MEMORANDUM

To:	Kathy Parker, EPA William Ryan, EPA	**Date:**	May 29, 2013
From:	Mark Larsen, Anchor QEA, LLC Jeremy Porter, Aspect Consulting	**Site:**	Bremerton Gas Works
Cc:	Kalle Godel, Cascade Natural Gas		
Re:	Summary of Proposed Intertidal Beach Area Sampling Locations and Methods: Removal Evaluation Work Plan		

In May of 2013, Cascade Natural Gas and the U.S. Environmental Protection Agency (EPA) signed an Administrative Settlement Agreement and Order on Consent (AOC) for completion of a Remedial Investigation/Feasibility Study (RI/FS) at the Bremerton Gas Works Site (Site) located at 1725 Pennsylvania Avenue in Bremerton, Washington (Figure 1).

As specified in the Settlement Agreement Statement of Work (SOW), the first task includes performance of a Removal Evaluation targeting specific site areas and information needs identified by EPA. The Removal Evaluation will include chemical testing of surficial sediments in the intertidal areas adjacent to the former gas works location. Detailed sampling and analysis methods for this and other Removal Evaluation activities are being defined in the Removal Evaluation Work Plan (Work Plan; in preparation). The sampling activities will be conducted following EPA review and approval of that Work Plan,

Sampling is currently targeted for this summer. At that time, it is anticipated that sediments from 30 test locations within the intertidal area will be tested for concentrations of polynuclear aromatic hydrocarbon (PAH) compounds and total organic carbon (TOC). Proposed intertidal sampling locations are shown in Figure 2, and are consistent with the EPA requirements defined in the AOC.

Each of the intertidal sediment samples will be submitted for laboratory analysis for the parameters presented in Table 1. That table also includes proposed analytical testing methods and target reporting limits. If potential hydrocarbon impacts are identified during

collection of the surface sediment samples, additional samples of subsurface sediments will be archived for possible analysis at these testing locations.

Testing data for the intertidal beach area will be summarized in a Removal Evaluation Report to be developed after completion of field sampling and data analysis activities. That report will also include the findings of physical inspections of existing upland drainage infrastructure and visual inspections along the bluff and beach line. The Removal Evaluation Report will include recommendations regarding whether additional removal actions are warranted based on existing site conditions prior to completion of the RI/FS and development of an overall cleanup remedy for the Site.

Consistent with the AOC, RI/FS activities to be performed subsequent to the Removal Evaluation will include development of a Scoping Memorandum and RI/FS Work Plan, and extensive additional upland and in-water testing beyond that conducted in support of the current Removal Evaluation. The RI/FS will also include development of baseline human health and ecological risk assessments prior to evaluation of cleanup requirements in the FS.

At your direction, all information requests or comments received by our team regarding the Removal Evaluation activities will be directed to your attention by email at parker.kathy@epa.gov, or by mail or phone as follows:

Kathy Parker
Preparedness and Prevention Unit
U.S. Environmental Protection Agency
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(206) 553-0062 (Phone)
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TABLES

Table 1
Parameters for Analysis, Methods, and Quantitation Limits

Parameter	Analytical Method	Quantitation Limits
Conventional Parameters (%)		
Total Solids	SM 2540B	0.1
Total Organic Carbon (TOC)	PSEP	0.1
Polycyclic Aromatic Hydrocarbons (µg/kg dry weight)		
1-Methylnaphthalene	8270D-SIM	0.5
2-Methylnaphthalene	8270D-SIM	0.5
Acenaphthene	8270D-SIM	0.5
Acenaphthylene	8270D-SIM	0.5
Anthracene	8270D-SIM	0.5
Benz(a)anthracene	8270D-SIM	0.5
Benzo(a)pyrene	8270D-SIM	0.5
Benzo(b)fluoranthene	8270D-SIM	0.5
Benzo(g,h,i)perylene	8270D-SIM	0.5
Benzo(j)fluoranthene	8270D-SIM	0.5
Benzo(k)fluoranthene	8270D-SIM	0.5
Chrysene	8270D-SIM	0.5
Dibenzo[a,h]anthracene	8270D-SIM	0.5
Dibenzofuran	8270D-SIM	0.5
Fluoranthene	8270D-SIM	0.5
Fluorene	8270D-SIM	0.5
Indeno(1,2,3-c,d)pyrene	8270D-SIM	0.5
Naphthalene	8270D-SIM	0.6
Phenanthrene	8270D-SIM	0.5
Pyrene	8270D-SIM	0.5

Notes:

µg/kg dry wt = micrograms per kilogram, dry weight basis

PSEP = Puget Sound Estuary Program

SIM = Selective Ion Monitoring

DNR-00050621

FIGURES

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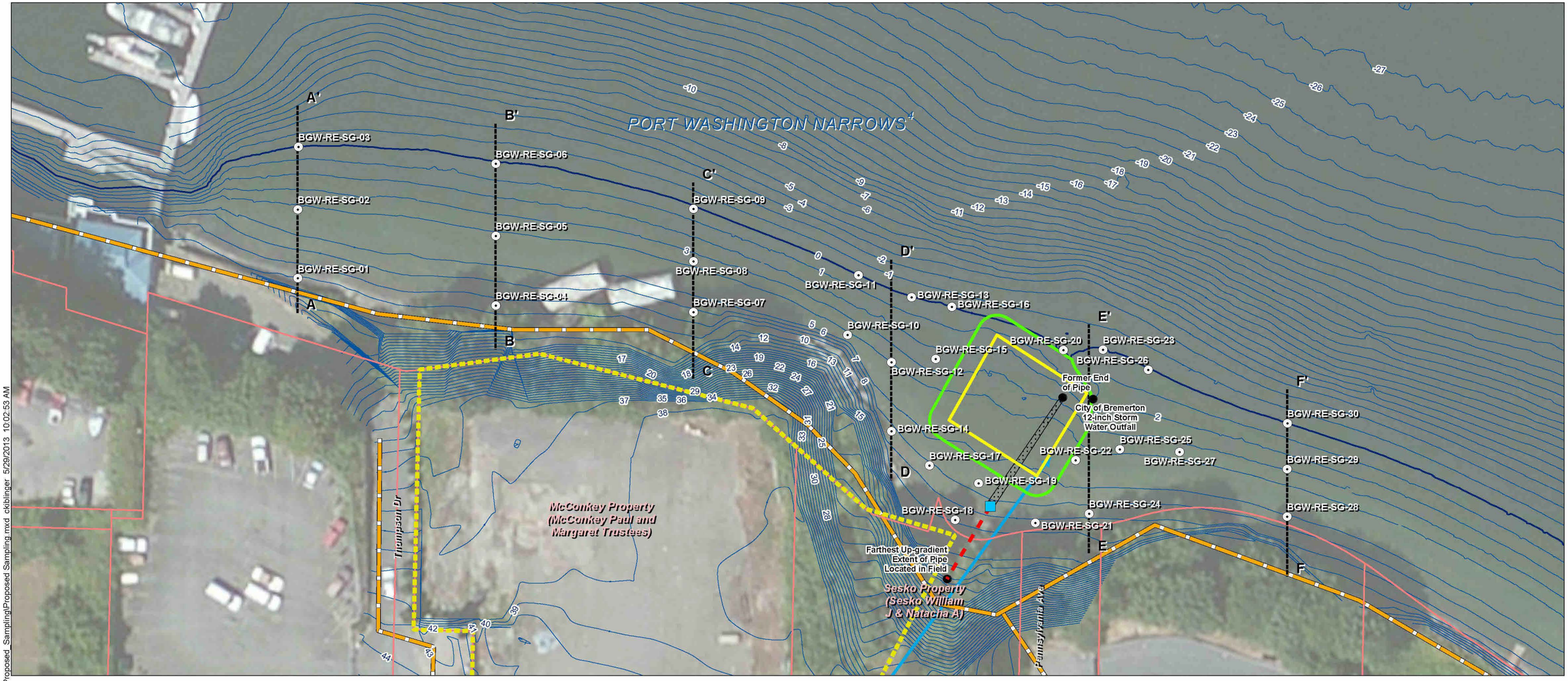
Feet
0 750 1,500

Figure 1
Former Gas Works Location and Vicinity
Removal Evaluation Work Plan
Bremerton Gas Works Site



- Proposed Sampling Locations
- 100-Foot Transects
- Bathymetry/Topography Contours (MLLW ft)[1]
- Extent of Organo-Clay Mat[2]
- Cover of Organo-Clay Mat (10-inch minus rock)[2]
- Field Verified Pipe Location
- TCRA/IA Pipe Plug Location[2]
- Remaining 12-inch Concrete Pipe[2]
- Sanitary Sewer
- Storm Sewer
- Pipe Removed and Backfilled to Grade[2]
- Former Gas Works Location
- Parcel Boundaries[3]

NOTES:
1. Survey conducted by eTrac; provided on May 15, 2013.
2. See Final Completion Report, Former Bremerton MGP Site, Incident Action and Time Critical Removal Action, January, 2011. Locations are approximate.
3. Acquired from Kitsap County GIS Data Download (http://www.kitsapgov.com/gis/metadata) and Real Property Search Tools (http://kcwppub3.co.kitsap.wa.us/ParcelSearch), May 15, 2013. Locations are presumed to be approximate.
4. State Aquatic Lands - Managed by DNR
5. 0-ft contour = Mean Lower Low Water (MLLW)

Feet
0 25 50 75 100

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Figure 2
Removal Evaluation Intertidal Sampling Locations
Removal Evaluation Work Plan
Bremerton Gas Works Site