

**Comments on US EPA Fact Sheet Announcement,  
'US EPA Signs Record of Decision for Brown and Bryant Superfund Site OU2'**

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The development and signing of a Superfund site Record of Decision (ROD) represents an important step in the investigation and remediation of a Superfund site. The final ROD outlining the remediation plan for the Brown and Bryant (B & B) Operable Unit No. 2 (OU-2) at the Arvin, CA site was released in September 2007; the ROD is available at:  
[http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/3dc283e6c5d6056f88257426007417a2/951b65b4f842e4fc8825736b006ee37e/\\$FILE/B&B%20FINAL%20ROD%20September\\_%202007%2009-30-07.pdf](http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/3dc283e6c5d6056f88257426007417a2/951b65b4f842e4fc8825736b006ee37e/$FILE/B&B%20FINAL%20ROD%20September_%202007%2009-30-07.pdf)

In November 2007 the US EPA Region 9, San Francisco, CA, released a Fact Sheet announcing the US EPA's signing of that ROD and summarizing aspects of it; the Fact Sheet is available at:  
[http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/3dc283e6c5d6056f88257426007417a2/996f5cbb83fd649c882573930031755b/\\$FILE/Brown%20&%20Bryant11\\_07%20Eng\\_Span%20139kb.pdf](http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/3dc283e6c5d6056f88257426007417a2/996f5cbb83fd649c882573930031755b/$FILE/Brown%20&%20Bryant11_07%20Eng_Span%20139kb.pdf)

A summary the key information provided in the ROD announcement is presented in these comments.

The Fact Sheet states the following:

*"U.S. Environmental Protection Agency (EPA) has signed a Record of Decision (ROD) that selects remedial measures to address groundwater contamination that resulted from pesticide reformulation activities at the Brown and Bryant Superfund Site (Site)."*

*"This ROD was developed in conjunction with the June 6, 2007 Proposed Plan that presented the cleanup goals for the chemicals of concern (COCs) and evaluated several alternatives to cleaning up the Site. There was one significant change from the Proposed Plan with the ROD establishing a more protective cleanup goal for 1,2,3 Trichloropropane (TCP) than was originally stated in the Proposed Plan. The change drops the cleanup goal from 40 micrograms per liter (µg/L) to 0.5 µg/L. The original proposed cleanup level of 40 µg/L is EPA's chronic lifetime health advisory level that was used because there is no Maximum Contamination Level (MCL) for TCP. The more protective cleanup goal of 0.5 µg/L is at the practical detection limit and was agreed upon by EPA and the California Department of Toxic Substances Control (DTSC). The cleanup measures that were selected will achieve the new cleanup goal for TCP and the cleanup goals for the other COC established in the Proposed Plan.*

*The selected cleanup measures include relocating and decommissioning City Well 1 (CW-1), pumping and treating the shallow aquifer and monitored natural attenuation in the middle aquifer with a Monitored Natural Attenuation Performance Plan (MNAPP).*

*The migration of groundwater contamination to potential and established domestic water the goal of this final cleanup plan is to protect human health and the environment by preventing the supplies.”*

### ***“The Selected Remedy***

*A remedy has been developed and selected to address the two issues stated above through three key components. The first component is to relocate the nearest drinking water well, CW-1. The second component is to design and implement a system of large arbor wells to pump and treat contamination in the shallow groundwater that is contained in the sponge-like geology below the Site. The third component is to develop a monitored natural attenuation performance plan to monitor the natural de-composition process of contaminants in the middle aquifer. Each of these three components will be de-scribed in further detail below.”*

### ***CW-1***

*The threat of Site-related contaminants migrating to CW-1 and contaminating Arvin’s drinking water supply is, at present, the primary risk to human health. Therefore, the first priority will be to relocate the well.*

*As a conservative measure of prevention, the EPA will construct a new drinking water well in coordination with the Arvin Community Services District (ACSD) and the City of Arvin and decommission CW-1 which is a gravel-packed constructed well. Decommissioning the well is necessary to prevent Site contaminants from entering the well.*

*In order to successfully relocate CW-1, the EPA and ACSD will need to identify a new location, test the water quality and test the feasibility of constructing the new well at the proposed location. This may take several months to accomplish. It is essential that this process is followed to ensure that the well is a lasting fixture and continues to provide quality drinking water to the community of Arvin.*

*The EPA estimates that the complete relocation of CW-1 and the decommissioning process will take approximately one year. This estimate is based on the assumption that all the steps of the procedure identified above are not complicated by unforeseen circumstances.*

### ***Large Arbor Wells***

*As stated above, the geology below the site is similar to a sponge. The site contaminants that have seeped into it from above have been absorbed and are being released very slowly to the middle aquifer below as groundwater passes through the sponge-like geology. A significant lack of water in the shallower aquifer creates a unique challenge to removing the contamination in the shallow aquifer. The EPA will design and install wells that are approximately eight feet in diameter and about 85 feet in depth. These large arbor wells are significantly different from traditional pump and treat wells that are only six inches in diameter. It is the intent of this system to catch Site contaminants before they reach the middle aquifer.*

*The large arbor wells are expected to perform with greater results and lower maintenance costs over the life of the treatment period. The sponge-like geology does not yield enough water to sufficiently cool the pumps during their operation, and the pumps would likely over-heat and*

*need to be replaced after only a fraction of the expected useful life. The large arbor wells will incorporate a passive pumping system similar to a sump pump. Once enough water has been accumulated in a basin, the pump will turn on and bring the water to the surface for treatment. This reduces potential wear and premature replacement of necessary equipment. This process will also reduce energy consumption and unnecessary greenhouse gas emissions that may have been produced by keeping a pumping system in constant operation. Once the groundwater has been treated and the contaminants have been removed or rendered inert (un-reactive and harmless), it will be disposed of in the municipal sewer system.*

*The EPA estimates that this system will operate for more than 10 years from completion of system construction. This estimate is based upon assumptions that groundwater flow rates remain constant during the treatment period. Fluctuations of groundwater flow may have significant impacts on the duration of the treatment. Regular monitoring will determine the effectiveness of this treatment system and allow for updates on estimates of cleanup completion.*

### ***Monitored Natural Attenuation Performance Plan***

*The EPA has documented that contaminants that enter the middle aquifer begin to decompose naturally and decrease in concentration as they get further from the source of the contamination in the shallow aquifer. The EPA believes that preventing contaminants from entering the middle aquifer by reducing the source of the contaminants in the shallow aquifer will allow the contaminants in the middle aquifer to naturally attenuate (decrease in concentration). Actual performance of the natural attenuation remedy will be carefully monitored in accordance with a Monitored Natural Attenuation Performance Plan (MNAPP). If monitoring data indicate that the COC levels do not continue to decline, as estimated, EPA and DTSC will reconsider the remedy decision. The EPA estimates that the site contaminants will naturally attenuate to target levels after the cleanup goals have been achieved with the large arbor wells.*

*The MNAPP will incorporate a system of monitoring wells, monitoring and reporting schedules and the identification of goals and triggers. These components of the MNAPP will need to be developed and the EPA will work with all interested stakeholders on the development of the MNAPP.*

*This comprehensive performance plan will be developed during the Remedial Design (RD) process when the large arbor wells are designed. Community involvement is highly encouraged throughout the RD process.”*

### ***“Property Concerns***

*The EPA has heard several concerns about individuals’ properties around the Site. Concerns range from property values to sellers’ disclosures. The following sections will go into more depth and provide additional resources for further information on these two subjects.*

### ***Property Values***

*Economic evidence suggests that placing sites on the National Priorities List (NPL) either has no effect on the prices of nearby homes or may actually raise them. This may seem surprising at first, but a closer look at how real estate markets work shows that information about hazardous materials at a given site (usually from local media) can be used by real estate markets fairly*

*quickly. The real problem is the uncertainty and delay between the discovery of the hazardous materials and the decision to clean up the site complicated by controversy over who will pay for it. Because the listing of a site on the NPL implies a Federal commitment to clean up the site, this step reduces uncertainty and may act as a signal to real estate markets that property values will soon rise. Additional steps, such as the release of the Record of Decision, may have similar effects.”*

#### **“Real Estate Disclosure and Superfund Site Boundaries**

*While it is customary in California to disclose a Superfund site that is within one mile of a residence, California law does not specifically address disclosure of Superfund status in real estate transactions. However, California law requires disclosure to prospective buyers of any conditions that may materially affect the value of residential property. California law also requires a seller to disclose adverse conditions on a property that are not easily discoverable by a buyer. Both buyers and sellers need to be careful to conduct research and make appropriate disclosures on properties that may be contaminated or near contaminated sites.”*

#### **Overall Comments**

The ROD for the remediation of the OU-2 area of the B&B Superfund site and the associated Fact Sheet released in 2007 presented to the public a misleading assessment of potential and actual groundwater pollution caused by the site, and an overly optimistic and unrealistic expectation of the degree to which the B&B Superfund site would be remediated and of the rate at which the remediation would be accomplished.

With regard to Arvin’s water supply well, CW-1, the ROD announcement indicated that the B&B site is a “threat” and that replacement of the well will be done “as a conservative measure of prevention.” In the ROD, however, the US EPA acknowledged that site-associated pollutants had, in fact, reached CW-1, but that concentrations of measured parameters had not exceeded MCLs. On the basis that measured pollutants had not exceeded MCLs, the US EPA determined that the well water was not polluted. The flaws in that reasoning have been discussed in our “Flawed Technology” review as well as in our comments on the ROD. It cannot be assumed that the fact that MCLs for the chemicals tested were not exceeded means that the water is safe for consumption or other uses. There can be unmeasured pollutants present that are a threat to public health in drinking water; some MCLs, including those for arsenic and chloroform, were not established at levels that ensure protection of public health.

According to its 2007 Fact Sheet, the US EPA estimated that it would take one year to complete the development of a replacement water supply well to replace CW-1. It is now five years later, and a new water supply well has still not been developed.

Upon detection of any B&B Site-derived contaminants in the water supply well water, the US EPA should have immediately shut down the well and found an alternate water supply for the people in Arvin.

Arbor wells provide a potentially viable method to begin to remove some of the pollutants in the A-zone soil and groundwater. However, it has, again, been five years and that measure has still not been undertaken. The Arbor wells should be placed as soon as possible and be closely

monitored to assess its effectiveness. The Fact Sheet stated that “the EPA estimates that this system will operate for more than 10 years from completion of system construction.” In order to protect public health and groundwater quality for as long as the site remains a threat, that system will likely have to be operated, maintained, and monitored for many decades.

The OU-1 ROD indicated that the groundwater that was to be removed from the A-zone would be treated and be re-injected into the site groundwater. The ROD for the OU-2 area, however, indicated the polluted groundwater extracted from the A-zone groundwater would be treated and sent to the local POTW (domestic wastewater treatment plant). The extracted groundwater and the treated wastewater from the POTW need to be carefully monitored to be certain that the B&B site pollutants are adequately treated in the POTW before its effluent is discharged.

According to the Fact Sheet, the details of the Monitored Natural Attenuation Performance Plan (MNAPP) that was to be part of the remediation of the B-zone groundwater were to have been developed during the Remedial Design process. The details of that plan should have been released for public review by now. As we commented on the ROD for OU-2, a combination of MNA, a marginally viable option, and enhanced groundwater removal by pump and treatment would be expected to offer a more effective approach to reducing the transport of site pollutants to offsite areas including the C-zone groundwater, and thereby offer a more reliable approach for cleaning up the B-zone groundwater.

The Fact Sheet stated, “*Economic evidence suggests that placing sites on the National Priorities List (NPL) either has no effect on the prices of nearby homes or may actually raise them.*” The Fact Sheet offered no identification or description of what this “evidence” was, who provided it, or the nature of the “suggestion” it made concerning the impact of NPL sites on nearby residential properties. We have observed that there is often disagreement between the values assigned to residential properties near waste management sites by site owners /agencies and those assigned by property value assessors. Contrary to what may have been “suggested” to the US EPA, and as discussed in our “Flawed Technology” review, there is peer-reviewed literature reporting on university-conducted studies that document the adverse impacts of landfills on property values.

The Fact Sheet fails to adequately inform the public about some of the potential problems with the approaches adopted by the US EPA for remediating the OU-2 areas of the B&B Superfund site.