6720 South Macadam Avenue, Suite 300
Portland, Oregon 97219
503.670.1108

ANCHOR QEA

Weekly Summary Report

Project Name:	Gasco Sediments Site ISS Field Pilot Study		
Project No:	000029-02.85	**Report Date:**	October 31, 2023
Week of:	October 23, 2023	**Report No:**	7

Weekly Summary

Item	Approximate Production This Week	Approximate Total Cumulative Production	Approximate Task Percent Completion
Mobilization activities	NA	NA	100%
Dolphin pile removal	NA	NA	100%
Debris removal	0 cy	16 cy	100%
ISS auguring	0 columns	47 columns	>100%[1]
Swell material removal	0 cy	191 cy	NA[2]

Notes:

1. The task percent complete for in situ stabilization and solidification (ISS) auguring is based on the Work Plan-identified goal of 29 columns.
2. Long-term sampling port leveling: The U.S. Environmental Protection Agency (EPA)-approved Work Plan states, "If necessary, small-scale regrading of the target sampling locations may be performed by the swell materials removal excavator or divers to prepare a surface that is as flat and level as practicably possible," but the Work Plan does not provide a specific removal volume.

Work Performed This Period

Monday (10/23/2023)

Performed leveling of ISS-treated surface to create an approximately level plateau for installation of the long-term sampling ports. Performed removal of auger drill rod, conducted bathymetry surveys, and collected five-part composite investigation derived waste (IDW) characterization sample of removed ISS-treated materials stored in the water-tight haul barge. Received sand for placement in footprint of the removed dolphin.

Tuesday (10/24/2023)

Placed sand in removed dolphin footprint. Divers performed underwater inspection of ISS-treated sediment surface. Performed bathymetry survey and demobilization activities.

Wednesday (10/25/2023)

Continued demobilization activities. Replaced containment boom in sheen management area (this area has been managed in coordination with the Oregon Department of Environmental Quality) with new boom material.

Thursday (10/26/2023)

Continued demobilization activities. Adjusted containment boom in sheen management area.

Friday (10/27/2023)

No work was performed.

Saturday (10/28/2023)

No work was performed.

Water Quality Monitoring

Monday (10/23/2023)

Performed visual inspection of river outside the outer containment barriers during ISS-treated surface removal leveling activities, and no turbidity plumes, sheens, or odors were observed. One round of water quality monitoring was performed during ebb tide during ISS-treated surface removal leveling activities, with field and chemical parameters collected at background stations NWN-BG1S and compliance station NWN-CS2N. Performed visual inspection of river inside the containment booms and identified sheen that was generated from a known ebullition area that is not associated with construction activities.

Tuesday (10/24/2023)

Performed visual inspection of river outside the outer containment barriers during sand placement activities, and no turbidity plumes, sheens, or odors were observed. One round of water quality monitoring was performed during ebb tide during sand placement activities, with field and chemical parameters collected at background station NWN-BG1S and compliance station NWN-CS1N. Performed visual inspection of river inside the containment booms and identified sheen that was generated from a known ebullition area that is not associated with construction activities.

Wednesday (10/25/2023)

Performed visual inspection of river outside the outer containment barriers during demobilization activities, and no turbidity plumes, sheens, or odors were observed. Performed visual inspection of river inside the containment booms and identified sheen that was generated from a known ebullition area that is not associated with construction activities. No water quality monitoring was performed.

Thursday (10/26/2023)

Performed visual inspection of river outside the reinstalled long-term sheen management containment barrier during demobilization activities, and no turbidity plumes, sheens, or odors were observed. No sheens related to construction activities observed outside of reinstalled long-term sheen management containment structure. Performed visual inspection of river inside the long-term sheen containment booms and identified sheen that was generated from a known ebullition area that is not associated with construction activities. No water quality monitoring was performed.

Friday (10/27/2023)

No work was performed.

Saturday (10/28/2023)

No work was performed.

Findings:

No water quality exceedances were identified. A compilation of water quality daily field forms from the week (Attachments 1 through 4), tabulated field parameter data (Attachment 5), and tabulated chemistry data (Attachment 6) are attached.

Scheduled Construction Work This Week (Next Reporting Week)
Demobilization activities.

Problems Encountered and Contingency Actions Implemented
No problems encountered.

Prepared by:	Kendra Skellenger	**Contact Information:**	503-752-4218 kskellenger@anchorqea.com
cc:	Bob Wyatt, Patty Dost, Mike Crystal, Tim Donegan, Taylor Crystal, Gary Rose, Joe Burke, Rob Ede, Jen Mott, Ryan Barth, Tim Stone, Ben Uhl, Billie-Jo Gauley, Joe Smith, Ross Pickering, Louisa Orr, Elizabeth Greene		

Attachments:	Attachment 1	Daily Monitoring Logs
	Attachment 2	Water Quality Monitoring Calibration Log
	Attachment 3	Water Quality Monitoring Forms – Field Parameters
	Attachment 4	Water Quality Sampling Forms – Chemical Parameters
	Attachment 5	Water Quality Field Parameter Measurements
	Attachment 6	Water Quality Chemical Parameter Measurements

Photographs

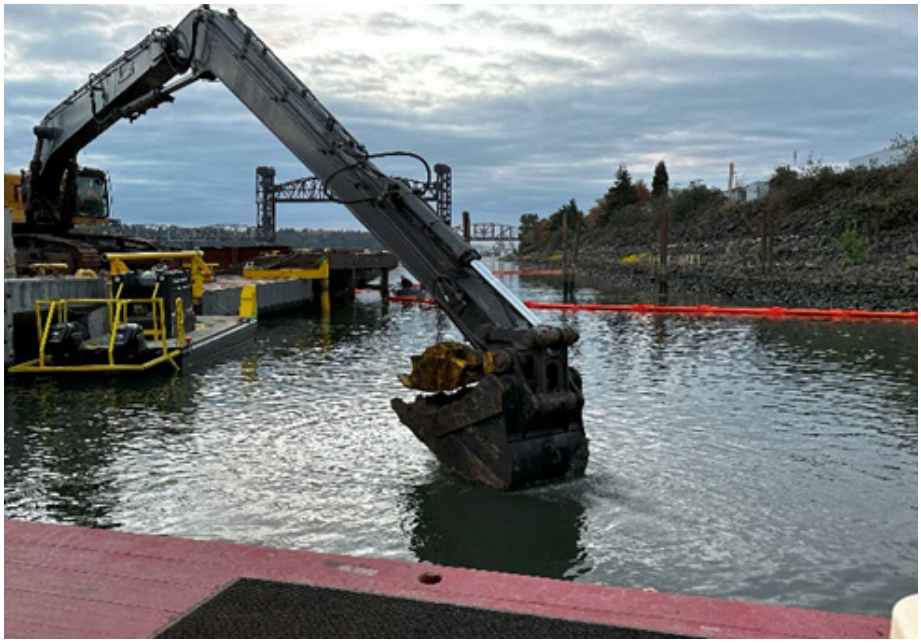
Photograph 1

Performing leveling of ISS-treated surface to create an approximately level plateau for installation of the long-term sampling ports (10/23/2023).

Photograph 2

Mixing removed ISS-treated materials stored on Barge No. 7 and collection of 5-part composite IDW characterization sample (10/23/2023).

Photograph 3



Placing sand in removed dolphin footprint (10/24/2023).

Photograph 4

Downriver portion of replaced containment boom at sheen management area (10/25/2023).

Attachment 1
Daily Monitoring Logs

Daily Monitoring Log
Gasco Sediments Site ISS Pilot Study

ANCHOR QEA
Anchor QEA, LLC
6720 South Macadam Avenue, Suite 300
Portland, OR 97219
Phone 503.670.1108

Date: 10-23-2023
Personnel: Simon Dudenhoefer

Wind from: N | NE | E | SE | S | SW | (W) | NW | NONE | (LIGHT) | MEDIUM | HEAVY
SUNNY | (CLOUDY) | RAIN
Temperature: (F) 52 °C
(Circle appropriate units)

Time	Comments
0615	Arrive @ Gasco Trailer → Calibrate YSI #6970, load WQM
——	equipment onto boat, prep sample labels + field forms
0745	H/S meeting: safety while driving boat to boat ramp, traffic,
——	light check (brakes, signals), entering/exiting boat / work area
0800	TIDES: LOW @ 0922, HIGH @ 1406, LOW @ 1941
0820	To Cathedral Park boat ramp
0840	ON WATER → To worksite
0904	Swell Removal Start time → @ BG-1S to = WQM C#1
——	Confirmed downstream flow direction visually; w/ velocimeter
——	and using USGS/NOAA data
——	Confirmed Garmin depth reading w/ lead line
——	Confirmed 300' boom distance w/ range finder
0916	Decon Van Dorn sampler
0920	Collected NWN-BGIS-231023 0920 @ 1' → Decon
0925	Collected NWN-BGIS-231023 0925 @ 19.2' → Decon
0930	Collected NWN-BGIS-231023 0930 @ 35.4' → Decon
0932	@ EW-IN, confirmed 100' boom distance w/ range finder
0940	@ CS-IN, " " 150' " "
0949	@ CS-2N, " "
0958	CS-2N has highest CS turbidity reading (5.92 @ 42')
0955	Collected NWN-CS2N-231023 0955 @ 1' → Decon
1000	Collected NWN-CS2N-231023 1000 @ 22.5' → Decon
1005	Collected NWN-CS2N-231023 1005 @ 42' → Decon
——	Finish WQM Circuit #1 → NO EXCEEDANCES
——	WQM Circuit #2 @ 1004 if swell removal continues
1020	OFF WATER
1030	ON WATER
1104	NO SED DISTURBING WORK OCCURRING → waiting for
——	survey results to determine if further swell removal required
——	→ NO WQM until swell removal starts again

1145 OFF WATER
Signature:

1535 ON WATER
1640 OFF WATER @ Cathedral Park Boat Ramp

Daily Monitoring Log
Gasco Sediments Site ISS Pilot Study

ANCHOR QEA
Anchor QEA, LLC
6720 South Macadam Avenue, Suite 300
Portland, OR 97219
Phone 503.670.1108

Date: 10-24-2023
Personnel: Simon Dudenhoefer

Wind from: N | NE | E | SE | (S) | SW | W | NW | NONE | (LIGHT) | MEDIUM | HEAVY
(SUNNY) | (CLOUDY) | RAIN |

Temperature: (°F) 47 °C
[Circle appropriate units]

Time	Comments
0615	Arrive @ Gasco Trailer → calibrate YSI, load boat
0625	H/S meeting: boat ramp slick → slips, trips, falls, loading/putting boat on water in low light, colder today, wear proper PPE + field gear
0635	To Cathedral Park Boat Ramp
0708	@ Cathedral Park Boat ramp → waiting for more light before putting boat on water (H/S first)
—	TIDES: LOW @ 1006, HIGH @ 1448, LOW @ 2135
—	↳ WQM Circuit #2 (ebb tide) will start @ beginning of sand placement → will collect samples
0715	ON WATER → To BG-1S
0729	@ BG-1S, confirmed flow direction (downstream) w/ velocimeter, visually + w/ USGS/NOAA data
—	Confirmed Garmin depth reading w/ lead line
—	Confirmed 300' boom distance w/ range finder
0735	Start WQM circuit #1 (start sand placement) @ BG-1S
0747	@ EW-1N, confirmed 100' boom distance w/ range finder
0755	@ CS-1N, " " 150' " "
0804	@ CS-2N " "
0813	@ CS-1N to collect chemistry samples → Decon Van Dorn sampler
0815	Collected NWN-CS1N-2310240815 @ 1' → Decon " "
0820	Collected NWN-CS1N-2310240820 @ 21.4' → Decon " "
0825	Collected NWN-CS1N-2310240825 @ 39.8' → Decon " "
0830	@ BG-1S to collect chemistry samples
0835	Collected NWN-BG1S-2310240835 @ 1' → Decon
0840	Collected NWN-BG1S-2310240840 @ 19' → Decon
0845	Collected NWN-BG1S-2310240845 @ 35' → Decon
—	Finish WQM Circuit #2 → NO EXCEEDANCES
—	No more sediment disturbing construction activities →
—	No further WQM → To boat ramp
0910	OFF WATER

Signature: _____

Attachment 2
Water Quality Monitoring Calibration Logs

ANCHOR QEA

6720 South Macadam Avenue, Suite 300
Portland, OR 98219

Water Quality Monitoring – Calibration Log Form
Gasco Sediments Site ISS Pilot Study

Date: 10-23-2023
Probe S/N: 21E103678

Calibrated by: Simon Dudenhoefer
Meter(s) Model: YSI ProDSS #6970

Parameter	Calibration Standard	Standard Lot No.	Expiration Date	Initial Calibration	Final Calibration	Temperature	Comments
pH 7.00 (Standard Units)	7.06	3GG0021	07/25	7.03	7.06	12.4	A standard for temp.
pH 4.00 (Standard Units)	4.00	3GF1085	06/25	3.95	4.00	12.7	
Dissolved Oxygen (DO)[1]	100.2	NA	NA	99.1	100.1	19.8	AIR
Turbidity (NTU)[1]	0	NA	NA	0.48	0.00	12.9	DI WATER
Turbidity (NTU)[1]	124	23E2400726	05/24	138.79	123.96	12.9	

Date:
Probe S/N:

Calibrated by:
Meter(s) Model:

Parameter	Calibration Standard	Standard Lot No.	Expiration Date	Initial Calibration	Final Calibration	Temperature	Comments
pH 7.00 (Standard Units)	7.00						
pH 4.00 (Standard Units)	4.00						
Dissolved Oxygen (DO)[1]							
Turbidity (NTU)[1]		DID NOT USE/CALIBRATE YSI #5006					
~~Turbidity (NTU)[1]~~							

Note:

1. Calibration standards are entered by hand depending on the monitoring instrument being used.

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Portland, OR 98219

Water Quality Monitoring – Calibration Log Form
Gasco Sediments Site ISS Pilot Study

Date: 10-24-2023
Calibrated by: Simon Dudenhoefer
Probe S/N: 21E103678
Meter(s) Model: YSI ProDSS #6970

Parameter	Calibration Standard	Standard Lot No.	Expiration Date	Initial Calibration	Final Calibration	Temperature	Comments
pH 7.00 (Standard Units)	7.00	3660021	07/25	7.06	7.07	10.2	Δ standard to 7.07 for temp
pH 4.00 (Standard Units)	4.00	36F1085	06/25	3.97	4.00	10.9	
Dissolved Oxygen (DO)[1]	100.2	NA	NA	99.1	100.1	18.7	AIR
Turbidity (NTU)[1]	0	NA	NA	-0.44	0.00	10.6	DI WATER
Turbidity (NTU)[1]	124	23E2401726	05/24	124.78	123.80	10.6	

Date:
Calibrated by:
Probe S/N:
Meter(s) Model:

Parameter	Calibration Standard	Standard Lot No.	Expiration Date	Initial Calibration	Final Calibration	Temperature	Comments
pH 7.00 (Standard Units)	7.00						
pH 4.00 (Standard Units)	4.00						
Dissolved Oxygen (DO)[1]							
Turbidity (NTU)[1]		DID NOT CAL/USE YSI #6006				SD	
Turbidity (NTU)[1]							

Note:

1. Calibration standards are entered by hand depending on the monitoring instrument being used.

Attachment 3
Water Quality Monitoring Forms – Field Parameters

ANCHOR QEA

6720 South Macadam Avenue, Suite 300
Portland, OR 97219

Probe #21E103678 YSI ProDSS #6970

Water Quality Monitoring Form – Field Parameters
Gasco Sediments Site ISS Pilot Study

Date: 10-23-2023 **Circuit Number:** 1

Station: (BG) EW CS-1 CS-2 N (S) Time: 0904

Flood / (Ebb) Up River / (Down River) Avg. Velocity: 0.368

Lat/Northing: 45.57876 Long/Easting: 122.75402 Total Water Depth: 38.4

	Water Depth (feet)	Turbidity (NTU)	pH (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	2.49	7.26	10.87	15.1
Middle	19.2	2.53	7.23	10.78	15.1
Deep	35.4	2.74	7.26	10.72	15.1

Comments[1]: • No sheen, odor, discoloration, or SS observed
• Collected sample @ each depth interval using VanDorn sampler

Construction Activity: Swell Removal

Station: BG (EW) CS-1 CS-2 (N) S Time: 0932

Flood / (Ebb) Up River / (Down River) Avg. Velocity: 0.158

Lat/Northing: 45.58007 Long/Easting: 122.75689 Total Water Depth: 43

	Water Depth (feet)	Turbidity (NTU)	pH (-)	DO (mg/L)	Temp. (°C)
Surface	1	2.55	7.26	10.84	15.1
Middle	21.5	2.67	7.23	10.79	15.1
Deep	40	6.07	7.32	10.71	15.1

Comments[1]: • No sheen, odor, discoloration, or SS observed

Construction Activity: Swell Removal

Recorded by: Simon Dudenhoefer

1. Include observations of floating/suspended material, sheens, discoloration, and odors.

* SS = suspended solids / material

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Probe #21E103678 YSI ProDSS #6970

Water Quality Monitoring Form – Field Parameters
Gasco Sediments Site ISS Pilot Study

Date: 10-23-2023 **Circuit Number:** 1

Station: BG EW (CS-1) CS-2 (N) S **Time:** 0940

Flood / (Ebb) Up River / (Down River) **Avg. Velocity:** 0.232

Lat/Northing: 45.58032 Long/Easting: 122.75741 **Total Water Depth:** 44.2

	Water Depth (feet)	Turbidity (NTU)	pH (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	2.65	7.30	10.83	15.1
Middle	22.1	2.69	7.25	10.77	15.1
Deep	41.2	3.81	7.26	10.71	15.1

Comments[1]: • No sheen, odor, discoloration, or SS observed

Construction Activity: Swell Removal

Station: BG EW CS-1 (CS-2) (N) S **Time:** 0949

Flood / (Ebb) Up River / (Down River) **Avg. Velocity:** 0.190

Lat/Northing: 45.58020 Long/Easting: 122.75672 **Total Water Depth:** 45

	Water Depth (feet)	Turbidity (NTU)	pH (-)	DO (mg/L)	Temp. (°C)
Surface	1	2.61	7.28	10.85	15.1
Middle	22.5	2.87	7.28	10.81	15.1
Deep	42	5.92	7.39	10.70	15.1

Comments[1]: • No sheen, odor, discoloration, or SS observed
• Collected chem. samples here @ each depth interval w/ VanDorn
• CS-2N has highest CS NTU (5.92) @ 42'

Construction Activity: Swell Removal

Recorded by: Simon Dudenhoefer

1. Include observations of floating/suspended material, sheens, discoloration, and odors.

* SS = suspended solids/material

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Probe# 21E103678 YSI ProDSS #6970

Water Quality Monitoring Form – Field Parameters
Gasco Sediments Site ISS Pilot Study

Date: 10-24-2023 **Circuit Number:** 1

Station: (BG) EW CS-1 CS-2 N (S) **Time:** 0735

Flood / (Ebb) Up River / (Down River) **Avg. Velocity:** 0.319

Lat/Northing: 45.57884 **Long/Easting:** 122.75401 **Total Water Depth:** 41

	Water Depth (feet)	Turbidity (NTU)	pH (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	3.44	7.22	10.94	14.8
Middle	20.5	3.58	7.23	10.97	14.7
Deep	38	~~*3.95 SD~~	7.27	10.98	14.7

Comments[1]: • No sheen, odor, discoloration, or SS observed
• Collected sample @ each depth using Van Dorn sampler
* 4.12

Construction Activity: Sand Placement

Station: BG (EW) CS-1 CS-2 (N) S **Time:** 0747

Flood / Ebb Up River / (Down River) **Avg. Velocity:** 0.341 SD

Lat/Northing: 45.58015 **Long/Easting:** 122.75689 **Total Water Depth:** ~~45~~ 43.8

	Water Depth (feet)	Turbidity (NTU)	pH (-)	DO (mg/L)	Temp. (°C)
Surface	1	3.25	7.25	10.94	14.8
Middle	21.9 ~~22.5 SD~~	3.46	7.22	10.97	14.8
Deep	40.8 ~~42 SD~~	3.32	7.24	10.98	14.7

Comments[1]: • No sheen, odor, discoloration, or SS observed

Construction Activity: Sand Placement

Recorded by: Simon Dudenhoefer

1. Include observations of floating/suspended material, sheens, discoloration, and odors.

* SS = suspended solids / material

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6720 South Macadam Avenue, Suite 300
Portland, OR 97219

Probe # 21E103678 YSI ProDSS #6970

Water Quality Monitoring Form – Field Parameters
Gasco Sediments Site ISS Pilot Study

Date: 10-24-2023 **Circuit Number:** 1

Station: BG EW (CS-1) CS-2 (N) S **Time:** 0755

Flood / (Ebb) Up River / (Down River) **Avg. Velocity:** 0.367

Lat/Northing: 45.58037 **Long/Easting:** 122.75744 **Total Water Depth:** 43

	Water Depth (feet)	Turbidity (NTU)	pH (-)	D.O. (mg/L)	Temp. (°C)
Surface	1	3.31	7.25	10.96	14.8
Middle	21.5	3.42	7.22	10.99	14.7
Deep	40	3.33	7.23	10.98	14.7

Comments[1]: • No sheen, odor, discoloration, or SS observed

• Collecting sample @ each depth interval using Van Dorn sampler
↳ CS-1N had highest CS NTU (3.42) @ 21.5'

Construction Activity: Sand placement

Station: BG EW CS-1 (CS-2) (N) S **Time:** 0804

Flood / (Ebb) Up River / (Down River) **Avg. Velocity:** 0.369

Lat/Northing: 45.58027 **Long/Easting:** 122.75676 **Total Water Depth:** 45.2

	Water Depth (feet)	Turbidity (NTU)	pH (-)	DO (mg/L)	Temp. (°C)
Surface	1	3.29	7.21	10.97	14.7
Middle	22.6	3.39	7.23	10.98	14.7
Deep	42.2	3.27	7.25	10.99	14.7

Comments[1]: • No sheen, odor, discoloration, or SS observed

Construction Activity: Sand placement

Recorded by: Simon Dudenhoefer

1. Include observations of floating/suspended material, sheens, discoloration, and odors.

* SS = suspended solids / material

Attachment 4
Water Quality Sampling Forms – Chemical Parameters

ANCHOR QEA

6720 South Macadam Avenue, Suite 300
Portland, OR 97219

Circuit #1 - Ebb Tide - Swell Removal

Water Quality Sampling Form – Chemical Parameters
Gasco Sediments Site ISS Pilot Study

Background Station ID: BG-1S

Lat/Northing: 45.57876	Long/Easting: 122.75402	
Total Water Depth: 38.4	Sample Depth: 1, 19.2, 35.4	
Sample ID: NWN-BG1S-231023+TIME	Date: 10-23-23	Time: 0920-0930

Comments[1]: • Collected sample @ each depth interval using Van Dorn sampler
• No sheen, odor, discoloration, or suspended material observed

Depth	Time	Sample ID
1	0920	NWN-BG1S-2310230920
19.2	0925	NWN-BG1S-2310230925
35.4	0930	NWN-BG1S-2310230930

Compliance Station ID: CS-2N

Lat/Northing: 45.58020	Long/Easting: 122.75672	
Total Water Depth: 45	Sample Depth: 1, 22.5, 42	
Sample ID: NWN-CS2N-231023+TIME	Date: 10-23-23	Time: 0955-1005

Comments[1]: • Collected sample @ each depth interval using Van Dorn sampler
• No sheen, odor, discoloration, or suspended material observed

Depth	Time	Sample ID
1	0955	NWN-CS2N-2310230955
22.5	1000	NWN-CS2N-2310231000
42	1005	NWN-CS2N-2310231005

Analytical Suite

Analyte	Bottle	Method	Preservative
Free Cyanide	125-mL Amber Poly	ASTM D4282	NaOH
	125-mL Amber Poly		None
PAHs	2 X 125-mL Amber Glass	EPA 8270D SIM	None

1. Observations of floating/suspended material, sheens, discoloration, and /or odors will be recorded in the comments.

Recorded and collected by Simon Dutenhoefer

ANCHOR QEA

6720 South Macadam Avenue, Suite 300
Portland, OR 97219

Circuit #1 - Ebb Tide - Sand Placement

Water Quality Sampling Form – Chemical Parameters
Gasco Sediments Site ISS Pilot Study

Background Station ID: BG-1S

Lat/Northing: 45.57877	Long/Easting: 122.75404	
Total Water Depth: 38	Sample Depth: 1, 19, 35	
Sample ID: NWN-BG1S-231024+TIME	Date: 10-24-23	Time: 0835-0845

Comments[1]: • Collected sample @ each depth interval using Van Dorn sampler
• No sheen, odor, discoloration, or suspended material observed

Depth	Time	Sample ID
1	0835	NWN-BG1S-2310240835
19	0840	NWN-BG1S-2310240840
35	0845	NWN-BG1S-2310240845

Compliance Station ID: CS-1N

Lat/Northing: 45.58038	Long/Easting: 122.75746	
Total Water Depth: 42.8	Sample Depth: 1, 21.4, 39.8	
Sample ID: NWN-CS1N-231024+TIME	Date: 10-24-23	Time: 0815-0825

Comments[1]: • Collected sample @ each depth interval using Van Dorn sampler
• No sheen, odor, discoloration, or suspended material observed

Depth	Time	Sample ID
1	0815	NWN-CS1N-2310240815
21.4	0820	NWN-CS1N-2310240820
39.8	0825	NWN-CS1N-2310240825

Analytical Suite

Analyte	Bottle	Method	Preservative
Free Cyanide	125-mL Amber Poly	ASTM D4282	NaOH
	~~125-mL Amber Poly~~		None
PAHs	2 X 125-mL Amber Glass	EPA 8270D SIM	None

1. Observations of floating/suspended material, sheens, discoloration, and /or odors will be recorded in the comments.

Recorded and collected by Simon Dudenhoefer

Attachment 5
Water Quality Field Parameter Measurements

Water Quality Field Parameter Measurements
Gasco Sediments Site ISS Field Pilot Study

Circuit No.	Monitoring Date	Time	Flow Direction (Upriver/ Downriver)	Station	North/ South	Total Water Depth (feet)	Monitoring Depth (feet)	Depth Zone	Measured Turbidity (NTU)	Background Corrected Turbidity (NTU)[1]	pH	DO (mg/L)	Temperature (C°)	Chemistry Sample
1	10/23/2023	9:04	Downriver	BG-1S	South	38.4	1	Surface	2.49	--	7.26	10.87	15.1	X
							19.2	Middle	2.53	--	7.23	10.78	15.1	X
							35.4	Deep	2.74	--	7.26	10.72	15.1	X
		9:32		EW-1N	North	43	1	Surface	2.55	0.06	7.26	10.84	15.1	
							21.5	Middle	2.67	0.14	7.23	10.79	15.1	
							40	Deep	6.07	3.33	7.32	10.71	15.1	
		9:40		CS-1N	North	44.2	1	Surface	2.65	0.16	7.30	10.83	15.1	
							22.1	Middle	2.69	0.16	7.25	10.77	15.1	
							41.2	Deep	3.81	1.07	7.26	10.71	15.1	
		9:49		CS-2N	North	45.0	1	Surface	2.61	0.12	7.28	10.85	15.1	X
							22.50	Middle	2.87	0.34	7.28	10.81	15.1	X
							42.0	Deep	5.92	3.18	7.39	10.70	15.1	X
1	10/24/2023	7:35	Downriver	BG-1S	South	41.0	1	Surface	3.44	--	7.22	10.94	14.8	X
							20.5	Middle	3.58	--	7.23	10.97	14.7	X
							38.0	Deep	4.12	--	7.27	10.98	14.7	X
		7:47		EW-1N	North	43.8	1	Surface	3.25	-0.19	7.25	10.94	14.8	
							21.9	Middle	3.46	-0.12	7.22	10.97	14.8	
							40.8	Deep	3.32	-0.8	7.24	10.98	14.7	
		7:55		CS-1N	North	43.0	1	Surface	3.31	-0.13	7.25	10.96	14.8	X
							21.5	Middle	3.42	-0.16	7.22	10.99	14.7	X
							40	Deep	3.33	-0.79	7.23	10.98	14.7	X
		8:04		CS-2N	North	45.2	1	Surface	3.29	-0.15	7.21	10.97	14.7	
							22.60	Middle	3.39	-0.19	7.23	10.98	14.7	
							42.2	Deep	3.27	-0.85	7.25	10.99	14.7	

Notes:

--: not applicable

1. The background corrected turbidity is calculated by subtracting the measured turbidity at each of the non-background stations (i.e., EW, CS-1, and CS-2) from the background station.

BG: background

CS: compliance station

DO: dissolved oxygen

EW: early warning

mg/L: milligram per liter

NTU: nephelometric turbidity unit

Attachment 6
Water Quality Chemical Parameter Measurements

Water Quality Monitoring Chemical Results
Gasco Sediments Site ISS Field Pilot Study

			Leveling of ISS-Treated Surface												Sand Placement											
		Sample Date	10/23/2023		10/23/2023		10/23/2023		10/23/2023		10/23/2023		10/23/2023		10/24/2023		10/24/2023		10/24/2023		10/24/2023		10/24/2023		10/24/2023	
		Time	9:20		9:25		9:30		9:55		10:00		10:05		8:35		8:40		8:45		8:15		8:20		8:25	
		Location ID	BG-1S		BG-1S		BG-1S		CS-2N		CS-2N		CS-2N		BG-1S		BG-1S		BG-1S		CS-1N		CS-1N		CS-1N	
		Depth (feet)	1.0		19.2		35.4		1.0		22.5		42.0		1.0		19.0		35.0		1.0		21.4		39.8	
Analyte	**Chronic WQC[1,2]**	**Acute WQC[1,2]**																								
Polycyclic Aromatic Hydrocarbons (µg/L)																										
Benzo(a)anthracene	2.2	9.2	0.016	U	0.017	U	0.017	U	0.016	U	0.016	U	**0.087**		0.016	U	0.016	U	0.016	U	0.016	U	0.016	U	**0.068**	
Benzo(a)pyrene	0.96	4	0.016	U	0.017	U	0.017	U	0.016	U	0.016	U	**0.111**		0.016	U	0.016	U	0.016	U	0.016	U	0.016	U	**0.085**	

Notes:

1. Acute criteria will be the compliance criteria for water quality monitoring

2. Acute and chronic PAH criteria are from *Procedures for Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures* (EPA 2003).

Detected concentration is greater than the acute water quality criteria

Detected concentration is greater than the chronic water quality criteria

Bold: Detected result

J: Estimated value

U: Compound analyzed but not detected above detection limit

µg/L: micrograms per liter

BMP: best management practice

ISS: in situ stabilization and solidification

WQC: water quality criteria

Reference:

EPA (U.S. Environmental Protection Agency), 2003. *Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures.* Office of Research and Development. EPA 600-R-02-013. November 2003. Available at: https://clu-in.org/conf/tio/porewater1/resources/EPA-ESB-Procedures-PAH-mixtures.pdf.