

To: West Valley Citizen Task Force

From: Melinda Holland, Clean Sites

Subject: Summary of January 15, 1998, Technical Workgroup Meeting - **Revised**

Date: January 27, 1998

At the January 7th CTF meeting, CTF members requested a technical workgroup meeting to discuss their concerns about:

- Impacts from the pilings under the Main Process Building, Waste Management Area 1 (WMA 1)
- Adequacy of the groundwater monitoring around the Main Process Building to detect contamination from the building into the Kent Recessional or deeper strata
- Methods of treating the North Plateau groundwater plume
- Bedrock Valley aquifer

This technical workgroup meeting was attended by: Tim Siepel, Ray Vaughan, and Murray Regan, CTF members; Carol Mongerson, observer; Paul Bembia and Tom Attridge, NYSERDA; Zintar Zadins and Bob Blickwedehl, Dames & Moore; Craig Repp, Bob Steiner, and Sonja Allen, WVNS; and Melinda Holland, Clean Sites, by conference call.

#### Impacts from Pilings and Groundwater Monitoring Issues

A CTF member stated that monitoring wells 306, 410, and 411 are in the correct area but were not screened at the correct levels vertically to detect contamination in the Kent Recessional. A site consultant responded that wells 410 and 411 are up-gradient of the Process Building and well 306 is across-gradient. There are no down-gradient Kent Recessional wells in the immediate area of the Process Building. There is a thick sand and gravel layer under the building and the wells were set to monitor that zone, not the Kent Recessional. United States Geological Survey (USGS) well 83-4d goes into the Kent Recessional, and although it is not screened at the very base, samples from the Kent Recessional can be obtained from this well. It is located near the north to northeast end of the Lag Storage Building addition. 83-4d has been sampled since late 1996 but little has been found there aside from a naturally-occurring isotope (Potassium-40). The location of test results from this well was requested.

The CTF members felt there is a need to be able to monitor for leaks which could result from openings created by installation of the pilings under the Main Process Building. A site consultant stated that it would be a good idea to install additional wells into the Kent Recessional if the decision is reached to close the building in-place. A CTF member questioned waiting until the decision has been reached because information indicating that the pilings have opened a pathway for contaminants to the Kent Recessional could effect the decision to close the building

in-place. A site consultant stated that it would take about 500 years for groundwater beneath the site to reach Buttermilk Creek, and other radionuclides like Cesium-137 or Strontium-90 which adhere to soil particles would move even more slowly. These times are developed using calculations derived from hydraulic conductivity and hydraulic head measurements. A NYSERDA representative stated that the USGS estimated flow rates using that approach. The CTF member felt that those calculations would be more accurate for homogenous media like the South Plateau Lavery Till rather than the soil of variable-sized particles found in the North Plateau. He suggested taking samples from well 83-4d to try to determine water dates and travel times. A site consultant cautioned that water dating may not be possible because sometimes you cannot locate carbon which is needed to do the dating. He also asked if travel times could be calculated based on water dating on the location of contamination from fallout from particular nuclear events. In response to an observer question, a NYSERDA representative stated that the Kent Recessional in the South Plateau is contiguous with the Kent Recessional in the North Plateau and the flow in that zone is to the northeast. Another CTF member asked if there are channels or faults which would allow the water to flow more swiftly in the North Plateau area. It was reported that the upper Kent Recessional contained a coarser fraction which would allow more flow.

Another CTF member suggested that installing a new well in the Kent Recessional would provide this information. The cost for such a well was estimated at \$6,000 to \$8,000 by a site consultant. Site representatives agreed to look into the idea of an additional Kent Recessional well in this area.

A CTF member referred to a memorandum from Dames & Moore from the early 1960s which refers to piles having been installed which were not completely vertical and which needed to be straightened. His concern is that during this straightening process openings could have been created along the piling to the deeper geologic units. A site consultant explained that as the pilings were driven, after 2 or 3 days the clay would remold itself around the pile and the clay particles would reorient themselves back to their original configuration. Another discussion ensued about how far the piles could have been moved during a reported straightening process which may not seal the opening around the pile. Discussion also focused on how far one could actually move a steel piling. Site consultants agreed to calculate the expected pile bending outcomes for the piles. **Site consultants asserted and explained that only the top 10 feet or so of a piling could be moved to any significant degree.** The sand and gravel layer is around 30 feet deep in the area in question thus they felt it was unlikely that a pathway for contaminants could have been opened into the Kent Recessional through the till. The CTF member acknowledged that, **unless a well could be placed in a location that would provide a definitive answer on whether or not the pilings have opened a pathway to deeper layers, if this turns out to be an improbable hypotheses, then** it would not worth spending a lot of money to investigate. Site consultants agreed that the best way to detect possible contamination in the Kent Recessional would be to install a monitoring well in that area but felt it would not be necessary if Alternatives I or II were selected because the plant would be dismantled and all contamination removed. That is why they have favored waiting until the remedy is selected before installing additional wells.

An observer asked about the fluctuations of radioactivity in South Plateau Kent Recessional wells, sometimes levels were above background and sometimes they are not. A site consultant responded that they look for steady, consistent trends, but short-term fluctuations do occur seasonally and are also expected due to the variability of analyzing extremely low concentrations.

### Bedrock Valley Aquifer Issues

A CTF member asserted that there is not adequate monitoring of the Bedrock Valley Aquifer. While it is unlikely that contamination has gotten to this zone, it would be good to install at least one well to provide baseline data including information on flow rate and direction. His reasons for being concerned with this deep zone include possible impacts from a global erosion control strategy which could redirect streams and eventually affect flows in the Bedrock Valley Aquifer. He also stated that wastes could migrate to the West into recharge areas near Rock Springs Road. These are the type of investigations which would have to be done if you were to site a Part 61 disposal facility.

### North Plateau Groundwater Plume Remediation

At the last CTF meeting a member suggested a technical approach to treating the North Plateau groundwater plume using a horseshoe shaped slurry wall and injection of chelating agents to drive and funnel contamination to a collection well for removal and treatment. A site consultant discussed a report which was done for the site by Malcolm Pirnie to investigate available technologies to treat the plume. Slurry walls for containment combined with flushing was one approach that was investigated. It was also noted that reverse osmosis is a better treatment technology for the water removed from the plume.

A site consultant also stated that as a result of CTF comments and concerns expressed at other public meetings, the site convened an external peer review panel to look into the North Plateau groundwater plume issue. One of their recommendations was to focus more effort on the source of the contamination. The site is acting on these recommendations, beginning with the characterization of the core area of the plume over the summer and fall. The first stage will include use of the geoprobe sampling technology at several locations in the core area. The second stage will attempt directional geoprobng to get at areas directly beneath the Process Building in the vadose zone.

A CTF member mentioned that Malcolm Pirnie's report seemed negative about the idea of putting a slurry wall all the way around the plant due to head build-up, underground utilities, and the difficulty of excavating contaminated material to construct the slurry wall. A site consultant responded that the Malcolm Pirnie study was based on the assumption that the plant remained fully operational and therefore excavation of soils with numerous underground utilities was problematic.

### **Action Items**

- ◆ Perform calculations on pilings and report result **and details of calculations** to the CTF
- ◆ Investigate dating water from well 83-4D
- ◆ Assess potential installation of the Kent Recessional well and Bedrock Valley Aquifer well