Savannah River Remediation
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11/2/2021

SRR-CWDA-2021-00086_Draft
Revision 0

RSM Track #: 10667

Charles E. Comeau, PMP
Deputy Federal Project Director, SDU Projects
U. S. DOE - Savannah River Operations Office

Dear Mr. Comeau:

ACTION ITEM FOLLOW-UP IN SUPPORT OF U.S. NUCLEAR REGULATORY COMMISSION SALT WASTE DISPOSAL ONSITE OBSERVATION VISIT FROM AUGUST 12, 2021

References:

1. SRR-CWDA-2021-00071, *Savannah River Site Salt Waste Disposal NRC Onsite Observation Visit, August 12, 2021*, Savannah River Site, Aiken, SC, Revision 1, August 2021.
2. SRR-CWDA-2019-00003, *Cement-Free Formulation Down-Select Report,* Savannah River Site, Aiken, SC, Revision 0, February 2019.
3. SRR-CWDA-2020-00008, *Cement-Free Saltstone Down-Selection Report Follow-up*, Savannah River Site, Aiken, SC, Revision 0, February 2020.
4. SRR-CWDA-2020-00064, *FY2020 Special Analysis for the Saltstone Disposal Facility at the Savannah River Site*, Savannah River Site, Aiken, SC, Revision 1, April 2021.
5. LWDP-SUTP-SSF-177, *Saltstone Disposal Unit (SDU) 7 Project – Tank Initial Leak Test*, Savannah River Site, Aiken, SC, Revision 0, May 2021.

The following information is being provided in follow-up to four open Action Items from the August 2021 Salt Waste Disposal Onsite Observation Visit (OOV) by the U. S. Nuclear Regulatory Commission (NRC). The Action Items include the following:

- NRC # SDF-CY21-01-001 (Action Item #2 from 8/2021 OOV, Reference 1)
    - *The DOE will provide the NRC with electronic copies of the Cement-Free down select reports [SRR-CWDA-2019-00003 and SRR-CWDA-2020-00008] and the Special Analysis [SRR-CWDA-2020-00064] – if not included in those reports, then the DOE to also provide the NRC with photos of pouring grout with the new formula into the disposal structures.*

- NRC # SDF-CY21-01-004 (Action Item # 5 from 8/2021 OOV, Reference 1)
    - *The DOE will provide the NRC with a report (or reports) that describe the procedures for and results of the SDS 7 hydrotest.*
- NRC # SDF-CY21-01-005 (Action Item # 6 from 8/2021 OOV, Reference 1)
    - *The DOE will provide the NRC with information on the piping material and quantity of the floor drains being installed in SDS 9 and other 375-ft. disposal structures.*
- NRC # SDF-CY21-01-006 (Action Item # 7 from 8/2021 OOV, Reference 1)
    - *The DOE will provide the NRC information on the change in thickness of the High-Density Polyethylene layer between the LMM and the UMM from 100 mil and the reason for that change.*

NRC # SDF-CY21-01-001 (Action Item #2 from 8/2021 OOV)

The documents SRR-CWDA-2019-00003, *Cement-Free Formulation Down-Select Report* (Reference 2), SRR-CWDA-2020-00008, *Cement-Free Saltstone Down-Selection Report Follow-up* (Reference 3), and SRR-CWDA-2020-00064, *FY2020 Special Analysis for the Saltstone Disposal Facility at the Savannah River Site* (Reference 4) were previously provided to the NRC via email on August 20, 2021. DOE is working to obtain video footage of pouring the cement free saltstone into Saltstone Disposal Unit (SDU) 6. When footage is obtained, it will be placed on the NRC Box location and the NRC will be notified.

NRC # SDF-CY21-01-004 (Action Item # 5 from 8/2021 OOV)

The Hydraulic Performance Test completed on March 24, 2021 at 3:14PM. LWDP-SUTP-SSF-177, *Saltstone Disposal Unit (SDU) 7 Project – Tank Initial Leak Test,* (Reference 5) provides the SDU 7 Project Tank Initial Leak Test Procedure. The final page of this document states "There were no test deficiencies identified during the performance of this test procedure. Testing…demonstrated the leak-tightness of SDU #7."

NRC # SDF-CY21-01-005 (Action Item # 6 from 8/2021 OOV)

The floor drains are installed in each quadrant of the SDU to act as a drain to remove water (e.g., rainwater) during tank construction since the water stops and walls cause ponding on the foundation. Figure 1 provides the approximate locations.

The floor drain piping is 3" diameter schedule 40 carbon steel pipe embedded in the floor prior to pouring concrete. The pipe has a total length of approximately 8 feet and extends from the interior surface of the floor slab to the outside of the unit (Figure 2). Once the SDU is enclosed and the drains are no longer needed, the exterior section of the piping is removed from the coupling and the drain piping is filled using Type V cement. Epoxy is applied at each end of the pipe to ensure a water-tight seal.

Figure 1: Approximate Location of Floor Drains

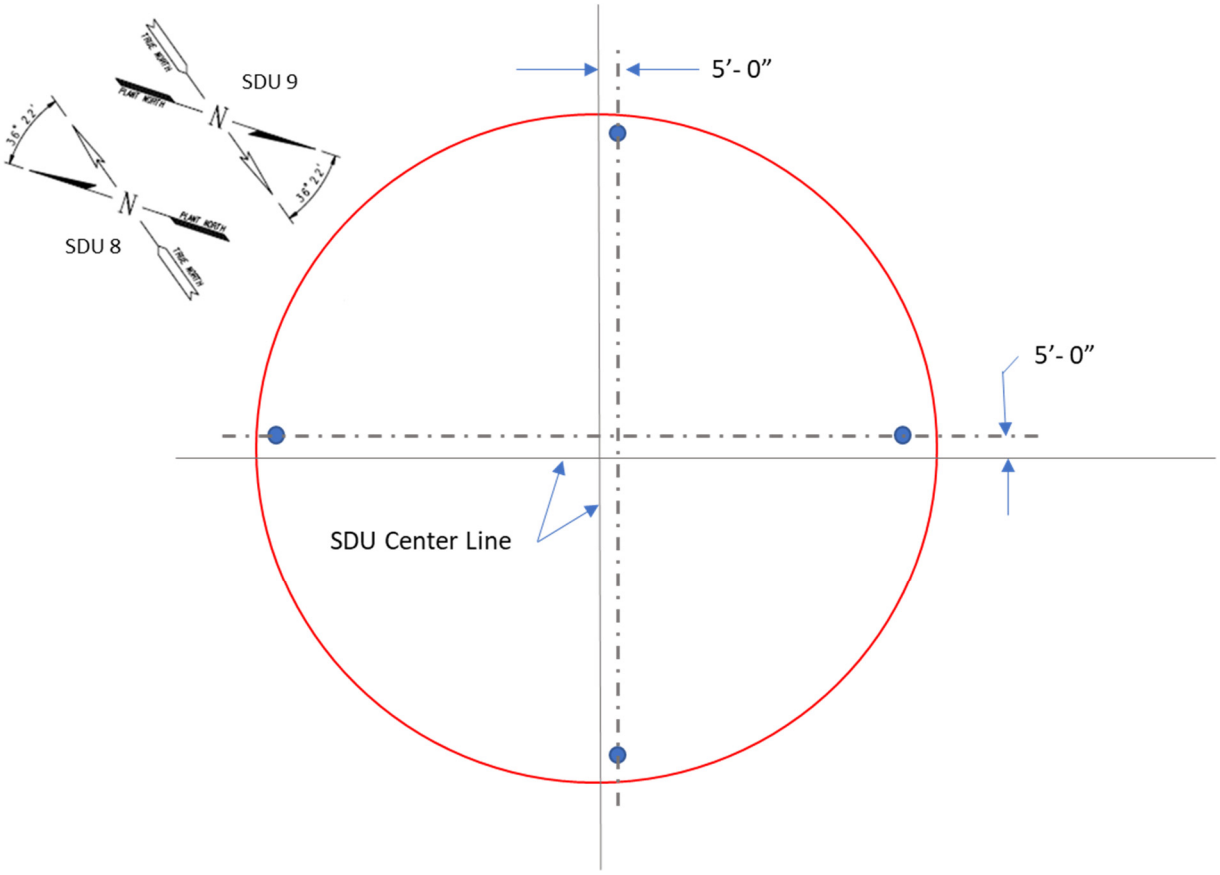
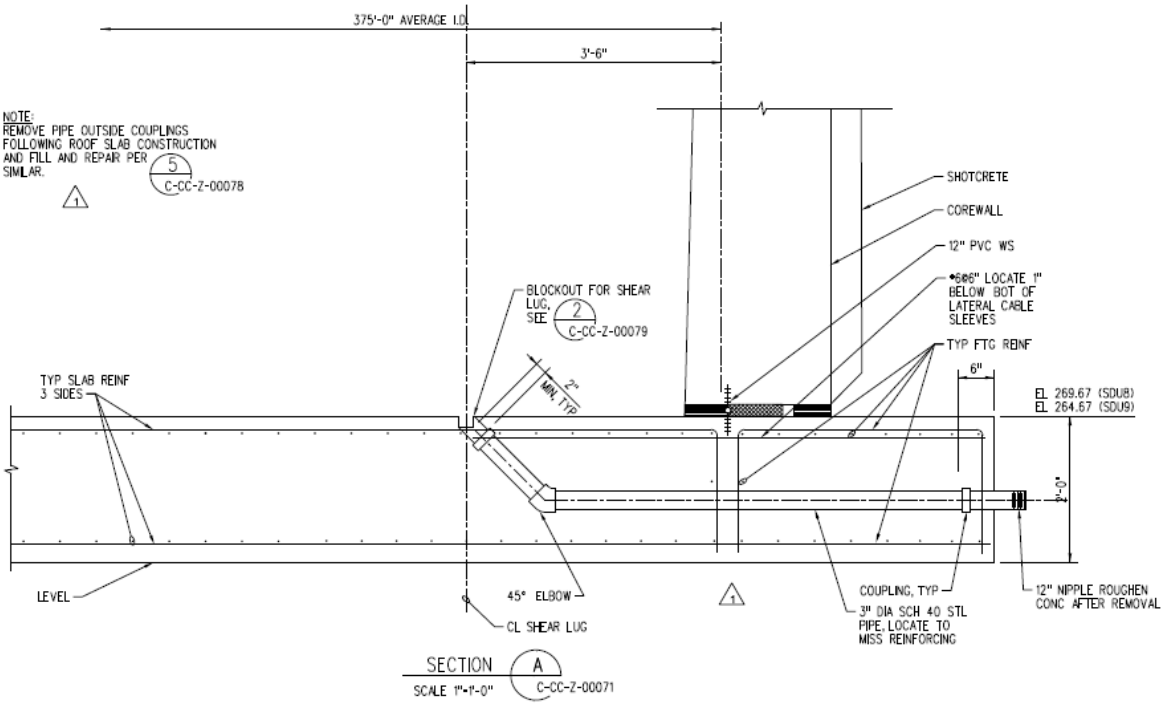


Figure 2: Cross-Section of Floor Drains



NRC # SDF-CY21-01-006 (Action Item # 7 from 8/2021 OOV)

When defining model inputs for the Saltstone Disposal Facility (SDF) Performance Assessment (PA) (prior to the start of modeling activities), a meeting was held with the SDU design team and there was a discussion at that time about possibly changing from 100 mil to 60 mil High Density Polyethylene (HDPE) for the construction of the SDUs. The thinner HDPE was expected to be more cost-efficient and easier for the installers to handle. Based on that discussion, for PA modeling it was assumed 60 mil HDPE would be used in SDUs 7 through 12. Although 60 mil HDPE is assumed in the SDF PA, the SDU designs and the construction of the SDUs has only used 100 mil. The SDU design team has confirmed that only 100 mil HDPE has been used in the construction of SDUs 7, 8, and 9. In this sense, the SDF PA models are conservative as the thicker 100 mil HDPE is expected to perform better than the thinner 60 mil HDPE.

If you have any questions, please contact me at 557-9900.

Sincerely,

LARRY ROMANOWSKI (Affiliate)

Digitally signed by LARRY ROMANOWSKI (Affiliate)
Date: 2021.11.02 20:10:22 -04'00'

Larry B Romanowski

Manager, Closure and Disposal Determinations

Waste Disposal Authority

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