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**REDACTED**

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**From:** Jen Mott

**Sent:** Friday, May 19, 2023 9:59 AM

**To:** Young, Hunter <Young.Hunter@epa.gov>

**Cc:** Peterson, Lance <petersonle@cdmsmith.com>; Patricia Dost <pdost@pearllegalgroup.com>; Ryan Barth <rbarth@anchorqea.com>; Joe Smith <jsmith@anchorqea.com>; Wyatt, Robert <robert.wyatt@nwnatural.com>; Azhar, Wardah <azharw@cdmsmith.com>; Billie-Jo Gauley <bgauley@anchorqea.com>; Wesley Thomas (Wesley.Thomas@deq.oregon.gov) <wesley.thomas@deq.oregon.gov>

**Subject:** RE: PAR and Laboratory Pilot Study Work Plan

Hunter,

The following email is provided on behalf of Ryan Barth.

Below please find the link to download the *Additional Revised In Situ Stabilization and Solidification Bench Scale Treatability Study Work Plan* (Work Plan) prepared on behalf of NW Natural. The Work Plan was revised to address EPA's comments dated April 14, 2023, on the *Revised In Situ Stabilization and Solidification Bench Scale Treatability Study Work Plan Addendum* dated March 13, 2023, for the Gasco Sediments Site Project Area. As discussed in Section 1 of the Work Plan, NW Natural is continuing to perform detailed technical evaluations regarding the various methods for construction of the integrated upland in situ stabilization and solidification treatment barrier wall and associated hydraulic controls. Following completion of these evaluations, NW Natural will submit an additional revised version of this Work Plan that addresses any modifications to the upland Treatability Study scope of work to address DEQ's March 15, 2023, comments or other project needs.

 [2023-05-19 Additional Revised ISS Bench Scale TSWP](#)

As always, please let us know if you have any questions during your review and/or would like to have a call/meeting to discuss anything. Regards.

**GASCO0050697**

Jen Mott  
Project Coordinator  
**Anchor QEA, LLC**  
[jmott@anchorqea.com](mailto:jmott@anchorqea.com)  
6720 S Macadam Ave, Suite 125, Portland, OR 97219  
(503) 972-5014

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**From:** Young, Hunter <[Young.Hunter@epa.gov](mailto:Young.Hunter@epa.gov)>  
**Sent:** Friday, April 14, 2023 12:05 PM  
**To:** Jen Mott <[jmott@anchorqea.com](mailto:jmott@anchorqea.com)>; THOMAS Wesley \* DEQ <[wesley.thomas@deq.oregon.gov](mailto:wesley.thomas@deq.oregon.gov)>; Wyatt, Robert <[robert.wyatt@nwnatural.com](mailto:robert.wyatt@nwnatural.com)>; Ryan Barth <[rbarth@anchorqea.com](mailto:rbarth@anchorqea.com)>  
**Cc:** Peterson, Lance <[petersonle@cdmsmith.com](mailto:petersonle@cdmsmith.com)>; Patricia Dost <[pdost@pearllegalgroup.com](mailto:pdost@pearllegalgroup.com)>; Joe Smith <[jsmith@anchorqea.com](mailto:jsmith@anchorqea.com)>; Azhar, Wardah <[azharw@cdmsmith.com](mailto:azharw@cdmsmith.com)>  
**Subject:** RE: PAR and Laboratory Pilot Study Work Plan

Bob, Jen, Ryan,

Please see attached for EPA's comments on the Revised In Situ Stabilization and Solidification Bench Scale Treatability Study Work Plan Addendum.

Let me know if you have any questions.

Hunter Young  
U.S. Environmental Protection Agency  
Region 10 - Oregon Operations Office  
[Young.Hunter@epa.gov](mailto:Young.Hunter@epa.gov)  
(503)-326-5020

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**From:** Jen Mott <[jmott@anchorqea.com](mailto:jmott@anchorqea.com)>  
**Sent:** Monday, March 13, 2023 3:43 PM  
**To:** Young, Hunter <[Young.Hunter@epa.gov](mailto:Young.Hunter@epa.gov)>; THOMAS Wesley \* DEQ <[wesley.thomas@deq.oregon.gov](mailto:wesley.thomas@deq.oregon.gov)>  
**Cc:** Peterson, Lance <[petersonle@cdmsmith.com](mailto:petersonle@cdmsmith.com)>; [rbarth@anchorqea.com](mailto:rbarth@anchorqea.com); Wyatt, Robert <[robert.wyatt@nwnatural.com](mailto:robert.wyatt@nwnatural.com)>; [pdost@pearllegalgroup.com](mailto:pdost@pearllegalgroup.com); Joe Smith <[jsmith@anchorqea.com](mailto:jsmith@anchorqea.com)>  
**Subject:** RE: PAR and Laboratory Pilot Study Work Plan

Hunter, Wes,

The following email is provided on behalf of Ryan Barth.

**GASCO0050698**

On February 16, 2023, NW Natural submitted the *Revised In Situ Stabilization and Solidification Bench Scale Treatability Study Work Plan* (Revised Work Plan) for the Gasco Sediments Site that responded to EPA and DEQ comments on the *In Situ Stabilization and Solidification Laboratory Pilot Study Work Plan* dated January 18, 2023. During development of the Revised Work Plan, NW Natural considered provisions of the EPA guidance for conducting a treatability study pertaining to the projected costs for the study consistent with EPA's comments. Consistent with the guidance, since submittal NW Natural continued to evaluate ways to improve the cost effectiveness of the proposed treatability study, including how "cost and time savings" could be "increased by limiting sampling and analysis objectives to address only indicator contaminants" (EPA 1992). These evaluations led to the proposed revisions to the Revised Work Plan scope of work for the sediment and soil laboratory testing programs described in the attached *Revised In Situ Stabilization and Solidification Bench Scale Treatability Study Work Plan Addendum* that is provided for EPA and DEQ review.

As always, please let us know if you would have any questions during your review and/or would like to have a call/meeting to discuss anything. Regards.

Jen Mott  
Project Coordinator  
**Anchor QEA, LLC**  
[jmott@anchoragea.com](mailto:jmott@anchoragea.com)  
6720 S Macadam Ave, Suite 125, Portland, OR 97219  
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**From:** Jen Mott  
**Sent:** Thursday, February 16, 2023 11:57 AM  
**To:** Young, Hunter <[Young.Hunter@epa.gov](mailto:Young.Hunter@epa.gov)>; Wesley Thomas <[wesley.thomas@deq.oregon.gov](mailto:wesley.thomas@deq.oregon.gov)>  
**Cc:** Peterson, Lance <[petersonle@cdmsmith.com](mailto:petersonle@cdmsmith.com)>; Ryan Barth <[rbarth@anchoragea.com](mailto:rbarth@anchoragea.com)>; Wyatt, Robert <[robert.wyatt@nwnatural.com](mailto:robert.wyatt@nwnatural.com)>; Patty Dost (<[pdost@pearllegalgroup.com](mailto:pdost@pearllegalgroup.com)>)  
<[pdost@pearllegalgroup.com](mailto:pdost@pearllegalgroup.com)>; Joe Smith <[jsmith@anchoragea.com](mailto:jsmith@anchoragea.com)>  
**Subject:** RE: PAR and Laboratory Pilot Study Work Plan

Hunter, Wes,

The following email is provided on behalf of Ryan Barth.

NW Natural submitted the *In Situ Stabilization and Solidification Laboratory Pilot Study Work Plan* for the Gasco Sediments Site Project Area to EPA on October 31, 2022. EPA and DEQ subsequently provided comments on January 18, 2023. Below please find the link to download the *Revised In Situ Stabilization and Solidification Bench Scale Treatability Study Work Plan* that responds to and incorporates feedback received from EPA and DEQ.

 [2023-02-16 Revised ISS Bench Scale Treatability Study Work Plan](#)

Due to file size, the documents are available on OneDrive. A list of documents is provided below.

- PDF: *Revised In Situ Stabilization and Solidification Bench Scale Treatability Study Work Plan* with tables/figures and all appendices

- PDF: *Revised In Situ Stabilization and Solidification Bench Scale Treatability Study Work Plan* with tables/figures, but no appendices
- Folder: Appendices
  - PDF: *Appendix A Revised In Situ Stabilization and Solidification Bench Scale Treatability Study Field Sampling Plan*
  - PDF: *Appendix B Revised In Situ Stabilization and Solidification Bench Scale Treatability Study Quality Assurance Project Plan*
  - PDF: *Appendix C Revised In Situ Stabilization and Solidification Bench Scale Treatability Study Health and Safety Plan*
  - PDF: *Appendix D Supporting Information for Proposed Sample Locations*
  - PDF: *Appendix E Response to EPA and DEQ Comments on the In Situ Stabilization and Solidification Laboratory Pilot Study Work Plan*

Please do not hesitate to let Bob or me know if you have any questions during your team's review.

Regards.

Jen Mott  
Project Coordinator  
**Anchor QEA, LLC**  
[jmott@anchorqea.com](mailto:jmott@anchorqea.com)  
6720 S Macadam Ave, Suite 125, Portland, OR 97219  
(503) 972-5014

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**From:** Young, Hunter <[Young.Hunter@epa.gov](mailto:Young.Hunter@epa.gov)>  
**Sent:** Wednesday, January 18, 2023 4:33 PM  
**To:** Wyatt, Robert <[robert.wyatt@nwnatural.com](mailto:robert.wyatt@nwnatural.com)>  
**Cc:** Peterson, Lance <[petersonle@cdmsmith.com](mailto:petersonle@cdmsmith.com)>; Ryan Barth <[rbarth@anchorqea.com](mailto:rbarth@anchorqea.com)>; Jen Mott <[jmott@anchorqea.com](mailto:jmott@anchorqea.com)>; Wesley Thomas <[wesley.thomas@deq.oregon.gov](mailto:wesley.thomas@deq.oregon.gov)>  
**Subject:** RE: PAR and Laboratory Pilot Study Work Plan

**CAUTION:** This email originated from outside of Anchor QEA. Do not click links or open attachments unless you recognize the sender and know the content is safe.

All,

There was a typo with the issue date of the comments in the previous version. Please use this updated version. Thanks,

Hunter Young  
U.S. Environmental Protection Agency  
Region 10 - Oregon Operations Office

**GASCO0050700**

[Young.Hunter@epa.gov](mailto:Young.Hunter@epa.gov)

(503)-326-5020

---

**From:** Young, Hunter

**Sent:** Wednesday, January 18, 2023 4:23 PM

**To:** Wyatt, Robert <[Robert.Wyatt@nwnatural.com](mailto:Robert.Wyatt@nwnatural.com)>

**Cc:** Peterson, Lance <[peterstone@cdmsmith.com](mailto:peterstone@cdmsmith.com)>; [rbarth@anchorage.com](mailto:rbarth@anchorage.com); [jmott@anchorage.com](mailto:jmott@anchorage.com); Wesley Thomas <[wesley.thomas@deq.oregon.gov](mailto:wesley.thomas@deq.oregon.gov)>

**Subject:** RE: PAR and Laboratory Pilot Study Work Plan

Bob,

See attached for the U.S. Environmental Protection Agency's comments on the Gasco In Situ Stabilization and Solidification Laboratory Pilot Study Work Plan. I will reiterate that EPA understands that NW Natural has proposed an integrated deep ISS treatment barrier wall to DEQ as an alternative source control measure and that DEQ is reviewing NW Natural's proposal with an understanding that the design and construction of the alternative source control remedy will be completed in parallel with the in-water remedy.

Let me know if you have any questions. Thank you.

Hunter Young

U.S. Environmental Protection Agency

Region 10 - Oregon Operations Office

[Young.Hunter@epa.gov](mailto:Young.Hunter@epa.gov)

(503)-326-5020

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**From:** Young, Hunter

**Sent:** Monday, December 5, 2022 4:06 PM

**To:** Wyatt, Robert <[Robert.Wyatt@nwnatural.com](mailto:Robert.Wyatt@nwnatural.com)>

**Cc:** Peterson, Lance <[peterstone@cdmsmith.com](mailto:peterstone@cdmsmith.com)>; [rbarth@anchorage.com](mailto:rbarth@anchorage.com); [jmott@anchorage.com](mailto:jmott@anchorage.com)

**Subject:** RE: PAR and Laboratory Pilot Study Work Plan

Hello Bob,

The Preferred Alternative Report (PAR) dated October 2022 provides a concept for moving forward with a sediment remedy for the Gasco Project Area that incorporates in situ stabilization and solidification (ISS) into the design. NW Natural's "preferred Full Dredge and ISS Design" presented in the PAR combines full dredging to the depth of contamination based on Record of Decision Table 21 remedial action level exceedances and the presence of Principal Threat Waste (PTW) in the Navigation Channel Region, combined with ISS treatment throughout the Intermediate, Shallow, and

**GASCO0050701**

Riverbank Regions of the Project Area, and an integrated deep ISS treatment barrier wall at the top of riverbank. EPA recognizes the primary purpose of the PAR as a planning document to articulate future evaluations needed to demonstrate applicability of the ISS technology.

The conditions under which ISS was retained in the Feasibility Study (FS) and included in the selected remedy are for areas where access, structures, and slope stability issues exist, where groundwater is affecting porewater, and for PTW, which EPA recognizes are situations present at the Gasco Project Area. EPA generally supports the ISS concept and supports NWN moving forward with treatability and pilot studies to validate whether ISS is a viable sediment remedial technology at the Gasco Project Area. EPA also supports incorporating this technology into the revised design for the project area.

EPA understands that NWN has proposed an integrated deep ISS treatment barrier wall to DEQ as an alternative source control measure and that DEQ is reviewing NWN's proposal with an understanding that the design and construction of the alternative source control remedy will be completed in parallel with the in-water remedy.

This email provides EPA's comments on the PAR which are to be addressed in future design deliverable.

Thank you,

Hunter Young  
U.S. Environmental Protection Agency  
Region 10 - Oregon Operations Office  
[Young.Hunter@epa.gov](mailto:Young.Hunter@epa.gov)  
(503)-326-5020

---

**From:** Wyatt, Robert <[Robert.Wyatt@nwnatural.com](mailto:Robert.Wyatt@nwnatural.com)>  
**Sent:** Monday, October 31, 2022 2:51 PM  
**To:** Young, Hunter <[Young.Hunter@epa.gov](mailto:Young.Hunter@epa.gov)>  
**Cc:** Peterson, Lance <[peterstone@cdmsmith.com](mailto:peterstone@cdmsmith.com)>; [rbarth@anchorqea.com](mailto:rbarth@anchorqea.com); [jmott@anchorqea.com](mailto:jmott@anchorqea.com)  
**Subject:** PAR and Laboratory Pilot Study Work Plan

Hi Hunter,

We've completed the Preferred Alternatives Report (PAR) you requested for the Gasco Sediments Site. To maintain an expedited schedule, we have also prepared a Laboratory Pilot Study Work Plan that describes our recommended testing program for in situ stabilization and solidification (ISS). Both documents are available for download using the following options:

**Instructions to access the FTP:**

To access the FTP site automatically using Windows Explorer please follow the steps below for your version of Windows:

- **Windows 7:** Click Start -> and click in the search box; **Windows 8.1/10:** Right-Click Start -> Run
- Copy/Paste the following line into the “Open” box for XP/8.1/10 or the “Search” box for Windows 7 and hit “enter”

**REDACTED**

- You should now be logged into the site using Windows Explorer. You can use copy/paste to move files to or from the site

To access the FTP site manually using a FTP browser like [CoreFTP](#) or Windows Explorer please use the info below.

- Site URL:
- Username: **REDACTED**
- Password:

To access the FTP site via web browser please follow the steps below.

- Click on the following link: **REDACTED**
- Input the username and password that are listed in the above section
- Use the tools available directly to the site to download or upload

As we have discussed, to be able to implement a field pilot test of ISS this summer we will need a final decision on EPA’s selected design option by the end of 2022. This timeline is critical for us because of the complex equipment, materials, and staffing logistics involved in performing work in summer 2023. We will also need approval of the work plan by the end of January 2023 so the initial laboratory treatability testing results can be used to support the field pilot study.

We appreciate your support in maintaining strong forward progress on this project and are excited to move into the next phase of design. If you have any questions during your review, please call.

Thank you,

Bob

**Robert J. Wyatt, R.G.**

**Director, Legacy Environmental Program**

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