

From: Ball, Ted
Sent: Friday, August 08, 2014 4:46 PM
To: Dale, Michael Ray
Cc: Mark Everett (meverett@lanl.gov); katzman@lanl.gov
Subject: Additional Wells for P&A



Attachments: DT-9_PA_figure_080714_rev1.pdf; Well Figs SIMO and SIMO-1.pdf; Work Plan to Plug and Abandon Test Well DT-9_rev1.docx; Test wells SIMO and SIMO.docx; San I access approval from Pueblo.pdf

Michael,

The Lab has some additional institutional funds for plugging and abandonment work this fiscal year.

So, I'm proposing that we plug and abandon SIMO and SIMO-1, as was originally planned last winter, and for which we already have San Ildefonso Pueblo approval (attached).

In addition, DT-9 is another old well at TA-49 that I'm proposing we plug and abandon before September. It was on my list for the FY 2015, so it will be coming up shortly anyway.

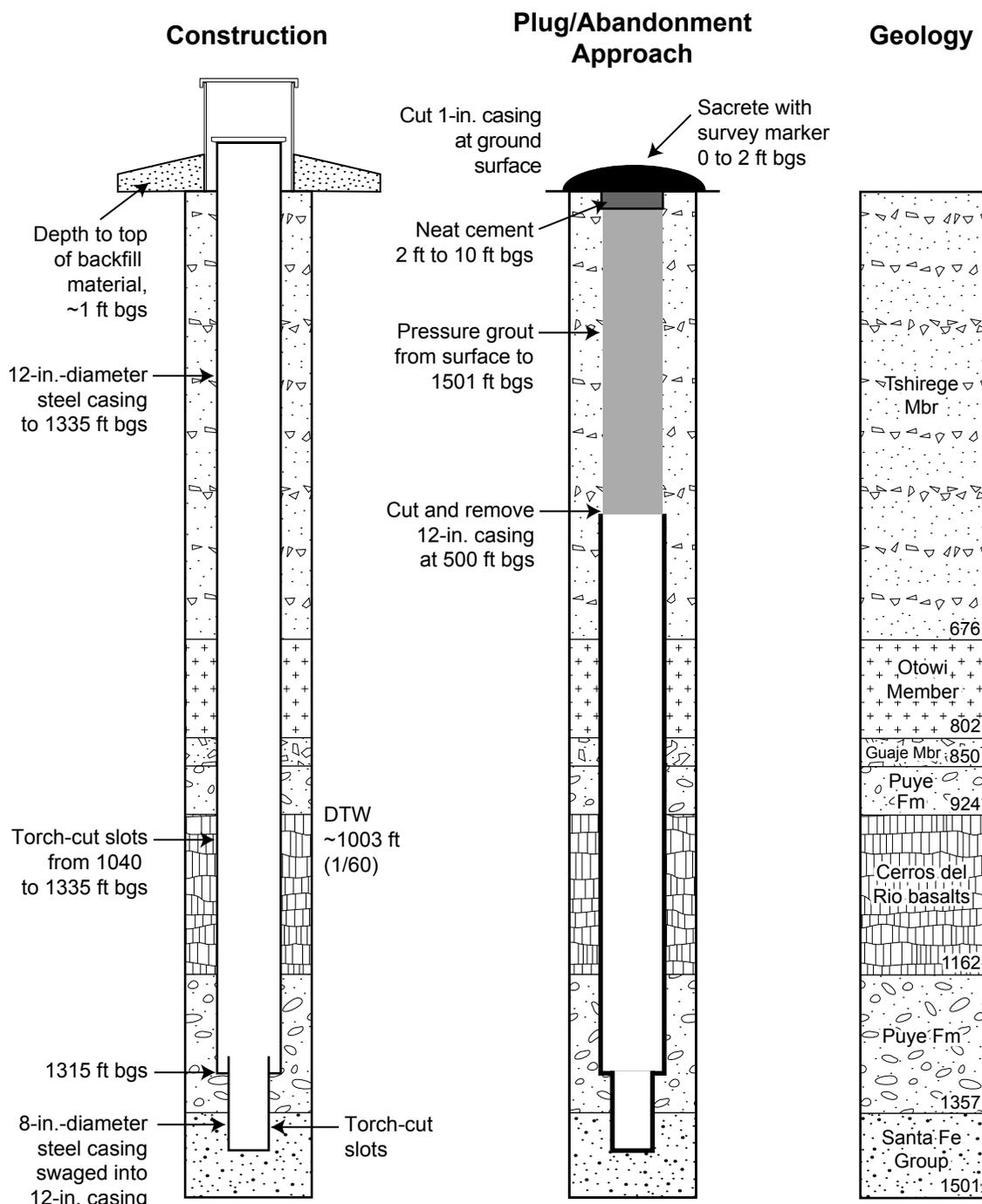
I have attached well diagrams with proposed final configurations and the one-page work plans for your review.

Please review and let me know if you approve of this plan.

Thanks,
Ted



Test Well DT-9



NOT TO SCALE

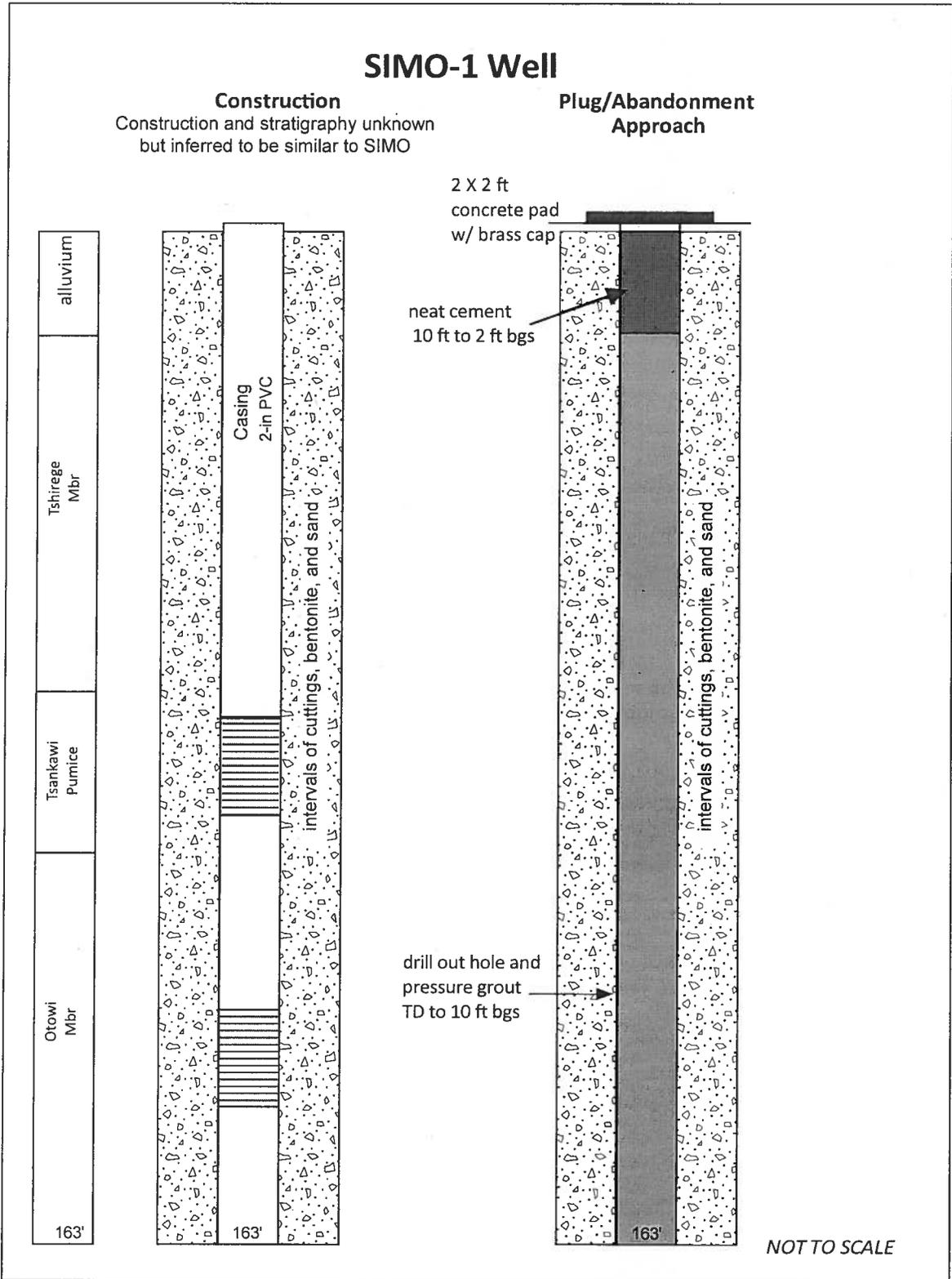


Figure 3.8-1 SIMO-1 abandonment schematic

Work Plan to Plug and Abandon Test Well DT-9

<p>Primary Purpose</p>	<p>The purpose for plugging and abandoning well DT-9 is to prevent migration of water and potential contaminants from upper levels of the well to the zone of regional saturation. This work plan summarizes the plugging and abandonment methods the Laboratory proposes for test well DT-9, located on Frijoles Mesa in TA-49. Well abandonment will be consistent with Section X.D, Well Abandonment, of the Consent Order and NMOSE regulations. A plugging plan will be submitted to NMOSE before abandonment.</p>
<p>Construction</p>	<p>Test well DT-9 was drilled to 1501 ft bgs in 1960 (Weir and Purtymun 1962, 011890; Purtymun 1995, 045344) with rotary equipment using air. Water was encountered at 1003 ft bgs. The well is constructed with 1335 ft of 12-in diameter steel casing, the lower 295 ft containing torch-cut slots, with 186 ft of 8-in diameter steel casing swaged 4 ft into the 12-in casing from 1317 to 1313. The 182 ft of 8-in casing exposed to the formation also contains torch-cut slots. There is presumed to be no backfill materials other than native formation. The well contains a submersible pump but has not been sampled since 2011.</p>
<p>Abandonment Methods</p>	<p>All surface and subsurface appurtenances will be removed from the well before it is abandoned. The well will be video and gamma surveyed to document pre-abandonment conditions. The 12-in. casing will be cut at 500 ft bgs. Tremmie pipe will then be lowered into the well to TD. The well will be pressure grouted by tremmie pipe from TD to 520 ft bgs. The casing will then be removed as the remainder of the borehole is grouted to the surface. If at any time the grout loss exceeds 150 percent of the calculated volume, chips may be used to provide a seal in the fluid loss zone.</p>
<p>Surface Completion</p>	<p>A neat-cement mound with brass marker will be installed over the well at ground surface. The marker will be surveyed in accordance with Section IX.B.2.f of the Consent Order, which states that pertinent structures may be horizontally located with a global positioning system with an accuracy of ± 0.5 ft.</p>
<p>Waste Disposal</p>	<p>A WCSF will be prepared to guide disposal of any wastes generated during abandonment. No waste samples will be collected. Materials removed from the borehole will be reused or recycled if possible. Non-recyclable materials will be disposed in accordance with the WCSF.</p>
<p>Summary Report</p>	<p>A report will be prepared detailing the abandonment methods and the quantities of backfill materials used. A location map and abandonment schematic will also be included in the report.</p>

Test wells SIMO and SIMO-1

These two test wells were drilled on San Ildefonso Pueblo in Mortandad Canyon east of the Laboratory boundary in cooperation with San Ildefonso Pueblo and the Bureau of Indian Affairs. Test well SIMO was completed in September 1990 to a depth of 104 feet (Stoker et al. 1991, 007530). There is limited information on test well SIMO-1. According to Purtymun, 1995 this well was drilled in September of 1992. The geologic log for this well continues to a depth of 163 feet. However, Purtymun lists the total depth at 116 feet in a table later in his report (Purtymun 1995, 045344). Perhaps the well was completed to this depth. It is located ~50 feet north of test well SIMO. Both holes were dry. Mortandad Canyon was the major release area for treated radioactive effluent at LANL. The depth of these wells and their location along a potential contaminant pathway within a canyon bottom make them a priority for plugging and abandonment. In addition, the fact that these wells are not located on LANL property heightens the need to properly abandon these wells.

Work Plan to Plug and Abandon Test Well SIMO

Primary Purpose	This work plan summarizes the plugging and abandonment methods Los Alamos National Laboratory (LANL or the Laboratory) proposes for test well SIMO located in lower Mortandad Canyon on San Ildefonso Pueblo. Well abandonment will be consistent with Sections IV.B.1.b.v and X.D (Well Abandonment) of the Compliance Order on Consent (Consent Order), and the New Mexico Office of the State Engineer (NMOSE) regulations. A plugging plan will be submitted to NMOSE before abandonment.
Construction	<p>Test well SIMO was drilled with a 3 ½-in hollow stem auger in September 1990 to a depth of 104 feet (Stoker et al. 1991, 007530). The hole was dry. The top was sealed with cement and a BIA steel security cover installed.</p> <p>The well is constructed as follows (see attached well completion log):</p> <ul style="list-style-type: none"> • 104 ft of 2-in inside diameter schedule 40 PVC • Ten foot sections of the pipe located between 50 and 60 and 80 and 90 ft bgs were perforated with a ¼-in drill bit to form two screens <p>The annular space consists of:</p> <ul style="list-style-type: none"> • Cement 0-5 ft bgs • Bentonite 5-8 ft bgs • Cuttings 8-53 ft bgs • Sand 53-56 ft bgs • Cuttings 57-66 ft bgs • Bentonite 66-69 ft bgs • Cuttings 69-81 ft bgs • Sand 81-84 ft bgs • Cuttings 84-104 ft bgs • <p>(cuttings in construction are tuff from the hole and silts,sands and gravels)</p>
Abandonment Methods	All surface and subsurface appurtenances will be removed from the well before abandonment begins. The casing will be pressure grouted from 104 to 10 ft bgs. The well will be drilled out to a minimum of 10 ft bgs. Neat cement slurry will be placed from in that boring from 10 ft bgs to the ground surface.
Surface Completion	A neat cement mound with brass marker will be installed at ground surface over the well. The marker will be surveyed in accordance with Section IX.B.2.f of the Consent Order, which states that pertinent structures may be horizontally located with a global positioning system with an accuracy of +/- 0.5 ft.
Waste Disposal	A waste characterization strategy form (WCSF) will be prepared to guide disposal of any wastes generated during abandonment. No waste samples will be collected. Materials removed from the borehole will be reused or recycled if possible. Non-recyclable materials will be disposed in accordance with the WCSF
Summary Report	A report will be prepared detailing the abandonment methods and the quantities of backfill materials used. A location map and abandonment schematic will also be included in the report.

Work Plan to Plug and Abandon Test Well SIMO-1

Primary Purpose	This work plan summarizes the plugging and abandonment methods Los Alamos National Laboratory (LANL or the Laboratory) proposes for test well SIMO-1 located in lower Mortandad Canyon on San Ildefonso Pueblo. The well is located ~ 50 feet north of test well SIMO. Well abandonment will be consistent with Sections IV.B.1.b.v and X.D (Well Abandonment) of the Compliance Order on Consent (Consent Order), and the New Mexico Office of the State Engineer (NMOSE) regulations. A plugging plan will be submitted to NMOSE before abandonment.
Construction	<p>Test well SIMO-1 was drilled with an auger in September 1992 to a depth of 163 feet (Purtymun 1995, 045344). The hole was dry.</p> <p>There is no more construction information provided about this well other than a description by Purtymun in which he says it is constructed similar to test well SIMO and contains screens at various depths. Thus we may assume that this well includes between 116 and 163 feet of 2-in diameter schedule 40 PVC with several slotted sections. Likewise the annular space should consist of a mix of bentonite, cuttings, and sand. The upper 5 feet likely contains cement. It is assumed that there is a BIA steel security cover at the surface.</p>
Abandonment Methods	All surface and subsurface appurtenances will be removed from the well before abandonment begins. The casing will be pressure grouted from TD to 10 ft bgs. The well will be drilled out to a minimum of 10 ft bgs. Neat cement will be placed in that boring from 10 ft bgs to the ground surface.
Surface Completion	A neat cement mound with brass marker will be installed at ground surface over the well. The marker will be surveyed in accordance with Section IX.B.2.f of the Consent Order, which states that pertinent structures may be horizontally located with a global positioning system with an accuracy of +/- 0.5 ft.
Waste Disposal	A waste characterization strategy form (WCSF) will be prepared to guide disposal of any wastes generated during abandonment. No waste samples will be collected. Materials removed from the borehole will be reused or recycled if possible. Non-recyclable materials will be disposed in accordance with the WCSF
Summary Report	A report will be prepared detailing the abandonment methods and the quantities of backfill materials used. A location map and abandonment schematic will also be included in the report.



Pueblo de San Ildefonso
Office of the Governors

SI-GC13-030

February 25, 2014

Peter Maggiore, Assistant Manager
Environmental Projects Office
DOE/NNSA Los Alamos Field Office
3747 West Jemez Road
Los Alamos, New Mexico 87544

Dear Mr. Maggiore:

In response to the request to plug and abandon SIMO-1 and SIMO wells located on the Pueblo de San Ildefonso reservation by the Department of Energy (DOE) and Los Alamos National Security, LLC (LANS), the Pueblo has granted access to its lands for this effort.

The Pueblo de San Ildefonso would like for you to coordinate with the Pueblo's Department of Environmental and Cultural Preservation (DECP) to conduct this effort. You may contact Raymond Martinez, DECP Director at (505) 455-2273 or rmartinez@sanipueblo.org.

Sincerely,

Terry Aguilar, Governor

Cc: Cheryl Rodriguez, Environmental Projects Office
Danny Katzman, LANS
Stephen Martinez, Natural Resource Director
Raymond Martinez, DECP Director