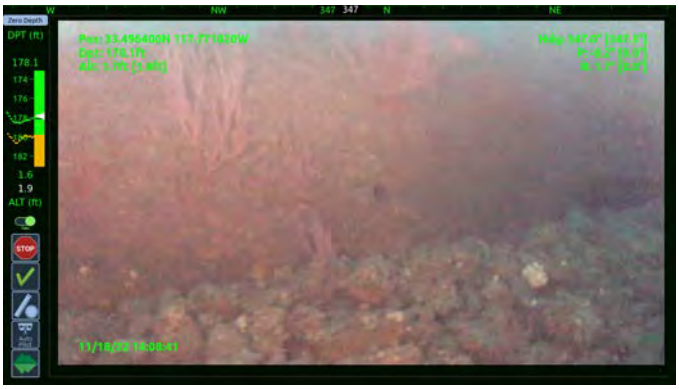
Entry 204 Flange 12

Entry 205 D50

Entry 206 D52

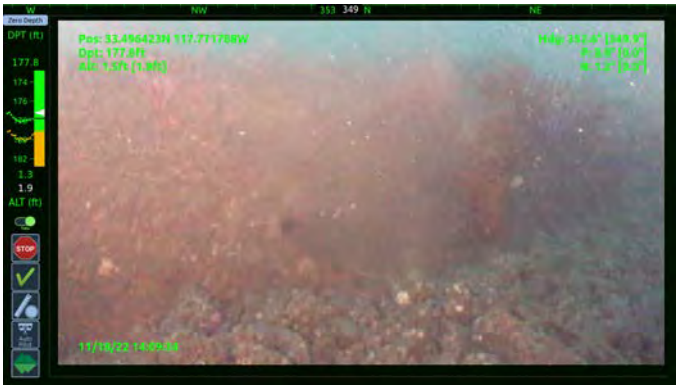
Entry 207 Flange 13

Entry 208 D54



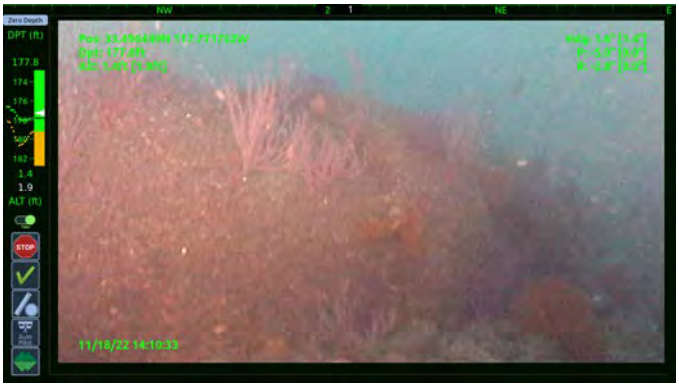
Entry 209 D56

Entry 210 Flange 14



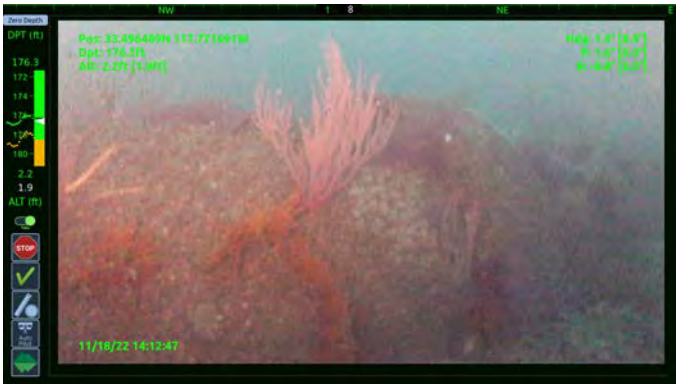
Entry 211 D58

Entry 212 D60

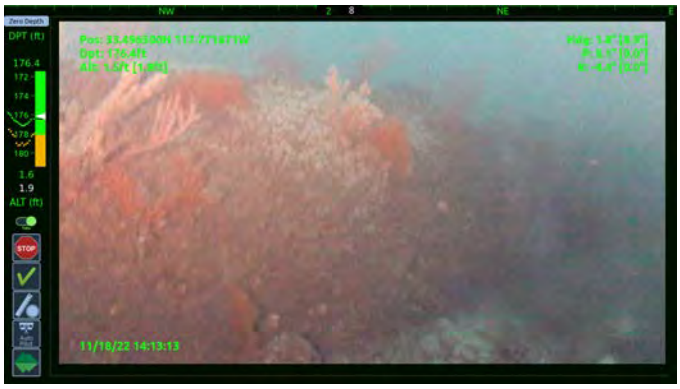


Entry 213 Flange 15

Entry 215 D64



Entry 216 Flange 16



Entry 217 D66

Entry 218 D68

Entry 219 Flange 17

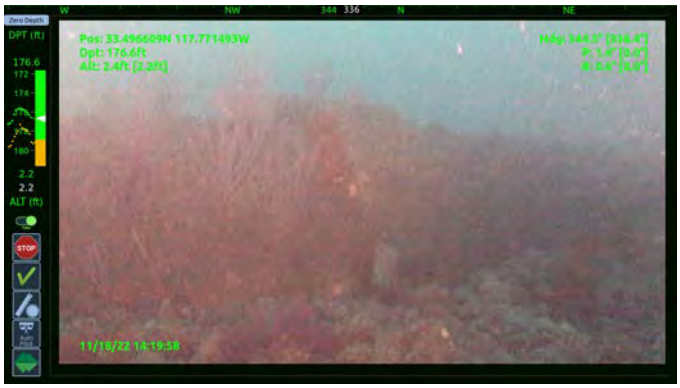
Entry 220 D70

Entry 221 D72

Entry 222 Flange 18

Entry 223 D74

Entry 224 D76



Entry225 Flange 19

Entry 226 D78

Entry 227 D80

Entry 228 Flange 20

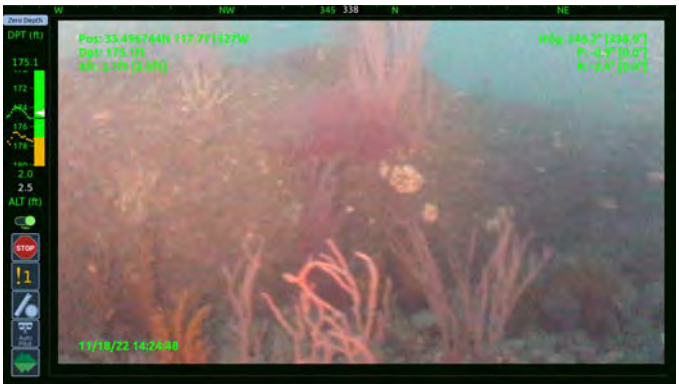
Entry 229 D82

Entry 230 D84

Entry 231 Flange 21

Entry 232 D86

Entry 233 D88



Entry 234 Flange 22

Entry 235 D90

Entry 236 D92

SUBSEA GLOBAL
SOLUTIONS

San Juan Creek Ocean Outfall

External Inspection and Condition Assessment Survey

11/17/2022 & 11/18/2022
Dana Point, CA

Client:

SOCWA

34156 Del Obispo Street
Dana Point, CA 92629

PO: 18297

Job Number: 5943

SUBSEA GLOBAL SOLUTIONS
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SUBSEA GLOBAL SOLUTIONS

Client: South Orange County Wastewater Authority

Date: January 24, 2023

Attn: Amber Baylor
Director of Environmental Compliance

Subject: Ocean Outfall External Inspection and Condition Survey of the SJCOO

Dear Amber,

On November 17th and 18th, Subsea Global Solutions (SGS) performed an underwater inspection of the San Juan Creek Ocean Outfall (SJCOO) for the South Orange County Wastewater Authority (SCOWA). The following is an accounting of our inspection activities.

Executive Summary

SGS conducted a detailed underwater inspection, focusing on the external condition of the SJCOO. SGS utilized a remote operated vehicle (ROV), which was operated and piloted by our subcontractor, ProROV. The underwater inspection efforts were conducted over two days, starting on Thursday November 17th and finishing on Friday November 18th, 2022.

The ROV utilized was a VideoRay Defender (VRD) manufactured by VideoRay LLC, Pottstown, Pennsylvania. The VRD vehicle was equipped with HD cameras, assorted lights, depth transducer, magnetic compass, GPS sensor and seven (7) thrusters for maximum maneuvering and thrust (4 vectored horizontal and 3 vertical). The VRD captured high-definition video and photos of the SJCOO.

The horizontal and vertical alignment of the SJCOO was documented during the inspection efforts. Underwater visibility varied throughout the water column but was generally good, ranging from between 5 ft and 10 ft. Maximum depth was less than 100 fsw.

Inspection Procedure

The inspection of the SJCOO began by observing the junction box of the diffuser section. The VRD then proceeded along the northwest side of the outfall, observing the general condition of the outfall, pipe joints, ballast rock and discharge ports. Upon reaching the elbow, the vehicle carefully looked at all sides of the structure, including the gate, then flew down the North side of the outfall to the end gate structure. The VRD then documented the condition of the diffuser section from the junction box to where it became buried into the beach.

The numbering of the joints starts from the first joint closest to the junction box. For consistency, the nomenclature utilized matched the previous reports so that year on year observations can be made. An

isometric drawing, showing the overall layout and the diffuser port nomenclature for the offshore-most diffuser section of the SJCOO is included below as Figure 1.

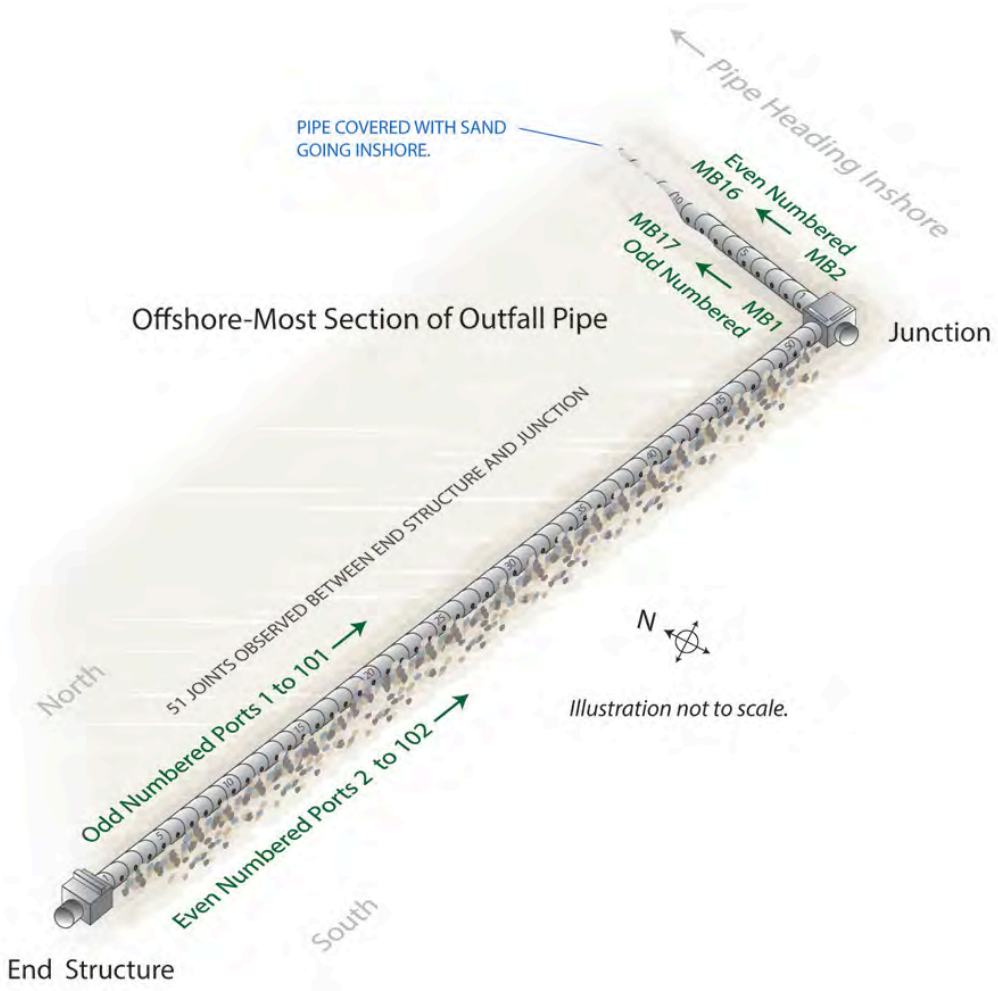

Figure 1 - Overview of SJCOO Offshore-Most Diffuser Section

Inspection Findings

During the performance of our inspection efforts, no critical findings, including significant undermining or gross damage to the outfall were observed. The outfall appeared to be generally in good condition and functioning properly during our inspection efforts.

Heavy marine growth was observed covering the entire exposed external face of the SJCOO. The outfall was consistently ballasted with rock at or above the springline[1] for much of the observed length. The SJCOO inspection data reveals approximately 20 linear feet along the outfall where ballast was observed to be absent. The missing ballast in these isolated areas has left the outfall pipe exposed below and well below the springline. The as-built cross section of the SJCOO at the diffusers is shown for reference in Figure 2.

[1] The springline is the horizontal line at the midpoint of the vertical axis of the pipe. This is shown for reference in Figure 2

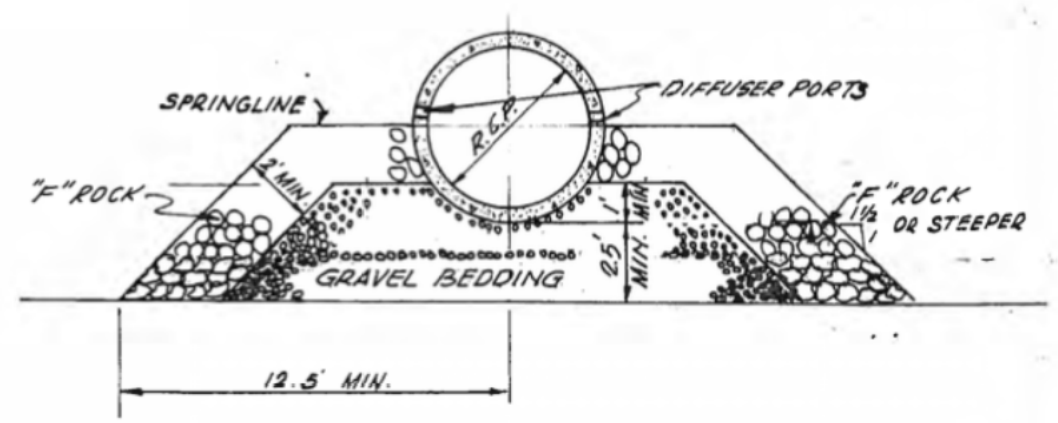

Figure 2: SJCOO As-Built Cross Section at Diffusers

Additionally, there were several areas where the ballast completely covered the top of the outfall. In these areas, the ballast had been covered by sand, and view of the outfall was obscured. The SJCOO inspection data reveals approximately 30 linear feet where ballast is covering the outfall. This area extends from MB 16 to MB 18. Although the diffusers and the ocean outfall are covered, effluent was seen seeping up through the ballast and sand.

The SJCOO diffuser ports were found to be in one of three following condition states:

1. Unobstructed and flowing freely
2. Obstructed and flowing
3. Obstructed and not flowing

Table of Findings

The following tables summarizes the inspection findings from November 17th & 18th, starting at the offshore diffuser section of the *San Juan Creek Ocean Outfall*. Findings are organized starting at the far end gate structure, heading east to the pipe junction.

OFFSHORE END GATE STRUCTURE				
Joint Number	Ports - North Side of Pipe		Ports - South Side of Pipe	
	Number	Findings	Number	Findings
No ports seen between end gate and first joint.				
1	1	Flowing	2	Flowing (Coved with Ballast)
2	3	Flowing	4	Flowing (Coved with Ballast)
3	5	Flowing	6	Flowing (Coved with Ballast)
4	7	Flowing (Coved with Ballast)	8	Flowing (Coved with Ballast)
3	9	Flowing (Buried in sand)	10	Flowing
6	11	Flowing	12	Not visible (Buried in sand)
7	13	Flowing	14	Flowing
8	15	Flowing	16	Flowing (Partially buried in sand)
9	17	Flowing	18	Flowing (Coved with Ballast)

OFFSHORE END GATE STRUCTURE				
Joint Number	Ports - North Side of Pipe		Ports - South Side of Pipe	
	Number	Findings	Number	Findings
10	19	Flowing	20	Flowing (Partially buried in sand)
11	21	Flowing	22	Flowing (Partially buried in sand)
12	23	Flowing	24	Flowing (Buried in sand)
13	25	Flowing	26	Flowing (Buried in sand)
14	27	Flowing	28	Flowing
15	29	Flowing	30	Flowing
16	31	Flowing	32	Flowing (Buried in sand)
17	33	Flowing	34	Flowing (Partially Buried in sand)
18	35	Flowing	36	Flowing
19	37	Flowing	38	Flowing
20	39	Not visible (Buried in sand)	40	Flowing
21	41	Flowing (Coved with Ballast)	42	Flowing (Buried in sand)
22	43	Flowing (Coved with Ballast)	44	Flowing (Coved with Ballast)
23	45	Flowing (Coved with Ballast)	46	Flowing (Partially buried in sand)
24	47	Flowing (Coved with Ballast)	48	Flowing (Buried in sand)
25	49	Flowing (Coved with Ballast)	50	Flowing
26	51	Flowing	52	Flowing (Coved with Ballast)
27	53	Flowing (Coved with Ballast)	54	Flowing (Coved with Ballast)
28	55	Flowing	56	Flowing
29	57	Flowing	58	Flowing
30	59	Flowing	60	Flowing
31	61	Flowing	62	Flowing
32	63	Flowing	64	Flowing (Buried in sand)
33	65	Flowing (Coved with Ballast)	66	Flowing
34	67	Flowing (Coved with Ballast)	68	Flowing
35	69	Flowing	70	Flowing
36	71	Flowing	72	Flowing
37	73	Flowing	74	Flowing
38	75	Flowing	76	Flowing
39	77	Flowing	78	Flowing
40	79	Flowing	80	Flowing
41	81	Flowing	82	Flowing
42	83	Flowing	84	Flowing
43	85	Flowing	86	Flowing

OFFSHORE END GATE STRUCTURE				
Joint Number	Ports - North Side of Pipe		Ports - South Side of Pipe	
	Number	Findings	Number	Findings
44	87	Flowing	88	Flowing
45	89	Flowing	90	Flowing
46	91	Flowing	92	Flowing (Coved with Ballast)
47	93	Flowing	94	Flowing
48	95	Flowing	96	Flowing
49	97	Flowing	98	Flowing
50	99	Flowing	100	Not visible (Buried in sand)
51	101	Flowing	102	Flowing
SJCOO Junction Structure				

The following table summarizes the inspection findings from November 17th & 18th of the *San Juan Creek Ocean Outfall*. Findings are organized starting at the junction structure and heading inshore.

JUNCTION STRUCTURE				
Joint Number	Ports - West Side of Pipe		Ports - East Side of Pipe	
	Number	Findings	Number	Findings
First port is between the junction structure and first joint.				
1	MB-1	Not visible (Buried in sand)	MB-2	Flowing (Coved with Ballast)
2	MB-3	Flowing (Partially buried in sand)	MB-4	Flowing (Coved with Ballast)
3	MB-5	Flowing (Coved with Ballast)	MB-6	Flowing (Partially buried in sand)
4	MB-7	Flowing (Coved with Ballast)	MB-8	Flowing
5	MB-9	Flowing (+/- 10 ft of missing ballast)	MB-10	Flowing
6	MB-11	Flowing (Coved with Ballast)	MB-12	Flowing
7	MB-13	Flowing (Coved with Ballast)	MB-14	Flowing
8	MB-15	Flowing (Coved with Ballast)	MB-16	Not Visible (Buried in rocks +/- 10 ft)
9	MB-17	Flowing (+/- 10 ft of missing ballast)	MB-18	Not visible (Buried in sand +/- 10 ft)
10	MB-19	Not visible (Buried in sand)	MB-20	Not visible (Buried in sand +/- 10 ft)
SJCOO Buried in Sand				

Detailed snapshots along the length of the SJCOO are included in at the end of this report as Appendix A. All photographic and video digital files will be made available for download by SCOWA.

Maintenance Recommendations

SGS recommends that SOCWA implement the following repair and maintenance at the SJCOO:

1. In areas along the length of the SJCOO where ballast is absent, install ballast such that the original design cross sectional is restored. The previous ballast repair efforts remain intact. Utilizing the same means and methods would be a reasonable course of action to address the areas of missing ballast.

2. Using mechanical means and methods, clean each of the SJCOO diffuser ports of marine growth and remove any obstructions.
3. Coordinate with NOAA to update their marine navigation chats to accurately show the location of the SJCOO outfall. The horizontal alignment of the SJCOO is shown incorrectly on the publicly available NOAAA marine charts. Mariners rely on these charts when setting anchors, and without the SJCOO shown correctly, it is possible that a mariner might accidently drop anchor and damage the outfall.

   This discrepancy is shown for reference in Figure 3. The discrepancy in the horizontal alignment between what is shown on the NOAA[2] charts (shown for reference in Figure 4) and what is present onsite amounts to approximately 1,700 feet. We have provided for reference a link to an interactive map, showing this information in greater detail[3].

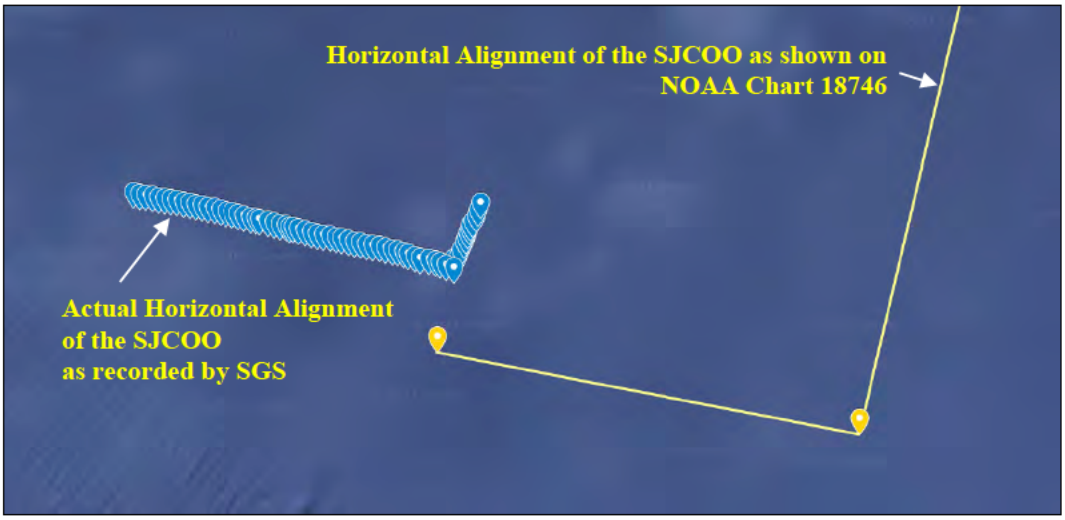

Figure 3: SJCOO Horizontal Alignment Discrepancies

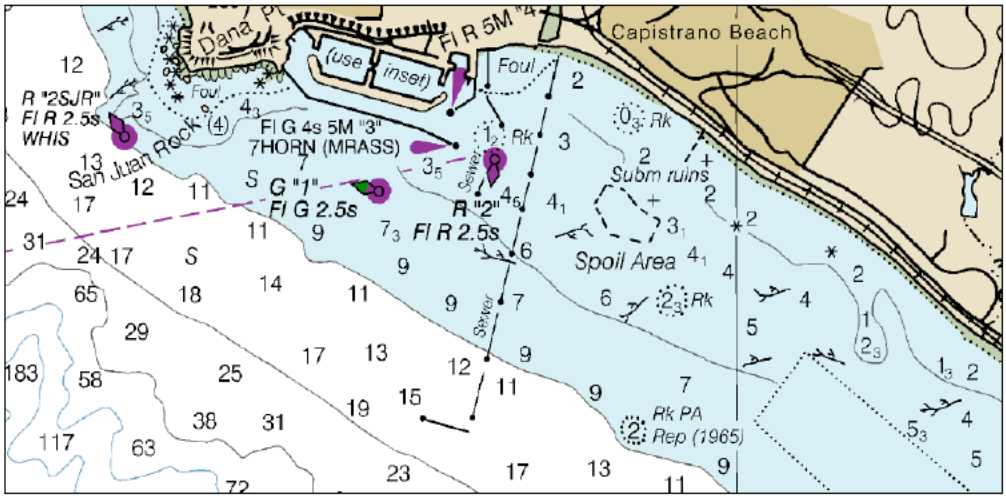

Figure 4: SJCOO as shown on NOAA Chart 18746

[2] NOAA Chart 18746 - https://charts.noaa.gov/PDFs/18746.pdf
[3] https://www.google.com/maps/d/edit?mid=1bbCJYBHRz_TQEvB7YG7FbgADnoZ2mpg

Summary photo documentation is included below in the Photo Log. A photo location map, showing the location of each of the photos is also included as part of the Photo Log. Additional detailed photo documentation, taken along the length of the SJCOO during the inspection efforts is included as Appendix A. A digital inspection running log, detailing all of the individual observation, is included as Appendix B.

If you have any questions regarding the information in this report, or to schedule additional services, please do not hesitate to contact me directly.

Best Regards,

Scott Nordholm, PE
Marine Construction Manager
SGS US West Coast, LLC

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Photo Log

Photo 1 – View at the SJCOO junction

Photo 2 – View at the SJCOO junction

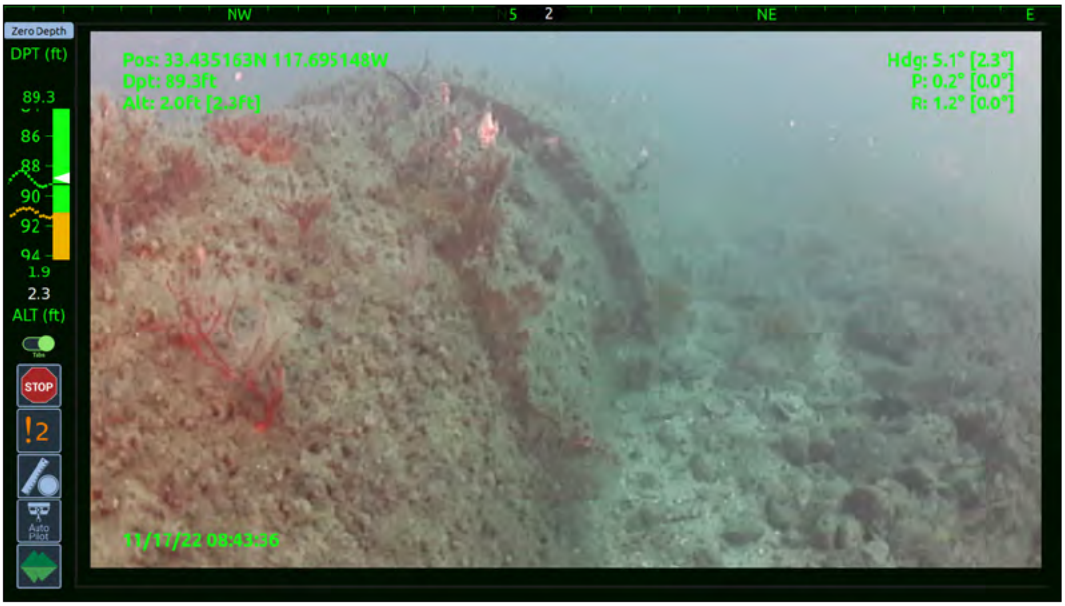


Photo 3 - View showing the typical external condition of the SJCOO

Photo 4 – View showing ballasting covering the top of the SJCOO

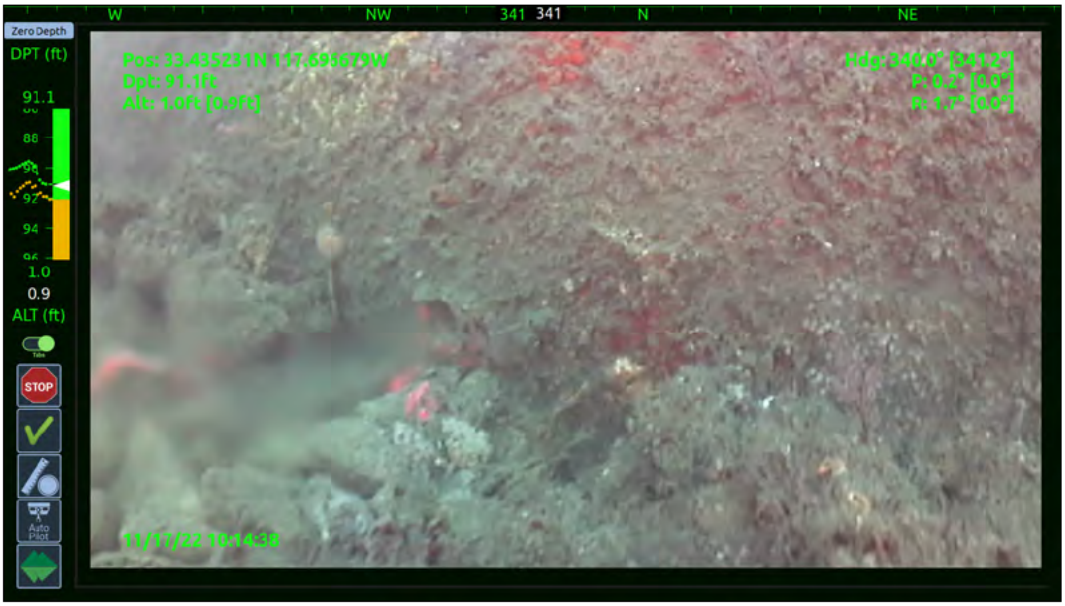


Photo 5 – View of one of the SJCOO diffuser port, with effluent flowing

Photo 6 – View of an additional SJCOO diffuser port, with effluent flowing

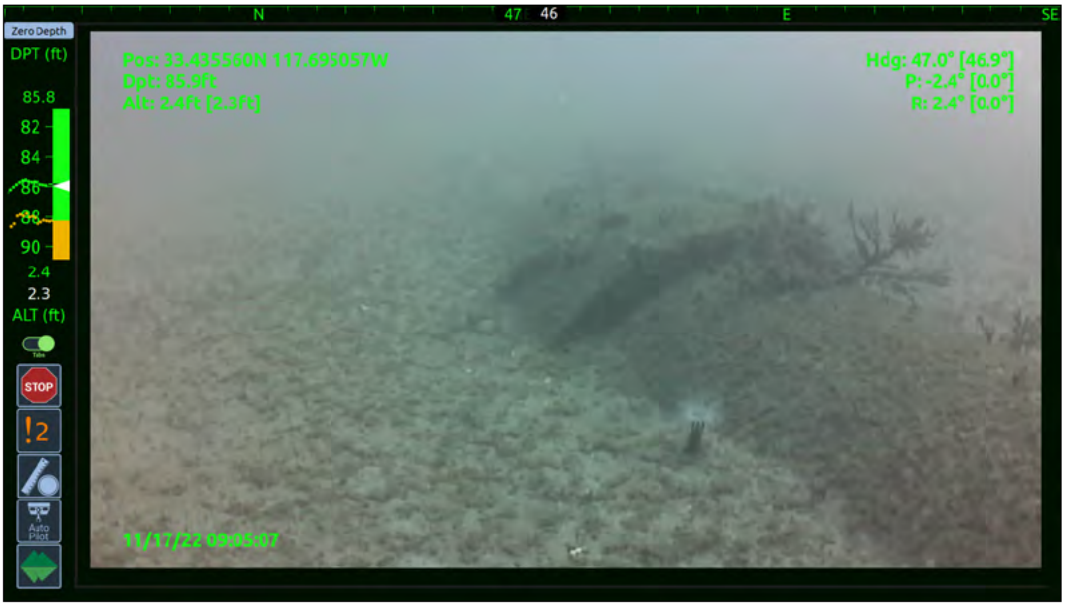


Photo 7 – View showing a section of the SJCOO buried by sand

Photo 8 – View of an SJCOO outfall manhole, slightly protruding from beneath the sand

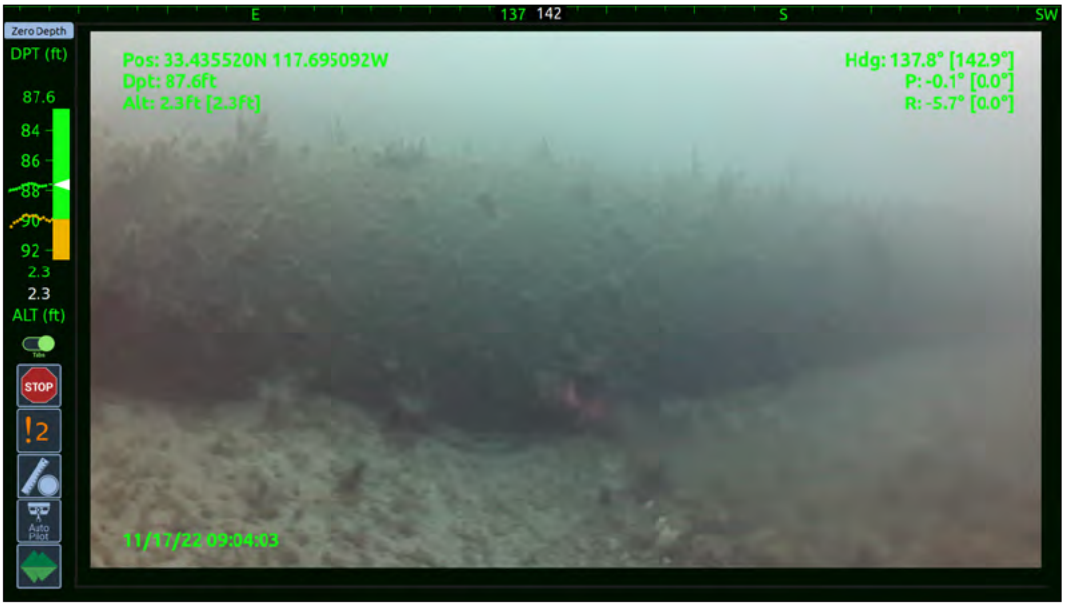


Photo 9 – View of an area along the SJCOO that is missing ballast below the springline

Photo 10 – View of the SJCOO end structure

SJCOO Photo Location Map

Appendix A - SJCOO Digital Running Log

Entry	Time	Comments
1	11/17/22 7:55	At Harbor 07:00
2	11/17/22 7:56	Departing slip on way to corner with junction box
3	11/17/22 8:21	Deployed ROV
4	11/17/22 8:24	Recording
5	11/17/22 8:26	Found Pipe, looking for junction box
6	11/17/22 8:29	At junction box (JB), recording video
7	11/17/22 8:32	Snap Shot (SS) of JB
8	11/17/22 8:34	SS of end gate 1 - closed
9	11/17/22 8:36	SS of end gate 2 - closed
10	11/17/22 8:38	New video recording of pipe from JB
11	11/17/22 8:40	MB2 flowing with rock and debris around it
12	11/17/22 8:40	SS of MB2
13	11/17/22 8:40	SS of flange 1
14	11/17/22 8:41	MB4 flowing but buried covered with rock, etc.
15	11/17/22 8:41	SS or MB 4
16	11/17/22 8:41	Flange 2
17	11/17/22 8:42	MB6 partially covered but flowing good
18	11/17/22 8:42	SS or MB6
19	11/17/22 8:42	Flange 3
20	11/17/22 8:42	SS of flange 3
21	11/17/22 8:43	SS of MB08, flowing
22	11/17/22 8:43	SS Flange 4
23	11/17/22 8:43	SS MB10, flowing
24	11/17/22 8:44	Diffusers now visible
25	11/17/22 8:44	SS flange 5
26	11/17/22 8:44	SS MB12, flowing
27	11/17/22 8:45	SS flange 6
28	11/17/22 8:45	SS MB 14
29	11/17/22 8:45	SS flange 7
30	11/17/22 8:46	SS MB16 no flow, rock and MBebris build back up around it
31	11/17/22 8:46	SS flange 8
32	11/17/22 8:47	At flange 9 but diffusers are buried
33	11/17/22 8:48	SS of MB 18, no flow cannot see, buried
34	11/17/22 8:48	SS flange 9
35	11/17/22 8:49	SS flange 10 no diffuser, pipe becomes buried
36	11/17/22 8:50	Manhole 1 beyond flange buried in sand and waypoint recorded
37	11/17/22 8:51	SS manhole 1
38	11/17/22 8:52	Stopping video
39	11/17/22 8:53	Start recording at junction box
40	11/17/22 8:54	SS MB1 fairly buried but flowing
41	11/17/22 8:55	SS flange 1
42	11/17/22 8:55	SS MB 3 flowing but buried up to spring line
43	11/17/22 8:56	SS flange 2
44	11/17/22 8:56	SS MB 5 flowing but covered in rock
45	11/17/22 8:57	SS flange 3
46	11/17/22 8:57	SS MB 7 flowing but can't see Diffuser, buried to spring line
47	11/17/22 8:58	SS flange 4
48	11/17/22 8:59	SS MB 9, exposed and flowing - Ballast is missing at this location (+/-10 ft)
49	11/17/22 8:59	SS flange 5
50	11/17/22 9:00	SS MB 11 flowing but in rock
51	11/17/22 9:00	SS flange 6
52	11/17/22 9:01	SS MB 13 flowing but covered in rock
53	11/17/22 9:01	SS flange 7

Entry	Time	Comments
54	11/17/22 9:02	SS MB 15 flowing but covered in rocks
55	11/17/22 9:02	SS flange 8
56	11/17/22 9:03	SS MB17 flowing right at spring line - Ballast is missing at this location (+/-10 ft)
57	11/17/22 9:04	SS MB 17
58	11/17/22 9:04	SS flange 9
59	11/17/22 9:04	MB 19 buried, no flow
60	11/17/22 9:04	Pipe is getting buried
61	11/17/22 9:05	SS flange 10
62	11/17/22 9:05	Stop recording
63	11/17/22 9:09	Driving to end structure
64	11/17/22 9:26	At end structure
65	11/17/22 9:28	Starting inspection on south side of pipe
66	11/17/22 9:29	Start recording
67	11/17/22 9:31	SS of end gate of end structure open and flowing. Middle striped buoy close by.
68	11/17/22 9:33	SS flange 1, no diffuser visible flowing
69	11/17/22 9:34	SS D2 flowing, but buried, rocks, etc.
70	11/17/22 9:34	SS flange 2
71	11/17/22 9:34	SS D4 flowing but buried
72	11/17/22 9:35	SS flange 3
73	11/17/22 9:35	SS D 6 flowing but buried
74	11/17/22 9:36	SS flange 4
75	11/17/22 9:36	SS D8 flowing but buried
76	11/17/22 9:37	SS flange 5
77	11/17/22 9:37	SS D10 flowing on spring line, not buried
78	11/17/22 9:38	SS flange 6
79	11/17/22 9:39	No diffuser showing, no flow
80	11/17/22 9:39	SS D12 not showing, not flowing
81	11/17/22 9:39	SS flange 7
82	11/17/22 9:40	SS D14 flowing but below spring line in scour
83	11/17/22 9:41	SS flange 8
84	11/17/22 9:42	SS D16 flowing on spring line and bottom half of diffuser is buried
85	11/17/22 9:42	SS flange 9
86	11/17/22 9:43	SS D18 flowing but surrounded by rocks
87	11/17/22 9:44	SS Flange 10
88	11/17/22 9:44	SS D20 flowing and buried
89	11/17/22 9:45	SS flange 11
90	11/17/22 9:45	SS D22 flowing but buried
91	11/17/22 9:46	SS flange 12
92	11/17/22 9:47	SS D24 flowing but buried, can't see opening
93	11/17/22 9:47	SS flange 13
94	11/17/22 9:48	SS D26 flowing but buried
95	11/17/22 9:48	SS flange 14
96	11/17/22 9:49	SS D28 flowing and above spring line
97	11/17/22 9:49	SS flange 15
98	11/17/22 9:50	SS D30 flowing and at spring line
99	11/17/22 9:51	SS flange 16
100	11/17/22 9:52	SS D32 buried but flowing
101	11/17/22 9:52	SS flange 17
102	11/17/22 9:53	SS D34 flowing and half buried
103	11/17/22 9:53	SS flange 18
104	11/17/22 9:53	SS D36 flowing and above spring line
105	11/17/22 9:54	SS flange 19
106	11/17/22 9:55	SS D38 clear and flowing
107	11/17/22 9:56	SS flange 20 but mostly buried. Pipeline is also getting buried on this south side.
108	11/17/22 9:56	SS flange 20

Entry	Time	Comments
109	11/17/22 9:57	SS D40 flowing and above spring line
110	11/17/22 9:58	SS flange 21, 95% buried
111	11/17/22 9:58	SS D42 flowing but buried
112	11/17/22 9:59	SS flange 22
113	11/17/22 9:59	SS D44 flowing and surrounded by rocks
114	11/17/22 10:00	DD flange 23, about 90% buried
115	11/17/22 10:01	SS D46 flowing, partially buried surrounded by rocks
116	11/17/22 10:01	SS flange 24
117	11/17/22 10:02	SS D48 flowing and buried
118	11/17/22 10:02	SS flange 25
119	11/17/22 10:03	SS D50 flowing and above spring line
120	11/17/22 10:03	SS flange 26
121	11/17/22 10:04	SS D52 flowing and surrounded by rocks
122	11/17/22 10:04	SS flange 27
123	11/17/22 10:06	SS D54 flowing but buried, surrounded by rocks, never saw hole
124	11/17/22 10:06	SS flange 28
125	11/17/22 10:07	SS D56 flowing surrounded by rocks
126	11/17/22 10:08	SS flange 29
127	11/17/22 10:08	SS D58 clear, flowing and surrounded by rocks
128	11/17/22 10:09	SS flange 30
129	11/17/22 10:10	SS D60 above spring line flowing
130	11/17/22 10:10	SS flange 31
131	11/17/22 10:11	SS D62 flowing and clear
132	11/17/22 10:11	SS flange 32
133	11/17/22 10:13	SS D64 buried and flowing
134	11/17/22 10:13	SS flange 33
135	11/17/22 10:14	SS D66 flowing and above spring line
136	11/17/22 10:15	SS flange 34
137	11/17/22 10:16	SS D68 flowing and clear
138	11/17/22 10:16	SS flange 35
139	11/17/22 10:17	SS D70 flowing and above spring line
140	11/17/22 10:18	SS flange 36 and overgrown with marine life
141	11/17/22 10:19	SS D72 flowing and above spring line
142	11/17/22 10:19	SS flange 37
143	11/17/22 10:20	SS D74 flowing surrounded by rocks
144	11/17/22 10:20	SS flange 38
145	11/17/22 10:21	SS D76 flowing and above spring line
146	11/17/22 10:21	SS flange 39
147	11/17/22 10:23	SS D78 flowing and above spring line
148	11/17/22 10:23	SS flange 40
149	11/17/22 10:25	SS D80 flowing and above spring line
150	11/17/22 10:25	SS flange 41
151	11/17/22 10:26	SS D82 flowing and above spring line
152	11/17/22 10:26	SS flange 42
153	11/17/22 10:27	SS D84 flowing and above spring line
154	11/17/22 10:28	SS flange 43
155	11/17/22 10:29	SS D86 flowing, clear and above spring line
156	11/17/22 10:30	SS flange 44
157	11/17/22 10:31	SS D88 open flowing and surrounded by rocks
158	11/17/22 10:32	SS flange 45
159	11/17/22 10:32	SS D90 flowing and above spring line
160	11/17/22 10:33	SS flange 46
161	11/17/22 10:34	SS D92 above spring line flowing and surrounded by rocks
162	11/17/22 10:34	SS flange 47, 50% buried
163	11/17/22 10:36	SS D94 barely flowing and below spring line

Entry	Time	Comments
164	11/17/22 10:36	SS flange 48
165	11/17/22 10:38	SS D96 flowing but can see diffuser due to rocks and current
166	11/17/22 10:39	SS flange 49
167	11/17/22 10:40	SS D98 flowing and above spring line
168	11/17/22 10:41	SS flange 50
169	11/17/22 10:42	SS D100 flowing and above spring line
170	11/17/22 10:43	SS flange 51 with lobster pot line on it
171	11/17/22 10:44	SS D102 not showing and not flowing
172	11/17/22 10:45	SS flange 52
173	11/17/22 10:45	SS D104 flowing and above spring line
174	11/17/22 10:46	Finished with south side of pipe. now inspecting junction box again
175	11/17/22 10:49	SS of all sides of junction box, did not find 2 diffusers on box
176	11/17/22 10:50	Stop Recording
177	11/17/22 12:36	At end structure to start North side diffuser inspection
178	11/17/22 12:38	Started Recording heading back to junction box
179	11/17/22 12:39	SS D1 flowing above spring line
180	11/17/22 12:40	SS flange 1
181	11/17/22 12:42	SS D3 flowing and above spring line surrounded by rocks
182	11/17/22 12:43	SS flange 2
183	11/17/22 12:44	SS D5 flowing and on spring line
184	11/17/22 12:45	SS flange 3
185	11/17/22 12:46	SS D7 flowing and surrounded by rocks
186	11/17/22 12:47	SS flange 4
187	11/17/22 12:47	SS D9 flowing but covered at spring line
188	11/17/22 12:48	SS flange 5
189	11/17/22 12:48	SS D11 low flow above spring line
190	11/17/22 12:49	SS flange 6
191	11/17/22 12:50	SS D13 flowing above spring line
192	11/17/22 12:50	SS flange 7
193	11/17/22 12:51	SS D15 flowing above spring line
194	11/17/22 12:51	SS flange 8
195	11/17/22 12:52	SS D17 above spring line flowing
196	11/17/22 12:53	SS flange 9
197	11/17/22 12:54	SS D19 flowing above spring line
198	11/17/22 12:54	SS flange 10
199	11/17/22 12:55	SS D21 flowing above spring line
200	11/17/22 12:56	SS flange 11
201	11/17/22 12:57	SS D23 flowing, above spring line
202	11/17/22 12:57	SS flange 12
203	11/17/22 12:58	SS D25 above spring line flowing
204	11/17/22 12:59	SS flange 13
205	11/17/22 12:59	SS D27 flowing, above spring line
206	11/17/22 13:00	SS flange 14
207	11/17/22 13:00	SS D29 flowing, above spring line
208	11/17/22 13:01	SS flange15
209	11/17/22 13:02	SS D31 flowing above spring line
210	11/17/22 13:03	SS flange 16
211	11/17/22 13:04	SS D33 flowing above spring line
212	11/17/22 13:04	SS flange 17
213	11/17/22 13:05	SS D35 flowing above spring line
214	11/17/22 13:05	SS flange 18
215	11/17/22 13:06	SS D37 above spring line, flowing
216	11/17/22 13:06	SS flange 19
217	11/17/22 13:07	SS D39 is buried along with 1/2 of the pipe
218	11/17/22 13:08	SS flange 20 is buried

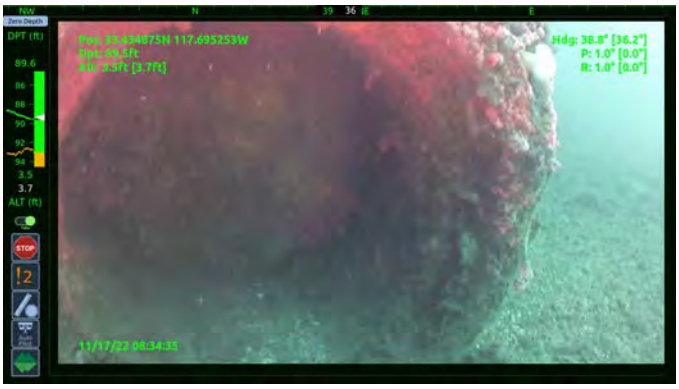
Entry	Time	Comments
219	11/17/22 13:09	SS D41 flowing between rocks
220	11/17/22 13:10	SS flange 21, buried 90%
221	11/17/22 13:11	SS D43 flowing above spring line surrounded by rocks
222	11/17/22 13:11	SS flange 22
223	11/17/22 13:12	SS D45 flowing above spring line and surrounded by rocks
224	11/17/22 13:13	SS flange 23, 80% covered
225	11/17/22 13:13	SS D47 flowing above spring line surrounded by rocks
226	11/17/22 13:14	SS flange 24
227	11/17/22 13:15	SS D49 flowing, above spring line surrounded by rocks
228	11/17/22 13:16	SS flange 25
229	11/17/22 13:17	SS D51 flowing below spring line
230	11/17/22 13:18	SS flange 26 has white build up on flange
231	11/17/22 13:18	SS manhole
232	11/17/22 13:19	Stop Recording
290	11/18/22 7:52	At junction box ready to deploy
291	11/18/22 7:53	Deployed ROV
292	11/18/22 8:07	Reset ROV GPS and now recording and logging flange coordinates
293	11/18/22 8:08	WP 19 flange 1
294	11/18/22 8:09	WP 20 flange 2
295	11/18/22 8:09	WP21 flange 3
296	11/18/22 8:10	WP22 flange 4
297	11/18/22 8:10	WP23 flange 5
298	11/18/22 8:10	WP24 flange 6
299	11/18/22 8:11	WP25 flange 7
300	11/18/22 8:11	WP26 flange 8
301	11/18/22 8:11	WP27 flange 9
302	11/18/22 8:12	WP28 flange 10
303	11/18/22 8:21	Ended recording, recovered ROV and about to redeploy
304	11/18/22 8:24	Deploying ROV for coordinates of flanges on long pipe
305	11/18/22 8:28	Last recording no good
306	11/18/22 8:30	Redeployed ROV and recording, lost DVL lock last time
307	11/18/22 9:24	Software issue, recovered Waypoints all good.
308	11/18/22 9:39	Heading to manhole to re-record diffusers from manhole to junction box.
309	11/18/22 9:58	Started recording/logging
310	11/18/22 10:02	SS D53 above spring line, flowing surrounded by rocks
311	11/18/22 10:03	SS flange 27
312	11/18/22 10:04	SS D55 flowing above spring line
313	11/18/22 10:04	SS flange 28
314	11/18/22 10:05	SS D57 above spring line flowing
315	11/18/22 10:06	SS flange 29
316	11/18/22 10:06	SS D59 spring line flowing
317	11/18/22 10:07	SS flange 30
318	11/18/22 10:08	SS D61 above spring line flowing
319	11/18/22 10:08	SS flange 31
320	11/18/22 10:09	SS D63 above spring line flowing
321	11/18/22 10:10	SS flange 32
322	11/18/22 10:11	SS D65 above spring line flowing surrounded by rocks
323	11/18/22 10:11	SS flange 33
324	11/18/22 10:12	SS D67 flowing above spring line surrounded by rocks
325	11/18/22 10:12	SS flange 34
326	11/18/22 10:12	SS D69 above spring line flowing
327	11/18/22 10:13	SS flange 35
328	11/18/22 10:14	SS D71 flowing below spring line
329	11/18/22 10:14	SS flange 36
332	11/18/22 10:15	SS D73 flowing above spring line

Entry	Time	Comments
333	11/18/22 10:15	SS D73 flowing above spring line
334	11/18/22 10:16	SS flange 37
335	11/18/22 10:16	SS D75 above spring line flowing
336	11/18/22 10:16	SS flange 38
337	11/18/22 10:17	SS D77 flowing above spring line surrounded by rocks
338	11/18/22 10:17	SS flange 39
339	11/18/22 10:18	SS D79 above spring line surrounded by rocks, flowing
340	11/18/22 10:18	SS flange 40
341	11/18/22 10:19	SS D81 above spring line flowing
342	11/18/22 10:19	SS flange 41
343	11/18/22 10:20	SS D83 flowing surrounded by rock above spring line
344	11/18/22 10:21	SS flange 42
345	11/18/22 10:21	Restarting video/log
346	11/18/22 10:21	SS flange 43
347	11/18/22 10:22	SS D85 above spring line flowing surrounded by rocks
348	11/18/22 10:22	SS flange 44
349	11/18/22 10:23	SS D87 flowing above spring line
350	11/18/22 10:24	SS flange 45
351	11/18/22 10:25	SS D89 flowing above spring line surrounded by rocks
352	11/18/22 10:25	SS flange 46
353	11/18/22 10:26	SS D91 above spring line flowing
354	11/18/22 10:26	SS flange 47
355	11/18/22 10:27	SS D93 below spring line flowing
356	11/18/22 10:27	SS flange 48
357	11/18/22 10:28	SS D95 below spring line flowing
358	11/18/22 10:28	SS flange 49
359	11/18/22 10:29	SS D97 flowing above spring line
360	11/18/22 10:29	SS flange 50
361	11/18/22 10:30	SS D99 above spring line flowing surrounded by rocks
362	11/18/22 10:30	SS flange 51
363	11/18/22 10:31	SS D101 above spring flowing surrounded by rocks
364	11/18/22 10:31	SS flange 52
365	11/18/22 10:32	SS D103 above spring line flowing
366	11/18/22 10:32	SS flange 53
367	11/18/22 10:33	End of inspection on long pipe
368	11/18/22 10:33	Ended recording/log

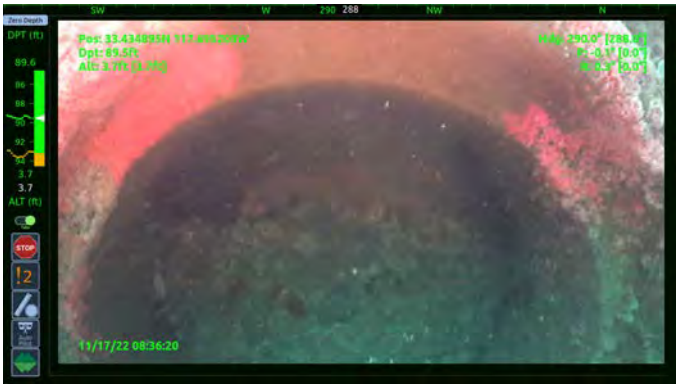
Appendix B - SJCOO Photo Snap Shots

The following Snap Shots (SS) show each diffuser or where diffuser should be and are either buried or clogged. The SS numbers follow the DJL (Appendix A) and indicate which diffuser or flange are indicated. All SS listed on the DJL above are not shown below as they may be duplicates, redundant, or show the same item but from a different angle / perspective and therefore only the best image was chosen for display purposes here. To find an image not shown, but listed on the DJL, simply go to the PNG image in the Snap Shot file on the thumb drive and match the time of the image with the Entry time on the DJL.

Entry 7 - Junction Box



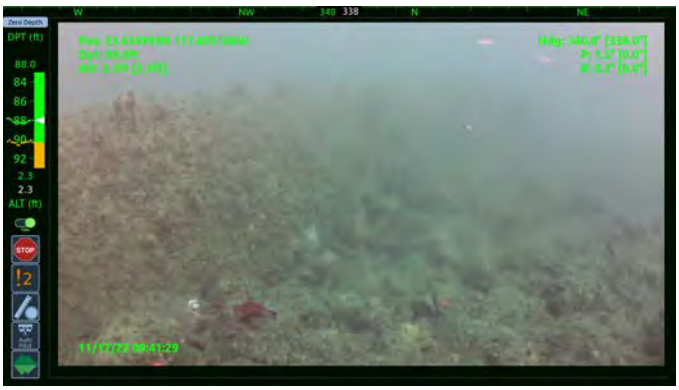
Entry 8 - Junction Box showing West gate Closed



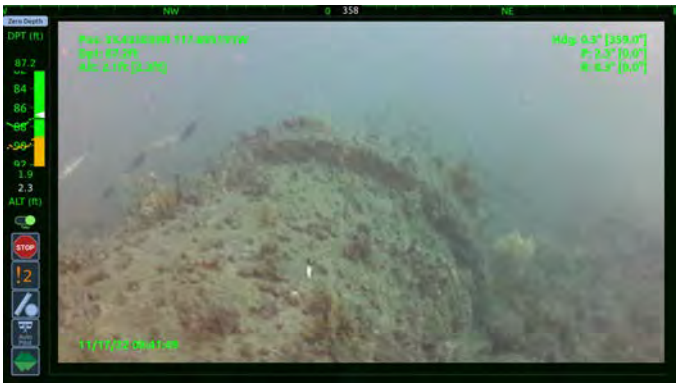
Entry 9 - Junction Box South Gate Closed

Entry 11 - D2

Entry 13 - Flange 1



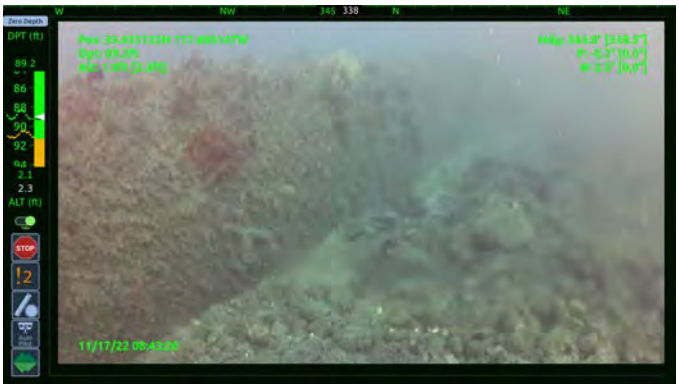
Entry 14 - D4



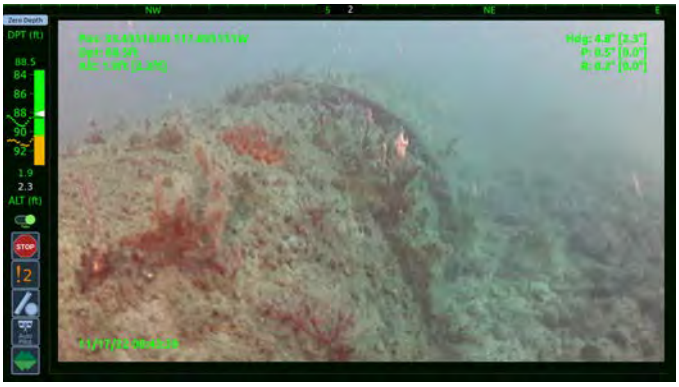
Entry 16 - Flange 2

Entry 17 - D6

Entry 19 - Flange 3

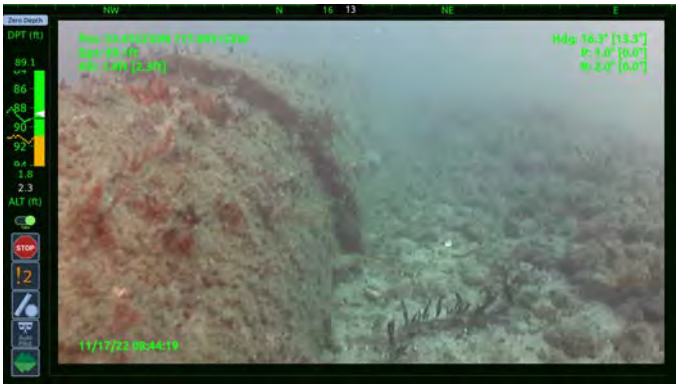


Entry 21 - D8

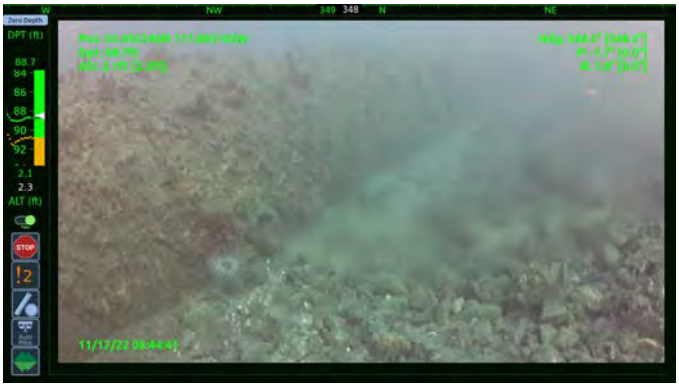


Entry 22 - Flange 4

Entry 23 - D10

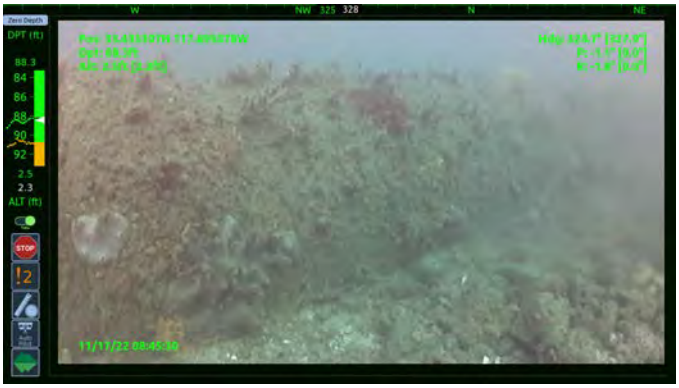


Entry 25 - Flange 5

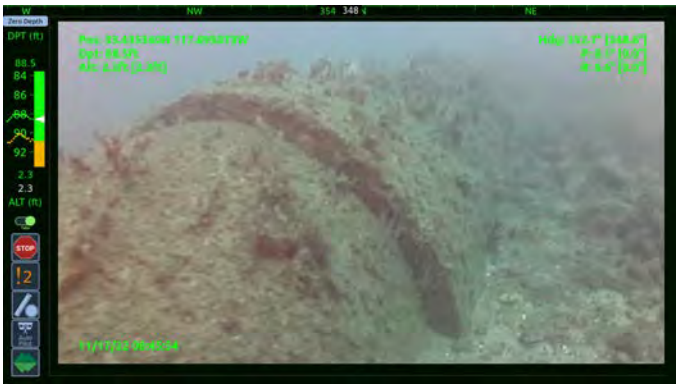


Entry 26 - D12

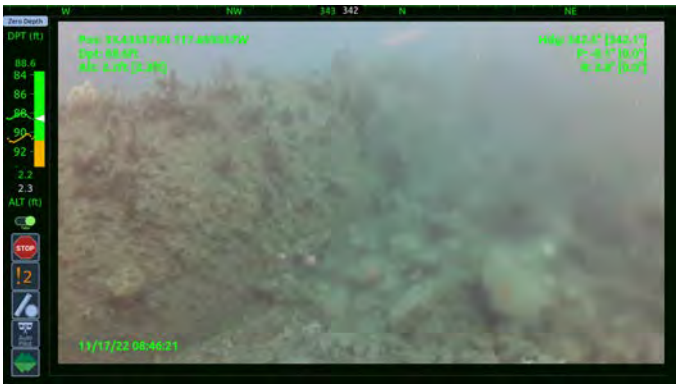
Entry 27 - Flange 6



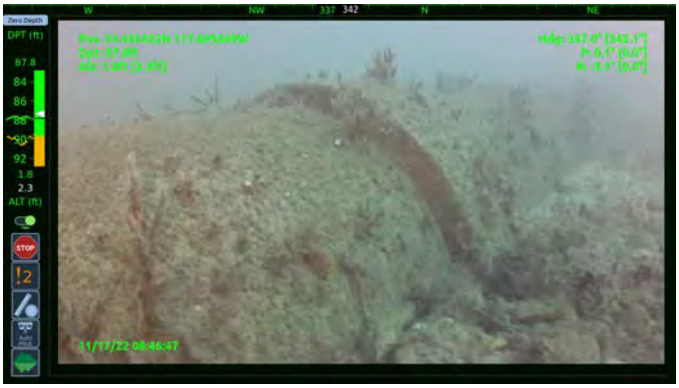
Entry 28 - D14/No Flow



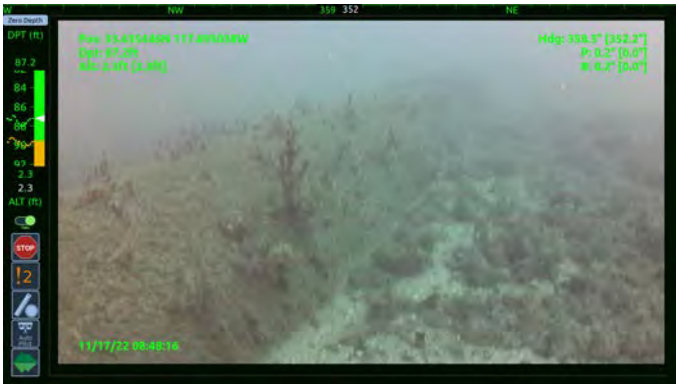
Entry 29 - Flange 7



Entry 30 - D16

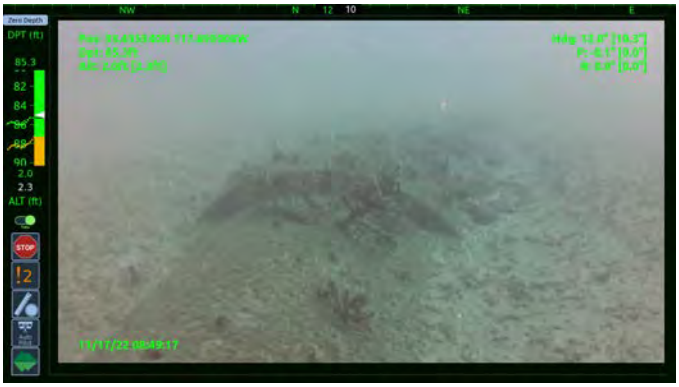


Entry 31 - Flange 8



Entry 33 - D18/No Flow

Entry34 - Flange 9



Entry 35 - Flange 10

Entry 36 - Manhole

Entry 40 - D1

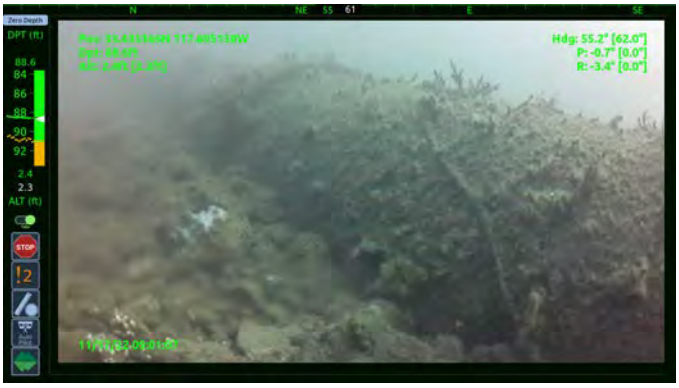
Entry 42 - D3

Entry 44 - D5

Entry 46 - D7

Entry 48 - D9

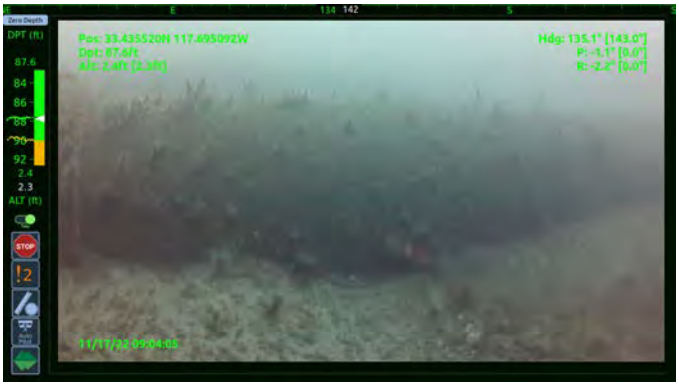
Entry 50 - D11



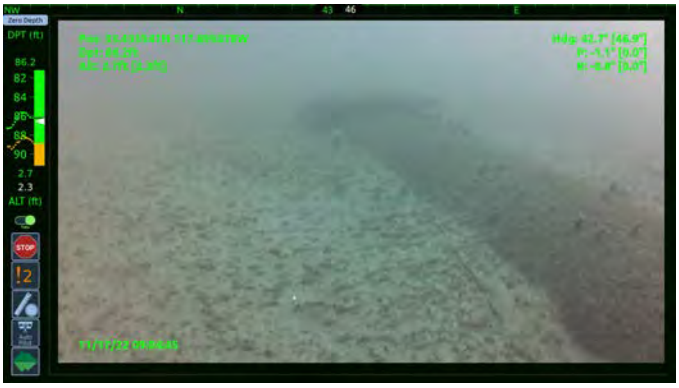
Entry 52 - D13

Entry 54 - D15

Entry 56 - D17



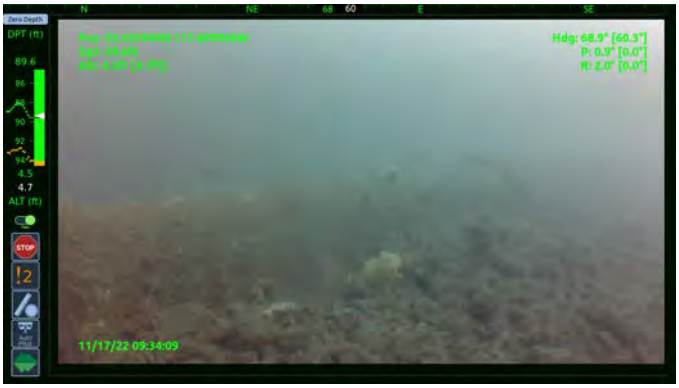
Entry 59 - D19



Entry 60 - Pipe getting buried

Entry 67 - End Structure

Entry 68 - Flange 1

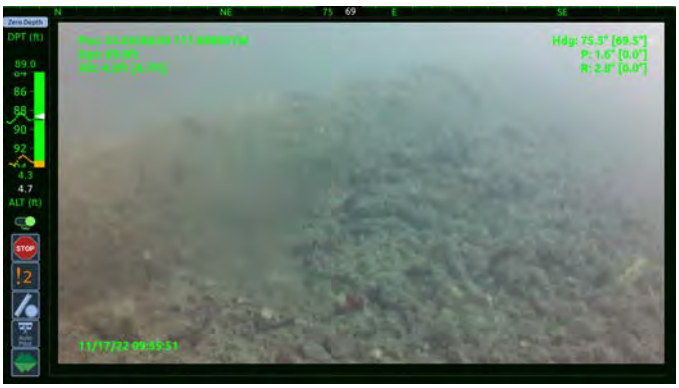


Entry 69 - D2

Entry 70 - Flange 2

Entry 71 - D4

Entry 72 - Flange 3



Entry 73 - D6

Entry 74 - Flange 4

Entry 75 - D8

Entry 76 - Flange 5

Entry 77 - D10

Entry 78 - Flange 6

Entry 80 - D12/No Flow

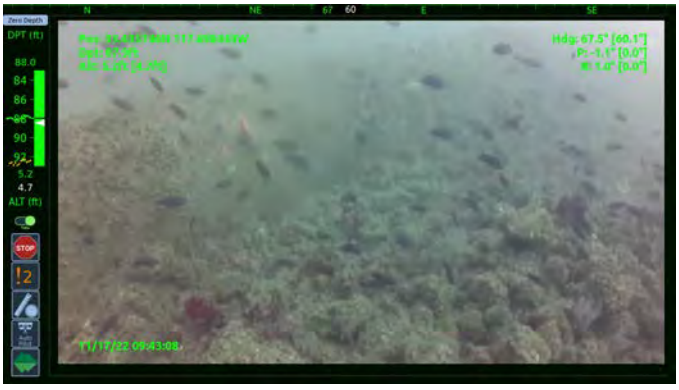
Entry 81 - Flange 7

Entry 82 - D14

Entry 83 - Flange 8

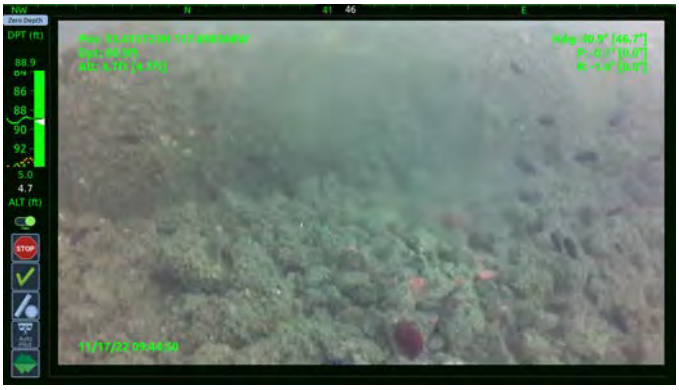
Entry 84 - D16

Entry 85 - Flange 9



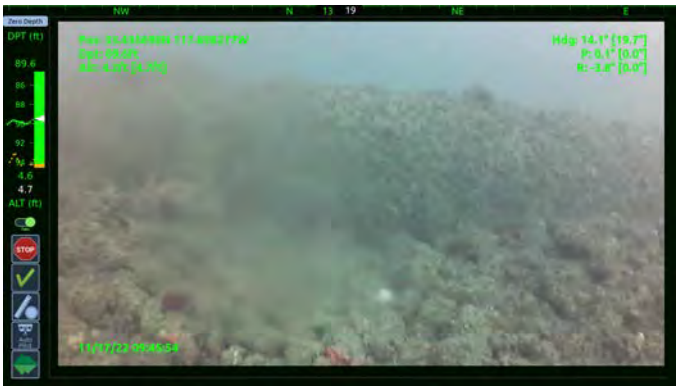
Entry 86 - D18

Entry 87 - Flange 10



Entry 88 - D20

Entry 89 - Flange 11

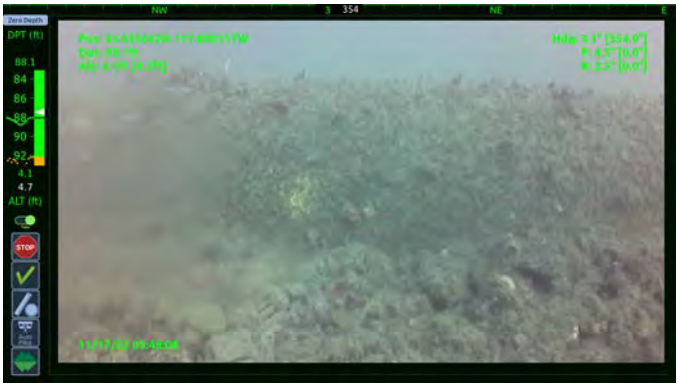


Entry 90 - D22

Entry 91 - Flange 12

Entry 92 - D24

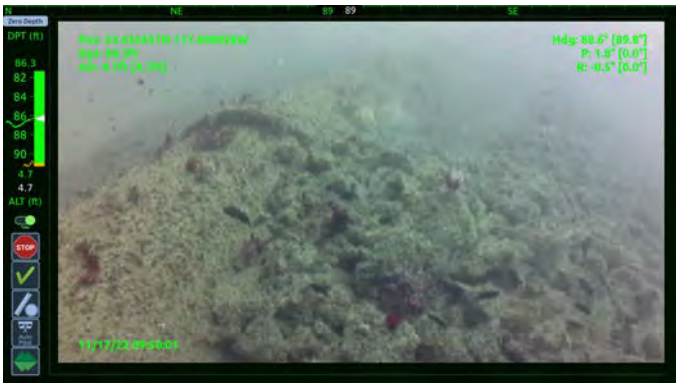
Entry 93 - Flange 13



Entry 94 - D26

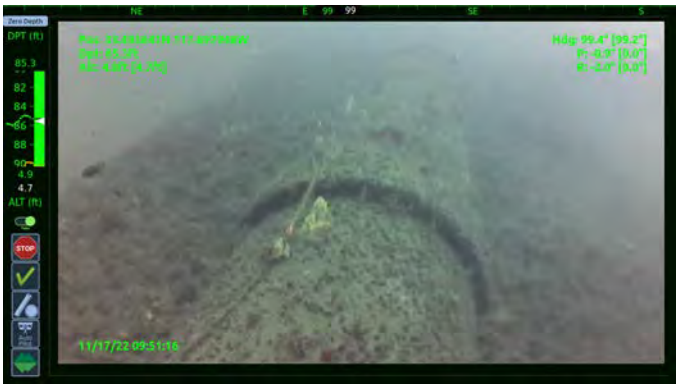
Entry 95 - Flange 14

Entry 96 - D28

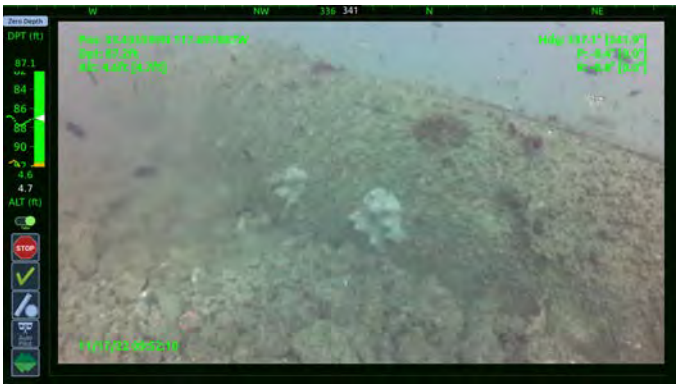


Entry 97 - Flange 15

Entry 98 - D30



Entry 99 - Flange 165



Entry 100 - D32

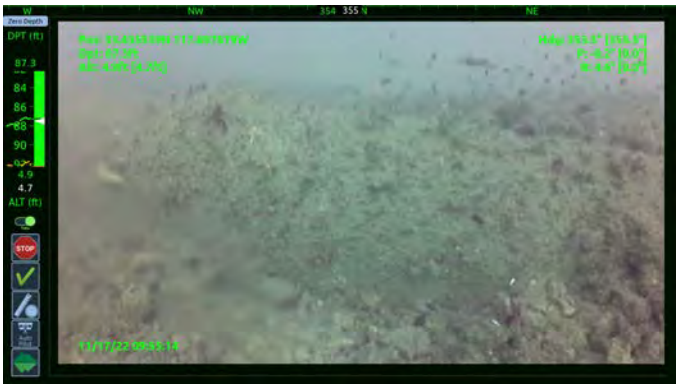
Entry 101 - Flange 17

Entry 102 - D34

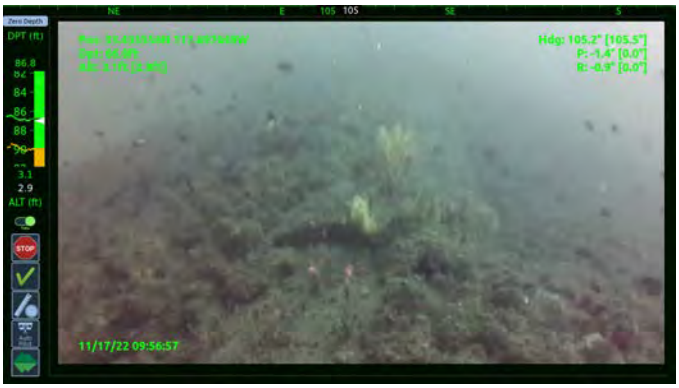
Entry 103 - Flange 18

Entry 104 - D36

Entry 105 - Flange 19



Entry 106 - D38



Entry 107 - Flange 20

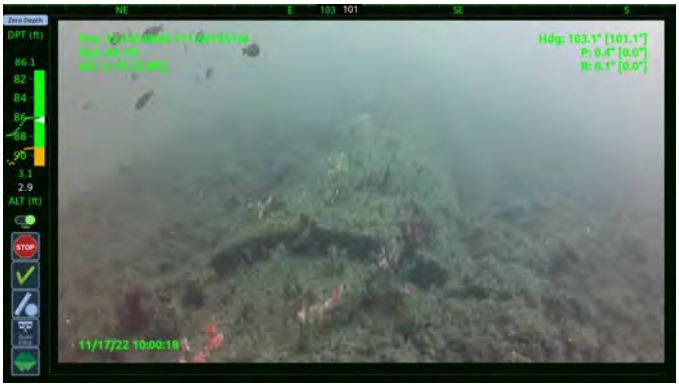
Entry 109 - D40

Entry 110 - Flange 21

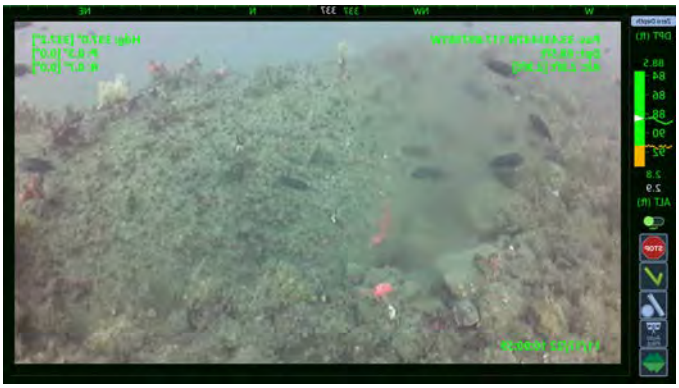
Entry 111 - D42

Entry 112 - Flange 22

Entry 113 - D44

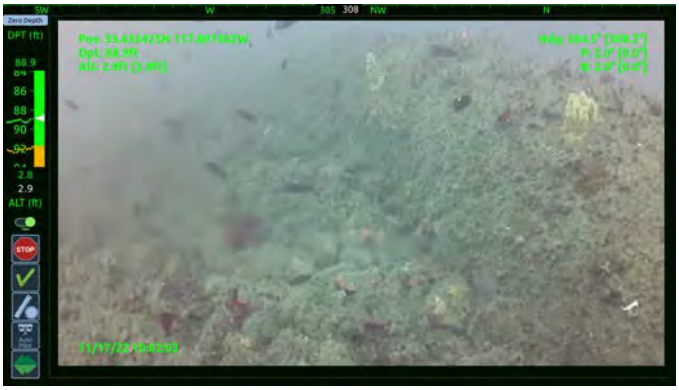


Entry 114 - Flange 23



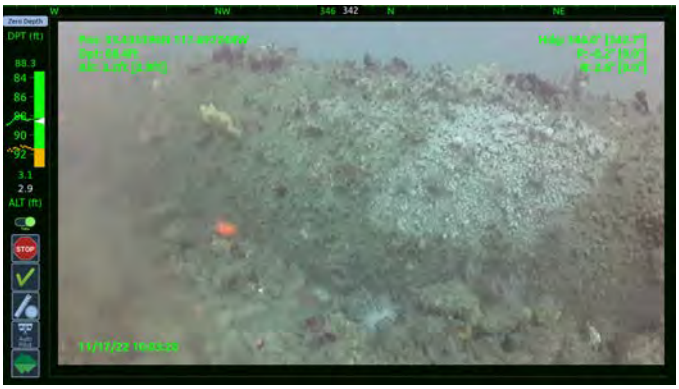
Entry 115 - D46

Entry 116 - Flange 24



Entry 117 - D48

Entry 118 - Flange 25

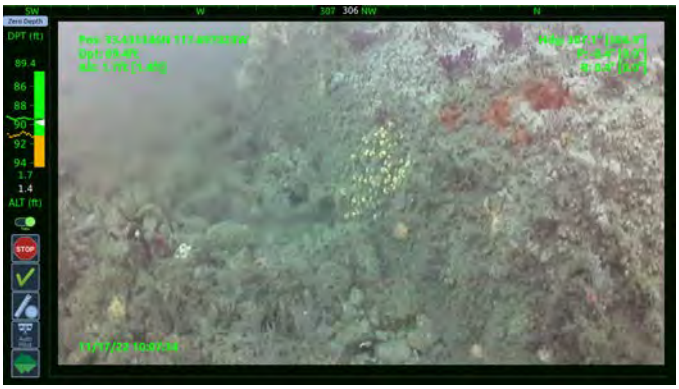


Entry 119 - D50

Entry 120 - Flange 26

Entry 121 - D52

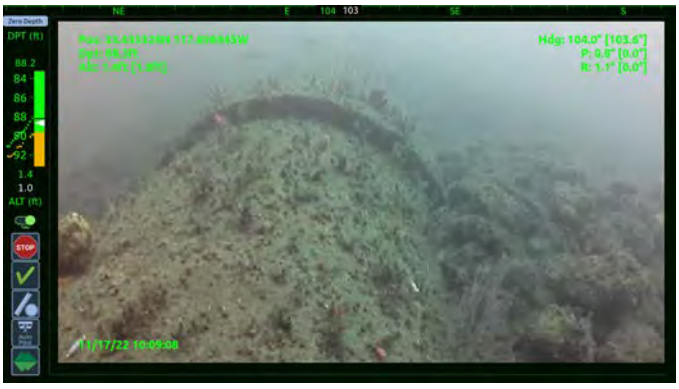
Entry 122 - Flange 27



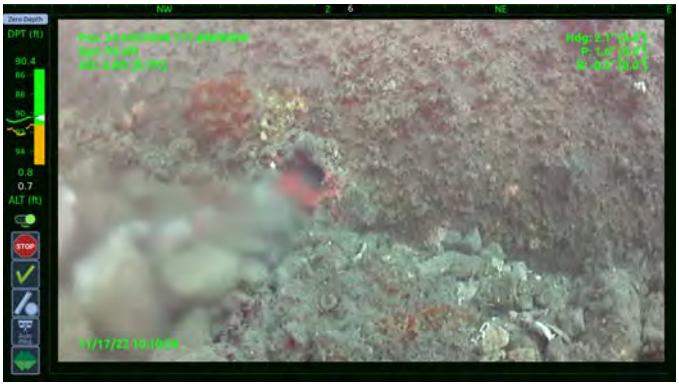
Entry 123 - D54

Entry 124 - Flange 28

Entry 125 - D56



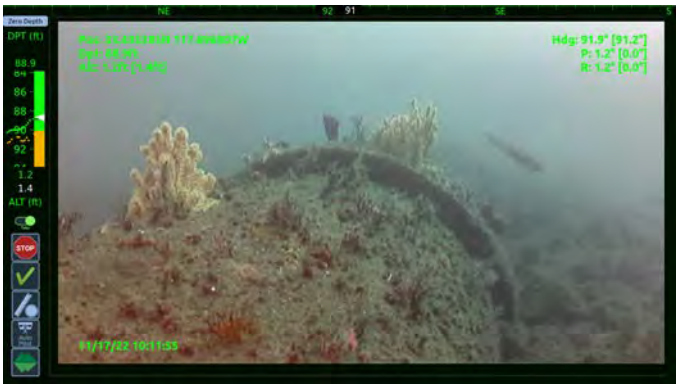
Entry 126 - Flange 29



Entry 127 - D58

Entry 128 - Flange 30

Entry 129 - D60

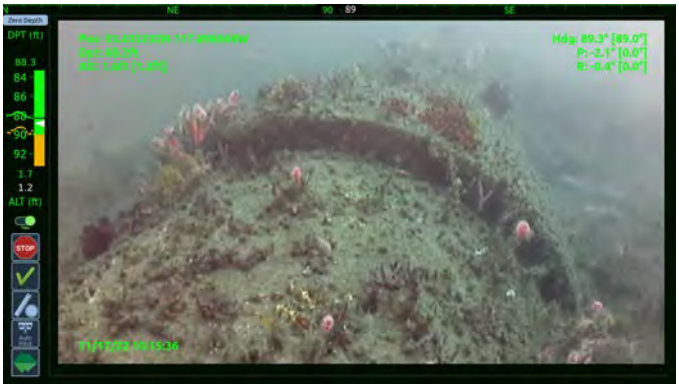


Entry 130 Flange 31

Entry 131 - D62

Entry 132 - Flange 32

Entry 133 - D64



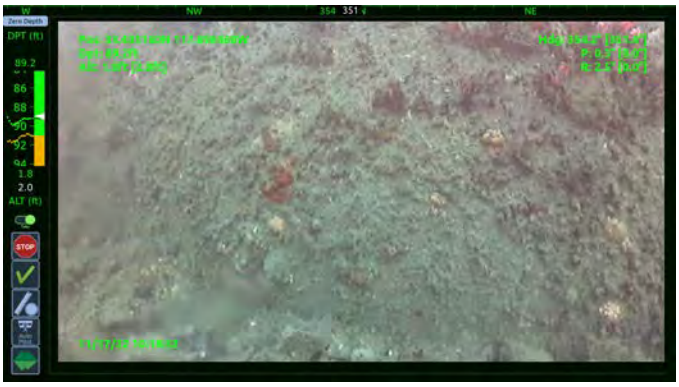
Entry 134 - Flange 33

Entry 135 - D66

Entry 136 - Flange 34

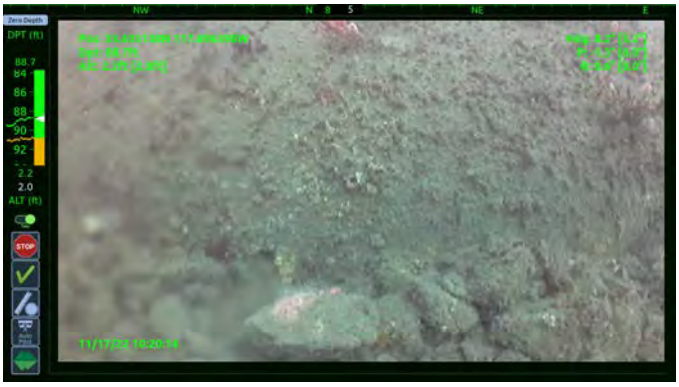
Entry 137 - D68

Entry 138 - Flange 35



Entry 139 - D70

Entry 140 - Flange 36

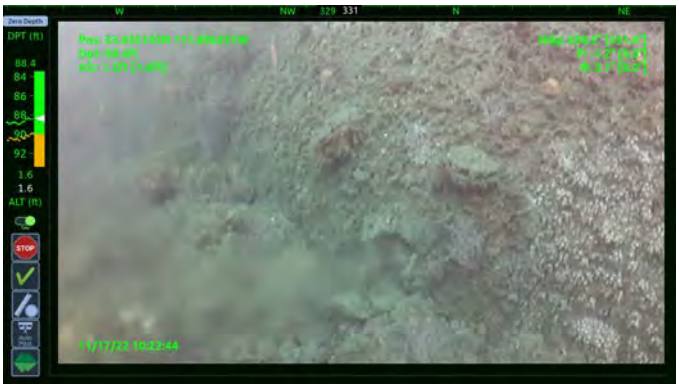


Entry 141 - D72

Entry 142 - Flange 37

Entry 143 - D74

Entry 144 - Flange 38

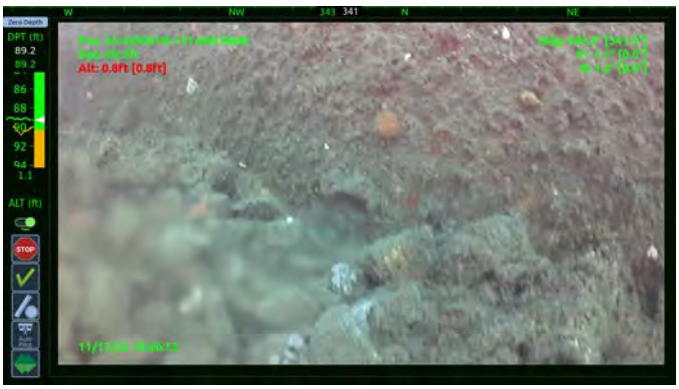


Entry 145 - D76

Entry 146 - Flange 39

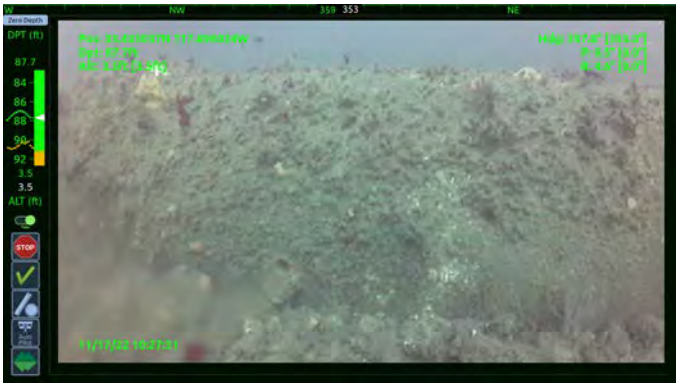
Entry 147 - D78

Entry 148 - Flange 40



Entry 149 - D80

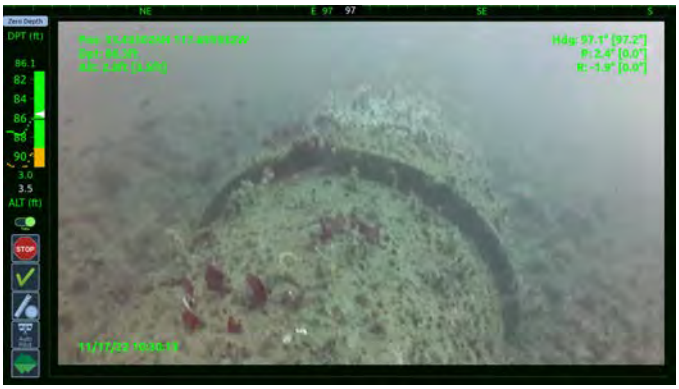
Entry 150 - Flange 41



Entry 151 D82

Entry 152 - Flange 42

Entry 153 - D84



Entry 154 - Flange 43

Entry 155 D86

Entry 156 - Flange 44

Entry 157 - D88

Entry 158 - Flange 45

Entry 159 - D90

Entry 160 - Flange 46

Entry 161 - D92

Entry 162 - Flange 47

Entry 163 - D94

Entry 164 Flange 48

Entry 169 - D100

Entry 170 - Flange 51

Entry 171 - D102

Entry 172 - Flange 52

Entry 173 - D104

Entry 179 - North side from End Structure D1

Entry 180 - Flange 1

Entry 181 - D3

Entry 182 - Flange 2

Entry 183 - D5

Entry 184 – Flange 3

Entry 185 - D7

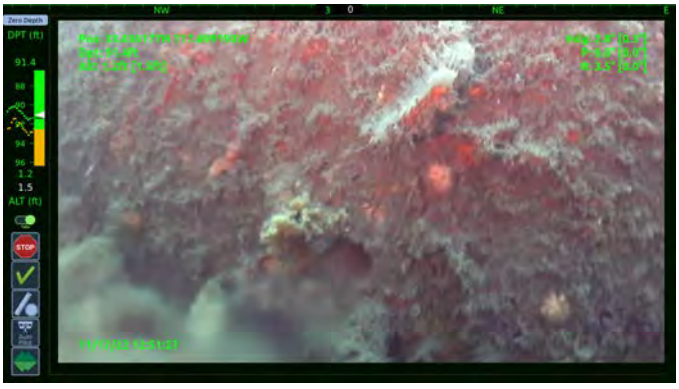
Entry 186 - Flange 4

Entry 187 - D9

Entry 188 - Flange 5

Entry 189 - D11

Entry 190 - Flange 6

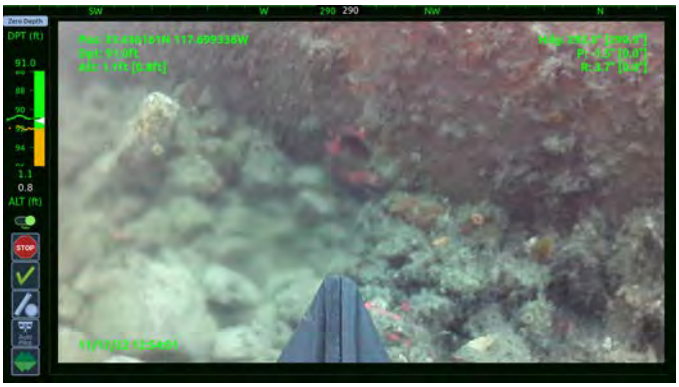


Entry 191 -D13

Entry 192 - Flange 7

Entry 193 - D15

Entry 194 - Flange 8



Entry 195 - D17

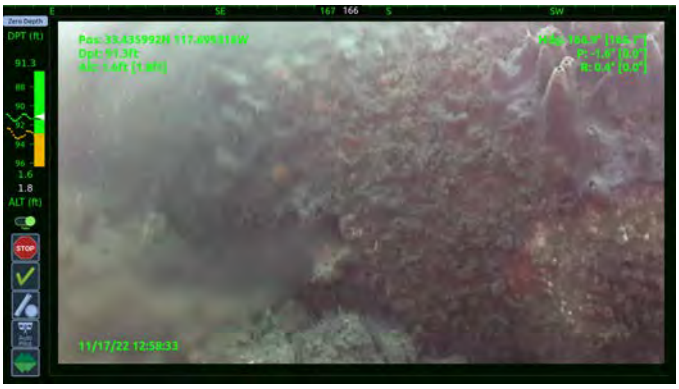
Entry 196 - Flange 9

Entry 197 - D19

Entry 198 - Flange 10

Entry 199 - D21

Entry 200 - Flange 11

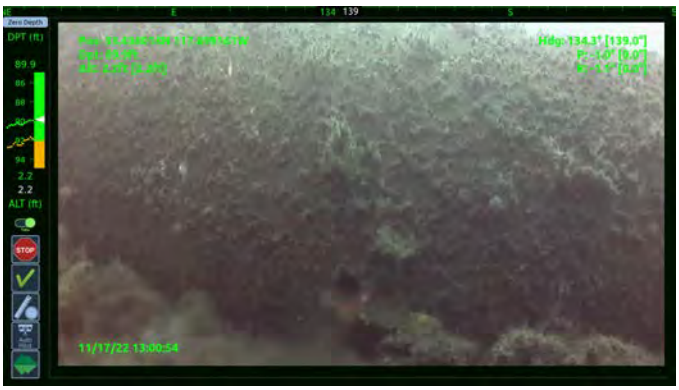


Entry 201 - D23

Entry 202 - Flange 12

Entry 203 - D25

Entry 204 - Flange 13

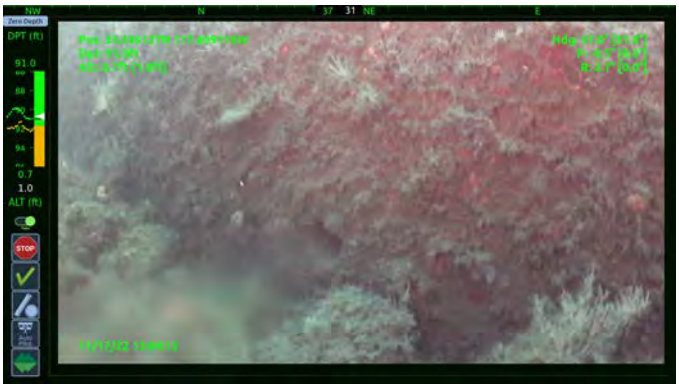


Entry 205 - D27

Entry 206 - Flange 14

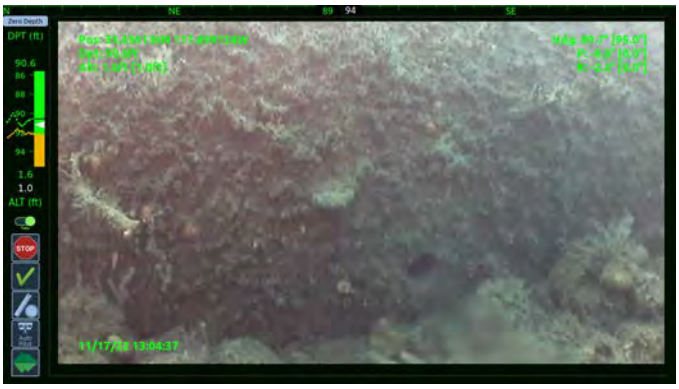
Entry 207 - D29

Entry 208 - Flange 15



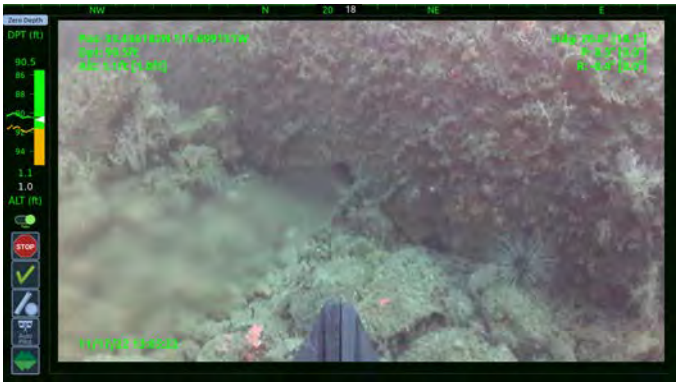
Entry 209 - D31

Entry 210 - Flange 16



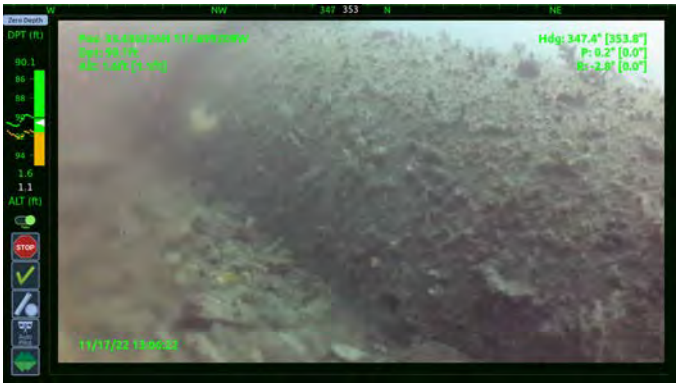
Entry 211 - D33

Entry 212 - Flange 17



Entry 213 - D35

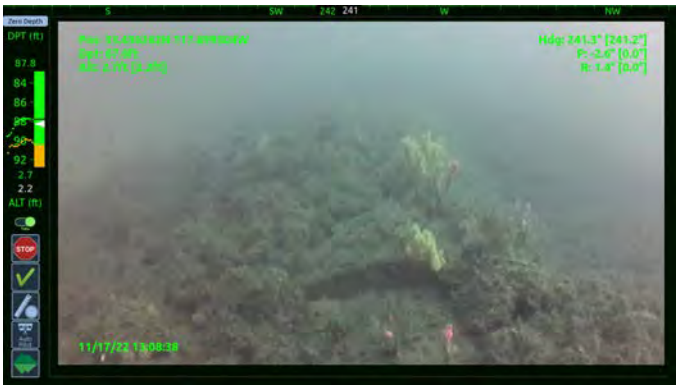
Entry 214 - Flange 18



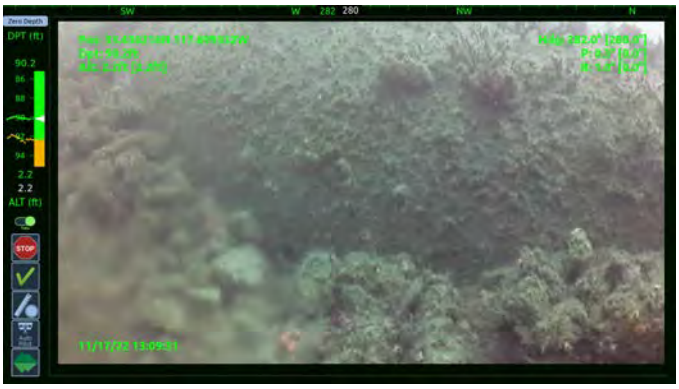
Entry 215 - D37

Entry 216 - Flange 19

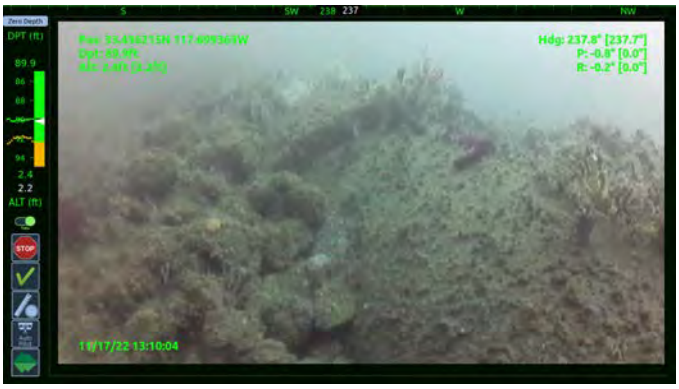
Entry 217 - D39 Buried



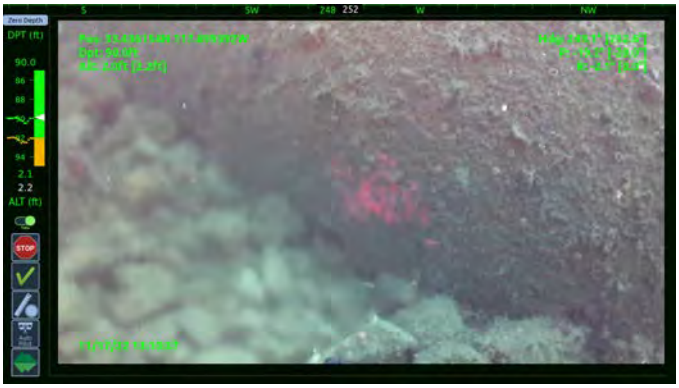
Entry 218 - Flange 20 buried



Entry 219 - D41



Entry 220 - Flange 21 90% buried



Entry 221 - D43

Entry 222 - Flange 22

Entry 223 - D45

Entry 224 - Flange 23

Entry 225 - D47

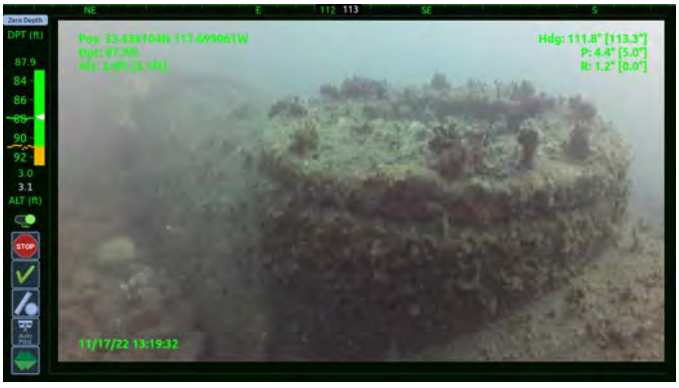
Entry 226 - Flange 24

Entry 227 - D49

Entry 228 - Flange 25

Entry 229 - D51

Entry 230 - Flange 26



Entry 231 - Manhole

Entry 310 - D53

Entry 311 - Flange 27

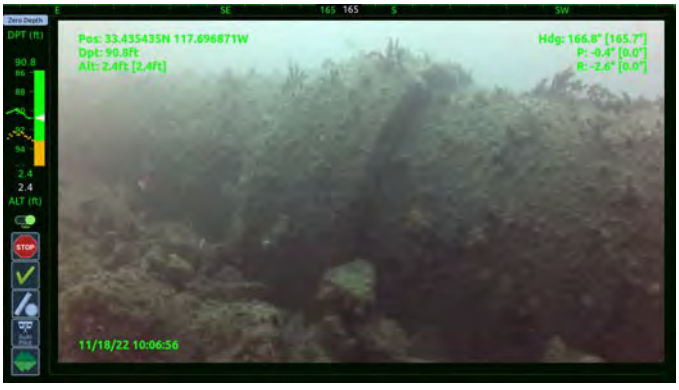
Entry 312 - D55

Entry 313 - Flange 28

Entry 314 - D57

Entry 315 - Flange 29

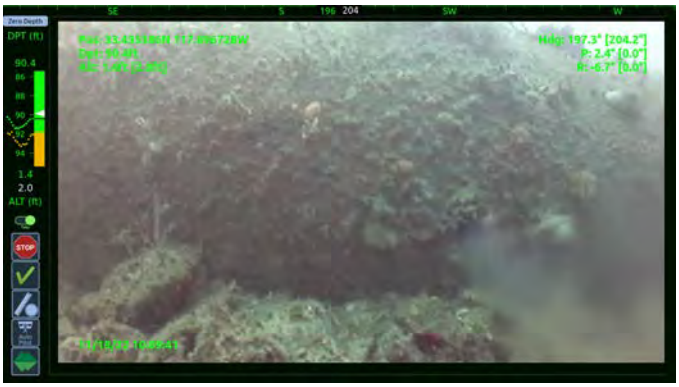
Entry 316 - D59



Entry 317 - Flange 30

Entry 318 - D61

Entry 319 - Flange 31



Entry 320 - D63

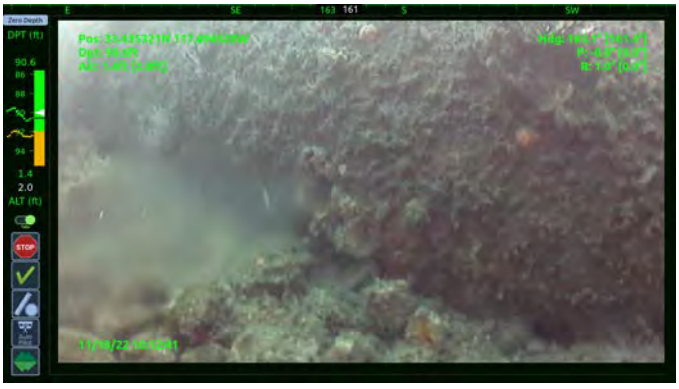
Entry 321 - Flange 32

Entry 322 - D65

Entry 323 - Flange 33

Entry 324 - D67

Entry 325 - Flange 34



Entry 326 - D69

Entry 327 - Flange 35

Entry 328 - D71

Entry 329 - Flange 36

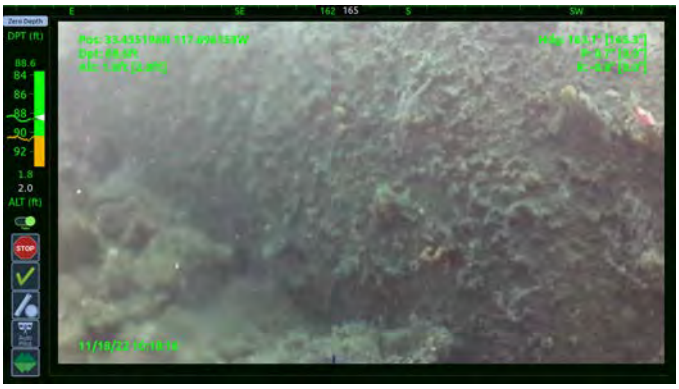
Entry 332 - D73

Entry 334 - Flange 37

Entry 335 - D75

Entry 337 - D77

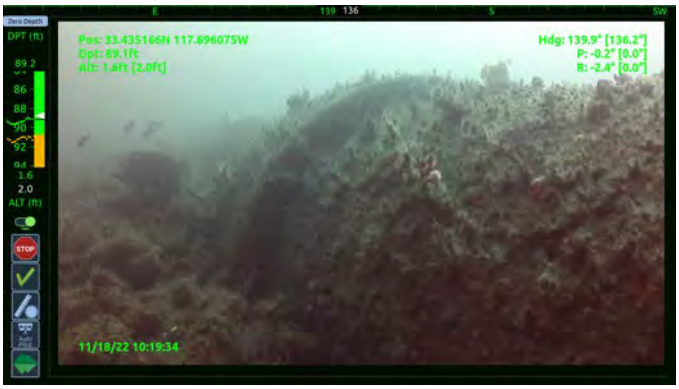
Entry 338 - Flange 39



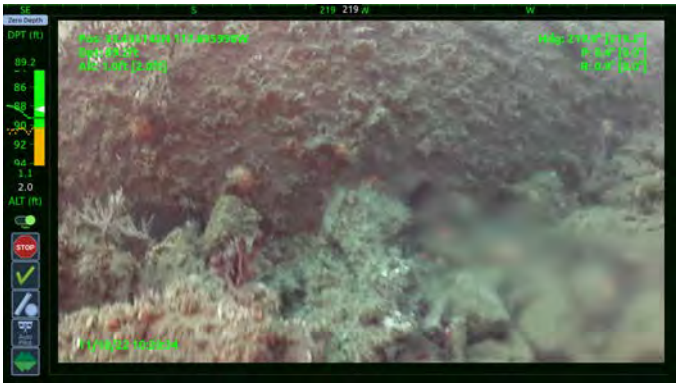
Entry 339 - D79

Entry 340 - Flange 40

Entry 341 - D81



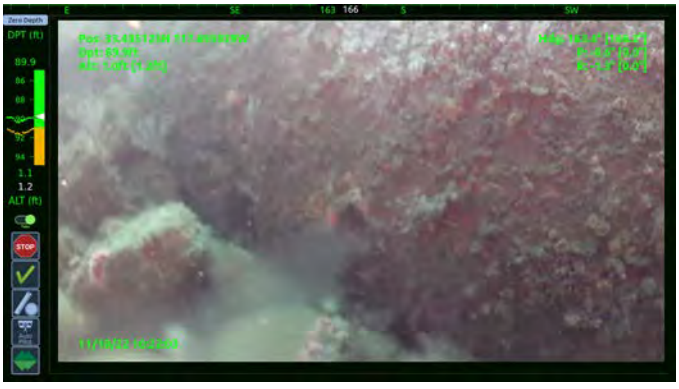
Entry 342 - Flange 41



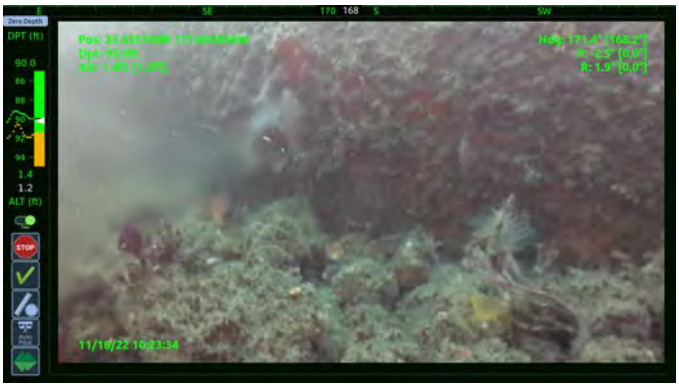
Entry 343 - D83

Entry 344 - Flange 42

Entry 346 - Flange 43



Entry 347 - D85



Entry 349 - D87

Entry 350 - Flange 45

Entry 351 - D89

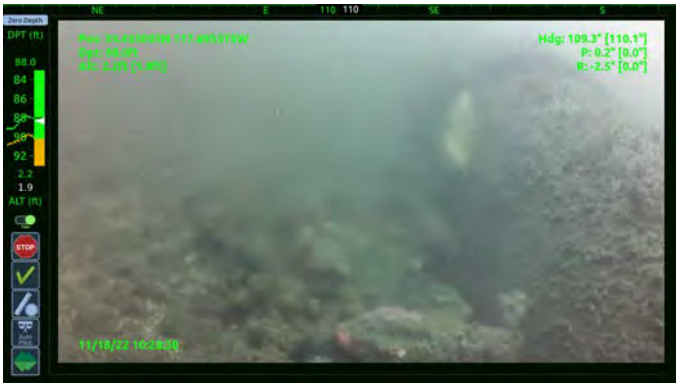
Entry 352 - Flange 46

Entry 353 - D91

Entry 354 - Flange 47

Entry 355 - D93

Entry 356 - Flange 48



Entry 357 - D95

Entry 358 - Flange 49

Entry 359 - D97

Entry 360 - Flange 50

Entry 361 - D99

Entry 362 - Flange 51

Entry 363 - D101

Entry 364 - Flange 52

Entry 365 - D103

Entry 367 - Flange 53

Agenda Item 7

Engineering Committee Meeting
Meeting Date: February 9, 2023

TO: Engineering Committee

FROM: Jim Burror, Acting General Manager/Director of Operations

SUBJECT: Contract Award for Regional Treatment Plant (RTP) Cogen Engine SCR Blower Installation [Project Committee 17]

Summary

This agenda item provides a recommendation for the PC 17 Engineering Committee Members to recommend to the PC 17 Board to award the installation of the Stueler blower modification on the RTP Cogen selective catalytic reducer (SCR). Western Energy is the authorized representative for Stueler, the manufacturer of the SCR, in California. The quote from Western is $45,450.23 plus tax, shipping, and fees to be determined at the time of shipping. Staff is requesting a $5,000 contingency to cover unforeseen construction and installation conditions, such as the issues with the condition of the metal inside of the SCR housing system when it is cut open. The total costs will exceed $50,000.

Discussion/Analysis

The SCR system was found to be too hot when operating. The final and successful solution was to remove sections of the insulating heat recovery water jacket. Unfortunately, this exposed metal is around 800 Fahrenheit and unsafe for employees maintaining the Cogen SCR. The removal of a portion of the heat recovery system also impacts the ability to recover sufficient heat on the coldest days of the year. This has led to the need to operate the supplemental boiler.

RTP Cogen SCR Ladder Out of Service Covered by Plywood

Western Energy is the only available vendor to SOCWA for this project.

Fiscal Impact

The project was budgeted as a large capital project (37232S-000) with a budget of $100,000. This project is located in the solids area of RTP. Therefore, the costs will be allocated using the solids ownership allocations for RTP. Table 1 shows the cost allocation by member agency for the contract plus contingency.

Table 1 – Cost Allocation

Member Agency	Allocation
City of Laguna Beach	$5,660.52
El Toro Water District	$10,296.89
Emerald Bay Service District	$297.66
Moulton Niguel Water District	$29,674.83
South Coast Water District	$4,520.34
Total	$50,450.24

The actual shipping costs, fees, and tax will be added to the allocated costs using the solids ownership percentages shown above when the invoice is received.

Recommended Action: Staff recommends that the Engineering Committee recommend that the PC 17 Board of Directors:

1. Award the contract to Western Energy in the amount of $45,450.23 plus actual shipping costs, fees, and tax to be determined at the time of shipping for the installation of the Stueler blower modification on the RTP Cogen selective catalytic reducer (SCR); and
2. Establish a project contingency in the amount of $5,000.

NORTHEAST® ENERGY SYSTEMS
Power Systems Specialists

WESTERN® ENERGY SYSTEMS
Power Systems Specialists

Gaseous Fueled Power Generation Systems
Co-Generation ● Landfill ● Biogas

1/26/23

SOCWA RTP
Mike Matson

Dear Mike:
We are pleased to submit this proposal for your consideration. This proposal includes the scope of supply as in only section 3. All additional work, if any, has not been considered and is excluded from this proposal.

1. Project Name: RTP Exhaust cooler system
Address: 29201 La Paz Rd
City, State, Zip Code Laguna Niguel, CA 92677

2. Type Equipment:

Unit #	Model	Serial
1	JMC 316	1162700

3. Definition of project: **The following proposal includes all parts, labor required to install an exhaust air injection system. All electrical work to be provided by customer and not included in this proposal. Any modifications required to be made to insulation as well are not considered.**

WES Technicians to perform the following:

Install Air injection system.
- Shut unit down and perform LOTO
- Remove soft insulation from exhaust
- Mount air injection system
- Install one way air valve
- Install open close valve
- Land all control wiring required
- Start up engine and tune system for optimal operation

Supervise contractor
- Work with fabricator to locate and install 2in threaded bung into exhaust system
- Work with contractor to install air injection piping and flex connection

4. Total Cost: **$45,450.23**

5. Payment Terms: Payment terms to follow Terms outlined in the Master Service agreement

6. Delivery: DAP customers site, 29201 La Paz Rd, Laguna Niguel CA, Incoterms 2020.

7. Cancelation charges: Less than 15 days from signed proposal 20%.
16-30 days from signed proposal
30%. 31 days from order of shipment
70%. After shipment of parts 100%.

8. Delivery Time: Approximately 10 to 14 weeks after receipt of purchase order.

9. Validity of Proposal: This proposal is valid for (30) days from the date of this proposal.

10. Freight and Tax: Freight and Taxes are not included and will be added to final invoice

Kind Regards,

Noe Zepeda
Product Support Manager
Western Energy Systems

Terms and Conditions:
Those outlined within the Master Services Agreement between South Orange County water and Western Energy Systems apply to this proposal.

Customer Acceptance of Proposal:

Name: _____

Signature: _____

Date _____

Agenda Item 8

Engineering Committee Meeting

Meeting Date: February 9, 2023

TO: Engineering Committee

FROM: Jim Burror, Acting General Manager/Director of Operations

SUBJECT: Contract Award for J.B. Latham Treatment Plant (JBL) Cogen Engine SCR Blower Installation [Project Committee 2]

Summary

This agenda item provides a recommendation for the PC 2 Engineering Committee Members to recommend to the PC 2 Board to award the installation of the Stueler blower modification on the JBL Cogen selective catalytic reducer (SCR). Western Energy is the authorized representative for Stueler, the manufacturer of the SCR, in California. The quote from Western is $45,450.23 plus tax, shipping, and fees to be determined at the time of shipping. Staff is requesting a $5,000 contingency to cover unforeseen construction and installation conditions, such as the issues with the condition of the metal inside of the SCR housing system when it is cut open. The total costs will exceed $50,000.

Discussion/Analysis

The SCR system was found to be too hot when operating. The final and successful solution was to remove sections of the insulating heat recovery water jacket. Unfortunately, this exposed metal is around 600 Fahrenheit and unsafe for employees maintaining the Cogen SCR. The removal of a portion of the heat recovery system also impacts the ability to recover sufficient heat on the coldest days of the year. This has led to the need to operate the supplemental boiler.

The JBL SCR has handrailing around the SCR to protect employees

Western Energy is the only available vendor to SOCWA for this project.

Fiscal Impact

The project was budgeted as a large capital project (32236S-000) with a budget of $100,000. This project is located in the solids area of JBL. Therefore, the costs will be allocated using the solids ownership allocations for JBL. Table 1 shows the cost allocation by member agency for the contract plus contingency.

Table 1 – Cost Allocation

Member Agency	Allocation
Moulton Niguel Water District	$10,908.16
Santa Margarita Water District	$29,452.03
South Coast Water District	$10,090.05
Total	$50,450.24

The actual shipping costs, fees, and tax will be added to the allocated costs using the solids ownership percentages shown above when the invoice is received.

Recommended Action: Staff recommends that the Engineering Committee recommend that the PC 2 Board of Directors:

1. Award the contract to Western Energy in the amount of $45,450.23 plus actual shipping costs, fees, and tax to be determined at the time of shipping for the installation of the Stueler blower modification on the JBL Cogen selective catalytic reducer (SCR); and

2. Establish a project contingency in the amount of $5,000.

1/31/23

SOCWA JBL
Mike Matson

Dear Mike:
We are pleased to submit this proposal for your consideration. This proposal includes the scope of supply as in only section 3. All additional work, if any, has not been considered and is excluded from this proposal.

1. Project Name: JBL Exhaust cooler system
Address: 34156 Del Obispo Street
City, State, Zip Code Dana Point, CA 92629

2. Type Equipment:

Unit #	Model	Serial
1	JMC 312	1154456

3. Definition of project: **The following proposal includes all parts, labor required to install an exhaust air injection system. All electrical work to be provided by customer and not included in this proposal. Any modifications required to be made to insulation as well are not considered.**

WES Technicians to perform the following:

Install Air injection system.
- Shut unit down and perform LOTO
- Remove soft insulation from exhaust
- Mount air injection system
- Install one way air valve
- Install open close valve
- Land all control wiring required
- Start up engine and tune system for optimal operation

Supervise contractor
- Work with fabricator to locate and install 2in threaded bung into exhaust system
- Work with contractor to install air injection piping and flex connection

4. Total Cost: **$45,450.23**

5. Payment Terms: Payment terms to follow Terms outlined in the Master Service agreement

6. Delivery: DAP customers site, 34156 Del Obispo St ,Dana Point CA, Incoterms 2020.

7. Cancelation charges: Less than 15 days from signed proposal 20%.
16-30 days from signed proposal
30%. 31 days from order of shipment
70%. After shipment of parts 100%.

8. Delivery Time: Approximately 10 to 14 weeks after receipt of purchase order.

9. Validity of Proposal: This proposal is valid for (30) days from the date of this proposal.

10. Freight and Tax: Freight and Taxes are not included and will be added to final invoice

Kind Regards,

Noe Zepeda
Product Support Manager
Western Energy Systems

Terms and Conditions:
Those outlined within the Master Services Agreement between South Orange County water and Western Energy Systems apply to this proposal.

Customer Acceptance of Proposal:

Name: _____

Signature: _____

Date _____

Agenda Item 9

Engineering Committee Meeting

Meeting Date: February 9, 2023

TO: Engineering Committee

FROM: David Baranowski, Director of Engineering

SUBJECT: Capital Improvement Construction Projects Progress and Change Order Report (*February)* [Project Committee Nos. 2, 15 & 17]

Overview

Active Construction Project Updates:
Attached are the updated CIP reports. Please note that there are two new change orders for Olsson Construction for PC 2 J.B. Latham Package B project totaling $32,571.89.

This is informational for PC 15 and PC 17 member agencies.

Recommended Action: Staff recommends that the Engineering Committee approve the following Olsson Construction Change Orders:

- Change Order 70 for $3,046.43, including 0 additional day(s)
- Change Order 71 for $29,525.46, including 0 additional day(s)

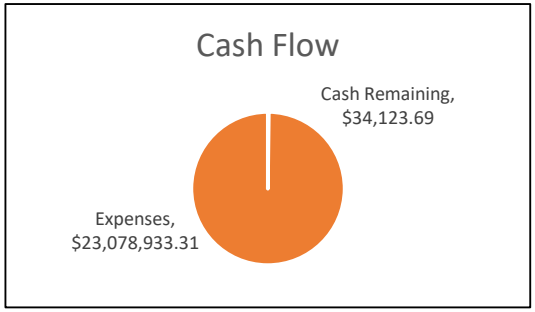
For a total of $32,571.89, with no additional days, and a revised contract value of $18,616,036.38 for the J.B. Latham Package B Project.

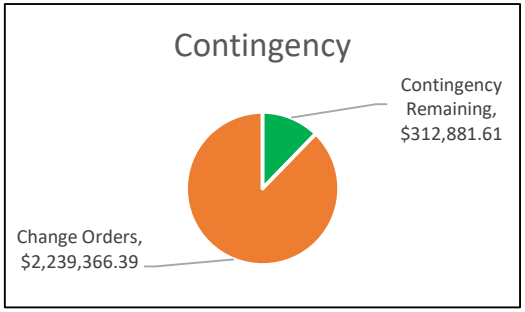
Project Financial Status

Project Committee	2
Project Name	Package B
Project Description	Plant 1 basin repairs, DAF rehabilitation, Energy Building seismic retrofit and minor rehabilitation, Digester 4 rehabilitation

Data Last Updated

January 30, 2023





Cash Flow

Collected	$ 23,113,057.00
Expenses	$ 23,078,933.31

Project Completion

Schedule	99%
Budget	96%

Contracts

Company	PO No.	Original	Change Orders*	Amendments	Total	Invoiced
Olsson	13497	$ 17,325,000.00	$ 1,291,036.38		$ 18,616,036.38	$ 18,405,627.59
Butier	13647	$ 895,727.00		$ 1,005,251.00	$ 1,900,978.00	$ 1,845,789.50
Carollo	13616	$ 846,528.00		$ 616,037.00	$ 1,462,565.00	$ 1,280,575.86
TetraTech	13605	$ 94,000.00		$ -	$ 94,000.00	$ 93,884.70
Ninyo & Moore	14279	$ 49,399.00		$ 30,000.00	$ 79,399.00	$ 47,005.27
ADS Environmental	16452	$ 107,200.00	$ -		$ 107,200.00	$ 55,125.00
Hallsten	16578	$ 251,422.00	$ 16,715.25		$ 268,137.25	$ -
Dudek	17401	$ 48,360.00		$ -	$ 48,360.00	$ 34,100.00
		$ 19,617,636.00	**$ 1,307,751.63**	**$ 1,651,288.00**	**$ 22,576,675.63**	**$ 21,762,107.92**

**Values include change orders to be reviewed by Engineering Committee and deductive change orders*

Contingency

Area	Project Code	Amount **	Change Orders	Total Remaining	Percent Used
Liquids	3220-000	$ 969,679.00	$ 857,807.95	$ 111,871.05	88.5%
Common	3231-000	$ 38,120.00	$ 3,305.76	$ 34,814.24	8.7%
Solids	3287-000	$ 1,544,449.00	$ 1,378,252.68	$ 166,196.32	89.2%
		$ 2,552,248.00	**$ 2,239,366.39**	**$ 312,881.61**	**87.7%**

*** Amount reflects contingency for Construction Contracts only*

Summary of New Change Orders

Change Order No	MNWD	SCWD	SMWD	$ Amount
70	$ 658.69	$ 609.29	$ 1,778.46	$ 3,046.43
71	$ 6,383.88	$ 5,905.09	$ 17,236.48	$ 29,525.46
Grand Total	**$ 7,042.57**	**$ 6,514.38**	**$ 19,014.94**	**$ 32,571.89**

Change Orders and Amendments

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
Within Contingency, to be reviewed by Engineering Committee						**$ 32,571.89**
70	Olsson	3287-000	DAFT 1 Area Reconfiguration	2/9/2023		$ 3,046.43
71	Olsson	3287-000	Digester 2 Hot Water Loop Change	2/9/2023		$ 29,525.46
Approved by Board of Directors					**191**	**$ 1,275,179.74**
1	Olsson	3287-000	Addition of Loop Piping to the Existing Hot Water Lines Adjacent to Digester 3	12/12/2019	0	$ 4,725.00
2	Olsson	3287-000	Asbestos Gaskets in Boiler hazardous disposal	6/4/2020	0	$ 6,343.10
3	Olsson	3287-000	Add Analog Infrastructure and Cabling	6/4/2020	11	$ 37,969.60
4	Olsson	3287-000	Digester 4 Coating Additional Sealant	6/4/2020	3	$ 24,001.54
5	Olsson	3220-000	Valve Handwheel Ergonomic extension	8/6/2020	28	$ 16,370.30
6	Olsson	3287-000	Change to DeZurik Plug Valves to match existing	8/6/2020	90	$ 41,993.87
7	Olsson	3287-000	Digester 4 Additional Concrete Repair	8/6/2020	3	$ 7,412.74

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
8	Olsson	3287-000	Repair Existing Damaged Electrical Box	8/6/2020	0	$ (1,829.00)
9	Olsson	3220-000	Change the Telescoping Valve Boxes and Piping from Carbon Steel to Stainless Steel	8/6/2020	0	$ 18,677.63
10	Olsson	3287-000	Duct bank J Interferences	12/17/2020	18	$ 73,639.42
11	Olsson	3220-000	Blasting of Existing Influent Pipe Spools	12/17/2020	5	$ 20,868.52
12	Olsson	3220-000	Duct bank K Interferences	12/17/2020	0	$ 15,567.08
13	Olsson	3287-000	Digester 3/4 PLC Relocation	12/17/2020	14	$ 41,367.51
14	Olsson	3287-000	Digester 4 Additional Tank Repair	12/17/2020	18	$ 33,642.75
15	Olsson	3220-000	Duct bank O Interferences	12/17/2020	0	$ 1,686.88
16	Olsson	3287-000	Digester 3/4 Control Building Roof Replacement	2/4/2021	0	$ 42,780.00
17	Olsson	3287-000	MCC-D1 Modifications due to Change in Motor Size	5/6/2021	0	$ 34,392.02
18	Olsson	3287-000	Integrator Additional Site Visits	5/6/2021	0	$ 7,571.97
19	Olsson	3287-000	Multi-zone air conditioning unit in the Cogen MCC Room and Office	6/3/2021	0	$ 29,417.20

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
20	Olsson	3220-000	Overhead Walkway Removal at Plant 1 Secondary Basins 5 through 9	6/3/2021	0	$ 62,113.50
21	Olsson	3287-000	Cogeneration PLC Modifications and Integration	6/3/2021	0	$ 42,922.67
22	Olsson	3220-000	Plant 1 Secondary Basins UV Rated Wear Strips	9/2/2021	0	$ 28,965.33
23	Olsson	3287-000	MCC-F1 Design Change	9/2/2021		$ 481,290.42
24	Olsson	3287-000	DAF 2 Investigation Work and Inspection Blast	10/7/2021		$ 67,838.71
25	Olsson	3287-000	New Fiber Conduit in West Blower Building	10/7/2021		$ 4,957.71
26	Olsson	3220-000	Plant 1 Primary Basin Conduit Obstruction	10/7/2021		$ 8,444.20
27	Olsson	3220-000	Plant 1 Influent Channel Additional Coating between Primary Basins 5 and 6	10/7/2021		$ 15,469.98
28	Olsson	3287-000	MCC-F1 Lighting Changes	10/7/2021		$ 7,843.04
29	Olsson	3287-000	Digester 3 Ground Rod	10/14/2021		$ 7,269.16
30	Olsson	3220-000	New Fiber Conduits at East Electrical and Storm Water Buildings	10/14/2021		$ 8,045.43
31	Olsson	3220-000	Plant 2 Primary Influent Channel Repair Credit	12/9/2021		$ (15,903.00)

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
32	Olsson	3220-000	Plant 1 and 2 Telescoping Valve Pipe Supports	12/9/2021		$ 6,132.27
33	Olsson	3287-000	4" Gas Line Routing Modifications	12/9/2021		$ 18,146.07
34	Olsson	3287-000	Gas Mixer Conduit Conflict	12/9/2021		$ 12,383.89
35	Olsson	3220-000	P1 Primary Tanks 5 and 6 Temporary Power	3/10/2022		$ 7,256.05
36	Olsson	3220-000	P1 Primary Tanks Skimmers Starter Modification	3/10/2022		$ 45,374.13
37	Olsson	3220-000	P1 Primary Tanks Hopper Wall Coating	3/10/2022		$ 34,505.41
38	Olsson	3220-000	P1 Effluent Channel Conduit Conflict	3/10/2022		$ 9,274.98
39	Olsson	3220-000	P1 Primary Tanks Torque Limit Switch	3/10/2022		$ 7,149.86
40	Olsson	3287-000	Multi-zone air conditioning unit in the Cogen MCC Room and Office	3/10/2022		$ (2,309.09)
41	Olsson	3287-000	DAFT 2 Repair	3/10/2022		$ 59,403.53
42	Olsson	3287-000	Digesters 1 and 2 Heat Exchanger Layout Reconfiguration Electrical	6/2/2022	1	$ 12,885.18
43	Olsson	3287-000	Digester 3 Heat Exchanger Hot Water Loop Tie-In	6/2/2022		$ 2,774.58
44	Olsson	3220-000	Plant 1 Primary Basin 1 Shutdown Repair Work	6/2/2022		$ 1,009.86

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
45	Olsson	3287-000	Replace Compressor Line and Valve at Digester 4	6/2/2022		$ 10,762.85
46	Olsson	3220-000	Plant 2 Influent Gates Removal and Concrete Demo	6/2/2022		$ 5,389.66
47	Olsson	3287-000	DAFT 2 Launder Support Detail	6/9/2022		$ 45,682.30
48	Olsson	3220-000	Plant 1 Primary Basins 1, 2, 5 and 6 Coating Removal	6/9/2022		$ 111,101.16
49	Olsson	3220-000	Plant 1 Primary Basins 1, 2, 5 and 6 Existing Equipment Removal and Reinstallation	6/9/2022		$ 71,864.17
50	Olsson	3287-000	Digester Mixing Pumps Control Programming Change	8/4/2022		$ 4,397.77
51	Olsson	3220-000	Plant 1 Primary Basins Skimmers I/O Connection and Programming Change	8/4/2022		$ 14,237.83
52	Olsson	3287-000	Fiber Patch Cables to Connect the Centrifuge PLC to the Centrifuge Patch Panel	8/4/2022		$ 3,755.90
53	Olsson	3220-000	Plant 1 Primary Basins 3 and 4 Coating Removal	8/4/2022		$ 43,222.24

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
54	Olsson	3220-000	Plant 1 Secondary Basins Concrete Structural and Basins 2 and 3 Drive Plate Rework	8/4/2022		$ 20,860.16
55	Olsson	3220-000	Plant 2 Primary Basins Repair and Rehab of Head-Shaft Bearings	8/4/2022		$ 4,618.44
56	Olsson	3231-000	Board SOCWA Front Office with Plywood to Cover Windows	8/4/2022		$ 3,305.76
57	Olsson	3220-000	Seal the Openings at Plant 1 Primary Influent and Effluent Channels	8/4/2022		$ 25,491.03
58	Olsson	3220-000	Plant 1 Primary Basins 3 and 4 Existing Equipment Removal and Reinstallation	9/1/2022		$ 26,498.32
59	Olsson	3220-000	Plant 1 Secondary Basins Existing Embedded Metal Plates	9/1/2022		$ 4,290.48
60	Olsson	3220-000	Plant 2 Primary Baffle Frame Replacement	9/1/2022		$ 18,291.57
61	Olsson	3287-000	Digester hatch connection, temperature guage adjustment, and potholing	11/3/2022		$ 9,971.62

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
62	Olsson	3220-000	Plant 1 Primary and Secondary Basins crack injection, concrete repair, channel cleaning, solids removal	11/3/2022		$ 146,734.55
63	Olsson	3287-000	Boiler Room Modifications	12/8/2022		$ 14,797.83
64	Olsson	3287-000	DAFT 1 Repair	12/8/2022		$ 66,992.33
65	Olsson	3220-000	Secondary Clarifier Telescoping Valve Modifications (Design Error)	12/8/2022		$ 32,709.94
66	Olsson	3287-000	Digester Control Buildings Modifications	2/2/2023		$ 9,746.81
67	Olsson	3220-000	Plant 1 and 2 Field Obstructions	2/2/2023		$ 8,871.74
68	Olsson	3287-000	MCC-F1 Site Modifications	2/2/2023		$ 57,233.12
69	Olsson	3287-000	DAFT and TWAS area additional slab modification and piping material change	2/2/2023		$ 19,368.58
Duduct-Common	Olsson	3231-000	Energy Building Monorail System Descope (F1-F4)	8/4/2022		$ (70,585.34)
Duduct-Liquids	Olsson	3220-000	Effluent Pump Station Descope (A1-A6)	8/4/2022		$ (483,605.73)
Duduct-Solids	Olsson	3287-000	Energy Building Modifications Descope (G1-G2, & H1-H2)	8/4/2022		$ (357,382.60)
HAL 01	Hallsten	3220-000	Cover Layout Modifications	8/4/2022		$ 16,715.25
Approved by Board of Directors (Amendments)						**$ 1,651,288.00**

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
1CM Common	Butier	3231-000	CM Change Order No. 1	7/13/2021		$ 48,995.00
1CM Liquids	Butier	3220-000	CM Change Order No. 1	7/13/2021		$ 294,125.00
1CM Solids	Butier	3287-000	CM Change Order No. 1	7/13/2021		$ 269,595.00
1ESDC Common	Carollo	3231-000	ESDC Change Order No. 1	6/3/2021		$ 18,210.00
1ESDC Liquids	Carollo	3220-000	ESDC Change Order No. 1	6/3/2021		$ 109,256.00
1ESDC Solids	Carollo	3287-000	ESDC Change Order No. 1	6/3/2021		$ 100,151.00
1G Common	Ninyo & Moore	3231-000	Geotechnical Services Change Order No. 1	2/3/2022		$ 5,400.00
1G Liquids	Ninyo & Moore	3220-000	Geotechnical Services Change Order No. 1	2/3/2022		$ 12,300.00
1G Solids	Ninyo & Moore	3287-000	Geotechnical Services Change Order No. 1	2/3/2022		$ 12,300.00
2CM Liquids	Butier	3220-000	CM Change Order No 2	5/12/2022		$ 196,268.00
2CM Solids	Butier	3287-000	CM Change Order No. 2	5/12/2022		$ 196,268.00
2ESDC Common	Carollo	3231-000	ESDC Change Order No. 2	12/9/2021		$ 11,075.00
2ESDC Liquids	Carollo	3220-000	ESDC Change Order No. 2	12/9/2021		$ 196,440.00
2ESDC Solids	Carollo	3287-000	ESDC Change Order No. 2	12/9/2021		$ 180,905.00
Potential Change						**$ 268,831.51**
PCO 005	Olsson	3287-000	TWAS Slab Modifications	(blank)		$ 50,000.00
PCO 038	Olsson	3287-000	Existing Valves at Digester 4 Heat Exchanger	(blank)		$ 5,000.00
PCO 047	Olsson	3287-000	Digester 3/4 Control Building Tee Replacement	(blank)		$ 5,000.00

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
PCO 054	Olsson	3220-000	Plant 1 Primary Effluent Channel Wall Corrosion	(blank)		$ 5,000.00
PCO 055	Olsson	3287-000	Additional Concrete Repair behind Digesters 1 & 2	(blank)		$ 7,500.00
PCO 057	Olsson	3220-000	Recoating of Basin Drive Shaft Steel Plates	(blank)		$ 10,000.00
PCO 058	Olsson	3220-000	Aluminum Kickplate at Aeration Basins	(blank)		$ 5,000.00
PCO 061	Olsson	3220-000	Steel Plate Coating and Blasting Extra Work	(blank)		$ 7,000.00
PCO 063	Olsson	3220-000	Concrete Repair at Secondary Basin Drive Units	(blank)		$ 8,000.00
PCO 064	Olsson	3220-000	Effluent Channel FA Duct Footing Conflicts	(blank)		$ 5,000.00
PCO 068	Olsson	3287-000	Chopper Pump Impeller Issues	(blank)		$ 5,000.00
PCO 070	Olsson	3220-000	Tread Plate-Slide Gate Conflicts at Effluent Channel	(blank)		$ 5,000.00
PCO 071	Olsson	3220-000	Effluent Channel Unforeseen Existing Conduit	(blank)		$ 5,000.00
PCO 072	Olsson	3287-000	Existing Conflicts at DAFT 2 Stairs	(blank)		$ 2,000.00
PCO 075	Olsson	3220-000	Bypass Pumping Plan Issues	(blank)		$ 100,000.00
PCO 083	Olsson	3220-000	Replacing the P1 Head Shaft Plate	(blank)		$ 5,000.00
PCO 095	Olsson	3287-000	Foul Air Rerouting at DAFT 2	9/2/2021		$ 5,000.00
PCO 106	Olsson	3287-000	DAFT 2 Isolation Valve	(blank)		$ 5,000.00

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
PCO 109	Olsson	3220-000	P1P Influent Channel Scum Gate Openings	(blank)		$ 2,500.00
PCO 119	Olsson	3220-000	Seal Openings in P1 Influent Channel Tanks 3 and 4	(blank)		$ 1,651.88
PCO 121	Olsson	3287-000	DAFT 1 Additional Repair - Flange	(blank)		$ 3,000.00
PCO 140	Olsson	3287-000	DAFT 1-TWAS Changes	(blank)		$ 10,000.00
PCO 143	Olsson	3287-000	Revisions to DG Line	(blank)		$ 3,000.00
PCO 153	Olsson	3220-000	Plant 1 primary helical drives temporary covers	(blank)		$ 9,179.63
Grand Total					**191**	**$ 3,227,871.14**

Agenda Item 10

Engineering Committee Meeting

Meeting Date: February 9, 2023

TO: Engineering Committee

FROM: Roni Young Grant, Associate Engineer

SUBJECT: Contract Award for J.B. Latham (JBL) Administration Building Roof Reconstruction Project [Project Committee 2]

Overview

The existing Administration Building roof consists of asphalt shingle as part of the original building construction in 1994. The existing roof has come to the end of its useful life. The project scope consists of the following:

- Mobilization and demobilization.
- Obtaining City permit and schedule for inspection.
- Remove and dispose of existing roofing and underlayment.
- Install new synthetic underlayment.
- Install new roof shingles.
- Paint all existing vents with rust preventative paint.
- Replace damaged wood, as needed.

Bids

SOCWA solicited bids from qualified contractors through Planetbids and met with potential bidders for a site walk. Three bids were received and are summarized below in Table 1.

Table 1 – Summary of Bids

Reconstruction of the Administration Building Roof	A. Preman Roofing	ERC Roofing	BEST Contracting Services
Mobilization/Demobilization	$2,000.00	$13,250.00	$12,013.00
Remove and dispose of existing roofing and underlayment	$20,000.00	$53,230.00	$69,230.00
Install new synthetic underlayment	$3,000.00	$16,000.00	$16,896.00
Install new roof shingle	$57,200.00	$48,820.00	$43,720.00
Paint all existing vents with rust preventive paint	$500.00	$1,200.00	$7,370.00
All other items necessary to complete the work	11,195.00		$32,140.00
Total Base Bid	**$93,985.00**	**$132,500.00**	**$181,369.00**
Additional Wood Replacement Rates			
LF of 1”x8”	$9.50	$28.00	$3.30
LF of 2”x8”	$14.50	$65.00	$3.60
SF of Plywood	$7.00	$12.00	$1.33

The condition of the roofing members cannot be determined until the roofing system is removed. Staff anticipates some roofing members will need to be repaired or replaced. The bids included a per unit cost to replace various roofing components discovered to be in poor condition during construction. Staff has assumed 500 linear feet of each wood size and 1,100 SF of plywood for determining a construction contingency.

Cost Allocation

The cost allocation for the construction and contingency is shown in Table 2. Based on the rates in the bid and the assumed quantities of wood replacement, staff is requesting a contingency of $19,700.

Table 2 – Cost allocation by member agency

Agency	Construction	Contingency	Total
	32232C-000	32232C-000	32232C-000
Moulton Niguel Water District	$21,004.96	$4,402.81	$25,407.77
Santa Margarita Water District	$50,026.01	$10,485.84	$60,511.85
South Coast Water District	$22,954.03	$4,811.35	$27,765.38
Total	$93,985.00	$19,700.00	$113,685.00

Table 3 shows the project budget and contingency.

Table 3 – Available budget

32232C-000 Budget	Construction	Contingency	Remaining Budget
$207,000.00	$93,985.00	$19,700.00	$97,515.00

Recommended Action: Staff recommends that the Engineering Committee recommend that the PC 2 Board of Directors award the contract to A. Preman Roofing in the amount of $93,985.00 for the JB Latham Administration Building Roof Reconstruction Project with a contingency of $19,700.00.

Agenda Item 11

Engineering Committee Meeting

Meeting Date: February 9, 2023

TO: Engineering Committee

FROM: David Baranowski, Director of Engineering

SUBJECT: Coastal Treatment Plant (CTP) Funding Strategy and Implementation Plan Proposal [Project Committee 15]

Overview

At the November 13, 2022, PC 15 Special Meeting, Hazen and Sawyer (Hazen) gave a presentation about their approach to identifying and obtaining funding sources. Hazen submitted the attached proposal to provide a comprehensive funding strategy and implementation plan for the Coastal Treatment Plant. The proposed fee is $60,140.

The proposal does not specify a project or potential future project that this funding would be used for. SOCWA has performed studies that have looked at a wide range of potential projects, including a recent study that analyzed the following treatment alternatives:

- Conventional Activated Sludge with Biological Nutrient Removal
- Membrane Bioreactor
- Aerobic Granular Sludge

Staff request feedback from the Committee about the proposal and how to proceed. Funds would need to be budgeted for next fiscal year.

Recommended Action: Discussion/Comments and Direction to Staff.

Hazen and Sawyer
7700 Irvine Center Drive, Suite 200
Irvine, CA 92618 • 949.951.8549

January 5, 2023

Mr. David Baranowski
Project Manager
South Orange County Wastewater Authority (SOCWA)
34156 Del Obispo Street
Dana Point, CA 92629

Re: Coastal Treatment Plant – Funding Strategy and Implementation Plan

Dear David:

Thank you for arranging our presentation before SOCWA's PC-15 Committee Meeting recently. We very much appreciate the opportunity to present our experience and qualifications in assisting our water agency clients in obtaining funding for projects like the future improvements needed at your Coastal Treatment Plant. As requested by the Committee, here is our proposal to provide a comprehensive funding strategy and implementation plan.

Firm Experience

Hazen is a proven, experienced, and responsive team. Our funding experts have developed infrastructure funding solutions totaling over $4.1B over the last 10 years for utilities across the country. Hazen's comprehensive approach to funding assistance for grant and favorable financing programs has enabled other utilities to effectively obtain water and wastewater infrastructure funding assistance from over 30 unique funding programs across the country. Hazen has been assisting utilities with the identification of projects eligible for various local, state, and federal funding sources. Likewise, we have experience helping our municipal clients prioritize projects to optimize use of new and evolving funding programs to maximize available funding efforts in securing this funding, and importantly, ensuring clients meet all grant administration criteria. To provide the best information to clients and ensure the highest opportunity for success, Hazen draws upon our extensive experience engaging program staff, developing a detailed understanding of funding programs' current priorities, and assisting utilities in determining which capital projects best fit various funding program opportunities.

Snapshot of the Proposed Hazen's Funding Team's Successful Funding Efforts

Project Name and Location	Total Funding
Nature-based Mitigation to Adapt in an Era of Megafire, Sonoma County, CA	$37,000,000
Groundwater Supply Treatment, East Orange Water Commission, NJ	$9,600,000
NYC Wastewater Resiliency Plan, NYCDEP, NY	$350,000,000
Nutrient Reduction Project, South Central Wastewater Authority, VA	$195,000,000
West Hickman WWTP Wet Weather Storage Tank, Lexington-Fayette Urban County Government, KY	$66,000,000

Winsor Water treatment Plan Rehabilitation, City of North Miami, FL	$20,000,000
Multiple Consent Decree Projects, City of Raleigh, NC	$181,000,000
Neuse River RRF Bioenergy Recovery Program, City of Raleigh, NC	$50,000,000
WWTP Improvements, City of Bedford Heights, OH	$44,000,000
Brook Hollow Interceptor, Dallas Water Utilities, TX	$22,000,000
WTP Upgrade Phase I, Greenville Utilities Commission, NC	$69,000,000

Our team has been instrumental in providing the technical support and program development necessary for local governments and utilities to submit competitive grant proposals, including highly competitive programs such as FEMA's Building Resilient Infrastructure and Communities (BRIC) program. Members of our team secured over $64 million in FEMA Hazard Mitigation Program Grants to offset impacts related to natural hazards and were successful in securing a $37 million dollar FEMA BRIC grant, which remains the nation's largest FEMA grant to mitigate impacts from wildfire.

Hazen is particularly adept at developing successful applications for new funding opportunities, ensuring that utility partners are immediately able to take advantage of available programs and do not miss potential opportunities. One example of this success is the EPA administered WIFIA program, which was established in 2017. To provide the best information to clients and ensure the highest opportunity for success, Hazen immediately engaged WIFIA program staff, developed a detailed understanding of program priorities, and assisted clients in determining which capital projects best fit the program priorities. Hazen's proven approach has helped clients receive WIFIA funding in each of the four years the program has existed, with approvals ranging from $29 million to over $400 million and totaling $1.4 billion. We are also assisting clients in leveraging new and evolving funding water, wastewater, and resiliency opportunities presented by the enactment of the Bipartisan Infrastructure Law (BIL), including additional grant-like money through the Department of Water Resources (DWR), the Federal Emergency Management Agency (FEMA) and the State Water Resources Control Board State Revolving Fund (SRF) programs.

Hazen's team has an extensive history of managing and administering grants. Our team's experience and expertise include a solid understanding of local, state, and federal programs requirements (i.e., Code of Federal Regulations Title 44 Section 200 (2CFR200) and Section 404). Our team recognizes that sound project monitoring will improve the efficiency of project implementation and the obligations associated with the funding process. As part of our standard procedures, Hazen's team can upon request, monitor and evaluate the progress of any funded project in accordance with the approved statement of work and budget, administrative requirements of 2CFR200 and any applicable state requirements.

Experience of Project Manager

Lisa Hulette, MBA, PMP will serve in the role of Project Manager. Lisa brings more than 20 years of leadership in the non-profit and public sectors with proven experience at leveraging multi-pronged, well-funded efforts designed to broaden support and create collaboration among diverse stakeholders. She is an expert fundraiser and has led teams that secured over $350 million in public and private funds for water resource planning, stream restoration, hazard mitigation and land conservation projects throughout California.

Prior to joining Hazen and Sawyer, Ms. Hulette was the Lead Program Manager and Designer for the $37 million FEMA Building Resilient Infrastructure and Communities (BRIC) grant awarded to Sonoma

County by United States President Biden on June 30, 2021, during a press conference. This is the largest wildfire project the federal government has funded to date and provides the foundation for FEMA's wildfire mitigation program. In addition to the FEMA BRIC award, Ms. Hulette was the lead in securing $64 million from FEMA's Hazard Mitigation Grant Program to reduce risk from natural disasters in Sonoma County. In addition to hazard mitigation project design and facilitation, she has advanced several successful legislative actions to successfully streamline permitting for watershed restoration projects at the state level and managed a wide variety of projects from initial planning, through design, construction, and operation.

Approach

Hazen will work closely with the South Orange County Water Authority (SOCWA) to provide a comprehensive funding strategy and implementation plan to plot a course to obtain and administer the best available funding opportunities. To do this, we will identify multiple potential funding options to provide the flexibility necessary to adapt to emerging funding programs, leverage existing programs, and to maximize the return on SOCWA's capital investment. Hazen will provide SOCWA with comprehensive funding consulting services aimed at maximizing grant opportunities to minimize the financial burden on SOCWA. Hazen will leverage both our in-house engineering expertise and knowledge of funding programs to ensure project planning, design, and implementation can be integrated to balance funding program priorities with project and schedule objectives.

Hazen uses the steps below to in our approach to identify and secure infrastructure funding for water utilities:

1. **Strategize applicable, available, achievable, funding options**
   An initial evaluation of SOCWA's current funding priorities will create a foundation for grant funding research and identification of feasible opportunities. Hazen will work closely with SOCWA to first develop an overall strategy to weigh the benefits and risks of all viable sources of grant funding and financing identified during the strategizing phase. This step will include analysis of the total program cost (e.g., including any federal cross cutter requirements), cashflow modeling, and comparing changes to rates under various funding scenarios. Understanding that SOCWA's goals – and funding opportunities – may shift over the course of the contract, this strategy will be revisited and revised, as needed, to remain a relevant guide.

2. **Inform CIP design decisions to maximize available funding sources and amounts**
   Hazen will use the outcomes of step 1 to inform any project design elements that will make a project or program more competitive for identified funding strategies. This step will also account for established application cycles of each grant program, and how they relate to existing or planned projects.

3. **Conform to all funding agency requirements**
   To ensure successful funding application efforts, Hazen will coordinate closely with SOCWA staff, our insight and knowledge of funding program "language," and our multidisciplinary staff to develop funding applications that fully integrate design, schedule, permitting, and stakeholder considerations.

4. **Secure funds by developing competitive proposals/grant applications**
   Based on our experience establishing relationships with funding agency staff (and existing knowledge of local, state, and federal programs), Hazen will work diligently to prepare successful grant applications that strike the balance between technical rigor and narrative building.

The discrete tasks we anticipate undertaking for this effort are described below.

Task 1 – Funding Strategy Plan Development

Hazen will identify potential funding opportunities through iBank, SRF, WIFI, DWR, the Bureau of Reclamation, FEMA and any additional programs such as those related to BIL. The funding strategy will evaluate the benefit of each feasible funding alternative while considering impacts on schedule and total project costs of additional State and Federal processes and compliance requirements. Consideration will be given to the benefit of combining or separating projects or groups of projects for funding strategy purposes. An implementation plan will be developed based upon the evaluation. This task includes:

- Conducting an initial meeting to establish projects goals, schedule requirements, and financial capability.
- Based upon input from SOCWA, developing a funding strategy that will provide a plan for securing state and federal funding that identifies each potential source, application requirements and deadlines, and a submittal schedule to maximize funds with the greatest benefit to SOCWA.
- Preparing a memorandum detailing the results of the analysis and presenting the information to SOCWA.
- Up to three meetings and one presentation of the funding strategy.

Task 2 - Funding Application & Grant Writing Services.

Hazen's proposal development services are built on the highest quality research, writing, and problem-solving skills. Hazen backs its program planning and design capacity with solid financial and budgeting skills, resulting in final products that communicate compelling visions and well-conceived budgets. Hazen organizes projects around agreed upon schedules with built-in milestones for conceptual, programmatic, and financial review and approval. Hazen's comprehensive proposal development sequence will involve the key steps listed below:

- Prepare a detailed proposal development checklist and work plan that: a) describes key proposal development activities such as document development, review, and feedback, b) outlines a timeline for completion, and c) identifies responsible parties.
- Ensure required system registrations such as Grants.gov and other submission platforms used by federal and state funders.
- Establish and schedule regular meetings with an application team that includes key Hazen and SOCWA staff. The first meeting of this Team will be a strategy session to review the funding opportunity, review and refine the work plan, and discuss the proposed approach to responding to proposal requirements.
- Develop a concept paper and concept budget in collaboration with relevant SOCWA staff. This step is particularly useful for projects involving multiple partners. Depending on the complexity and timeline of the individual grant proposal, this step may be abbreviated or skipped.
- Work with SOCWA staff to produce successive drafts of the project narrative, budget, attachments, and forms. Application attachments may include letters of support or commitment, memoranda of understanding or other partnership agreements, logical models, management plans, etc.

Task 3 – Agency Coordination and General Support

- Coordinate with identified funding agencies to solicit early buy-in and support of application materials.
- Perform follow-up activities including sharing submission confirmation and updating SOCWA with any follow-up items.
- Hazen is also available to provide more targeted proposal development services as desired or requested by SOCWA. For example, Hazen can assist with kickoff activities such as developing a work plan, checklist of application components, and a proposal narrative outline based on the

RFP guidance and/or review application drafts both for quality and technical completeness. This flexibility may help maximize SOCWA's return on investment in Hazen funding services.

Task 4 – Project Management

- Administrative duties and meetings to ensure project execution
- Monthly progress reports
- Invoicing and budget management

Estimated Fees

The attached table presents our estimated level-of-effort and fee to conduct the above tasks. The total not-to-exceed fee for the proposed scope of work is $60,140.

Estimated Schedule

Hazen estimates that we can complete the above scope of work within 4 months after receiving the Notice to Proceed from SOCWA.

We sincerely appreciate the opportunity to submit this proposal. If you should have any questions or wish to discuss our proposal, please contact me at DRJones@HazenandSawyer.com or (916) 769-8753. Thank you.

Sincerely,

Dave Jones, PE
Vice President

Enclosure

South Orange County Wastewater Authority	Funding Strategy Plan - Fee Estimate							
							Total	
	Project Director	Technical Advisors QA/QC	Project Manager	Admin. Support	**Total Hours**	**Labor**		
	Jones	Robertson	Hulette	Baruda				
	$325	$325	$280	$130				
							ODC	**Total**
TASK 1 - Funding Strategy Development								
1.1 Conduct project kick-off meeting	2	1	4	0	7	$ 2,095		$2,095
1.2 Identify potential funding opportunities	0	0	2	4	6	$ 1,080		$1,080
1.3 Conduct comparison of funding opportunities specific to project	1	1	5	0	7	$ 2,050		$2,050
1.4 Prepare memo summarizing comparison	1	1	4	2	8	$ 2,030		$2,030
1.5 Meet with SOCWA to review memo	2	0	4	0	6	$ 1,770		$1,770
1.6 Develop draft funding strategy	2	1	8	2	13	$ 3,475		$3,475
1.7 Prepare memo on funding strategy	1	1	4	2	8	$ 2,030		$2,030
1.8 Meet with SOCWA to discuss memo	2	0	4	0	6	$ 1,770		$1,770
1.9 Finalize funding strategy memo	2	1	5	2	10	$ 2,635		$2,635
SUBTOTAL TASK 1	**13**	**6**	**40**	**12**	**71**	**$ 18,935**	**$0**	**$18,935**
TASK 2 - Funding Application and Grant Writing Services	*(Estimate for per funding application/Final cost for each application to be approved via email prior to start of Task 2)*							
2.1 Prepare funding proposal development checklist and work plan	0	0	1	3	4	$ 670		$670
2.2 Confirm required system registrations	0	0	1	2	3	$ 400		$400
2.3 Conduct strategy session to refine work plan	2	2	6	2	12	$ 3,240		$3,240
2.4 Develop concept paper and budget	2	1	6	4	13	$ 3,175		$3,175
2.5 Produce successive drafts of funding application(s). Assume 4 drafts.	4	4	32	8	48	$ 12,600		$12,600
SUBTOTAL TASK 2	**8**	**7**	**46**	**19**	**80**	**$20,085**	**$0**	**$20,085**
TASK 3 - Agency Coordination and General Support								
3.1 Coordinate with funding agencies	0	0	4	0	4	$ 1,120		$1,120
3.2 Perform follow-up activities	1	1	2	1	5	$ 1,340		$1,340
SUBTOTAL TASK 3	**1**	**1**	**6**	**1**	**9**	**$ 2,460**	**$ -**	**$ 2,460**
TASK 9 - Meetings and Project Management								
1.1 Administrative Duties	0	0	12	12	24	$ 4,920		$4,920
1.2 Monthly Progress Reports (assume 3 reports)	2	0	6	6	14	$ 3,110		$3,110
1.3 Project Progress Meetings (assume 4 meetings)	4	0	8	4	16	$ 4,060	$1,000	$5,060
1.4 Budget and Schedule Management	2	0	12	12	26	$ 5,570		$5,570
SUBTOTAL TASK 9	**8**	**0**	**38**	**34**	**80**	**$ 17,660**	**$1,000**	**$18,660**
TOTAL	**30**	**14**	**130**	**66**	**240**	**$ 59,140**	**$ 1,000**	**$ 60,140**

Agenda Item 12

Engineering Committee Meeting

Meeting Date: February 9, 2023

TO: Engineering Committee

FROM: David Baranowski, Director of Engineering

SUBJECT: Contract Award for Coastal Treatment Plant (CTP) Drainage Pump Station Conceptual Design [Project Committee 15]

Overview

The Drainage Pump Station (DPS) at the Coastal Treatment Plant was planned to be replaced by a new station as part of the 2019 Facility Improvements Project. However, during construction, the DPS replacement was removed from the construction contract when it was discovered that additional drains were connected to the DPS, not shown in the facility's records.

The DPS was last modified in 1987, and the equipment has reached the end of its useful life. The new project includes implementing a number of lessons learned, including additional condition assessments/inspections and additional potholing. At this time, it is anticipated that a full station rehabilitation would include new pumps, piping, electrical equipment, and structural modifications.

The scope of work for this contract includes the following:

- Condition assessment of the wet well, including concrete cores and pH testing to determine the extent of concrete rehabilitation needed.
- Evaluations of various facility features including pump configuration, discharge piping location, electrical equipment, code compliance, containment, and construction sequencing.
- Reviewing the most recent constructions in the area, including the construction photos from South Coast Water District's (SCWD) force main replacement project that shows what is buried near the DPS.
- Preliminary designs and layouts.
- Cost estimate.
- Workshops, memos, and reports.

Proposals

SOCWA requested proposals from the following firms to provide a condition assessment of the existing facility and provide a preliminary design for a station rehabilitation.

- Black and Veatch
- Brown and Caldwell
- Hazen and Sawyer
- Tetra Tech

One proposal was received and is summarized below in Table 1. Staff reached out to the firms that did not submit a proposal. It was noted that the firms' workloads did not allow them to submit a proposal at this time.

Table 1 – Summary of Proposals

Firm	**Tetra Tech**
Project Manager	Tom Epperson
Total Labor Hours	1,445
Total Cost	$284,000

The proposed fee was greater than the expected budget of $175,000. Staff met with Tetra Tech to discuss reasons for the fee and the primary reasons were the effort in the condition assessment task and the preliminary design task. Due to some of the project challenges, especially the electrical system, Tetra Tech's proposal reflects a 30% design effort. Staff's expectation for the project was only a conceptual level design to assess feasibility before proceeding with detailed design.

Staff requested a revised fee proposal from Tetra Tech for only the conceptual level tasks. The revised fee is $176,000. Tetra Tech removed the Preliminary Design task (Task 6), Preliminary Design Report (Task 8), and reduced the effort for Task Nos. 1 (Project Management), and 7 (Cost Estimate). Removing these tasks also reduces the project schedule by approximately 2 months. Staff believes the conceptual level tasks and fee better align with their expectations for the project.

Cost Allocation

Cost allocations for the proposed fee and revised fee are shown in Table 2.

Table 2 – Cost allocation by member agency

Agency	**Drainage Pump Station Preliminary Design**	**Drainage Pump Station Conceptual Design**
	3522AL-000	3522AL-000
City of Laguna Beach	$107,665.67	$66,722.39
Emerald Bay Service District	$8,477.61	$5,253.73
Moulton Niguel Water District	$83,080.60	$51,486.57
South Coast Water District	$84,776.12	$52,537.31
Total	$284,000.00	$176,000.00

Table 3 – Available budget for 3522AL-000

Existing Funds	**FY 22/23 Budget**	**Total Available Funds**	**Additional Budget Needed for Preliminary Design**
$49,200	$125,000	$174,200	$109,800

If necessary, additional budget will be included in the next fiscal year. The available funds will cover the project effort through the rest of this fiscal year.

Recommended Action: Staff recommends that the Engineering Committee recommend that the PC 15 Board of Directors award the contract to Tetra Tech in the amount of $176,000 for the Coastal Treatment Plant Drainage Pump Station Conceptual Design.

TETRA TECH

January 26, 2023

Jeanette Cotinola, Procurement/Contracts Manager
South Orange County Wastewater Authority
34156 Del Obispo Street
Dana Point, CA 92629

Reference: Proposal to Provide Engineering Services for the Coastal Treatment Plant Drainage Pump Station Rehabilitation Preliminary Design Project

Dear Ms. Cotinola,

Tetra Tech is pleased to submit our proposal for the Coastal Treatment Plant (CTP) Drainage Pump Station (DPS) Rehabilitation Preliminary Design project. We value the relationship we have built with the South Orange County Wastewater Authority (SOCWA) and we desire to once again provide SOCWA with the same diligent, high-quality, and responsive service that you expect and deserve. Tetra Tech has assembled an outstanding team that can provide the following distinct advantages for this project:

- **Extensive Sewer Lift Station Design Experience:** During the last twenty (20) years, members of our project team have been involved in the **design and/or construction of more than twenty (20) sewer lift station projects** for various Southern California agencies including several for your member agencies.
- **Submersible Pump Experience:** Our project team has recent design experience with sewage and drainage submersible pumps within wet wells. This experience includes three separate facilities for IRWD's Peters Canyon Channel Water Capture Project, MNWD's North Aliso Lift Station Reconstruction, ETWD's Oso Lift Station, and a sewage submersible wet well package station for OCWD's Burris Pump Station.
- **SOCWA Experience:** Tetra Tech has been working with SOCWA on multiple projects since 2004. CTP projects include Conceptual Evaluation of DPS; Storm Water Control Study; Miscellaneous Stormwater Compliance Upgrades; North Side Drainage Evaluation; and the Design/Build Export Sludge Equalization Basin.
- **Local In-House, Structural, Electrical and Control Capabilities:** Tetra Tech has in-house local, registered structural, electrical and control engineers with vast lift station design experience.
- **Dedication to the District:** Our approach will include a "teamwork and partnering" relationship. We will do this by exceeding your expectations through innovative and smart solutions, attention to detail, and our understanding of your design processes and requirements.

Our proposal will remain in full force and effect for one-hundred and twenty (120) days after the above submittal date. Thank you for giving us the opportunity to submit our proposal, we look forward to working with SOCWA. Should you require additional information or have any questions, please contact me at 949/809-5156 or via email at tom.epperson@tetratech.com.

Sincerely,

Tom Epperson, PE
Vice President

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FIRM OVERVIEW

Tetra Tech's goal is to provide the necessary expertise and resources to deliver projects on time, within budget, and in compliance with the design and construction standards of our clients and approval agencies. Leveraging our national presence, multi-disciplinary team, and client focused service, we apply lessons learned from our vast experience to each and every challenge. Clients benefit from this approach by receiving high-quality service, innovative designs, and functional solutions that are responsive to their needs and often exceed their expectations. A cornerstone of our success is our client-focused service, staff qualifications, firm commitment, and desire to successfully complete each assignment to the satisfaction of our clients.

Tetra Tech's reputation as a leader in consulting engineering is validated by Top 10 ratings annually by *Engineering-News Record*.

Tetra Tech is a leader in water/wastewater/recycled water facility design and consistently ranks among the top engineering firms annually according to the *Engineering News-Record*, a highly regarded news magazine. **In 2022, Tetra Tech was rated 1st in the "Water" category, 2nd in the "Sewer/Waste" category, and 4th among the "Top 500 design firms" nationwide!**

This project will be managed from our Irvine office located at:

Company Legal Name: Tetra Tech, Inc.
Address: 17885 Von Karman Avenue, Suite 500
Irvine, CA 92614
Project Manager: Tom Epperson, PE
Telephone: 949/809-5156
E-Mail: tom.epperson@tetratech.com

WHY TETRA TECH

Tetra Tech has assembled an outstanding team that can provide the following distinct advantages for this project:

- **Extensive Sewer Lift Station Design Experience.** During the last twenty (20) years, members of our project team have been involved in the **design and/or construction of more than twenty (20) sewer lift station projects** for various Southern California agencies including several for your member agencies.
- **Submersible Pump Experience.** Our project team has recent design experience with sewage and drainage submersible pumps within wet wells. This experience includes three separate facilities for IRWD's Peters Canyon Channel Water Capture Project, MNWD's North Aliso Lift Station Reconstruction, ETWD's Oso Lift Station, and a sewage submersible wet well package station for OCWD's Burris Pump Station.
- **SOCWA Experience.** Tetra Tech has been working with SOCWA on multiple projects since 2004. CTP projects include Conceptual Evaluation of DPS; Storm Water Control Study; Miscellaneous Stormwater Compliance Upgrades; North Side Drainage Evaluation; and the Design/Build Export Sludge Equalization Basin.
- **Local In-House, Structural, Electrical and Control Capabilities.** Tetra Tech has in-house local, registered structural, electrical and control engineers with vast lift station design experience.
- **Dedication to the District.** Our approach will include a "teamwork and partnering" relationship. We will do this by exceeding your expectations through innovative and smart solutions, attention to detail, and our understanding of your design processes and requirements.

Our extensive experience with similar projects will ensure that SOCWA will receive a high level of service. We have assigned a team that are currently or recently worked on similar lift station projects: MNWD (North Aliso Lift Station Reconstruction) and ETWD's Oso Lift Station. This previous experience will help our team be cost effective and successful on this project.

UNDERSTANDING OF PROJECT

The Drainage Pump Station (DPS) was originally built in 1967 and modified in 1987. The original purpose of the DPS was to handle all incoming flows from the north influent sewer. The DPS is located adjacent to the facility property line, next to the Aliso Creek, and is potentially within the flood zone of the creek.

Currently, there are no flows from the north influent sewer, but the DPS still handles all drainage flows at the facility. Flows include storm water, process return flows (tank drains, AWT backwash, etc.) and building drains. Originally, the DPS discharged into an influent force main just before it entered the headworks facility. In 2019, the influent force main was rehabilitated and the DPS discharge location was changed to the primary influent channel.

The pump station is constructed with a wet-pit/dry-pit configuration. There are two 50 HP dry-pit submersible pumps, each with a capacity of 2,300 gallons per minute at 54 feet of total dynamic head, and one submersible pump, with a capacity of 350 gallons per minute at 30 feet of total dynamic head. The wet well has a capacity of roughly 9,000 gallons.

No major upgrades have occurred since 1987 and the DPS is now in need of rehabilitation and modifications to ensure proper and effective operation. Over the last 10 years, the DPS has been the focus of the following evaluations:

- 2013 Replacement Alternatives Evaluation
- 2019 Replacement Design Memorandum and Design Drawings (not constructed)
- 2020 Flood Protection Evaluation

The purpose of this project is to rehabilitate the DPS by replacing aging equipment, upgrading the structure, and bringting it up to code, especially NFPA 820. The goals for the engineering services for the DPS Rehabilitation are as follows:

1. Perform a wet well condition assessment to determine the type of rehabilitation needed to the structure and interior components.
2. Evaluate options for a new discharge location. The current location causes issues with treatment during periods of high usage.
3. Design a facility that meets current functional needs and code requirements (e.g., NFPA).
4. Evaluate construction feasibility, bypassing and sequencing options to minimize disruption to the DPS and the treatment plant.

PROJECT APPROACH

Tetra Tech fully understands the importance of your project. We are offering an outstanding team, which combines the experience, depth, and understanding needed for the successful delivery of this project. Our core principles establish how we plan to work together with SOCWA to successfully complete this project:

- **Service.** Tetra Tech puts its clients first. We listen to better understand our clients' needs and deliver smart, cost-effective solutions that meet those needs. Our philosophy is to "Do it Right."
- **Value.** Tetra Tech takes on our clients' problems as if they were our own. We develop and implement real-world solutions that are cost-effective, efficient, and practical.
- **Excellence.** Tetra Tech brings superior technical capability, disciplined project management, and excellence in safety and quality to all of our work.
- **Opportunity.** Our people are our number one asset. Our workforce is diverse and includes leading experts in our fields. Our entrepreneurial nature and commitment to success provides challenges and opportunities.

We value the relationship that has been established with SOCWA and look forward to continuing and further developing this association in the future.

SEWER LIFT STATION EXPERIENCE

The following is a summary of the various lift station projects that members of our Project Team have designed during the last twenty (20) years.

New Lift Stations

City of Santa Ana San Lorenzo Lift Station: replaced an existing submersible lift station with a masonry building containing a separate electrical/control room, dry pit housing the pumps/motors, odor control facilities, emergency bypass facility, meter, grinders, and emergency generator.

El Toro Water District Oso Lift Station: while maintaining existing lift station in service, constructed a new 10-foot diameter wet well containing two submersible pumps, valve vault with check valves and meter, emergency bypass connection, new electrical/control equipment, backfilled existing dry pit with slurry and located emergency generator on top of structure, and emergency overflow connection to Moulton Niguel Water District sewer within El Toro Road.

NAVFAC Package 2 (Camp Pendleton) Replacement Lift Station: consisted of a new wet well, submersible pumps, valve vault, and emergency generator. The existing lift station must remain in operation, without interruption, throughout the construction of the new lift station.

NAVFAC Coronado Sewer Pump Station Replacement (Coronado): replaced three (3) existing submersible pumps with new above ground packaged pumping station, including adding a back-up natural gas emergency pump, bypass pumping facilities, and re-coating of the existing wet well.

Irvine Ranch Water District Coastal Ridge Lift Station: new lift station with adjacent wet well, dry pit, separate electrical/control room, bypass piping, and emergency generator. The dry pit was located below ground due to the aesthetics of the surrounding residences.

Upgrade Existing Lift Stations

MNWD Regional Lift Station Enhancements: replaced one of the pumps with a smaller pump to handle low flows, constructed additional wet well capacity and added an on-site standby pump.

NAVFAC Package 1 (Camp Pendleton) Upgrades: upgraded nine (9) existing lift stations including the addition of emergency generators, added new grinders, improve SCADA capabilities, and site safety improvements.

NAVFAC Package 2 (Camp Pendleton) Upgrades: upgraded two (2) existing lift stations including the addition of emergency generators, improved SCADA capabilities, and site safety improvements.

Long Beach Water Department Pump/Motor/Valves Upgrades: designed the replacement of pumps/motors, valves, and added a bypass connection at the S-25 Lift Station.

Odor Control Upgrades: added oxygenation odor control facilities at Lower Salada and Upper Salada Lift Stations for MNWD.

Pump/Motor/Valves Upgrades: replaced Fairbanks Morse pumps/motors with Cornell pumps/motors as well as replaced existing check valves, gate valves, and added a meter at Lower Salada, Upper Salada, Del Avion, Regional and Aliso Creek Lift Stations for MNWD.

Expand Wet Well Capacity: the wet well capacity at Upper Salada was increased by expanding the existing wet well structure. At Upper Boundary Oak and at Aliso Creek Lift Station, the wet well capacity was expanded by constructing new buried fiber reinforced plastic tanks.

SUBMERSIBLE PUMP EXPERIENCE

The following is a summary of several recent projects where Tetra Tech's Project Team has designed wet well facilities with submersible pumps:

ETWD Oso Lift Station Improvements: constructed new 10-foot diameter wet well containing two submersible pumps, valve vault with check valves and meter, and new electrical and control equipment.

IRWD's Peters Canyon Channel Water Capture: three diversion structures, each with 6 foot ID precast concrete wet well (20 to 25 feet deep); dual submersible pumps with slide rail disconnect assemblies; valve vault (check and gate valves); meter vault; and electrical and control equipment.

OCWD's Burris Pump Station: included a packaged lift station including wet well, dual submersible pumps with guide rail system, valve vault and electric/control equipment.

SIMILAR LIFT STATION PROJECTS

During the last twenty (20) years, members of our project team have been involved in the design and/or construction of more than twenty (20) sewer lift station projects. The following is a summary of these lift station projects:

Client	Project Name	Design Complete
Moulton Niguel Water District	North Aliso Lift Station Reconstruction (Final Design)	Under Design
Moulton Niguel Water District	North Aliso Lift Station Evaluation (Preliminary Design)	2022
City of Santa Ana	San Lorenzo Lift Station	Under Construction
El Toro Water District	Oso Lift Station Improvements	2021
NAVFAC Southwest	Camp Pendleton Sewer Lift Station Package #1	2014
NAVFAC Southwest	Camp Pendleton Sewer Lift Station Package #2	2014
NAVFAC Southwest	Naval Base Coronado Sewer Lift Station	2013
Moulton Niguel Water District	Lower and Upper Salada Lift Station Oxygenation Upgrades	2008/2006/2000
South Coast Water District	Sewer Lift Station Evaluation	2007
City of San Clemente	Cypress Shores Lift Station	2007
City of San Clemente	La Pata Lift Station	2007
Moulton Niguel Water District	Del Avion Lift Station Pump/Motor Replacement	2006
South Coast Water District	Blue Lagoon Lift Station	2006
Long Beach Water Department	S-25 Lift Station Modifications	2004
Moulton Niguel Water District	Regional Lift Station Pump/Motor Replacement	2004/2000
Long Beach Water Department	S-25 Lift Station Modifications	2004
Moulton Niguel Water District	Upper Boundary Oak Lift Station Expansion	2003
Moulton Niguel Water District	Aliso Creek Lift Station Upgrades	2002
Irvine Ranch Water District	Coastal Ridge Lift Station	2002

In addition, our Project Team recently completed the design of the Peters Canyon Channel Water Capture and Reuse Pipeline for Irvine Ranch Water District. This project included three (3) separate diversion structures, with each diversion facility including a wet well, submersible pumps, valve vault and meter vaults. The construction was just completed and the lift stations have been placed into service.

UNDERSTANDING OF ISSUES

Tetra Tech has an excellent understanding of the project **due to our previous work on the 2020 Flood Protection Evaluation**. For that project, our Team already reviewed the 2013 Replacement Alternatives Evaluation, 2019 Replacement Design Memorandum and Design Drawings, and the original construction plans as well as performed an extensive field visit.

PROJECT MANAGEMENT

Over the years, Tetra Tech has established well defined, rigorous procedures for project management. These techniques have been developed and refined and have contributed to our success and reputation. The keys to our project management system are communications, project planning, monitoring, and quality assurance.

The Tetra Tech team's goal is to keep SOCWA's staff "in the loop" from Day One of the project. Communication tools include the formal progress reports afforded through our project management system and an informal give-and-take approach starting with **Tom Epperson, PE, our Project Manager,** and extending to every member of the Tetra Tech team.

At the project's outset, the chain of command and appropriate communication methods will be agreed upon and can be as formal or as informal as SOCWA desires. We will use the entire communication spectrum. We will conduct formal meetings with agenda and typewritten notes, and we will use informal meetings with notes to file. We will also have documentation of telephone communications, with notes to file or letters of understanding as appropriate follow-up.

We are proposing to use e-mail to keep SOCWA aware of the status of the project. Every two weeks, Tetra Tech will prepare a brief (one or two paragraphs or bullet items) e-mail summarizing the following:

- activities completed in the previous two weeks
- activities planned for the upcoming weeks
- any critical decisions that need to be made
- schedule of upcoming events/meetings

In addition, each month we will prepare a project status memorandum containing the following: summary of project schedule; description of key issues/concerns which have surfaced along with proposed options and solutions; and a project status summary report showing current schedule and budget.

SCOPE OF SERVICES

The scope of services for this project consists of the following tasks.

Task 1: Project Management and Progress Meetings

Tetra Tech will include in the scope of work sufficient time and budget to administer/manage the services provided. Project management/administration shall include, but not be limited to:

- Project kick-off meeting conducted in person at CTP.
- Conduct virtual monthly progress meetings with SOCWA staff. The primary purpose of the meetings is to review schedule, task progress, and outstanding action items. Tetra Tech will prepare the agenda, the action item list, and the decision log for each meeting. For this proposal, we have assumed a maximum of 9 progress meetings.
- Prepare and maintain a project schedule.
- Prepare bi-weekly status e-mails and monthly invoicing.

Task 2: Data Collection and Document Review

SOCWA will provide available record drawings and previous studies involving the DPS. Drawings do not exist for all modifications to the DPS. SOCWA will also provide operating data for the DPS and treatment plan such as wet well level and pump run times. Tetra Tech will perform two site visits to verify drawings and existing conditions.

Task 3: Wet Well Condition Assessment

Tetra Tech will have V&A (subconsultant to Tetra Tech) perform a condition assessment of the inside of the wet well to assess the integrity of the structure, condition of surfaces and coatings, and look for issues that need to be remedied during the rehabilitation. The work will include concrete core drilling, chipping, pH testing and associated lab analysis. The assessment will be able to occur during normal business hours. SOCWA will bypass flows to the station for a period of up to 4 hours to allow for the assessment. The wet well is considered a confined space and only properly trained individuals with proper safety equipment and fall protection may enter. The only access to the wet well is through a hatch on the top of the structure (there are no stairs). The following is a summary of the work to be performed by V&A:

a. Duration of V&A's scope of work is three months.

b. Prepare a Health and Safety Work Plan.

c. V&A will subcontract with Jamison Engineering Contractors (JEC) to provide confined space entry support and concrete coring and repair of concrete core holes.

d. V&A will use the following methods to perform the condition assessment of the wet well:

   - Visual Assessment (documented with digital photographs and field notes) and the condition will be rated using the VANDA® Concrete Condition Index (Table 1-1 and 1-2).
   - Concrete Sounding on accessible concrete surfaces.
   - Concrete Penetration Testing at two locations within the structure.
   - Concrete Surface pH Testing, at up to two will be taken within the structure.
   - Surface Penetrating Radar (SPR) will be used to measure the depth of concrete cover, identify placement of reinforcing steel and to detect coarse voids and defects. One SPR scan (3-feet wide by 3-feet tall) will be performed within the structure.

- Ultrasonic Thickness Testing at accessible metallic surfaces. Up to 8 measurements will be performed within the structure.
- Dry Film Thickness (DFT) Testing will be performed on coated metallic surfaces. Up to 8 DFT measurements will be taken within the structure.
- Concrete Core Sampling and Testing consisting of two (1 pair) of core samples from the wet well. JEC will patch the core holes with a concrete repair product. One core sample will be laboratory tested by Voss Laboratories for compressive strength per ASTM C—42. One core sample will be used by Voss Laboratories to take four ½ - inch incremental chloride, carbonation and pH tests.

e. V&A will use the following methods to perform the condition assessment of the influent force main:

- Visual Assessment of the metallic surfaces (documented with digital photographs and field notes) and the condition will be rated using the VANDA® Concrete Condition Index (Table 1-2).
- Ultrasonic Thickness Testing at accessible metallic surfaces. Up to 16 measurements will be performed on the force main.
- Dry Film Thickness Testing will be performed on coated metallic surfaces. Up to 20 DFT measurements will be taken on the force main.

f. V&A will prepare a Condition Assessment Report that describes the field assessment methods, activities, results, conclusions, potential causes of degradation of materials, and recommendation for repair, rehabilitation, and/or replacement.

Task 4: Preliminary Evaluations

Tetra Tech will evaluate and analyze the following:

a. ***Wet Well Rehabilitation Plan:*** based on the finding of Task 3, Tetra Tech will recommend a plan to rehabilitate the wet well.

b. ***Compliance Evaluation:*** The existing building is not physically separated from the wet well and is not in compliance with NFPA 820. Tetra Tech will conduct an analysis of NFPA and any other building codes that might need to be considered as part of the rehabilitation. Tetra Tech will summarize the necessary modifications to bring the DPS into compliance. One option might include reconstructing the top floor of the DPS building. Based on our previous investigation, the whole electrical room may need to be relocated.

c. ***Containment Wall Plan:*** Tetra Tech will use our previous 2021 Memorandum "Conceptual Evaluation for the Protection of the CTP Drainage Pump Station" to determine the basic requirements for the wall to be constructed and to properly protect the facility from a flood. This will include determining the height, size of footing, wall material, and shoring/excavation to construct the wall. Tetra Tech will determine the best method of handling the water that might get trapped in the containment area. Tetra Tech will review any permitting or inter-agency coordination that will need to occur but this does not include any actual coordination, just research into potential requirements.

d. ***Pump Alternatives:*** Tetra tech will evaluate alternative pump size, types, configurations, and operational/control strategies to meet the needs of the station. This will include considering the maximum flow (including potential influent flow from the north sewer), maximum flow (not including flow from the north sewer), typical daily flow, and the minimum flow scenarios.

e. ***Discharge Piping Modifications:*** Tetra Tech will evaluate different options to relocate or modify the discharge piping to better diffuse flow. The current discharge location sends too much flow to one primary clarifier.

f. ***Influent Force Main Condition Assessment:*** This work was included within the above Task 3 as it will be done by V&A. The assessment will be performed from the chemical injection manhole and as the pipe enters the headworks building. The condition of the pipe and sample port will be included within V&A's Condition Assessment Report.

g. ***Bypassing and Construction Sequencing:*** The DPS cannot be taken out of service for extended periods of time. Tetra Tech will evaluate options to bypass flows and/or sequence the construction to minimize impacts to the plant. This will include evaluation of relocating the DPS to alternative site.

Task 5: Preliminary Evaluations Memo and Workshop

Tetra Tech will provide a draft technical memorandum documenting the findings and conclusions of the Preliminary Evaluations Tasks. Tetra Tech will conduct a workshop at the Coastal Treatment Plant to present the findings and recommendations from the draft memo. No final memo is required. Comments will be incorporated into the Preliminary Design Report summarized in Task 8 below.

Task 6: Conceptual Design and Layout

Based on the feedback from SOCWA from the previous tasks, Tetra Tech will prepare a conceptual design of a Drainage Pump Station Rehabilitation. This includes a layout and basic sections that show the conceptual design of the DPS, the major equipment, changes to the structure or building, changes to the electrical and instrumentation systems, and other significant changes.

Due to the option of potentially having to relocate the whole electrical room, we are anticipating performing the following electrical scope of work:

- Perform preliminary electrical design and contact suppliers for equipment replacement
- Generate the following electrical sheets to 30% completion
  Legend Sheet
  Site Plan
  Single Line Diagram
  I&C Sheet
  Detail Sheet
  Electrical Room Lighting Upgrade
  Equipment Elevation (switchboard, MCC, control panel)
  Pump control Schematic

Task 7: Cost Estimate

Tetra Tech will estimate the construction cost for the proposed changes. The Class 5 cost estimate will include cost markups, construction contingency, and estimate for the design feet, an estimate for the engineering services during construction fee, and an estimate for construction management. The cost estimate shall be submitted along with the preliminary design in the previous task.

Task 8: Preliminary Design Report

Tetra Tech will combine the work from all previous tasks into a draft Preliminary Design Report. SOCWA will review and provide comments on the draft report. Tetra Tech will incorporate comments and produce a final Preliminary Design Report. No printed copies of the draft or final report are required.

PROJECT TEAM

Tetra Tech has a depth of resources for staffing this project with experienced and qualified personnel. The following team has had extensive experience working on sewage/drainage lift stations. The following paragraphs provide a brief summary of the qualifications of our key staff. Brief resumes are included within the Appendix.

Project Manager – Mr. Tom Epperson, PE will be the Project Manager and will provide project oversight and ensure that the necessary resources are committed to the project to get the job done. Mr. Epperson will apply more than 41 years of experience which includes a myriad of projects which required finding solutions to complex issues within wastewater facilities.

Assistant Project Manager – Neha Gajjar, PE will be the Assistant Project Manager and will provide support to Mr. Epperson with project oversight. Ms. Gajjar has over 30 years of experience in water and wastewater facilities design and played a major role on the 2021 Memorandum "Conceptual Evaluation for the Projection of the CTP Drainage Pump Station".

Project Engineer – Matt Vera, PE will be the lead design engineer on this project. He is currently playing the same role on MNWD's North Aliso Lift Station Reconstruction project.

Structural Engineer – Eric Yuen, PE, SE will be the lead structural engineer on this project. He is currently playing the same role on MNWD's North Aliso Lift Station Reconstruction project.

Electrical/Controls – Mazen Kassar, PE will be the lead electrical/controls engineer on this project. He is currently playing the same role on MNWD's North Aliso Lift Station Reconstruction project.

Subconsultant: To provide the services requested in the RFP, Tetra Tech has added V&A as our Condition Assessment Consultant to our project team. Tetra Tech will be responsible for coordinating and integrating their efforts for the required condition assessment of the wet well and influent force main. V&A will serve SOCWA as Subconsultants to Tetra Tech.

SATISFIED CLIENTS

Client satisfaction is a major objective for Tetra Tech. This commitment to our clients has earned us the privilege of providing continuous service to several of our below listed references. We believe that our clients will attest to our technical experience and responsive staff, and we encourage you to contact our references to verify our past performance firsthand.

City of Santa Ana	El Toro Water District	Orange County Water District	Irvine Ranch Water District	Moulton Niguel Water District
Rudy Rosas, PE 714/647-3379 rrosas@santa-ana.org 2 Lift Stations	**Dennis Cafferty, PE** 949/837-7050 dcafferty@etwd.com Oso Lift Station and Recycled Water Expansion	**Mike Markus, PE** 714/378-3305 mmarkus@ocwd.com 2 Pump Stations and Well Injection	**Richard Mori, PE** 949/453-5571 Mori@irwd.com 2 Lift Stations and 4 Diversion Structures	**Todd Dmytryshyn** 949/425-3549 Multiple Lift Stations

SCHEDULE

Tetra Tech has reviewed current and planned workload schedules for our project team, and are available to immediately begin work on this project. The following is a summary of our significant milestones:

Milestone	Date (assuming NTP by Mid-March 2023)
Draft Condition Assessment Report	End of June 2023
Draft Technical Memo (Evaluations)	Mid-July 2023
Draft PDR	Mid-August 2023
Final PDR	Mid-September 2023

PRICING

Attached Fee Spreadsheet presents the estimate of hours and budget to complete the work in accordance with the Scope of Services provided within the RFP and within this proposal. The budget includes all costs required to complete the work requested by the RFP. We have also attached our Hourly Rate Schedule for 2023.

MISCELLANEOUS ITEMS

Tetra Tech certifies that it is not aware of any actual or potential conflict of interest that exists or may arise by executing the contract or performing the work that is the subject of this proposal.

Attached to the proposal is signed Attachment B (Non-Collusion Affidavit).

Tetra Tech certifies that it is willing and able to obtain all insurance required by the form contract included as Attachment C.

Tetra Tech certifies that it has conducted a reasonable and diligent inquiry concerning the minimum and/or prevailing wages required to be paid in connection with the performance of the work for this proposal.

Tetra Tech certifies that the proposed pricing includes sufficient funds to allow Tetra Tech to comply with all applicable local, state, and federal laws or regulations governing the labor or services to be provided.

Tetra Tech acknowledges and agrees with all terms and conditions stated in the RFP and certifies that all information provided in connection with our proposal is true, complete and correct.

Price Proposal

CTP DPS Rehabilitation Preliminary Design

Submitted to: South Orange County Wastewater Authority
Attn: Jeanette Cotinola, Procurement/Contracts Manager

Contract Type: T&M

Price Summary / Totals	
Task Pricing Totals	284,000
Specify Add'l Fees on Setup	0
Technology Use Fee	
Total Price	**284,000**

Project Phases / Tasks	Total Labor Hrs	Program Manager (Tom Epperson)	Project Manager 2 (Neha Gajjar)	Project Engineer 2 (Matt Vera)	Engineer 3 (Jamie McEyea)	Engineer 2 (Samuel Ortiz)	Sr Project Administrator (Deana Escamilla)	Sr Project Manager (Mazen Kassar)	Project Engineer 2 (Doug Seaman)	Engineer 2 (Johnson Le)	Project Manager 1 (Eric Yuen)	Project Engineer 1 (Jose Quiroz)	Sr CAD Designer 2 (Eric Hutchins)	Senior Project Manager (Senior Project Manager)	Project Manager (Project Manager)	Associate Engineer (Associate Engineer)	Graduate Engineer (Graduate Engineer)	Labor Rate Esc.	Labor	ODCs	Task Pricing Totals
Bill Rate >		350.00	280.00	180.00	130.00	115.00	135.00	305.00	180.00	115.00	230.00	160.00	145.00	322.00	302.00	225.00	184.00				
Proj Area >		Civil/Mechanical	Project Management	Civil/Mechanical	Civil/Mechanical	Civil/Mechanical	Civil/Mechanical	Electrical/Controls	Electrical/Controls	Electrical/Controls	Structural	Structural	Structural	V&A	V&A	V&A	V&A				
	1,445	60	60	200	260	170	8	100	156	136	18	54	16	16	65	72	54	**0.00%**	268,468	15,532	**284,000**
Task 1: Project Management and Progress Meetings	**108**	**18**	**34**	**18**	**6**			**8**						**8**	**8**	**8**			**29,072**	**128**	**29,200**
PM (6 months)	18	6	12																5,460		5,460
Meetings (Kickoff and 9 progress meetings)	66	10	14	10				8						8	8	8			18,452	128	18,580
Project Schedule	8			2	6														1,140		1,140
Bi-weekly status e-mails/monthly invoice (12/6)	16	2	8	6															4,020		4,020
Task 2: Data Collection and Document Review	**112**	**4**		**20**	**24**	**16**		**12**	**20**	**16**									**19,060**	**140**	**19,200**
Document and operating data review	44	4		12	12	8		4	4										7,980		7,980
Two site visits	68			8	12	8		8	16	16									11,080	140	11,220
Task 3: Wet Well Condition Assessment	**183**													**8**	**57**	**64**	**54**		**44,126**	**14,774**	**58,900**
Health & Safety Plan	35													1	13	21			8,973		8,973
Wet Well Condition Assessment	41													2	13	13	13		9,887	14,774	24,661
Influent Force Main Condition Assessment	40													2	13		25		9,170		9,170
Condition Assessment Report	67													3	18	30	16		16,096		16,096
Task 4: Preliminary Evaluations	**290**	**10**	**4**	**56**	**84**	**48**		**24**	**24**	**8**	**8**	**24**							**49,380**	**120**	**49,500**
Wet Well Rehabilitation Plan	29	1		4	8						4	12							4,950		4,950
Compliance Evaluation (NFPA 820)	65	1		8				24	24	8									14,350	44	14,394
Containment Wall Plan	61	1	4	8	16	16					4	12							9,670		9,670
Pump Alternatives	21	1		8	12														3,350		3,350
Discharge Piping Modifications	25	1		8	8	8													3,750		3,750
Influent Force Main Condition Assessment Plan	13	1		4	8														2,110		2,110
Bypassing and Construction Sequencing	34	2		8	16	8													5,140	34	5,174
Relocating BPS to Alternative Site	42	2		8	16	16													6,060	42	6,102
Task 5: Preliminary Evaluations Memo and Workshop	**116**	**6**	**12**	**20**	**8**	**8**		**20**	**24**	**8**	**2**	**8**							**24,100**	**100**	**24,200**
Preliminary Evaluation Memo	102	4	8	16	8	8		16	24	8	2	8							20,340		20,340
Workshop	14	2	4	4				4											3,760	100	3,860
Task 6: Conceptual Design and Layout	**434**	**8**		**52**	**96**	**72**		**24**	**64**	**88**	**2**	**12**	**16**						**66,580**	**20**	**66,600**
Conceptual Design of DPS: layout	37	1		8	16	12													5,250		5,250
Conceptual Design of DPS: Sections	21	1		4	8	8													3,030		3,030
Recommended Siting of DPS	33	1		8	12	12													4,730		4,730
Containment Wall Plan and Details	41	1		8	16	16													5,710		5,710
Site Drainage	41	1		8	16	16													5,710		5,710
Bypass and Sequence Plan	29	1		8	12	8													4,270	20	4,290
Major Equipment	58	2		8	16			8	16	8									10,460		10,460
Building Upgrades	22										2	8	12						3,480		3,480
Structural Details - wall, sumps, etc.	8											4	4						1,220		1,220
Electrical Sheets to 30% level (8 sheets)	144							16	48	80									22,720		22,720
Task 7: Cost Estimate	**68**	**8**	**4**	**12**	**12**	**8**		**4**	**8**	**8**	**2**	**2**							**12,920**	**80**	**13,000**
Construction Cost Estimate	56	4		8	12	8		4	8	8	2	2							9,680	80	9,760
Design Fee/Construction Engineering/CM	12	4	4	4															3,240		3,240
Task 8: Preliminary Design Report	**134**	**6**	**6**	**22**	**30**	**18**	**8**	**8**	**16**	**8**	**4**	**8**							**23,230**	**170**	**23,400**
Preliminary Design Report	116	6	6	18	22	14	6	8	16	8	4	8							20,740		20,740
Processing of PDR	18			4	8	4	2												2,490	170	2,660
Totals	**1,445**	**60**	**60**	**200**	**260**	**170**	**8**	**100**	**156**	**136**	**18**	**54**	**16**	**16**	**65**	**72**	**54**	**0.00%**	**268,468**	**15,532**	**284,000**

TETRA TECH

2023
HOURLY CHARGE RATE AND EXPENSE REIMBURSEMENT SCHEDULE

Project Management	
Project Manager 1	$230.00
Project Manager 2	$280.00
Sr Project Manager	$305.00
Program Manager	$350.00
Principal in Charge	$350.00
Engineers	
Engineering Technician	$80.00
Engineer 1	$105.00
Engineer 2	$115.00
Engineer 3	$130.00
Project Engineer 1	$160.00
Project Engineer 2	$180.00
Sr Engineer 1	$200.00
Sr Engineer 2	$210.00
Sr Engineer 3	$220.00
Principal Engineer	$300.00
Planners	
Planner 1	$105.00
Planner 2	$115.00
Sr Planner 1	$125.00
Sr Planner 2	$150.00
Sr Planner 3	$175.00
Designers & Technicians	
CAD Technician 1	$65.00
CAD Technician 2	$75.00
CAD Technician 3	$90.00
CAD Designer	$100.00
Sr CAD Designer 1	$135.00
Sr CAD Designer 2	$145.00
CAD Director	$150.00
Survey Tech 1	$50.00
Health & Safety	
H&S Administrator	$95.00
Sr H&S Administrator	$115.00
H&S Manager	$145.00

Construction	
Construction Project Rep 1	$78.00
Construction Project Rep 2	$85.00
Sr Constr Project Rep 1	$100.00
Sr Constr Project Rep 2	$115.00
Construction Manager 1	$165.00
Construction Manager 2	$185.00
Construction Director	$233.00
General & Administrative	
Project Assistant 1	$70.00
Project Assistant 2	$75.00
Project Administrator	$95.00
Sr Project Administrator	$135.00
Sr. Graphic Artist	$150.00
Technical Writer 1	$97.00
Technical Writer 2	$124.00
Sr Technical Writer	$155.00
Information Technology	
Systems Analyst / Programmer 1	$77.00
Systems Analyst / Programmer 2	$115.00
Sr Sys Analyst / Programmer 1	$130.00
Sr Systems Analyst / Programmer 2	$196.00
Project Accounting	
Project Analyst 1	$90.00
Project Analyst 2	$114.00
Sr Project Analyst	$155.00

Reimbursable In-House Costs:	
Photo Copies (B&W 8.5”x11”)	$ 0.15/Each
Photo Copies (B&W 11”x17”)	$ 0.40/Each
Color Copies (up to 8.5"x11")	$ 2.00/Each
Color Copies (to 11"x17")	$ 3.00/Each
Compact Discs	$10/each
Large format copies	$0.40 S.F.
Mileage-Company Vehicle	$0.80/mile
Mileage-POV	$0.55/mile*

*current GSA POV mileage rate subject to change

All other direct costs, such as production, special photography, postage, delivery services, overnight mail, printing and any other services performed by subconsultant will be billed at cost plus 15%.

NOTE: Rates subject to change annually.

APPENDIX
Resumes

Education

BS, Environmental Engineering, University of California, Irvine, 1978

Registration

Professional Civil Engineer, California, No. 36399, 1983

Years of Experience

41

Years with Tetra Tech

30

Tom Epperson, PE

Project Manager

Mr. Epperson has more than 41 years of professional experience in water, wastewater, and reclaimed water engineering. Tom has been responsible for the preparation of water, wastewater, and reclaimed water master plans; project design reports for various water, wastewater, and reclaimed water facilities; and the planning and design of water, wastewater, and reclaimed water pipelines, along with pump stations and reservoirs. Mr. Epperson's experience includes completing the design, bidding, and construction management of over 200 miles of water/reclaimed water/sewer mains, 36 water/reclaimed water pump stations, 18 wellhead facilities, 12 sewer lift stations, and 25 water and reclaimed water storage reservoirs throughout Southern California.

PROJECT EXPERIENCE

Regional Lift Station Force Main Replacement, Moulton Niguel Water District. Project Manager. Provided engineering services for the replacement of approximately 15,000 linear feet of 20-inch and 24-inch Techite sewer force main within Laguna Niguel Regional Park. Regional Lift Station and Force Mains are critical wastewater facilities that pump flow from MNWD sewer collection system to South Orange County Wastewater Authority Regional Treatment Plant. The replacement force main consists of dual 24-inch pipeline approximately 8,000 feet length and will be constructed within Laguna Niguel Regional Park. Scope of services include preliminary design, final design and construction phase services.

Oso Lift Station Improvement Project, El Toro Water District. Mr. Epperson is the project manager providing engineering services for the relocation of the existing lift station to a new property within Laguna Woods. The work includes a preliminary analysis of sewer flows for the basis of design, evaluating pumps to select the most efficient for the lift station demands, configuring the site to accommodate new construction while the existing remains in service, evaluating on-site storage and response times, considering odor control alternatives and converting the existing wet well into an emergency storage basin.

San Lorenzo Sewage Lift Station, City of Santa Ana. Project Manager. Prepared plans, specifications, and cost estimates to construct a new sewer lift station on San Lorenzo Avenue within the City of Santa Ana. The improvements included a wet well, dry well, three variable frequency drive pumps, aboveground CMU block control room, emergency generator, hardscape and landscape improvements and approximately 1,300 linear feet of new sewer main.

Lower Salada Lift Station Rehabilitation, Moulton Niguel Water District. Project Manager. Design and construction of a rehabilitation of the Lower Salada Lift Station, including rehab of the existing wet well and replacement of existing valves.

Coastal Ridge Lift Station, Irvine Ranch Water District. Project Manager. Design of a 260 gpm lift station with a required lift of approximately 285 feet. The project included the design of a wet well, dry well pump room, and meter vault.

Regional Lift Station Force Main Replacement Study, Moulton Niguel Water District. Project Manager for the preparation of the Regional Lift Station Force Main Replacement Study which included: developing design criteria; trenchless rehabilitation of the existing force mains; alternative alignments; hydraulic analysis; impacts of each alternative on the existing lift station; selection of the recommended alternative; summary of creek crossings, construction issues, and regulatory issues; and preliminary cost estimates and schedule for the force main replacement.

Education

BS, Civil Engineering, University of California at Berkeley, 1991

Registration

Professional Civil Engineer, California, No. 55574, 1996

Years of Experience

30

Years with Tetra Tech

4

Neha Gajjar, PE

Assistant Project Manager

Ms. Gajjar has more than 30 years of professional experience providing project management, planning, and design of water transmission, distribution, and storage facilities projects. Neha has significant experience preparing plans and specifications for water/sewer mains, storm drains, pipelines, and has an intimate understanding of these requirements for many municipalities. Ms. Gajjar's responsibilities as engineering lead include establishing design parameters, managing project schedules, and handling required appropriate technical resources necessary for each project.

PROJECT EXPERIENCE

Upper Salada Sewer Lift Station, Moulton Niguel Water District, Laguna Niguel, CA. Project Manager. Assumed position of Project Manager after preliminary design report was complete. Duties included coordination with MNWD to assess a new scope for the project based on current needs, preparation of plans and specifications to install a permanent generator on site, including documentation (plats and legal descriptions) for the District to use in acquiring portions of adjacent property, coordination and research at OCFA to determine the latest setback requirements and establishing the optimal location for the facilities to meet state and federal guidelines.

Washington Well Drilling Phase 2, Drilling and CEQA, City of Santa Ana, CA. Project Manager. Design included drilling and equipping plans of a new well within a vacant City property near the intersection of Washington/Penn. The first phase of the project identified the drill location and facility configuration within the lot. This is the second phase and focuses on the final well site layout and renderings for the new well facility. The work also includes coordination with environmental and cultural requirements in advance of any drilling efforts.

La Palma Avenue and Tustin Avenue Watermain Replacements at OCTA Crossing, City of Anaheim, CA. Project Manager. The OCTA planned to construct an additional railroad track for the Metrolink within its existing right-of-way as part of the Anaheim Canyon Station Metrolink Project. The new tracks cross City of Anaheim water mains at La Palma Avenue and Tustin Avenue and therefore the mains must be rerouted and placed within a steel casing. Tetra Tech prepared plans and specifications to replace the existing 36-inch CCP with a 36-inch steel in a 48-inch steel casing in La Palma Avenue, the existing 12-inch CIP with a 12-inch DIP in a 24-inch steel casing in La Palma Avenue, and the existing 12-inch CIP with a 12-inch DIP in a 24-inch steel casing in Tustin Avenue. The project also included coordination with OCTA.

1951 Cohort Pipeline Replacement Design, Mesa Water District, Costa Mesa CA. Project Manager. Mesa Water District wishes to upgrade existing 4-inch to 8-inch CML&C steel pipelines within its jurisdiction that was originally part of Fairview County Water District at acquisition in 1950. The existing facilities were built in 1951 and currently has break rates and is thus part of Mesa Water's CIP replacement program. The project consists of about 22,000 linear feet of pipe replacement within the City of Costa Mesa, including replacement of existing 1-inch/2-inch services lines, meter boxes and outdated "dry barrel" fire hydrants. We are preparing the design documents for these replacements.

Spinnaker Bay Drive Water Main Replacement Phase 2, Long Beach Water Department, Long Beach, CA. Project Manager. LBWD is replacing corroded ductile iron water mains installed in the 1980s with PVC pipe material within the Spinnaker Bay neighborhood. Prepared design documents for about 2,500 linear feet of 8-inch and 12-inch pipe, including domestic service reconnections, associated new valves and new fire hydrants.

Education

BS, Civil Engineering, University of California, Irvine, 2013

Registration

Professional Civil Engineer, California, No. 86663, 2016

Years of Experience

10

Years with Tetra Tech

5

Matt Vera, PE

Project Engineer

Mr. Vera has provided design engineering in various water and wastewater projects including domestic and reclaimed water pipelines, gravity sewer mains, sewer main rehabilitations, pump stations, lift stations, wells, flow control facilities, and pressure reducing valve vaults. Responsibilities have included preparation of construction plans, specifications, and design calculations; assisted supervisors in preparing project reports and memorandums.

PROJECT EXPERIENCE

Regional Lift Station Force Main Replacement, Moulton Niguel Water District. Project Engineer providing engineering services for the replacement of approximately 15,000 linear feet of 20-inch and 24-inch Techite sewer force main with Laguna Niguel Regional Park. Regional Lift Station and Force Mains are critical wastewater facilities that pump flow from MNWD sewer collection system to South Orange County Wastewater Authority Regional Treatment Plant. The replacement force main consists of dual 24-inch pipeline approximately 8,000 feet length and will be constructed with Laguna Niguel Regional Park. Scope of services include preliminary design, final design and construction phase services.

Regional Treatment Plant Southerly Influent Sewer Improvements, Moulton Niguel Water District. Design Engineer for the modification and rehabilitation of to the southerly influent sewers for South Orange County Wastewater Authority's Regional Treatment Plant. The project consisted of the demolition and replacement of the existing influent structures to consolidate flows into the plant, the rehabilitation of approximately 700 LF of existing 36-inch diameter sewers with cured-in-place pipe lining, the installation of a new cast-in-place diversion structure and the rehabilitation of the existing 72-inch manholes. A flow metering structure and flow metering equipment were also added to the influent sewers to allow for more accurate pre-treatment chemical dosing. Site improvements were made to improve egress and ingress for the District including the addition of a supplemental access gate and access road. Conceptual bypass plans and construction sequence were of key importance as the Regional Treatment Plant influent sewers cannot be off-line.

2018-2019 Reservoir Management Systems Replacement, Moulton Niguel Water District. Project Engineer for a bulk sodium hypochlorite dosing system at five of its 20 potable water reservoir sites. This project was third phase of the District's system-wide improvements to standardize its chemical facility buildings and equipment types. The improvements consisted of the removal of the existing ClorTec facility and construction of a reservoir management system (RMS) building with separate ammonia and sodium hypochlorite rooms, including chemical tanks, metering pumps, reservoir mixers, piping to and from the reservoirs, spill containment, emergency shower and eyewashes, return mixing pumps and grading to ensure the new building lies seamlessly within the existing on-site facilities.

Crown Valley Pipeline Replacement, Moulton Niguel Water District. Project Engineer for the replacement of the I.D. No. 1 Master Meter and the accompanying interconnecting piping between the South Coast Water District's Joint Transmission Main and the MNWD's proposed Crown Valley Transmission Main. The Crown Valley Pipeline Replacements Project consists of three components: Lower Salada Lift Station Force Main Replacement (approximately 9,400 LF of dual force mains), Crown Valley Parkway Transmission Main Lower Reach Replacement (approximately 9,700 LF of transmission main), and I.D. No. 1 Master Meter Relocation. The Master Meter Relocation consists of existing utility relocations; new below-grade vault; new mechanical piping and appurtenances; retaining wall; 16-inch steel piping; site grading; miscellaneous electrical and SCADA improvements.

Education

BS, Civil Engineering, California State Polytechnic University, Pomona, 2007

MS, Structural Engineering, California State Polytechnic University Pomona, 2016

Registrations

Professional Civil Engineer, California, No. 75983, 2009

Professional Structural Engineer, California, No. 6177, 2014

Years of Experience

16

Years with Tetra Tech

16

Eric Yuen, PE, SE

Structural Design

Mr. Yuen has more than 16 years of experience in the design, analysis and detailing in structural engineering. Eric is knowledgeable in reinforced concrete, masonry, structural steel and wood frame design, and construction for a variety of building and infrastructure projects including reservoirs, water/wastewater treatment facilities, as well as seismic retrofit of existing structures.

PROJECT EXPERIENCE

Regional Lift Station Force Main Replacement, Moulton Niguel Water District. Structural Project Engineer providing engineering services for the replacement of approximately 15,000 linear feet of 20-inch and 24-inch Techite sewer force main with Laguna Niguel Regional Park. Regional Lift Station and Force Mains are critical wastewater facilities that pump flow from MNWD sewer collection system to South Orange County Wastewater Authority Regional Treatment Plant. The replacement force main consists of dual 24-inch pipeline approximately 8,000 feet length and will be constructed with Laguna Niguel Regional Park. Scope of services include preliminary design, final design and construction phase services.

Burris Pump Station, Orange County Water District. Structural Project Engineer. Design of the new Burris Pump Station which consists of four 1,750 horsepower vertical turbine pumps delivering a maximum flow rate of 200 cfs to the Santiago Basins from Burris Basin. Work consisted of reviewing the existing Burris Pump Station Evaluation Report, assisting OCWD with selecting a replacement option, performing final design of the selected option and providing bid and construction phase services. The project also includes unique designs, such as 190,000 cubic yards of earthwork to be completed prior to pump station construction, the construction of a 55-foot diameter by 55-foot-high circular wet well which was computer and physically modeled during design for flow characteristics, and the construction of an 180,000-gallon surge suppression system.

Timber Ridge Booster Pump Station Replacement, Yorba Linda Water District. Structural Project Manager. Project includes engineering planning, design and construction-phase services for the replacement of an existing 35-year old booster pump station. The District contracted Tetra Tech to design and construct a new CMU block pump station building; replace the existing gas engine pump and enclosure with a new electric driven pump/motor with the same or greater rated capacity; install an emergency natural gas engine driven generator set; install two bladder tanks for surge protection for the 1000 Zone and 1300 Zone; replace existing direct buried mag meters on the 1300 Zone and 1160 Zone discharge piping with above ground meters; and replace and upgrade the existing electrical equipment.

Fleming Zone 8 Tank and Zone 8 to 9 Booster Pump Station Demolition and Replacement, **Irvine Ranch Water District.** Structural Project Manager. Engineering design services for demolition and replacement of an existing above ground 0.15 MG Zone 8 steel tank and Zone 8 to 9 pump station consisting of two 600 gpm vertical turbine pumps each equipped with a 60 horsepower motor. The Fleming pump station site also contains an existing administrative building with a conference room and restroom, two storage buildings, and an AT&T cellular antenna facility. Services also include storage building replacement; reservoir management system building with sodium hypochlorite and aqueous ammonia storage and feed systems and an “in-tank” chemical injection and mixing system; a 2,000 gallon diesel fuel storage tank and dispensing system; and site electrical service, controls, and telemetry improvements.

Education

BS, Electrical Engineering, California State University, Long Beach, 1990

Registrations

Professional Electrical Engineer, California, No. 15809, 1998

General Construction, Class B, California, No. 777845, 2008

Years of Experience

31

Years with Tetra Tech

14

Mazen Kassar, PE

Electrical/Controls

Mr. Kassar has more than 31 years of experience in electrical engineering and industry standards that include electrical engineering staff management, project management, construction management and supervision, water and wastewater treatment, petro-chemical design, and environmental soil and groundwater treatment. Mazen's background includes designing medium and low voltage power distribution, instrumentation design, control systems and SCADA systems for a wide variety of projects, and the installation of electrical systems for remediation projects, including soil vapor extraction systems, and groundwater pump and-treat systems.

PROJECT EXPERIENCE

Regional Lift Station Force Main Replacement, Moulton Niguel Water District. Electrical Project Manager providing engineering services for the replacement of approximately 15,000 linear feet of 20-inch and 24-inch Techite sewer force main within Laguna Niguel Regional Park. Regional Lift Station and Force Mains are critical wastewater facilities that pump flow from MNWD sewer collection system to South Orange County Wastewater Authority Regional Treatment Plant. The replacement force main consists of dual 24-inch pipeline approximately 8,000 feet length and will be constructed within Laguna Niguel Regional Park. Scope of services include preliminary design, final design and construction phase services.

San Lorenzo Sewage Lift Station, City of Santa Ana. Electrical Project Manager. San Lorenzo Sewage Lift Station improvements include a wet well, dry well, three variable frequency drive pumps, aboveground CMU block control room, emergency generator, hardscape and landscape improvements, and approximately 1,300 linear feet of new sewer main. As the Electrical Engineer Mr. Kassar preformed electrical power system studies that included load flow, short circuit, and arc flash calculations.

Maxine Lift Station Bypass Connection, City of Santa Ana. Electrical Project Manager. The purpose of the Maxine Lift Station Bypass Connection Project was to install a connection on the existing force main that would allow the City to bypass sewer flows around the existing lift station utilizing a portable pump from the existing wet well to the force main. Managed the electrical power system studies which included load flow, short circuit, and arc flash calculations.

Burris Pump Station, Orange County Water District. Electrical Engineer for the design of the new Burris Pump Station which consists of four 1,750 horsepower vertical turbine pumps delivering a maximum flow rate of 200 cfs to the Santiago Basins from Burris Basin. Work consists of reviewing the existing Burris Pump Station Evaluation Report, assisting OCWD with selecting a replacement option, performing final design of the selected option and providing bid and construction phase services. The project also includes unique designs, including 190,000 cubic yards of earthwork to be completed prior to pump station construction, the construction of a 55-foot diameter by 55-foot-high circular wet well which was computer and physically modeled during design for flow characteristics, and the construction of an 180,000-gallon surge suppression system.

Package 1 Sewer Lift Station Improvements, NAVFAC Southwest, Marine Corps Base, Camp Pendleton. Lead Electrical Engineer for the Package 1 sewer lift station improvements project includes providing all design-build services to upgrade nine existing lift stations. The design of the upgrades includes the addition of emergency generators and communication connections to NAVFAC's Unity system, as well as designing and installing site lighting. At two of the existing lift stations, new grinders were designed to replace an existing one. The project included design of plans and specifications.

ATTACHMENT B
NON-COLLUSION AFFIDAVIT

The undersigned declares:

I am the Vice President of Tetra Tech, Inc., the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on 1/26/23 [date], at Irvine [city], CA [state].

Signature: 

Title: Vice President

Price Proposal

REVISED FEE FOR CONCEPTUAL DESIGN TASKS ONLY

CTP DPS Rehabilitation Conceptual Design

Submitted to: South Orange County Wastewater Authority
Attn: Jeanette Cotinola, Procurement/Contracts Manager

Contract Type: T&M

Price Summary / Totals	
Task Pricing Totals	176,000
Specify Add'l Fees on Setup	0
Technology Use Fee	
Total Price	**176,000**

	Bill Rate >	350.00	280.00	180.00	130.00	115.00	135.00	305.00	180.00	115.00	230.00	160.00	145.00	322.00	302.00	225.00	184.00
	Proj Area >	Civil/Mechanical	Project Management	Civil/Mechanical	Civil/Mechanical	Civil/Mechanical	Civil/Mechanical	Electrical/Controls	Electrical/Controls	Electrical/Controls	Structural	Structural	Structural	V&A	V&A	V&A	V&A
Project Phases / Tasks	**Total Labor Hrs**	Program Manager (Tom Epperson)	Project Manager 2 (Neha Gajjar)	Project Engineer 2 (Matt Vera)	Engineer 3 (Jamie McElyea)	Engineer 2 (Samuel Ortiz)	Sr Project Administrator (Deana Escamilla)	Sr Project Manager (Mazen Kassar)	Project Engineer 2 (Doug Seaman)	Engineer 2 (Johnson Le)	Project Manager 1 (Eric Yuen)	Project Engineer 1 (Jose Quiroz)	Sr CAD Designer 2 (Eric Hutchins)	Senior Project Manager (Senior Project Manager)	Project Manager (Project Manager)	Associate Engineer (Associate Engineer)	Graduate Engineer (Graduate Engineer)
	866	24	12	160	132	88	3	46	108	80	12	34	-	14	52	72	29

Pricing by Resource

	Labor Rate Esc.	Labor	ODCs	Task Pricing Totals
Project Phases / Tasks	**0.00%**	160,863	15,137	**176,000**
Task 1: Project Management/Progress Meetings		**20,502**	**98**	**20,600**
PM (4 months)		3,640		3,640
Meetings (Kickoff and 6 progress meetings)		13,242	98	13,340
Project Schedule		360		360
Bi-weekly status e-mails/monthly invoice (8/4)		3,260		3,260
Task 2: Data Collection and Document Review		**18,380**	**120**	**18,500**
Document and operating data review		7,300		7,300
Two site visits		11,080	120	11,200
Task 3: Wet Well Condition Assessment		**34,956**	**14,544**	**49,500**
Health & Safety Plan		8,973		8,973
Wet Well Condition Assessment		9,887	14,544	24,431
Influent Force Main Condition Assessment				-
Condition Assessment Report		16,096		16,096
Task 4: Preliminary Evaluations		**52,220**	**180**	**52,400**
Wet Well Rehabilitation Plan		5,320		5,320
Compliance Evaluation (NFPA 820)		18,640	64	18,704
Containment Wall Plan		8,920		8,920
Pump Alternatives		3,720		3,720
Discharge Piping Modifications		3,920		3,920
Influent Force Main Condition Assessment Plan				-
Bypassing and Construction Sequencing		5,620	54	5,674
Relocating BPS to Alternative Site		6,080	63	6,143
Task 5: Preliminary Evaluation Memo and Workshop		**21,860**	**140**	**22,000**
Preliminary Evaluation Memo		19,220		19,220
Workshop		2,640	140	2,780
Task 6: Preliminary Design and Layout				
Conceptual Design of DPS: layout				
Conceptual Design of DPS: Sections				
Recommended Siting of DPS				
Containment Wall Plan and Details				
Site Drainage				
Bypass and Sequence Plan				
Major Equipment				
Building Upgrades				
Structural Details - wall, sumps, etc.				
Electrical Sheets to 30% level (8 sheets)				
Task 7: Final Memo and Cost Estimate		**12,945**	**55**	**13,000**
Construction Cost Estimate		4,970	55	5,025
Finalize Memo		7,975		7,975
Task 8: Preliminary Design Report				
Preliminary Design Report				
Processing of PDR				
Totals	**0.00%**	**160,863**	**15,137**	**176,000**

Agenda Item 13

Engineering Committee Meeting

Meeting Date: February 9, 2023

TO: Engineering Committee

FROM: David Baranowski, Director of Engineering

SUBJECT: 2023/2024 Fiscal Year Capital Improvement Program Budget Calendar

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Overview

Staff has started preparing the next fiscal year budget, including the capital improvement program. The schedule below identifies the key dates between now and the end of the fiscal year. Staff will be reaching out to members in early March to schedule budget review meetings.

March

- March 2 – Draft Capital Budget distributed to members
- March 9 – Engineering Committee Meeting (Draft Capital Budget Presentation)
- March 13 to 24 – Individual Budget Reviewing Meetings

April

- April 13 – Engineering Committee Meeting (Revised Capital Budget Presentation)
- April 18 – Finance Special Committee Meeting (Budget Review Meeting)

May

- May 16 – Finance Committee Meeting
- May 18 – Board Budget Workshop

June

- June 1 – Board Meeting (Budget Consideration for Approval)

Recommended Action: Information Item.