

**Interference Report for Installation of RWM-1R 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

## ACRONYM LIST

ACM	Asbestos Containing Material
D&R	Dismantlement & Removal
EC&ACP	Environmental Compliance & Area Completion Projects
FOC	Fiber Optic Cable
Ft.	Feet
GPR	Ground Penetrating Radar
In.	Inch
OSHA	Occupational Safety & Health Administration
OE	Overhead Electric
PACM	Presumed Asbestos Containing Material
RWM-1	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

## **1.0 Introduction**

The purpose of this document is to identify potential interferences that may be encountered during the installation of Replacement Recovery Well (RWM-1R) and its mechanical and electrical commodities. RWM-1R will be located northeast of Building 782-2M. Its location is shown in Appendix A, Figures A-1 and A-2.

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 ground penetrating radar (GPR) survey, and discussions with personnel from Utilities and Operating Services.

## **2.0 Background**

### **2.1 Facility Description**

RWM-1R will be installed as a replacement recovery well for Recovery Well RWM-1 (905-1M) in Savannah River Site (SRS) A/M-Area, northeast of Building 782-2M. RWM-1 will be abandoned in-place after installation of RWM-1R in accordance with Q-SDD-M-00003 (Interference Report for Abandonment of RWM-1 (905-1M) Near Bldg. 782-2M). RWM-1R will be installed approximately 110 ft. northeast of RWM-1 to advance groundwater remediation by supplying contaminated water to the M1 Air Stripper for treatment. See Appendix A, Figures A-1 and A-2. 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 concrete pad.

## **3.0 Discussion**

### **3.1 General**

A review of A/M site maps was used to identify various underground piping and utility systems within the vicinity of the proposed location for RWM-1R. Utilizing GPR, the site surveying department located and marked the approximate location of pipes, conduits, and cables. EC&ACP Engineering reviewed the site maps and all relevant drawings in order to ascertain size, type and approximate depth of the pipes, conduits, and cables. Appendix A provides a general lay-out of the area and interfacing facilities/utilities/services within close proximity of RWM-1R's location. Appendix B shows photos of the facility area and the nearby above ground interferences. Any active underground utilities/services were determined to be buried deep enough to allow for equipment to safely operate over them.

### 3.1 General (Continued)

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

### 3.2 Interferences

#### Equipment

Equipment to be used for the installation of RWM-1R will be a full size Rotosonic drilling rig along with support truck for equipment and materials. They will be aligned back-to-back in an area approximately 75 ft. in length and 15 ft. in width. The Rotosonic drilling rig is approximately 42,000 pounds. A hoist rig will also be used for the installation of the pump. The weight of the hoist rig is approximately 30,000 pounds. The maximum height of the hoist is 37 ft. above the truck bed, and approximately 41 ft. above ground surface.

The proposed underground route of the water well line tie-in for RWM-1R is shown in Appendix A, Figure A-3. The equipment to be used for the tie-in will be a backhoe. The proposed excavation method will be either hand digging or some form of vacuum excavation due to the congested area and multiple interferences.

Potential interferences associated with the Rotosonic drilling rig, hoist rig, and backhoe use at the RWM-1R site are described below.

#### Underground Piping

A walk down of the facility and adjacent area, a GPR survey, and a review of the drawings listed in the Reference section below, were used to identify various underground piping and utility systems within the vicinity of where RWM-1R will be installed. There is a 4 in. Ø PVC well water line buried approximately 3 ft. below grade and approximately 10 ft. east of RWM-1R's proposed location (see Reference 5.4). This well water line is not within the 6 ft. buffer excavation limit shown in the circled area in Appendix A, Figure A-2, and is buried deep enough such that equipment may safely operate over it.

The proposed underground route to tie-in the water well line for RWM-1R is shown in Appendix A, Figure A-3. There are 2 in. Ø 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 5.6). An analysis was performed and documented in ERD-EN-2012-0083 (see Reference 5.7), which shows that the surface loading from a hoist rig weighing 30,000 pounds would not damage these underground lines. Vehicle traffic over these lines is permissible. There is an underground fiber optic cable (FOC) buried 3 ft below grade approximately 19.5 ft. east of RWM-1 (See Reference 5.4 and Appendix A, Figure A-3). Surface loading analysis is not required for underground electrical lines.

## 3.2 Interferences (Continued)

### Overhead Electric Lines

There are overhead 13.8 kVA electric lines and a messenger basket, shown in Appendix A, Figure A-1. The messenger basket and 13.8 kVA line are approximately 45 ft. northwest of the proposed location for RWM-1R. The height of the 13.8 kVA overhead electric lines is approximately 30-35 ft. above grade. Manual 8Q, Procedure 10, Section 5.2.2, requires a boundary of 20 ft. for mobile equipment from overhead lines. RWM-1R is located 23.5 ft. away from the nearest power pole, A8893G. Due to this, the power lines will not need to be de-energized for the installation of RWM-1R. Extreme caution should be exercised to ensure the equipment does not come in contact with these high voltage and communication lines. In all cases, spotters should be used to direct back-up and movement of equipment.

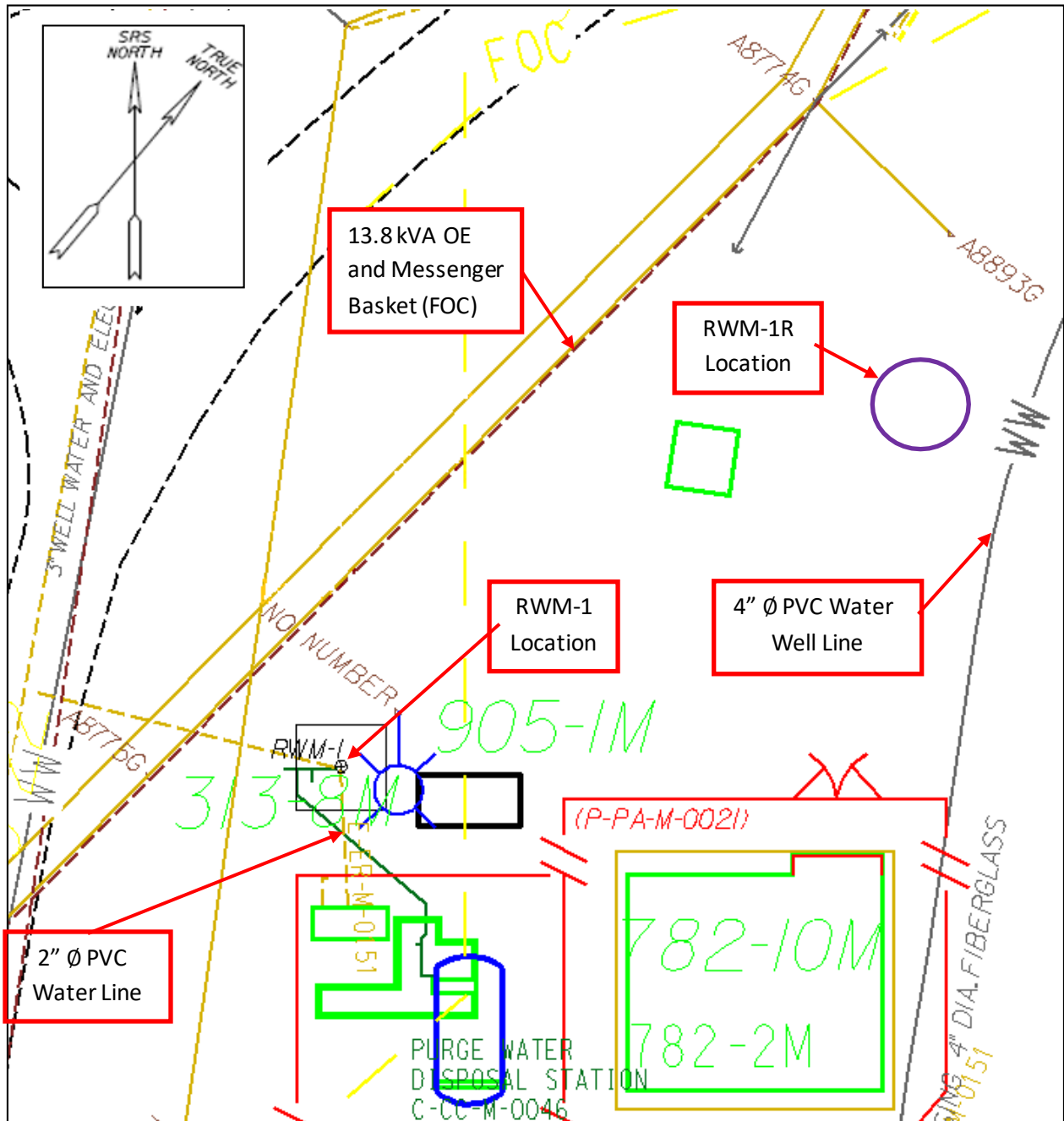
## 4.0 Summary/Conclusions

RWM-1R will be installed approximately 110 ft. northeast of RWM-1, in the circled area shown in Appendix A, Figure A-2 and Appendix B, Figures B-1 and B-2. The proposed underground route of the water well line tie-in for RWM-1R is shown in Appendix A, Figure A-3. The equipment operators should utilize a spotter to avoid contact with the overhead electric lines near the installation area. The water line tie-in's proposed excavation method will be either hand digging or some form of vacuum excavation due to the congested area and multiple interferences.

## 5.0 References

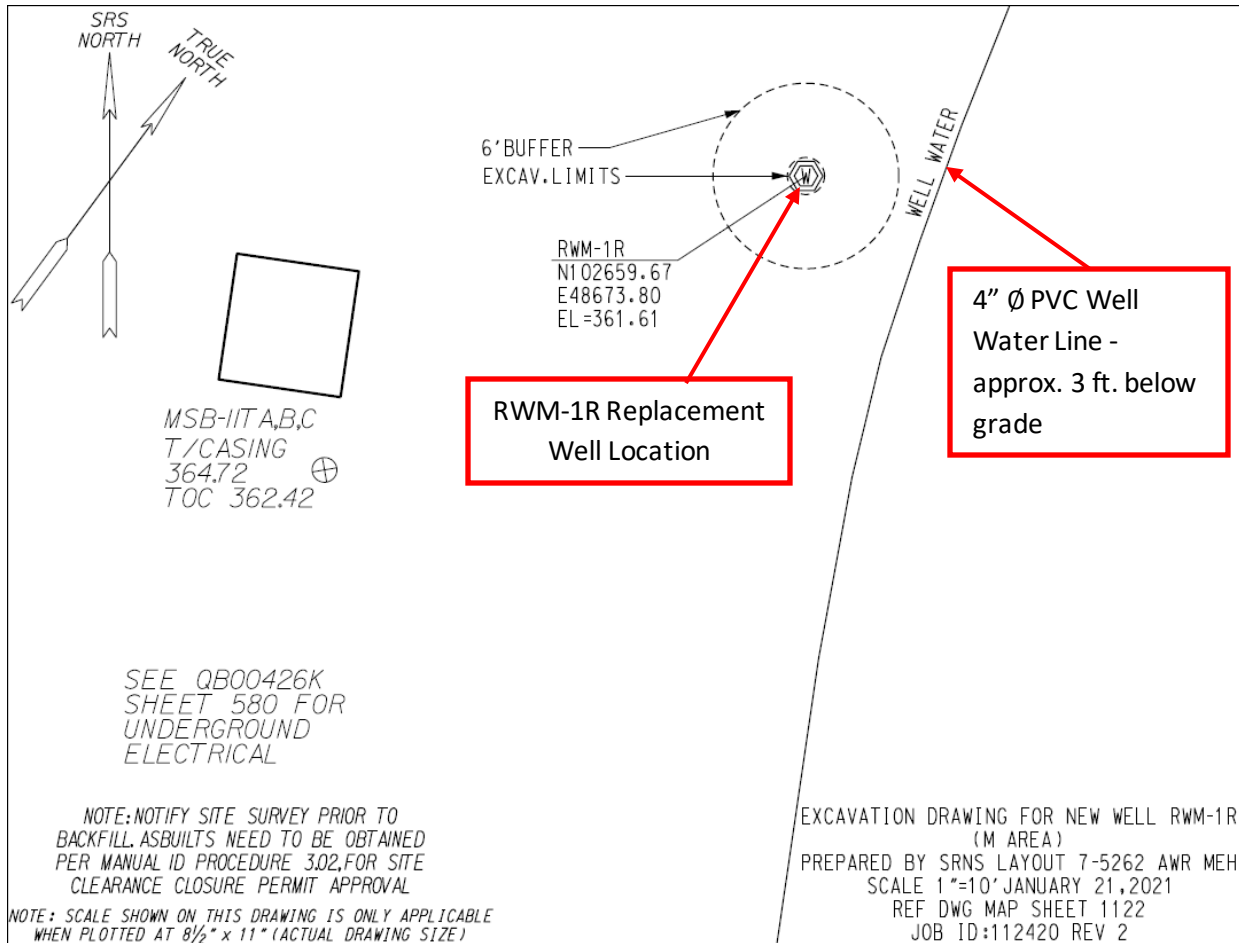
- 5.1 W740641, *Savannah River Plan 905M Well Facilities Area 300, 300-M Groundwater Remedial Action Piping- Sections and Details SHT 1*, Rev. 44.
- 5.2 W738103, *905-M Well Facilities Area 300, 300-M Groundwater Remedial Action Piping & Instrument Diagram Sh. 1 Power, Process & Instrumentation (U)*, Rev. 144
- 5.3 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.
- 5.4 P-PY-M-0008, *Dynamic Underground Stripping (DUS) M-Area Settling Basin Piping and Equipment Plan and Details (U)*, Rev. 5.
- 5.5 Site Map 1122.
- 5.6 P-PA-M-0021, *M-Area Purged Water Disposal Station Equipment and Piping Layout*, Rev. 2.
- 5.7 ERD-EN-2012-0083, *Interference Report for RWM-1 Pump Removal (905-1M)*, October 2012, Rev. 0.

**Appendix A – Interference Location Maps**



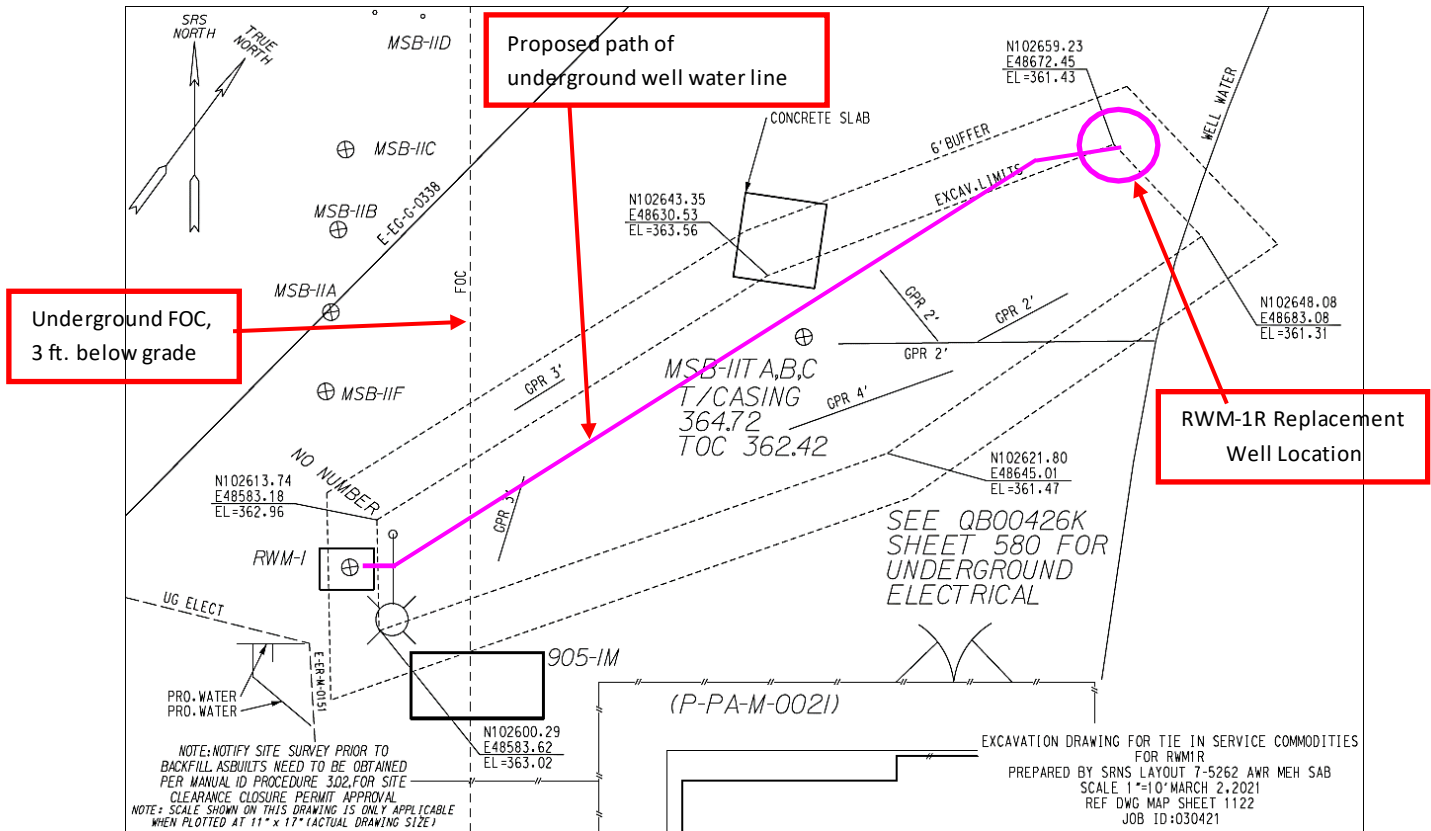
**Figure A-1. Interference Location Map for RWM-1R (Reference 5.5)**

**Appendix A – Interference Location Maps (Continued)**



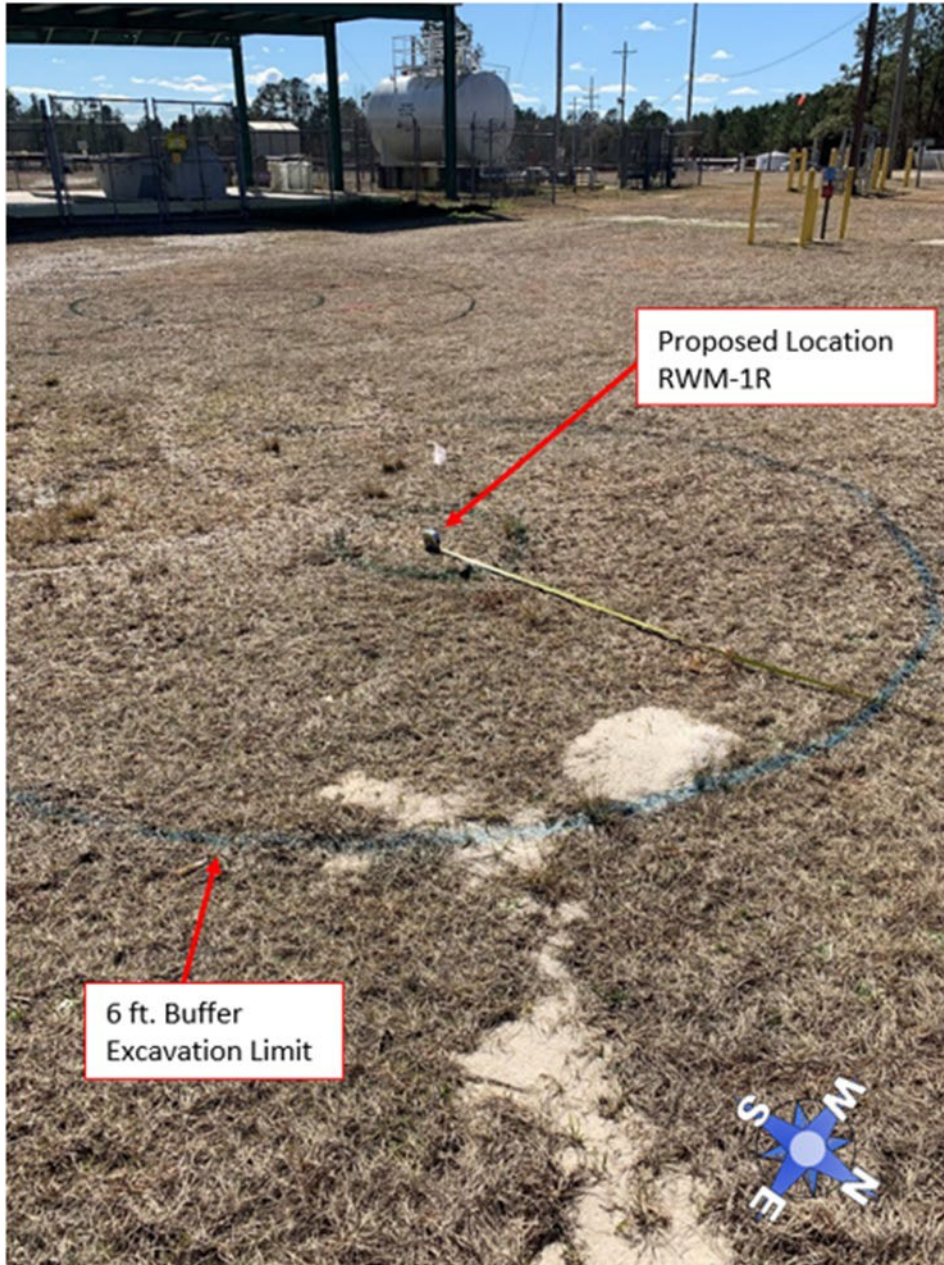
**Figure A-2. Proposed Location for Replacement Recovery Well, RWM-1R**

**Appendix A – Interference Location Maps (Continued)**



**Figure A-3. Proposed Location for Underground Piping at RWM-1R**

**Appendix B – Facility Area Photos**



**Figure B-1. Proposed Location of RWM-1R (Looking Southwest)**

**Appendix B – Facility Area Photos (Continued)**



**Figure B-2. Proposed Location for RWM-1R (Looking Northeast)**