MAR 21 2000

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT 624175

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
CHG Characterization Engineering	Characterization Engineering	N/A
5. Proj./Prog./Dept./Div.:	6. Design Authority/Design Agent/Cog. Engr.:	7. Purchase Order No.:
Characterization Project	GP Janicek/DD Wanner	N/A
8. Originator Remarks: ESR-98-03 1) Design Verification performed by informal review per HNF-IP-0842 Vol IV, Section 4.24 2) The Design Criteria is addressed in WHC-SD-WM-SDD-068, *System Design Description for the In-Situ Vapor Sampling System.* 3) The safety classification for the Type 4 ISVS Carts is General Services (GS).		9. Equip./Component No.: N/A 10. System/Bldg./Facility: 200G
11. Receiver Remarks:	11A. Design Baseline Document? [] Yes [X] No	12. Major Assm. Dwg. No.: N/A 13. Permit/Permit Application No.: N/A 14. Required Response Date: N/A

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Designator	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	RPP-5451	N/A	0	PARTIAL ACCEPTANCE FOR BENEFICIAL USE (ABU) FOR THE TYPE 4 IN-SITU VAPOR SAMPLER (ISVS) CARTS	SQ	1	1	

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec. 12.7)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION
(See Approval Designator for required signatures)

(G) Reason	(H) Disp.	(J) Name (K) Signature (L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name (K) Signature (L) Date	(M) MSIN
1	1	Design Authority GP Janicek 3/20/00	S7-12	1	1	CPO Eng. Mgr ~~RM Boger~~ 3/21/00	S7-12
1	1	Cog. Eng. DD Wanner 3/14/00	S7-12	1	1	CPO Mgr. JF Sickels 3-16-00	S7-03
1	1	Cog. Mgr. JS Schofield 3/15/00	S7-12				
1	1	QA ML McElroy 3/15/00	S7-07				
1	1	Safety CD Jackson 3/16/00	S7-34				
~~1~~	~~1~~	~~Env. LL Penn~~ 3/14/00	S7-03				
1	1	Proj. Mgr JD Criddle Jr. 3/15/00	S7-12				
1	1	Review GW Wilson 3/13/00	S7-12				

18.	19.	20.	21. DOE APPROVAL (if required)
F.R. Reich 3/10/00 FR Reich Signature of EDT Originator Date	GP Janicek 3/20/00 Authorized Representative For Receiving Organization Date	G P Janicek 3/20/00 Design Authority/ Cognizant Manager Date	Ctrl No. [] Approved [] Approved w/comments [] Disapproved w/comments

S

PARTIAL ACCEPTANCE FOR BENEFICIAL USE (ABU) FOR THE TYPE 4 IN-SITU VAPOR SAMPLER (ISVS) CARTS

R. M. BOGER
CH2M HILL Hanford Group, Inc., Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

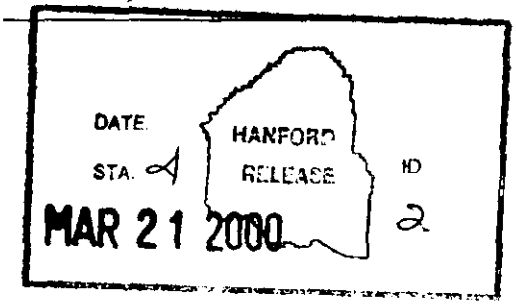
EDT/ECN: 624175 UC: 2000
Org Code: 74900 Charge Code: 102254/E100
B&R Code: EW3130000 Total Pages: 12

Key Words: Partial, Acceptance for Beneficial Use, ABU, single shell tanks, storage tanks, radioactive waste, vapor sampling, design requirements, Type 4, In-Situ Vapor Sampling, ISVS

Abstract: This document provides the "Partial" Acceptance for Beneficial Use (ABU), for the Type 4 in-situ vapor sampler system (ISVS). This document is generated to support the completion of equipment modifications and engineering documentation for the ISVS system that is used for sampling gaseous vapors in the Hanford single shell radioactive waste storage tanks. The ABU is used to document the items required for transferring the ISVS system to operations for field use. This document is generated following Characterization Engineering Desk Instruction DI-CE-004-001.

Release Approval [signature] Date 3/21/00

Release Stamp



Approved for Public Release

PARTIAL ACCEPTANCE FOR BENEFICIAL USE (ABU) FOR THE TYPE 4 IN-SITU VAPOR SAMPLER (ISVS) CARTS

Prepared For
River Protection Project
CH2M HILL Hanford Group, Inc.
Characterization Engineering
Richland, WA

By G. W. Wilson
COGEMA Engineering Corporation
Richland, Washington

March 2000

TABLE OF CONTENTS

APPENDICES

PARTIAL ACCEPTANCE FOR BENEFICIAL USE (ABU) FOR TYPE 4 IN-SITU VAPOR SAMPLER (ISVS) CARTS

1.0 INTRODUCTION

This document presents the "Partial" Acceptance For Beneficial Use (ABU) for the Type 4 In Situ Vapor Sampling system carts that were updated for use during FY-2000. The two existing Type 4 carts (ISVS-1 and ISVS-2) have been in storage and have not been used for over two years. A task was initiated to upgrade the ISVS Type 4 sampling carts and ready them for field deployment (RPP 2000a).

The Type 4 ISVS carts are portable sampling systems designed to collect in-tank vapor samples from the head space region of Hanford's radioactive waste storage tanks (WHC 1996). The Type 4 ISVS system consists of a cart, a tube bundle, and a sampling head. The cart contains an instrumentation cabinet with vacuum air pump components, a manifold and various valves, flow meters, flow totalizers, rotameters, and filters mounted on a hand truck. The tube bundle (approximately 50-ft long) connects the cart with the sampling head and is used to lower the sampling head into a tank dome space through a tank riser. The sampling head contains particulate filters, tritium-trap filters, multiple sorption tubes, and a thermocouple. As tank dome-space gas is drawn through the tube bundle by the cart vacuum system, the sampling head scavenges particle and gas samples. The selection and arrangement of the sorption tubes and filters is dependent upon the vapor sampling needs identified in the Data Quality Objective document (LMHC 1999a) and the sampling analysis plan (SAP). After sampling is completed the sample head is disconnected from the tube bundle, bagged out with protective plastic, and shipped to the 222S laboratory for analysis.

2.0 PURPOSE

This "Partial" ABU documents the completion of items that are required prior to turnover of the Type 4 ISVS system to Operations for field deployment. This ABU was completed as required by HNF-IP-0842, Section 3.12, "Acceptance of Structures, Systems, and Components for Beneficial Use" and supports configuration management of the Type 4 ISVS system (LMHC 1999b). This is a "Partial" ABU in that several non-critical items remain to be completed. This "Partial" ABU allows the Type 4 ISVS system to be field deployed to support FY 2000 vapor sampling and mixer pump testing schedules. None of the remaining ABU items have an impact on the operation or safety of the Type 4 ISVS system.

3.0 SCOPE

This "Partial" ABU documents the completed tasks and identifies documentation that was generated for the turnover of the Type 4 ISVS system to Operations (RPP 2000b). Appendix A contains the ABU checklist. Appendix A also identifies the items remaining to be completed for the release of a final ABU. A final ABU will be completed by revising this

turnover-supporting document via the ECN process after the open documentation is completed and the ECN's incorporated into the system drawings,

4.0 COMPLETED TASKS

The tasks and documentation that were completed for the Type 4 ISVS carts includes the following:

- Engineering Task Plan released and issued (RPP-5468).
- Design Compliance Matrix released and issued (RPP 5275).
- Operation Test Procedure released and issued (RPP 5659).
- Updated all ISVS drawings to incorporate old outstanding ECNs.
- Updated sampler head drawing to include potential sampling materials (sorbent tubes, filters, sampler head configuration, etc.) that could be part of a sampling head inserted the tank dome space (H-2-825301).
- Flammable Gas Equipment Advisory Board (FGEAB) approval obtained for dome intrusive vapor sampling with the Type 4 ISVS system per Ignition Control Set #2 in Facility Group 1, 2, and 3 tanks (FGEAB-97-008, Rev. 8).
- Completed an informal walk-down of Carts #1 and #2 (RPP 5468).
- Released 8 modification work ECNs to modify sample cylinder, add digital thermometer, add intrinsically safe thermocouple reader, add fan switch, add totalizer brackets, add stiffening angle, add wire and equipment labels, and add electrical connection diagram for ISVS-2 to show differences that exist between ISVS-1 and ISVS-2 (H2-825301, H2-825313, and H2-825314).
- Completed OTP testing with both ISVS-1 and ISVS-2 (RPP 5911 and RPP 5912).
- Completed operator training (Training Plan Document Number 79600-00-002).
- Updated operating procedures (TO-080-627, Rev. B-0).
- Performed validation and verification of operating procedures (TO-080-627, Rev. B-0).
- Completed NEC inspection (NEC Service Inspection Authorization No. 8175 and 8176).

As indicated in Appendix A, three activities remain to be completed. These tasks are not related to the operability or safety of the Type 4 ISVS system and therefore, the carts are considered ready for field deployment.

5.0 RESPONSIBILITIES

The assigned Design Authority is responsible for proper preparation and maintenance of the ABU and exercises ownership of it on behalf of Characterization Equipment Engineering and Characterization Project Operations management.

6.0 REFERENCES

FGEAB-97-008, Rev. 8, *Flammable Gas Equipment Advisory Board Interpretation/Recommendation Report*, January 12, 2000, CH2M HILL Hanford Group. Richland, Washington.

LMHC 1999a, HNF-SD-WM-DQO-021, Rev. 1, *Data Quality Objectives for Regulatory Requirements for Hazardous and Radioactive Air Emissions Sampling and Analysis.* Lockheed Martin Hanford Corporation, Richland, Washington, July 1999.

LMHC 1999b, HNF-IP-0842, Vol. IV, *TWRS Administrative Procedures, Engineering,* Lockheed Martin Hanford Corporation, Richland, Washington, September 1998.

RPP 2000a, RPP-5468, Rev. 0, *Engineering Task Plan for Preparing the Type IV In-Situ Vapor Samplers (ISVS) for Use*, January 2000, CH2M HILL Hanford Group. Richland, Washington.

RPP 2000b, RPP 5275, Rev. 0, *Baseline Design Compliance Matrix for the Type 4 In-Situ Vapor Samplers (ISVS),* January 2000, CH2M HILL Hanford Group. Richland, Washington.

RPP 2000c, RPP 5659, Rev. 0, *Operations Test Plan for the Type 4 In-Situ (ISVS) System*, January 2000, CH2M HILL Hanford Group. Richland, Washington.

RPP 2000d, RPP 5911, Rev. 0, *Cart #2 Type 4 In-Situ Vapor Sampling (ISVS) System Operability and Operational Test Report*, March 2000, CH2M HILL Hanford Group. Richland, Washington.

RPP 2000e, RPP 5912, Rev. 0, *Cart #1 Type 4 In-Situ Vapor Sampling (ISVS) System Operability and Operational Test Report*, March 2000, CH2M HILL Hanford Group. Richland, Washington.

TO-080-627, Rev. B-0, *Vapor Sampling of Waste Tanks Using In-Situ Vapor Sampling (ISVS) System*, February 2000, Tank Farm Plant Operating Procedure, CH2M HILL Hanford Group. Richland, Washington.

WHC 1996, Blanchard, R. J., WHC-SD-WM-SDD-068 Rev. 0, *System Design Description for the In-Situ Vapor Sampling System*, July 1966, Westinghouse Hanford Company, Richland, Washington.

APPENDIX A

ACCEPTANCE FOR BENEFICIAL USE CHECKLIST

ACCEPTANCE FOR BENEFICIAL USE (ABU)

3. Document No.	4. Project No.	5. SSC Designator	6. System / Building / Facility	7. Equipment / Component No.	8. EDT No.
RPP-5451	NA	GS	200 General	ISVS Carts #1	EDT 627877

9. Final ABU ( ) Partial ABU (X)	10. ATP Rerun Required ( ) Yes (X) No

11. Description of Work

Modify Type 4 ISVS carts by replacing dial thermometer, replacing power strip, and other minor modifications. Complete update of drawings to represent an as-built condition of each cart.

This partial ABU documents the completion of all activities necessary for the deployment of the two Type 4 ISVS carts (Ref ES-00-00032 and ES-00-00033). All items required prior to meet final ABU requirements are completed except for two items listed below in block 12.

12. Description of Work to be Completed	13. Scheduled Completion Date	14. Responsibility for Completion	15. Impact on Operations/Safety
Drawings H-2-825301, H-2-825313, and H-2-825314 to be revised with ECNs incorporated following completion of modifications to cart #2	5/30/2000	G. W. Wilson	No impact on operation or safety. Configuration control maintained by approved ECNs which apply to Sample Carts 1 and 2.
Establish Vendor file.	5/30/2000	GW Wilson	No impact on operation or safety. Required for configuration control.

16. Documents or Other Items/Tasks to be Updated	17. Fund Source	18. Doc #	19. Responsibility for Completion	20. Required prior to final ABU (Yes/No)
ENGINEERING:				
• Engineering Procedure (N/A)				
• Engineering Task Plan (ETP) (X)		RPP-5468, Rev. 0, issued 1/6/00	FR Reich	Yes
• Final Safety Analysis Report (FSAR) (N/A)				
• Safety Assessment (SA) (N/A)				
• Functional Design Criteria (FDC) (N/A)				
• Conceptual Design Report (CDR) (N/A)				
• Supplemental Design Requirements Document (SDRD) (N/A)				
• System Design Description (SDD) (N/A)				
• Acceptance Test Procedures (ATPs) and Final Test Report (N/A)				
• Operational Test Procedures (OTP) and Final Test Report (X)		RPP 5659, OTP issued 1/31/00, and RPP 5911 (ISVS-2) and RPP 5912 (ISVS-1) OTRs issued 3/2/00 per Work packages ES-00-00032 (ISVS-1) and ES-00-00033 (ISVS-2).	DD Wanner	Yes
• Safety Equipment List (SEL) (X)		The DCM document (RPP-5275; Rev. 0) defines the Type 4 ISVS carts as General Service.	JD Criddle	Yes
• Environmental Impact Statement (N/A)				
• Environmental Report (N/A)				
• Environmental Permits (N/A)				
• Stress/Seismic Analysis (N/A)				
• Stress/Design Report (N/A)				
• Equipment Specification (N/A)				
• Procurement Specification (N/A)				
• Construction Specification (N/A)				
• Essential Material Specification (N/A)				
• Technical Specification (N/A)				
• Interface Control Drawing (N/A)				
• Design Compliance Matrix (DCM) (X)		RPP-5275, Rev. 0, issued 1/25/00	FR Reich	Yes

16. Documents or Other Items/Tasks to be Updated		17. Fund Source	18. Doc #	19. Responsibility for Completion	20. Required prior to final ABU (Yes/No)
• As-built Drawing	(X)		Updated H-2-825301, H-2-825313, and H-2-825314 as per outstanding ECNs; generated ECNs as per an informal walkdown of ISVS-1 and ISVS-2.	GW Wilson	Yes
ADP:					
• Software Configuration Management Plan	(N/A)				
• System Requirements Specifications	(N/A)				
• Software Design Description	(N/A)				
• Computer Software	(N/A)				
TRAINING:					
• Training Plan	(N/A)				
• Training manuals	(N/A)				
• Training to Operating Crews	(X)		Type IV Vapor Cart Operations Training Plan 79600-00-002, 3/9/00 (course #351483)	P "Rick" Jennings	Yes
• Training to Maintenance Crews	(X)		Type IV Vapor Cart Operations Training Plan 79600-00-002, 3/9/00 (course #351483)	P "Rick" Jennings	Yes
• Training Mock-Up	(N/A)				
OPERATIONS:					
• Operating and Maintenance Manuals	(N/A)				
• Operating Procedures	(X)		TO-080-627, Rev. B-0, revised 2/16/00	DD Wanner	Yes
• Operation Instructions	(N/A)				
• Surveillance Procedures	(N/A)				
• Calibration Procedures	(N/A)				
• Preventative Maintenance Procedures	(N/A)				
• Repair/Maintenance Procedures	(X)		ES-683 (ISVS-1) and ES-684 (ISVS-2), issued 2/29/00	DD Wanner	Yes
• Functional Check Procedures	(N/A)				
• Operations Safety Requirements	(N/A)				
• Preventative Maintenance Data Sheets	(X)		ES-683 (ISVS-1) and ES-684 (ISVS-2), issued 2/29/00	DD Wanner	Yes

16. Documents or Other Items/Tasks to be Updated		17. Fund Source	18. Doc #	19. Responsibility for Completion	20. Required prior to final ABU (Yes/No)
QUALITY ASSURANCE:					
• Inspection Plan	(X)		See work packages ES-00-00032 (ISVS-1) and ES-00-00033 (ISVS-2).	ML McElroy	
• QA Program/Project Plan	(N/A)				
• QAP JP	(N/A)				
• NEC Inspection	(X)		NEC Inspection Report No. 8189: NEC Service Inspection Authorization No. 8175, 1/26/00 (ISVS-1) NEC Service Inspection Authorization No. 8176, 1/26/00 (ISVS-2)	JD Criddle	Yes
PROCUREMENT ACTIVITIES:					
• Vendor Information	(X)		TBD	GW Wilson	Yes
• Material List	(N/A)				
• Spare Parts	(X)		Part of the 2101HV Inventory System	JS Schofield	Yes
• Purchase Requisition	(N/A)				
• ALARA Management Worksheet	(N/A)				
• Other	(N/A)				

PROJECTS: CHARACTERIZATION OPERATIONS AND ENGINEERING			
		Signature	**Date**
Cog/Field Engineer	D. D. Wanner	Dale D Wanner	3/14/2000
Cog/Field Mgr.	J. S. Schofield		3/15/00
Quality Assurance	M. L. McElroy	M. L. McElroy	3/15/00
Safety	C. D. ~~CA~~ Jackson	C. D. Jackson	3/16/00
Characterization Projects	R. M. Boger		3/21/00
Project Manager	J.D Criddle		3/15/00
Characterization Ops	J. F. Sickels	James Sickels	3-16-00
Design Authority	G. P. Janicek		3/20/00
Design Engineer	F. R. Reich	F. R. Reich	3/10/00