

Interference Report for Abandonment of RWM-1 (905-1M) Near Bldg. 782-2M



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**Printed in the United States of America
Prepared for
U. S. Department of Energy
and
Savannah River Nuclear Solutions LLC
Aiken, South Carolina**

Document Revision History

Date	Rev	Page/¶/Ref	Description of Changes
08/11/2021	0	N/A	Initial Issue

ACRONYMLIST

ACM	Asbestos Containing Material
AWG	American Wire Gauge
Cu	Copper
D&R	Dismantlement & Removal
EC&ACP	Environmental Compliance & Area Completion Projects
Ft.	Feet
GPR	Ground Penetrating Radar
In.	Inch
OSHA	Occupational Safety & Health Administration
OE	Overhead Electric
PACM	Presumed Asbestos Containing Material
PVC	Polyvinyl chloride
RWM	Recovery Well
RWM-1R	Replacement Recovery Well
SCDHEC	South Carolina Department of Health and Environmental Control
SRNS	Savannah River Nuclear Solutions
SRS	Savannah River Site
UE	Underground Electric
W.P. El.	Working Point Elevation

1.0 Introduction

The purpose of this document is to provide guidance for the safe in-place abandonment of the Recovery Well #1 (RWM-1). RWM-1 is located on an equipment pad associated with building number 905-1M, adjacent to Building 782-2M. This document is also for meeting the requirements of Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1926, Subpart T 850(a).

Potential interferences that may be encountered during performance of this work have been identified based on reviews of SRNS drawings shown in the References section of this document, field walkdowns, a GPR survey, and discussions with personnel from Utilities and Operating Services.

2.0 Background

2.1 Facility Description

Located on Savannah River Site (SRS) A/M-Area just outside the northwest corner of Building 782-2M, RWM-1 was installed in 1985 to supply contaminated water to the M1 Air Stripper for treatment. Although ideally located, RWM-1 has been underperforming. The well was located to draw groundwater with high levels of tetrachloroethene and trichloroethylene. However, the current low flow rate diminishes its mass removal efficiency. RWM-1 has been re-developed in an unsuccessful attempt to improve its flow. Because the aquifer in the area provides water readily, all indications are that the well itself is the problem. Therefore, RWM-1 will be abandoned in-place, and replacement well RWM-1R will be installed to advance groundwater remediation. The existing above ground equipment (the motor starter, disconnect at 323-M, transformer, lighting panel, rack, receptacle, and heat trace) at RWM-1, the eight (8) bollards surrounding RWM-1, the concrete pad, and part of the existing pipe will remain at RWM-1 to be used for RWM-1R. At RWM-1R there will be a new concrete pad with a well pipe coming from the ground and going back into the ground. New bollards will be installed to surround the RWM-1R concrete pad. Installation of RWM-1R will occur prior to abandonment of RWM-1 and will be in accordance with Q-SDD-M-00001 (Interference Report for Installation of RWM-1R Near Bldg. 782-2M).

An asbestos inspection of Recovery Well 905-1M (RWM-1) was conducted on September 5, 2017 and identified that all the gasket materials are presumed asbestos containing materials (PACM). The results of that survey are included in SDD-APG-2017-01896, Environmental Compliance & Area Completion Projects Asbestos Inspection Report of Thermal Insulation Recovery Well 905-1M (RWM-1) (Reference 5.9). Gaskets in unbroken flanges are determined to be encased in a hardened substance and therefore not subject to regulatory

2.1 Facility Description (Continued)

requirements if undisturbed. In accordance with 40 CFR part 61.145, a ten-day notification will be filed with South Carolina Department of Health and Environmental Control (SCDHEC) prior to demolition and all ACM removal, if any is subsequently found, will be performed by asbestos trained personnel with proper permitting and waste disposal procedures.

2.2 Facility End State

The proposed decommissioning end-state for RWM-1, which has no defined or anticipated future missions, is in-place abandonment of the well by grouting. The existing above ground equipment (the motor starter, disconnect at 323-M, transformer, lighting panel, rack, receptacle, and heat trace) at RWM-1, the eight (8) bollards surrounding RWM-1, the concrete pad, and part of the existing pipe will remain at RWM-1 to be used for RWM-1R. At RWM-1R there will be a new concrete pad with a well pipe coming from the ground and going back into the ground. New bollards will be installed to surround the RWM-1R concrete pad. The end-state of the remaining above ground equipment that will not be used for RWM-1R is dismantlement and removal (D&R). A replacement well, RWM-1R, will be installed approximately 110 ft. northeast of RWM-1 to continue groundwater remediation in this portion of the plume. See Appendix A, Figure A-2

3.0 Discussion

3.1 General

All D&R work of remaining above grade equipment that will not be used at RWM-1R shall meet the requirements of 29 CFR 1926 Subpart T. All employees performing D&R work shall be knowledgeable of this document.

Other hazards not specifically identified in the engineering interference report are mitigated or prevented by Site programs as described in SRS Manual 1-01, Management Policies, Procedure 1.22, Integrated Safety Management System.

All hazardous materials will be removed prior to decommissioning. All wastes generated during decommissioning shall be managed in accordance with SRS procedures.

3.2 Interferences

Site utilities/services to/from RWM-1 shall be isolated and disconnected from the facility prior to the start of the D&R work. Appendix A provides a general layout of the area, interfacing facilities/utilities/services within close proximity, and defines the D&R boundary. Appendix B shows photos of the facility area and the above ground

3.2 Interferences (Continued)

interferences. Active underground utilities/services are buried such that equipment may safely operate over them.

Equipment

No major mobile equipment will be used for the D&R of the above ground equipment to grade and in-place abandonment of the well by grouting. A skid steer will be used to move discarded above ground material into a skid pan. Additionally, the skid steer will be used to hold a platform with a 55-gallon drum which will be used to supply grout to fill the well for abandonment. Potential interferences associated with the in-place abandonment of RWM-1 are described below.

Underground Piping

A walk down of the facility and adjacent area, along with a review of the drawings listed in the Reference section below, was used to identify various underground piping and utility systems within the vicinity of RWM-1. There is a 3 in. \emptyset underground electrical line leading west off RWM-1. The centerline W.P. El. is 357.7 ft. (see Reference 5.1). There is a #4/0 AWG bare Cu ground wire buried 3 ft. below grade about 32 ft. northwest of RWM-1 (see Reference 5.6). There is also an underground fiber optic cable buried 3 ft. below grade approximately 19.5 ft. east of RWM-1 (See Reference 5.5). Surface loading analysis is not required for underground electrical lines.

In addition to these underground electrical lines, there are 2 in. \emptyset PVC underground process water lines west and south of RWM-1, approximately 2.5 ft. underground, connecting RWM-1 to the Purge Water Disposal Station and the M1 Air Stripper (see Reference 5.8). Vehicle traffic over these lines is permissible. No D&R work will break the ground surface for the in-place abandonment of RWM-1; therefore, the underground utilities pose no interference.

Overhead Electric Lines

There is a light pole immediately adjacent to and east of RWM-1. In addition to the light pole, there are 13.8 kVA overhead electric (OE) lines, a 480 V OE twisted pair, and a messenger basket, shown in Appendix B, Figure B-1. The 480 V line is approximately 16.5 ft. west of RWM-1. The height of the 480 V lines is approximately 20-25 ft. above grade. A messenger basket and a 13.8 kVA line are approximately 20 ft. northwest of RWM-1. The height of the 13.8 kVA overhead electric lines is approximately 30-35 ft. above grade. These power lines will not need to be de-energized for the installation of RWM-1R in accordance with Manual 8Q, Procedure 10 since no mobile equipment will be used for the D&R work. The OE lines will not interfere with any lifting equipment that will be used to remove the above grade equipment of RWM-1. Extreme caution should be exercised to ensure the equipment does not come in contact with and potentially damage the light pole adjacent to RWM-1. All lifting movement should be in

3.2 Interferences (Continued)

a north/south direction until well clear of the light pole. In all cases, spotters should be used to direct back-up and movement of equipment.

4.0 Summary/Conclusions

The current RWM-1 has no future mission and the end-state is in-place abandonment of the well by grouting. The existing above ground equipment (the motor starter, disconnect at 323-M, transformer, lighting panel, rack, receptacle, and heat trace) at RWM-1, the eight (8) bollards surrounding RWM-1, the concrete pad, and part of the existing pipe will remain at RWM-1 to be used for RWM-1R. The end-state of the remaining above ground equipment that will not be used for RWM-1R is D&R. Prior to RWM-1 activities, a replacement recovery well, RWM-1R, will be installed in accordance with Q-SDD-M-00001 (Interference Report for Installation of RWM-1R Near Bldg, 782-2M). The area will be cleaned up. The equipment operators should utilize a spotter, so as not to contact facilities/services within close proximity of the D&R area.

5.0 References

- 5.1** W738104, *Savannah River Plant 905-M Well Facilities Area 300, 300-M Groundwater Remedial Action Plot Plan – Piping – UG Power*, Rev. 17.
- 5.2** W740641, *Savannah River Plan 905M Well Facilities Area 300, 300-M Groundwater Remedial Action Piping- Sections and Details SHT 1*, Rev. 44.
- 5.3** W738103, *905-M Well Facilities Area 300, 300-M Groundwater Remedial Action Piping & Instrument Diagram Sh. 1 Power, Process & Instrumentation (U)*, Rev. 144
- 5.4** E-EY-A-0008, *A/M Area Vadose Zone Remediation Project A-014 Outfall, Process Sewer, and M-Area Basin Sites Bldg. No. 'S 782-3M, -4M, & -5M Overhead Power Plan, Electrical (U)*, Rev. 3.
- 5.5** P-PY-M-0008, *Dynamic Underground Stripping (DUS) M-Area Settling Basin Piping and Equipment Plan and Details (U)*, Rev. 5.
- 5.6** E-EG-G-0338, *A/M Area Vadose Zone Remediation Project M Basin Area, Bldg. No. 782-4M Grounding Plan and Sections, Electrical (U)*, Rev. 1.
- 5.7** M-M6-M-0152, *M Area Purged Water Disposal Station, Piping & Instrumentation Diagram (U)*, Rev. 6.
- 5.8** P-PA-M-0021, *M-Area Purged Water Disposal Station Equipment and Piping Layout*, Rev. 2.
- 5.9** SDD-APG-2017-01896, *Environmental Compliance & Area Completion Projects Asbestos Inspection of Thermal Systems Insulation Recovery Well 905-1M (RWM-01)*, September 5, 2017, Rev. 0.
- 5.10** Site Map 1122.

Appendix A – Interference Location Maps

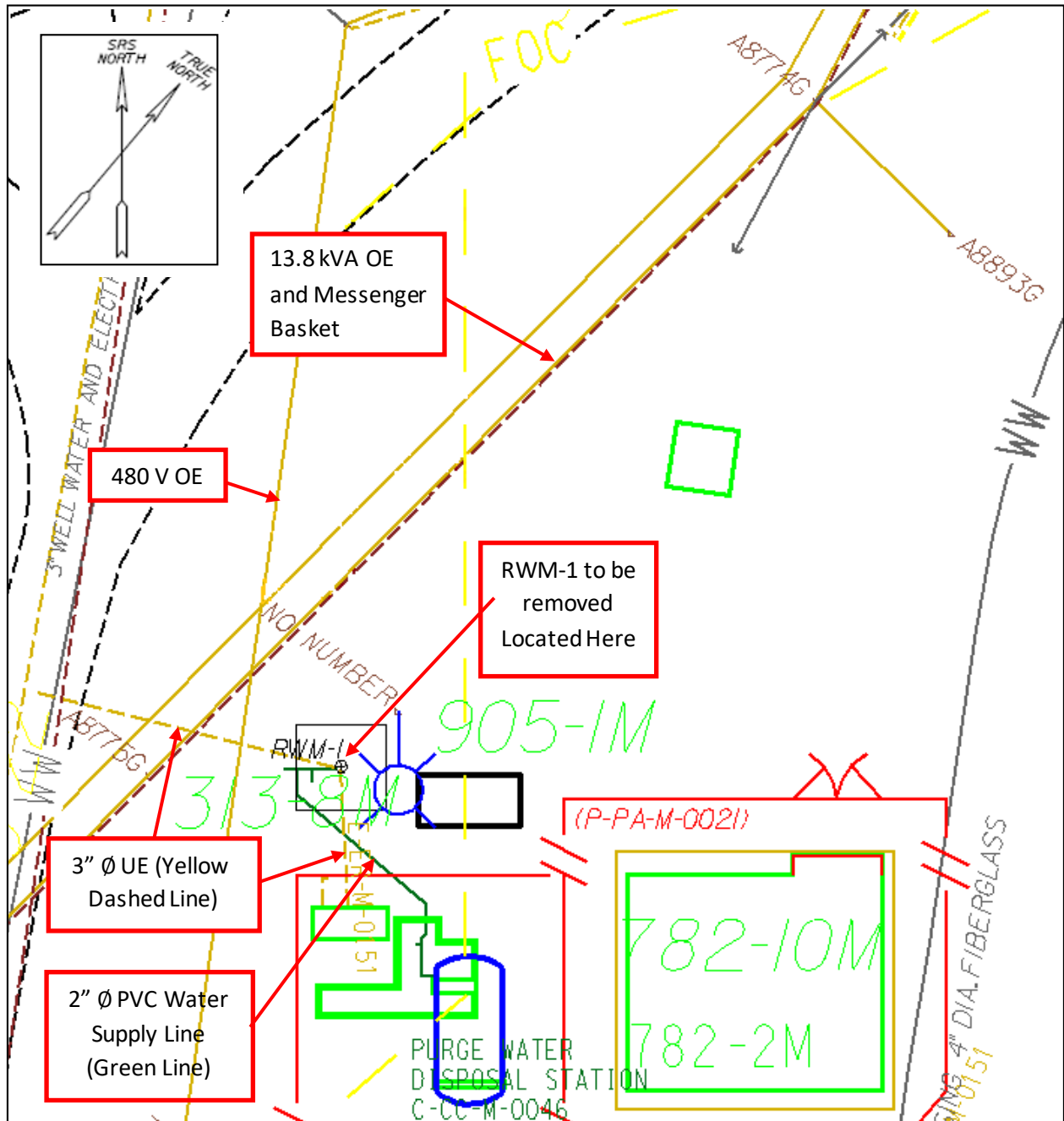


Figure A-1. Interference Location Map for RWM-1 (905-1M) (Reference 5.10)

Appendix A – Interference Location Maps (Continued)

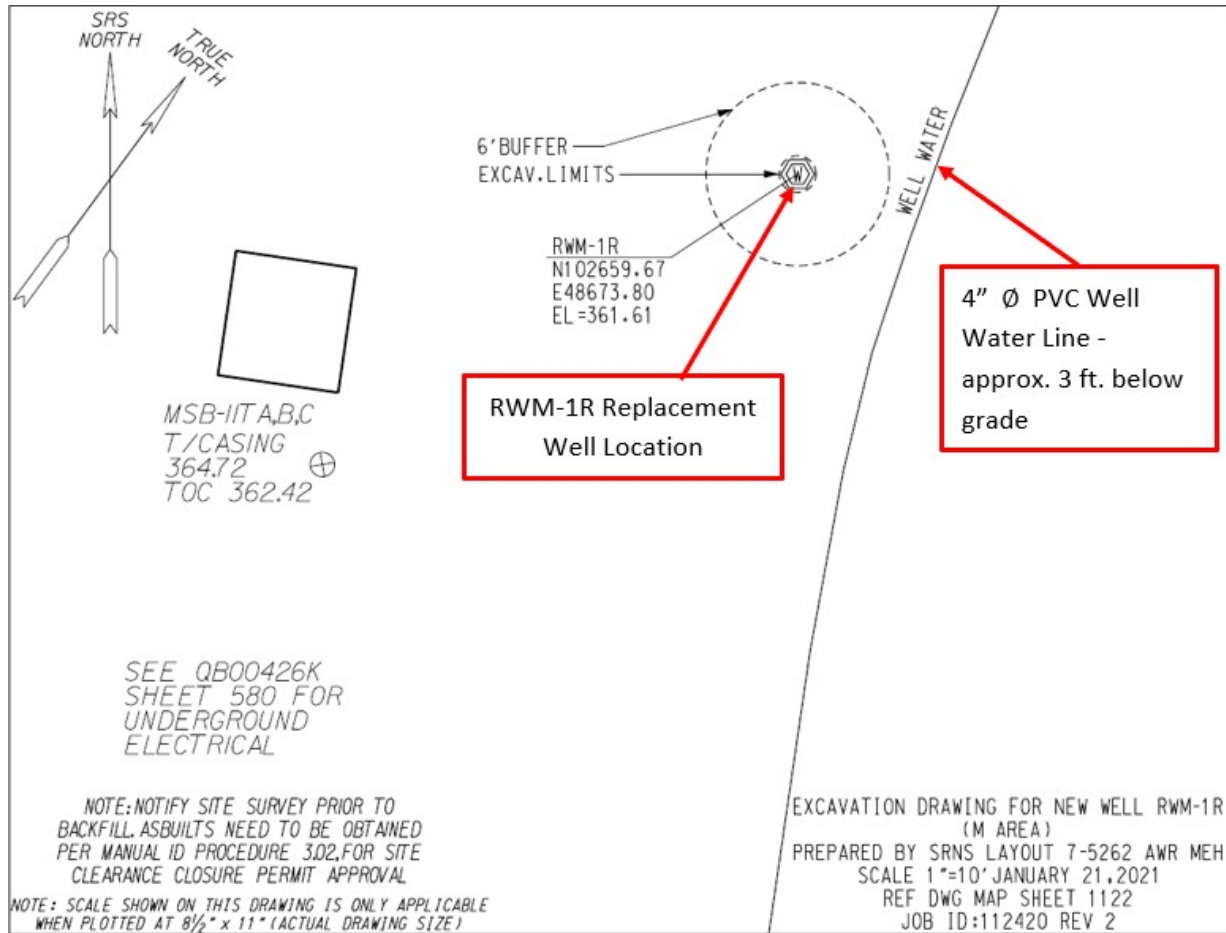


Figure A-2. Proposed Location for Replacement Recovery Well, RWM-1R

Appendix B – Facility Area Photos

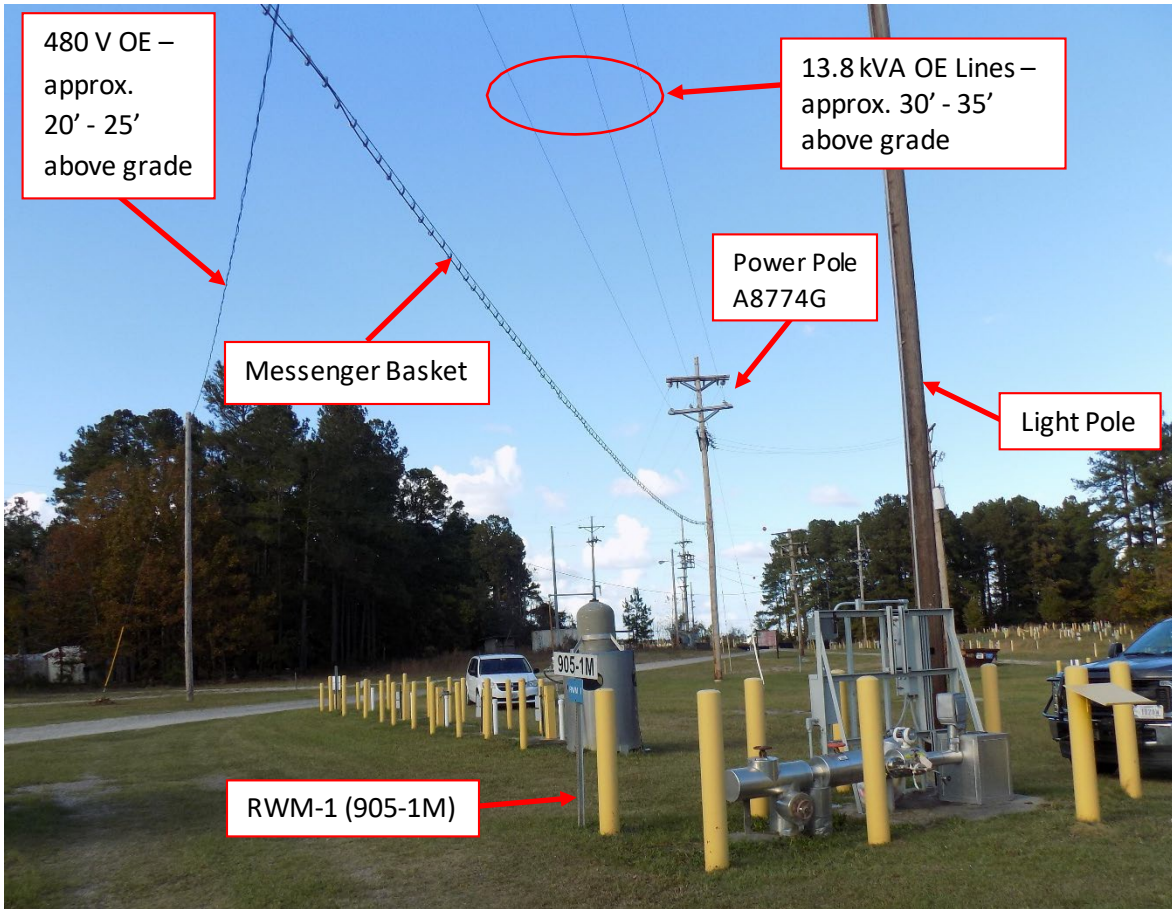


Figure B-1. Area Showing Overhead Electric Lines and Power Poles (Looking Northeast)