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ENGINEERING DATA TRANSMITTAL

Page 1 of 1

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	~~WHC-SD-ER-AP-004~~			Description of Work for the	3	1	1	
1	WHC-SD-EN-AP-065,		0	3000-1, 2, 3, 4 Leaking Underground				
				Storage Tank Investigation				

16. KEY

Impact Level (F)	Reason for Transmittal (G)	Disposition (H) & (I)
1, 2, 3, or 4 see MRP 5.43 and EP-1.7	1. Approval 4. Review 2. Release 5. Post-Review 3. Information 6. Dist (Receipt Acknow. Required)	1. Approved 4. Reviewed no/comment 2. Approved w/comment 5. Reviewed w/comment 3. Disapproved w/comment 6. Receipt acknowledged

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(See Impact Level for required signatures)

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~~1~~	1	Cog./Proj. Eng	R. C. Roos	11-11-91	H4-55	IRA Clearance			H4-17	3	
1	1	Cog./Proj. Eng. Mgr	R. P. Henckel	11-11-91	H4-55	EDMC			H4-22	3	
1	1	QA	W. E. Bartlet	11-11-91		H4-16					
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INFORMATION RELEASE REQUEST

References: WHC-CM-3-4

Purpose

- ☐ Speech or Presentation (Check only one suffix)
  - ☐ Full Paper
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- ☐ Reference
- ☒ Technical Report
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- ☐ Manual
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- ☐ Software/Database
- ☐ Controlled Document
- ☐ Other _____

New ID Number: WHC-SD-EN-AP-065, Rev. 0

Existing ID Number (include revision, volume, etc.):

If previously cleared, list ID number.:

Date Release Required: 11-1-91

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Will material be handed out? ☐ Yes ☒ No

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CHECKLIST FOR SIGNATORIES

Review Required per WHC-CM-3-4	Yes	No	Reviewer Name (printed)	Signature	Date
Classification/Unclassified Controlled Nuclear Information	☐	☒			
Patent - General Counsel	☒	☐	S.W. Berglin ~~B.D. Williamson~~	S.W. Berglin	11/6/91
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WHC Program	☐	☒			
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Publications Services	☐	☒	L. Hermann	L. Hermann	6/1/92
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References Available to Intended Audience	☒	☐	C.J. LYNCH	C.J. Lynch	10-28-91
Transmit to DOE-HQ/Office of Scientific and Technical Information	☐	☒			

Information conforms to all applicable requirements. The above information is certified to be correct.

Author/Requestor (Printed/Signature): C.J. Lynch for R.C. Roos — Date: 10-28-91

Responsible Manager (Printed/Signature): C.J. Lynch for R.P. Henckel — Date: 10-28-91

Intended Audience

☐ Internal ☐ Sponsor ☒ External

INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP

Stamp is required before release. Release is contingent upon resolution of mandatory comments.

APPROVED FOR RELEASE OFFICIAL DOCUMENT NS Date 6/1/92

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SUPPORTING DOCUMENT

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2. Title	3. Number	4. Rev No.
Description of Work for the 3000-1, 2, 3, 4 Leaking Underground Storage Tank Investigation	WHC-SD-EN-AP-065	0

5. Key Words

Sampling/groundwater monitoring, remediation

APPROVED FOR PUBLIC RELEASE

6. Author

Name: R. C. Roos

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7. Abstract

6/1/92 M. Solis

Roos, R. C., 1992, *Description of Work for the 3000-1, 2, 3, 4 Leaking Underground Storage Tank Investigation*, WHC-SD-EN-AP-065, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

8. PURPOSE AND USE OF DOCUMENT - This document was prepared for use within the U.S. Department of Energy and its contractors. It is to be used only to perform, direct, or integrate work under U.S. Department of Energy contracts. This document is not approved for public release until reviewed.

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9. Impact Level 3SQ

10. RELEASE STAMP

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TABLE

1.0 SCOPE OF WORK

This description of work outlines field activities associated with three sampling/groundwater monitoring wells in the 3000 Area. The wells will be used to assess potential contamination of soil and groundwater resulting from leaking underground storage tanks. This description of work should be used in conjunction with WHC (1988a). Analytical parameters and field quality assurance will be in accordance with *Guidance for Remediation of Releases from Underground Storage Tanks* (Ecology 1991). Based on findings during field work and analysis of sampling data, additional wells may be drilled to support remediation of soils at this site. Additional wells will follow guidance provided in this document.

2.0 WORK REQUIREMENTS

2.1 HEALTH AND SAFETY

All personnel working in the exclusion zone will have completed the 40-h Hazardous Site Worker training program. Work will be performed according to the Job Safety Analysis or Site Safety Plan.

2.2 QUALITY ASSURANCE PLAN

The basic objective of the quality assurance (QA) plan is to ensure that data, findings, and results are sufficiently accurate and reliable to support decisions associated with site evaluation and selection of remedial alternatives. Activities will be based on approved procedures and work will be performed to guidelines specified in this document and the following:

- WHC-S-014, *Generic Specifications for Groundwater Monitoring Wells* (WHC 1991)
- WHC-EP-0383, *Environmental Engineering, Technology, and Permitting Function Quality Assurance Program Plan* (WHC 1990)
- WHC-CM-4-3, *Industrial Safety Manual*, Vols. 1 through 3 (WHC 1992)
- WHC-CM-7-5, *Environmental Compliance Manual* (WHC 1988b)
- WHC-CM-7-7, *Environmental Investigation and Site Characterization Manual* (WHC 1988a)

Westinghouse Hanford and Environmental Engineering and Geotechnology (EE&G) procedures will be followed throughout the sampling effort. The EE&G procedures are listed in Table 1.

Table 1. Environmental Engineering and Geotechnology Procedures.

Procedure	Environmental Investigation Instruction
Sampling	5.2, 5.3, 5.8, 5.9, 5.13
Drilling	6.1, 6.4, 6.6, 6.7, 6.8, 6.10
Geologic Logging	9.1
Groundwater Sampling	10.1, 10.2, 10.3, 10.4
Sample Handling	5.2, 5.11
Field Documentation	1.5, 5.1, 5.10
Equipment Decontamination	5.4, 5.5
Site Entry Requirements	1.1
Deviation from Procedures	1.4
Personnel Requirements	1.1, 1.7
Health and Safety Requirements	1.1, 1.7, 2.1, 2.2, 2.3, 3.2

Additional procedures contained in WHC (1988a) may be applicable to specific field situations. However, procedures listed here should cover the majority of work.

Laboratory analysis of chemical properties will be done in accordance with procedures and laboratory QA/QC specified in SW 846 (EPA 1986).

3.0 SAMPLING AND FIELD ACTIVITIES

3.1 SAMPLING SPOILS PILES

The two spoils piles will each be divided into four quadrants. Four random samples will be collected and composited from each quadrant.

Composite samples from the spoils piles will be analyzed for the following parameters [EPA Methods from SW 846 (EPA 1986)]:

- Total petroleum hydrocarbon (TPH), EPA Method 3540/8015 (Diesel)
- TPA, EPA Method 5030/8015 (Gasoline)
- Benzene, ethylbenzene, toluene, xylenes (BETX), EPA Method 5030/8020.

In addition to chemical sample analysis, composite material from each spoil pile will be collected for assessment of biological activity. This assessment will support decisions regarding decontamination of the soil. One composite sample from each spoil pile will be collected and analyzed for the following:

- Soil solution pH
- Background nutrient analysis
- Microbial population density for both total bacteria and petroleum degrading bacteria.

Sample volumes will be stipulated by the analytical laboratory. Holding times for chemical analysis are specified in *Guidance for Remediation of Releases from Underground Storage Tanks* (Ecology 1991).

3.2 DRILLING ACTIVITY

3.2.1 Borehole Location and Description

Three borings will be advanced in the 3000 Area underground storage tank site. Upon completion, the borings will be constructed as groundwater monitoring wells in accordance with WHC (1991). The three borings will be located as follows:

- Within the area of the tank excavation, at the site of greatest known contamination
- Approximately 75 ft east of the tank excavation
- North of the tank excavation, at the pipe junction to the fill stations.

Drilling locations will be staked for identification.

Drill cuttings will be contained according to guidance provided in *Guidance for Remediation of Releases from Underground Storage Tanks* (Ecology 1991). Cuttings will be placed on plastic at the drill site or in the contaminated spoils piles. Analysis of borehole samples will be used to determine if cuttings from each borehole are contaminated. If contaminated, cuttings will be stored for remediation with other contaminated soil from the tank area.

The borings will be advanced approximately 15 ft beyond the water table. The screened interval for the groundwater wells will be 20 ft, and will extend from the bottom of the well to 5 ft above the water table.

3.2.2 Borehole Sample Collection

Three soil samples and one groundwater sample will be collected from each boring for laboratory analysis. Soil samples will be collected at intervals of 5 ft during drilling activities. Of the samples collected, three will be selected for laboratory analysis. The three selected will be:

- Sample from interval with highest readings on field instruments
- Deepest sample with readings above background on field instruments
- Sample nearest to water table.

If one sample location meets two or more of the selection criteria, the field team leader will select a sample or samples to complete a set of three total samples from the borehole.

If field screening results are equal to or less than background (as measured in ambient air) for all soil samples collected from a boring, the following sample intervals will be utilized for laboratory analysis:

- 5 - 10 ft below ground surface
- Sample nearest water table
- Sample mid-way between bullets 1 and 2.

Soil samples will be collected by split-spoon or other similar downhole sampler. Groundwater samples will be collected by sampling pump, or stainless-steel or teflon bailer after completion of well development activities.

The presence of phase-separated hydrocarbons will be assessed using a bailer or oil-water interface probe. If free product is detected in the boreholes after well development, Ecology will be notified.

3.2.3 Sample Analyses

Samples collected during drilling activities will be analyzed for the following [EPA Methods from SW 846 (EPA 1986)]:

- Soil samples
  - TPH, EPA Method 3540/8015 (Diesel)
  - TPA, EPA Method 5030/8015 (Gasoline)
  - BETX EPA Method 5030/8020
  - Total lead, EPA Method 3050/7421
- Groundwater samples
  - TPH, EPA Method 3510/8015 (Diesel)
  - TPH, EPA Method 5030/8015 (Gasoline)
  - BETX EPA Method 5030/8020
  - Total lead, EPA Method 3010/7421

In addition to chemical sample analysis, a sample will be collected from each borehole from a depth of 3 to 5 ft for assessment of biological activity. This assessment will support decisions regarding decontamination of the soil. The samples will be analyzed for the following:

- Soil solution pH
- Nutrient analysis
- Microbial population density for both total bacteria and petroleum degrading bacteria
- Microbial stimulation testing to determine the response of native bacteria to nutrient and oxygen amendments.

3.2.4 Field Quality Assurance/Quality Control

Field QA/QC will include one duplicate sample, one trip blank, one transfer blank, and one equipment blank for soil samples at each borehole. One borehole will have a QA/QC sample set collected from groundwater.

4.0 PROJECT FOLLOW UP

At the conclusion of the initial investigative phase outlined in this work description, follow-up activities will be determined. A groundwater monitoring program will be implemented at the site for 1 yr. Fluid-level measurements will be conducted monthly in each groundwater monitoring well and quarterly groundwater quality samples will be collected from each well. Chemical analytical parameters will be the same as specified in Section 3.2.3. However, the list of analytes may be reduced or expanded based on results obtained as the investigation progresses. Remediation alternatives will be evaluated based on data obtained during borehole sampling, and supplemented as necessary by follow-up monitoring.

5.0 REFERENCES

Ecology, 1991, *Guidance for Remediation of Releases from Underground Storage Tanks*, Washington State Department of Ecology, Olympia, Washington.

EPA, 1986, *Test Methods for Evaluating Solid Waste - Physical/Chemical Methods*, 2nd Ed. SW-846, U.S. Environmental Protection Agency, Washington, D.C.

WHC, 1988a, *Environmental Investigations and Site Characterization Manual*, WHC-CM-7-7, Westinghouse Hanford Company, Richland, Washington.

WHC, 1988b, *Environmental Compliance Manual*, WHC-CM-7-5, Westinghouse Hanford Company, Richland, Washington.

WHC, 1990, *Environmental Engineering, Technology, and Permitting Function Quality Assurance Program Plan*, WHC-EP-0383, Westinghouse Hanford Company, Richland, Washington.

WHC, 1991, *Generic Specifications for Groundwater Monitoring Wells*, WHC-S-014, Westinghouse Hanford Company, Richland, Washington.

WHC, 1992, *Industrial Safety Manual*, WHC-CM-4-3, 3 Vols, Westinghouse Hanford Company, Richland, Washington.