

JUN 30 1994

11

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Reason	Disp.											Reason	Disp.
1/2	1	Cog. Eng.	M.A. Wasemiller	<i>M.A. Wasemiller</i>	5/23/94	H6-04	N. Uziemblo	<i>N. Uziemblo</i>	5/25/94	B5-18	1/2	1	
1/2	1	Cog. Mgr.	G.C. Henckel	<i>G.C. Henckel</i>	5/23/94	H6-04	H.D. Downey	<i>H.D. Downey</i>	5/24/94	H6-27	3		
1/2	1	QA	G.S. Corrigan	<i>G.S. Corrigan</i>	5-23-94	H4-16	Information Release Admin (2)			H4-17	3		
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		Env.					EPIC (2)	<i>EDMC</i>		H6-08	3		
3		M.J. Galgoul				H6-03							
1/2	1	P.M. Pak		<i>P.M. Pak</i>		A5-19							

18. M.A. Wasemiller <i>M.A. Wasemiller</i> Signature of EDT Originator Date <i>7/3/94</i>	19. _____ Authorized Representative Date for Receiving Organization	20. <i>G.C. Henckel III</i> G. Henckel III Cognizant/Project Date <i>5/24/94</i> Engineer's Manager	21. DOE APPROVAL (if required) Ltr. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
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Date Received: 5/27/94/CS

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Reference: WHC-CM-3-4

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Title: Description of Work for 216-U-1 and 216-U-2 Stainless Steel Pipeline Integrity Testing	Unclassified Category UC-630	Impact Level Q
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M. A. Wasemiller	<i>M. A. Wasemiller</i> 5/29/94	

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SUPPORTING DOCUMENT

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V. & Burkland 6/24/94

7. Abstract Wasemiller, M. A., 1994, <i>Description of Work for 216-U-1 and 216 U-2 Stainless Steel Pipeline Integrity Testing</i> , WHC-SD-EN-AP-166, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

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10. RELEASE STAMP

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Station #12

9. Impact Level Q

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ACRONYMS

DOW	description of work
FTL	field team leader
GPR	ground penetrating radar
HWOP	Hazardous Waste Operations Plan
LFI	Limited Field Investigation
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
RWP	Radiation Work Permit
SOP	standard operating procedures

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FIGURE:

1. Pipeline and Surrounding Facilities 2

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1.0 SCOPE OF WORK

This description of work (DOW) details the field activities associated with the integrity testing of the stainless steel effluent line connecting the 224-U Building to the 216-U-1 and 216-U-2 (U-1 and U-2) Cribs in the 200 West Area. It will serve as the guide for field work and will be used in conjunction with the 200-UP-2 *Resource Conservation and Recovery Act* of 1976 (RCRA) *Facility Investigation/Corrective Measures Study* (DOE-RL 1993 [LFI]) and *Environmental Investigations and Site Characterization Manual* (WHC 1988d).

2.0 OBJECTIVES

The objectives of this integrity test are to (1) Inspect the interior of this pipeline by in-line camera survey and (2) If required, conduct a pressure test on a section of the pipeline.

3.0 BACKGROUND

3.1 SITE HISTORY

The U-1 and U-2 Cribs were constructed in 1951. From March 1952 to June 1967, the site received cell drainage from Tank 5-2 in the 221-U Building and waste from the 224-U Building via the overflow from the 241-U-361 Settling Tank. From June 1957 to July 1957, the site received waste from the 224-U Building via the overflow from the 241-U-361 Settling Tank and contaminated solvent from the 276-U Settling Tank solvent storage area. The discharge of 221-U waste was discontinued during shutdown of production operations. From July 1957 to May 1967, the site received waste from the 224-U Building and equipment decontamination and reclamation wastes from operations in the 221-U Building canyon.

3.2 SITE DESCRIPTION

3.2.1 Surface Description

The process line connecting 224-U to the U-1 and U-2 Cribs is a 3.5-in. outer diameter, stainless steel line. The pipe is initially underneath the 224-U Building and its support facilities. It then travels underneath various macadam roads and parking areas (Figure 1). After the pipe has travelled about 150 ft due west, the grade above it is natural vegetation. A surface contamination zone begins as the line enters the U-361 Settling Tank and extends past the U-1 and U-2 Cribs.

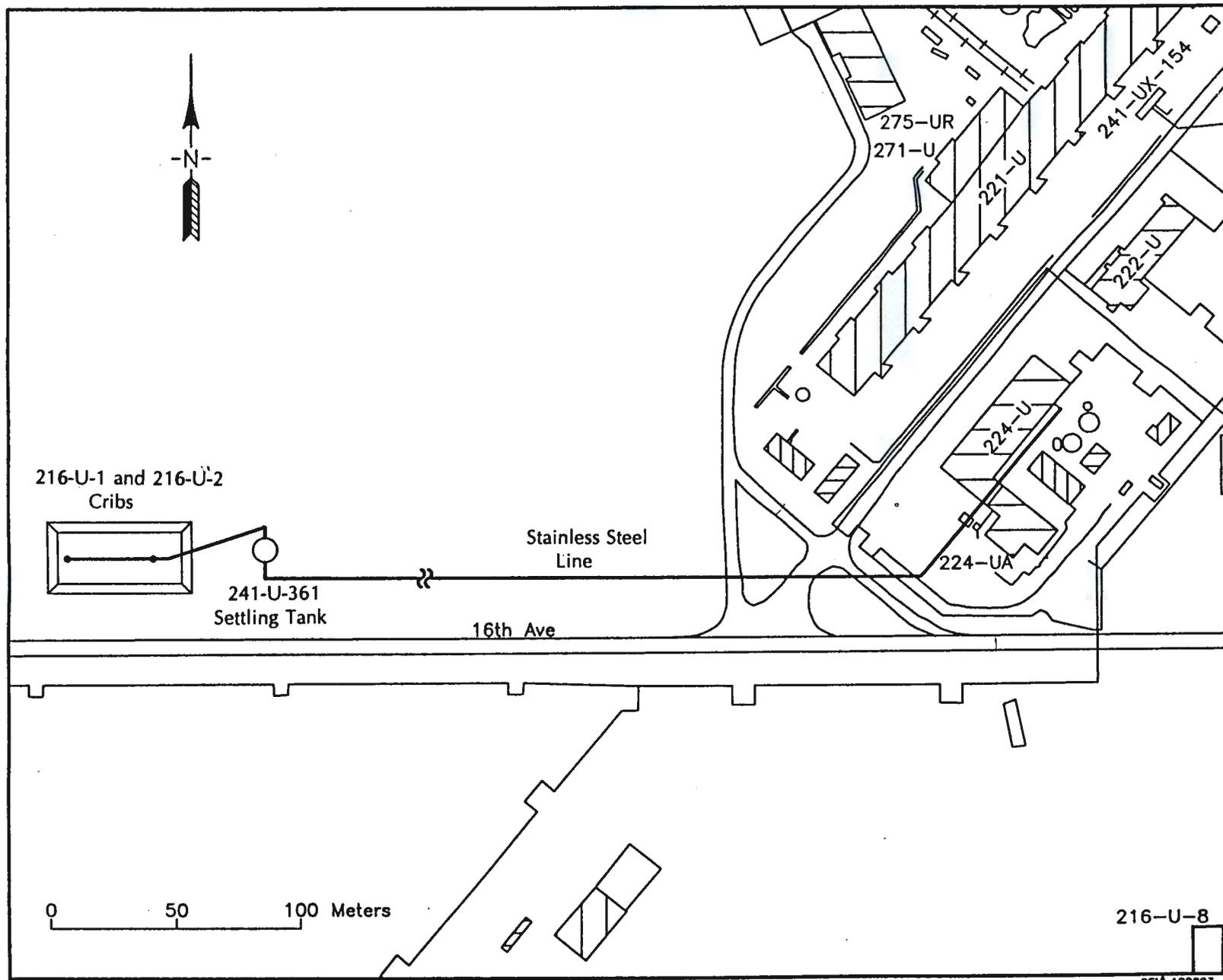


Figure 1. Pipeline and Surrounding Facilities.

3.2.2 Subsurface Description

This stainless steel line exits perpendicularly to the southeast side of the U-224 Building. Subsequently, it makes a 90° turn to the southwest, where it travels about 400 ft. Approximately 200 ft from the stainless steel line's origin at C Cell, a line from the 221-U Building ties into it. The pipe then turns 45° due west, travelling parallel to 16th Street approximately 800 ft to the 361-U Retention Tank. The U-1 and U-2 Cribs are situated just west of the 361-U Retention Tank.

4.0 SCOPE OF WORK

The scope of work is encompassed in five steps: (1) obtaining access to the pipeline in order to perform an in-line camera survey of the line to the greatest extent possible, (2) evaluating the need for further investigation of the pipeline, (3) blanking the line, as needed, to perform a pressure test, (4) conducting the pressure test, as needed, and (5) documenting the ability of the line to maintain pressure.

An excavation to expose the pipeline will be done inside the U-Plant perimeter fence at a location that will maximize the extent of pipeline that can be camera surveyed. The location of all excavations will be surveyed using ground penetrating radar (GPR). GPR generally allows for the determination of depth and size of metallic objects buried beneath the surface. The location of the excavation will be such that a camera survey can be made in both directions in the pipeline. The pipeline will be initially checked for liquid at this point. If the pipeline does contain liquid, it will be assumed to be in acceptable condition since this line has been inactive since 1967. Once it has been determined that the pipeline does not contain fluid, access will be accomplished by removing a section of the line. Once the pipeline has been opened, the camera survey will take place. The survey will consist of a small video camera cabled to video cassette recording equipment. The camera will be pushed along the pipeline utilizing a fiberglass rod system. It is possible to survey 400 ft of pipe or more in this manner under ideal conditions. If it is possible to survey to the maximum extent in each direction, a total of 800 ft of pipe could be examined. Upon completion of the camera survey, the need for further investigative work on the pipeline will be discussed with the regulators. Based on regulatory approval, further investigation of the pipeline could involve a pressure check of the line. To prepare for this possibility, the line will be set up so that a pressure check can be carried out as needed. This will require blanking of the line.

If it is determined that a pressure test is necessary, the line will be blanked just east of the 361-U Settling Tank and at any other locations deemed necessary to ensure a closed system. The location for excavation and blanking of the pipe will be chosen such that surface contamination zones and underground/overhead utilities are avoided. A pre-job camera survey was initiated from C Cell in the 224-U Building to the junction with the line from the 221-U Building. While the junction itself could not be observed, the integrity of the pipe roughly 90 ft from the point of the camera entry

visually appeared good. It has therefore been assumed that if breaches in the pipe integrity are present, they would be located after the 221-U tie-in.

5.0 GENERAL REQUIREMENTS

5.1 HEALTH AND SAFETY

All personnel working to this DOW will have completed the 40-Hr Hazardous Waste Site Worker Training Program and will perform all work in accordance with the following:

- WHC-CM-7-7, *Environmental Investigations and Site Characterization Manual* (EII) (WHC 1988d).
- WHC-CM-7-5, *Environmental Compliance Manual* (WHC 1988c)
- WHC-CM-1-6, *Radiological Control Manual* (WHC 1993)
- WHC-IP-0692, *Health Physics procedures Manual* (WHC 1991)
- WHC-CM-4-11, *ALARA Program* (WHC 1988a)
- WHC-EP-0383, *Environmental Engineering, Technology, and Permitting Function Quality Assurance Program Plan* (WHC 1990)
- WHC-CM-4-3, *Industrial Safety Manual*, Vol. 1 through 4 (WHC 1992)
- WHC-CM-7-8, Vol 2, *Engineering and Geotechnology Functions and Procedures*, Rev. 1 (WHC 1988b)
- Site-specific health and safety plan/radiation work permits/job safety analysis

5.2 PREREQUISITES

The requirements and procedures applicable to the 200-UP-2 Operable Unit field activities are specified in the *Environmental Investigations and Site Characterization Manual* (WHC 1988d). Applicable EIIs include the following:

- EII 1.1 "Hazardous Waste Site Entrance Requirements"
- EII 1.5 "Field Logbooks"
- EII 1.13 "Readiness Review"
- EII 2.1 "Preparation of Hazardous Waste Operations Permit"

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- EII 3.2 "Calibration and Control of Monitoring Instruments"
- EII 3.4 "Field Screening"
- EII 4.3 "Control of CERCLA and Other Past-Practice Investigation Derived Waste"
- EII 6.1 "Activity Reports of Field Operations"

Additional requirements and procedures applicable to the 200-UP-2 Operable Unit can be found in *Engineering and Geotechnology Functions and Procedures*, Vol. 2, specifically, "Test Pit Excavation in Radiological Areas" (WHC 1988b).

Each item on the checklist for tasks requiring readiness review (EII 1.13, "Engineering and Geotechnology Readiness Review" [WHC 1988b]) will be signed and dated by the cognizant engineer or field team lead leader (FTL) prior to the start of work.

6.0 FIELD ACTIVITIES

Task 1--Preparatory Activities

A meeting with Health Physics, Environmental Restoration Operations, UO₃ Plant Operations, and a Site Safety Officer will be held prior to commencement of the job. At this meeting, appropriate procedures will be agreed upon. Any technical issue brought up by any group will be addressed and associated problems resolved.

The following permits will be obtained and requirements fulfilled:

- Excavation Permit
- Radiation Work Permit (RWP)
- Hazardous Waste Operations Plan (HWOP)
- NEPA documentation
- Safety Assessment
- Cultural Resources Review
- Agreement Activity Notification
- Ecological Assessment
- Waste Control Plan
- Readiness Review

A pre-job safety meeting, including all personnel associated with the job, will be held before the job is performed. Again, any comments or concerns raised will be addressed and resolved at this time.

A tailgate safety meeting will be held at the job site prior to starting operations each day.

Task 2--Excavation and Blanking of Pipe

Before initiating any investigative work, the pipe will be exposed and blanked as necessary for the camera survey and any subsequent pressure testing. A backhoe will be used to excavate to the pipe depth, which is expected to be 4 to 10 ft below the surface. Appropriate personnel will install a sealed blank just east of the 361-U-Settling Tank and will assemble pressure testing apparatus downstream of the tank 5-2 line junction. If a pressure test is conducted, it will be from this point so that all pressure will force any contents of the pipe toward the U-1 and U-2 Cribs.

Any waste generated during the excavation of these access pits will be handled in accordance with the waste control plan developed to address field investigation activities for the 216-U-1/216-U-2 Cribs. Any contaminated soils encountered in the pits will be returned to the point of generation and all information will be noted in the field logbook. A copy of this waste control plan will be part of the readiness review folder for this project.

Task 3--Pressure Test

The testing of the system through a positive or negative pressure test will be initiated if sufficient information to determine the integrity of the pipeline is not available as a result of the in-line camera survey. A negative pressure test allows for the determination of any leaks without the addition of any gases to the system. If the system does not maintain a negative pressure, there is no ability to determine the source(s) of the pressure loss. A positive pressure test would require the addition of gas to the system.

Should the pipe pass the pressure test, it will be assumed that the integrity has not been breached, and no further investigation will be pursued. If the pipeline cannot maintain pressure, a meeting will be held with the regulators to determine the next phase of the investigation to attempt to locate any leaks and the method best suited to locating them, if there is a need. The need for further investigation will be addressed upon review of the information collected.

7.0 ORGANIZATION

Field Team Leader--George Jackson/Craig Rowley
 Cognizant Engineer--Mark Wasemiller/Michael Galgoul
 Cognizant Manager--George Henckel
 Planner--Ken Berry
 Heavy Equipment--Dan Riley/Ray Jennings
 Health physics technician--Mike Rushman/Kathy Matthews/Glenda Biever
 Landlord--Bill Osborne
 Waste Shipping and Disposal--Greg Hopkins
 Site Safety Officer--Judy Vaughn

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Ecology--Nancy Uziemblo/Dave Holland
DOE--Paul Pak
D&D Engineering--Bill Hayward

8.0 REFERENCES

- DOE-RL, 1993, *200-UP-2 RCRA Facility Investigation/Corrective Measures Study*, DOE/RL-91-19 Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- WHC, 1988a, *ALARA Program*, WHC-CM-4-11, Westinghouse Hanford Company, Richland, Washington.
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