

**A MEMORANDUM OF AGREEMENT**

**Between**

**The United States Environmental  
Protection Agency**

**and**

**City of Tacoma, Department of Public Utilities,  
Water Division (Tacoma Water)**

**Well 12A Operation During Superfund Remedy**

**December 2010**



**A MEMORANDUM OF AGREEMENT**  
**Between**  
**The United States Environmental Protection Agency**  
**and**  
**Tacoma Water**

**I. Preamble**

- A. This is a voluntary agreement between the United States Environmental Protection Agency (EPA) and Tacoma Water to promote coordination of activities and sharing of information related to the operation of Tacoma Water's Supply Well 12A during implementation of the amended remedy for the Well 12A, Operable Unit 1 (OU1) of the Commencement Bay/South Tacoma Channel Superfund Site (hereinafter Well 12A Superfund Site). The selected "remedy" or "remedial action" is described in the second Record of Decision Amendment for the Well 12A Superfund Site, signed in October 2009.
- B. It is hypothesized that sustained pumping of Well 12A draws the contaminant plume toward the well and affects groundwater flow within the plume. Operation of Well 12A may disrupt certain phases of the remedial effort unless activities are coordinated with the use of Well 12A. Appendix A of the Focused Feasibility Study<sup>1</sup> discusses the impact of Well 12A on the movement of contaminants.
- C. The purpose of this agreement is to provide an understanding of normal operations for Well 12A for planning purposes, provide a communication strategy to coordinate activities with the operation of Well 12A, identify trigger events for which notifications should be provided to all parties, and provide a mechanism for information exchange.
- D. It is understood that successful implementation of the remedy for Well 12A, OU1 of the Commencement Bay/South Tacoma Channel Superfund Site is desirable for all parties as the remedy is intended to prevent further migration of contaminant mass and assist in achieving the long-term objective of restoring the aquifer to its beneficial use as a drinking water source for the City of Tacoma.
- E. This agreement does not create any right or benefit substantive or procedural, enforceable by law or equity against EPA or Tacoma Water, their officers or

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<sup>1</sup> CDM, 2009. *Final Focused Feasibility Study, Well 12A Superfund Site, Tacoma Washington*. Report prepared for the USEPA Region 10. April 2, 2009.

employees, or any other person. This agreement does not direct or apply to any person outside of EPA and Tacoma Water.

- F. EPA enters into this agreement in furtherance of its statutory and regulatory responsibilities and authorities under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. 9601 et seq., and to facilitate the implementation of the selected remedial action for the Well 12A Superfund Site.

## **II. Normal Operation of Well 12A**

- A. Tacoma Water's South Tacoma well field, including Well 12A, is currently used primarily as a peaking source of water. Use of wells can be expected to vary widely from one year to the next, with some years requiring very little well usage. Overall usage of the well field, including Well 12A, is predicted to increase in the future. It is anticipated that this well field may be heavily used in a dry year, and it is possible that it may be used very little in a normal to wet year.
- B. Well 12A, with its air stripping treatment, is critically important as its availability affects other large production wells in the area. Although subject to modification, Well 12A and the air stripping treatment is generally started and run under the following conditions:
- Well 6B or Well 11A are not allowed to run more than 10 consecutive days without Well 12A running.
  - Well 12A must run if both Well 6B and Well 11A are running together.
  - Well 12A should run if the following north wells are in operation: Wells 2B, 4A, and 9A.
- C. To provide for adequate exercising of the wells, and to ensure that wells will be available when called, Tacoma Water has adopted a well pumping schedule that ensures that each of its wells are run at least every four years. Well 6B and Well 11A are scheduled to run in alternating odd years. Well 12A is to be run every other year (odd numbered years), to correspond to the years in which Well 6B or Well 11A are run.

## **III. Terms of Agreement**

- A. The Terms of Agreement identified below were prepared through discussions and coordination of representatives from Tacoma Water and EPA. The intent of these terms is to improve the success of the remedy implementation. Tacoma Water will use reasonable efforts to meet any voluntary use modifications or restrictions defined through this process, provided, however,

that Tacoma Water's operation of Well 12A to supply groundwater necessary to meet demand will take precedence.

- B. **Well 12A Pumping Test:** The EPA agrees to coordinate the implementation of a pumping test at Well 12A with Tacoma Water. The purpose of the pumping test is to collect data for use in defining if and how Well 12A impacts the plume area to maximize the effectiveness of remedial activities. The EPA will initially collect background data from surrounding monitoring wells while Well 12A is not in operation, and then conduct the pumping test of Well 12A to monitor groundwater levels in the surrounding area to determine aquifer response.
- C. EPA will conduct the pumping test prior to injecting amendment into the subsurface to enhance anaerobic bioremediation. EPA will provide full disclosure to Tacoma Water of the composition of any amendment added to the aquifer. The intent of the amendment injections is to enhance the natural conditions necessary to improve groundwater quality by promoting bioremediation of contaminants including but not limited to trichloroethylene, 1,1,2,2-tetrachloroethane, and tetrachloroethylene. Accordingly, EPA does not expect that the injection of amendment will further deteriorate groundwater quality. **Modified Pumping Strategy during Amendment Injection and Distribution:** EPA agrees to negotiate with Tacoma Water to develop a mutually agreeable pumping strategy for Well 12A during injection and distribution of amendment into the subsurface to enhance anaerobic bioremediation. The EPA will be using the groundwater extraction and treatment system (GETS) located on the former Time Oil property to control amendment delivered to the subsurface and aid in distributing it across the target treatment area. The EPA agrees to coordinate with Tacoma Water prior to injection to ensure the operation of Well 12A will not negate any testing or remedial effort. This may require that Well 12A be shut off for a period of time or not run continuously for a specific length of time, subject to the operational needs of Tacoma Water as set forth in Section III. A. above.

The EPA will initially be conducting an injection pilot study and would work with Tacoma Water to determine the effect of Well 12A on the plume during this test period.

- D. **Controlled Well Operation during Flux Monitoring and Groundwater Sampling:** EPA agrees to coordinate with Tacoma Water before each flux monitoring round or groundwater sampling round is conducted. If Well 12A operations change in the middle of a sampling cycle, it may adversely impact results. EPA agrees to coordinate sampling activities such that sampling is conducted while Well 12A is not in use, or provide that Tacoma Water will maintain a constant pumping rate at Well 12A during the timeframe of sampling.

EPA agrees to provide prior notification to and coordinate with Tacoma Water if any modification or restriction of Well 12A use is desired during flux monitoring and groundwater sampling. Quarterly monitoring is projected to occur through 4<sup>th</sup> Quarter 2013. The frequency of sampling by EPA will decrease after the engineering components of the remedy are complete.

- E. **Information Sharing:** EPA would like to set up a mechanism where data collected about the aquifer by both parties is shared. At a minimum, EPA requests that a meeting be held once a year to exchange information. The EPA will provide a status of the remedy including providing groundwater level data and analytical results.
- F. **Coordination of Operations:** Tacoma Water intends to work with EPA to operate Well 12A in a manner that is consistent with the remedial action, recognizing that water supply obligations are of primary importance.
- F. **Communication Strategy**

A. **List of Contacts**

1. **U.S. Environmental Protection Agency**

Ms. Kira Lynch  
(206) 553-2144  
Lynch.Kira@epamail.epa.gov

2. **Tacoma Water**

Ms. Kim DeFolo, Water Quality  
(253) 396-3087  
kdefolo@cityoftacoma.org

Mr. Chris Johnson, Water Supply  
(253) 502-8743  
cjohnso2@cityoftacoma.org

B. **Trigger Events for Notification**

1. EPA

- Injection of amendment
- Flux monitoring
- Groundwater sampling/groundwater levels

2. Tacoma Water

- Deviations from normal pumping strategy
- Emergency situations (e.g., flooding that necessitates use of Well 12A)

#### IV. Signatories

The undersigned hereby execute this Memorandum of Agreement on behalf of their respective agency. This agreement takes effect when signed by a representative from each agency, and will continue in effect until December 31, 2015. This agreement may be extended or modified, at any time per the mutual written consent of the parties. Additionally, a party may terminate its participation in this agreement at any time by providing written notice to the other party at least 10 days in advance of the desired termination date.

For the United States Environmental Protection Agency:

  
Daniel D. Opalski

Director, Office of Environmental Cleanup

Date: 1/27/11

For Tacoma Water:

  
Linda McCrea

Water Superintendent

Date: 1/17/11