2. To: (Receiving Organization) Distribution		3. From: (Originating Organization) RPP Upgrade		4. Related EDT No.: 627859 PRD 11/8/99	
5. Proj/Prog/Dept/Div.: Core Sampling		6. Design Authority/Design Agent/Cog. Engr.: Rob Dale		7. Purchase Order No.: N.A.	
8. Originator Remarks: Qualification Test was performed November 8, 1999. Results and supporting documentation are attached. The test article passed the qualification test.				9. Equip./Component No.: N.A.	
				10. System/Bldg./Facility: 200G	
				12. Major Assem. Dwg. No.: H-2-690140	
				13. Permit/Permit Application No.: N.A.	
11. Receiver Remarks:				11A. Design Baseline Document? ☐ Yes ☒ No	
14. Required Response Date: 11/11/99					

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	RPP-5251	all	0	PINTLE ROD QUALIFICATION	G NA	2	1	
				TEST PLAN/REPORT FOR ROLL				
				PIN RELOCATION				

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
2	/	Design Authority George Janicek	<i>[Signature]</i>	11/8/99	S7-12	2	2	Jeff Smalley	<i>[Signature]</i>	11/8/99	S7-12
2	1	Design Agent Paul Deichelbohrer	<i>[Signature]</i>	11/8/99	S7-12						
2		Cog. Eng. Rob Dale	<i>[Signature]</i>	11/8/99	S7-12						
2		Cog. Mgr. John Schofield	<i>[Signature]</i>	11/8/99	S7-12						
2	/	QA Mike McElroy	<i>[Signature]</i>	11/8/99	S7-07						
		Safety									
		Env.									

18. <i>[Signature]</i> P Deichelbohrer Signature of EDT Originator Date 11/8/99		19. _____ Authorized Representative for Receiving Organization Date		20. <i>[Signature]</i> G.P. Janicek Design Authority/Cognizant Manager Date 11/8/99		21. DOE APPROVAL (If required) Ctrl No. _____ ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments	
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PINTLE ROD QUALIFICATION TEST PLAN/REPORT FOR ROLL PIN RELOCATION

R.M. Boger

Prepared by Lockheed Martin Hanford Corporation
Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

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Key Words: Sampler, Roll Pin, Trigger, Pintle Rod, Core Sample Truck

Abstract:

A roll pin in the end of the pintle rod in core samplers needs to be moved upward to avoid potential interference with another part (the release disk) during installation of the retainer ring. This test plan/report is intended to demonstrate that the sampler valve closes normally and the pintle release mechanism operates normally with the new roll pin location.

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Release Approval Date 11/8/99

Release Stamp

Approved For Public Release

PINTLE ROD QUALIFICATION TEST PLAN/REPORT FOR ROLL PIN RELOCATION

- 1.0 INTRODUCTION
- 2.0 PURPOSE
- 3.0 SCOPE
- 4.0 REFERENCES
- 5.0 RESPONSIBILITIES
- 6.0 PREREQUISITES
- 7.0 TEST EQUIPMENT REQUIRED
- 8.0 QUALIFICATION TEST PROCEDURE
 - 8.1 VISUAL INSPECTION
 - 8.2 SHUTDOWN

EXCEPTION SHEET

ACCEPTANCE RECORD OF SAMPLER
ACCEPTANCE RECORD OF PINTLE ROD

PINTLE ROD QUALIFICATION TEST PLAN/REPORT FOR ROLL PIN RELOCATION

1.0 INTRODUCTION

This test plan/report is intended to perform design verification by qualification testing of a design improvement to the core samplers used for characterization of Hanford tank waste.

This document will serve as both the test plan and the report. Test results will be recorded directly on these pages in black ink and, then, the document will be re-issued as a report with a separate EDT (Engineering Data Transmittal).

In universal and retained gas samplers the piston is connected to the pintle rod with a sheet metal retainer ring. This method of connection allows the piston to remain connected to the pintle rod during filling of the sampler, and to be disconnected at the end of the filling stroke. Disconnection is accomplished by means of the release disk which applies a "pry-off" force to the retainer ring when the pintle rod pulls the release disk against stops in the sampler wall located at the end of the filling stroke.

Attachment of the retainer ring to the pintle rod is accomplished by forcing the rod through a (new) retainer ring while an assembly tool holds the ring in position. At this time, the release disk is present on the pintle rod subassembly, but is loose and is not supposed to contact the retainer ring.

Tolerance build up in the components (i.e., the piston, the pintle rod and the release disk) could produce a configuration in which the release disk is forced, by a roll pin in the pintle rod, into the retainer ring during installation. This could lead to premature release of the retainer ring.

Calculations (Ref. 3) indicate that relocation of the roll pin upward by 0.13 inch will eliminate this potential interference. No adverse affect is expected to performance of the core sampler by this modification. In fact, an additional benefit is expected. By moving the roll pin upward, the closing of the sampler valve will occur slightly earlier which will help insure that the piston is not disconnected too early before the sampler valve closes.

2.0 PURPOSE

The purpose of this test is to demonstrate that the sampler closing mechanism and pintle release mechanism operate correctly when the roll pin in the pintle rod has been moved upward 0.13 inch.

3.0 SCOPE

This test will verify proper valve closure and pintle release in at least one sampler with a modified pintle rod (roll pin relocated).

4.0 REFERENCES

- 4.1 H-2-690140 CORE SAMPLER ASSEMBLY
- 4.2 ECN-648068 [NO-flow Inserts]
- 4.3 ECN-651162 [Heat Treatment of Pintle Rods]

5.0 RESPONSIBILITIES

All qualification testing activities shall be under the supervision of the Test Engineer. As a minimum, The Test Engineer, and Quality Assurance shall approve the test results recorded in this document during testing as outlined in this test plan.

A Quality Assurance representative will verify conformance with this procedure at the conclusion of testing. Closure of exceptions generated during the test will also be verified by Quality Assurance.

Verification is indicated by signatures in the appropriate blocks of the form in Section 8.0 and the Design Authority approval of the qualification test report documenting successful verification of the design modification.

6.0 PREREQUISITES

Prior to performance of this test procedure the "green tag" status (Acceptance following fabrication) of the following components shall be ascertained:

98-649 Test Sampler

(initial) 11/8/99

98-649 Test Piston

(initial) 11/8/99

A Test Pintle Rod Assembly (Item No. 30, Ref. 1) shall be fabricated/modified in accordance with the following figure. The location of the roll pin hole shall be at 0.88, instead of 0.75 inches. This is the only difference in the test pintle rod from the assembly shown in Reference 1.

Complete assembly of the pintle rod assembly in accordance with Reference 1.

PINTLE ROD

SCALE: 2/1

30

7.0 TEST EQUIPMENT REQUIRED

The following instrument will be needed in support of this test:

Force Gage Range: 0 to 100 pounds, minimum. Verify calibration status is current and document on test equipment data sheet.

8.0 QUALIFICATION TEST PROCEDURE

QA(initial) N/A

Have pintle rod(s) fabricated per this test plan.

Install into a push or rotary sampler (no-flow insert not necessary) in accordance with the instructions of H-2-690140 and all outstanding ECN's (see Ref's.). Pull pintle rod out of sampler to activate the valve closing mechanism and the piston release.

CAUTION: KEEP FINGERS AWAY FROM VALVE-END OF SAMPLER WHEN ACTUATING VALVE.

Record observations in matrix below. Read and record the force (max) needed to remove the pintle rod.

Drawing Ref.	Attribute	Specification	Test Result	Comment
NONE	VERIFY THAT ROLL PIN DOES NOT CONTACT RELEASE DISK DURING INSTALLATION OF RETAINER RING)	NO INTERFERENCE	ACCEPTABLE 11/8/99 (100 N/A)	70011649 NONE PERFORMED 100LB PULL TEST ON RETAINER RING AFTER INSTALLATION OF RING.
Note 16	PISTON DRAG	TRAVEL FREELY	ACCEPTABLE 11/8/99 (100 N/A)	
Note 16	BALL DETENT SETTING	35 TO 46 POUNDS FORCE	SEE EXCEPTIONS #1 SHEET 8	BALL DETENT SETTING IS 34 LBS.
Note, SH 3, ZN A-3	RETAINER RING-PINTLE ROD PULL TEST	100 POUNDS, MIN	ACCEPTABLE 11/8/99 (100 N/A)	NONE
Note 12	RE-TIGHTEN SET SCREWS	10-14 IN-LB	11/8/99 (100 N/A)	ACCEPTABLE
NONE	PULL THE PINTLE ROD OUT	VALVE CLOSURE	ACCEPTABLE 11/8/99 (100 N/A)	NONE
NONE	PINTLE ROD RELEASE	100 POUNDS, MAX	11/8/99 (100 N/A)	55 lbs. ACCEPTABLE

TEST EQUIPMENT DATA SHEET

Equipment	Manual	Calibration
Force Gage	MOREHOUSE RING FORCE GAUGE	776-29-10-001 COD: 4/19/00
TORQUEMETER	SAMPSON TE3FUA	814-88-01-029 COD: 1/7/00

RETAINER RING T99220-55-126-576
P-CARD # 40091913-2011 JAB 11/8/99

8.1 VISUAL INSPECTION

Observe that the roll pin and the pintle rod guide are still present on the removed pintle rod.

8.2 SHUTDOWN

Qualification Test Performed by:

Charles F Hutchinson 11-8-99

Qualification Test Witnessed by:

James G Bolan 11-8-99

Confirm that all of the steps in this test have been completed.

(Initial) PRD

EXCEPTION SHEET

Exception No. 1

Step No. 8.0

Date 11-8-99

Description BALL DETENT SETTING 34/65 INSTEAD OF
35 TO 46 POUNDS.

Action Taken

USE AS IS, BALL DETENT SETTING IS
ACCEPTABLE FOR THIS TEST PURPOSE IE FOR RETEST OF
RETAINER RING.

Approved by Paula Reichel-Hohen 11/8/99
Michael L. McElroy - LMHC-QA 11/8/99
Date

Exception No. N/A

Step No. N/A

Date N/A

Description

N/A

Action Taken

Approved by N/A N/A
Date

WHC-SD-WM-TC-032 REV 0
TEST PROCEDURE

A. SERIAL NUMBER

RECORD SERIAL NUMBER IN SECTION D.

WITNESS Q.C.

DATE 9-24-99

B. USING THE EMPTY SAMPLER ASSEMBLY, PUSH PISTON P/N H-2-690140-1 (OR P/N H-2-690140-2 & P/N H-2-690140-3 INTO THE ASSEMBLY 12 TO 13 INCHES WITH A ROD. FILL THE TUBE WITH WATER TO WITHIN 1 TO 1 1/2 INCHES FROM THE FACE OF THE SAMPLER ASSEMBLY. CLOSE ROTARY VALVE P/N H-2-690140-17 SCREW THE INSERT P/N H-2-690140-26 UNTIL 14-16 LBS-IN TORQUE IS REACHED

RECORD TORQUE 15 LBS-IN

WITNESS Q.C.

DATE 9-24-99

METS: 814-28-01-031 CDD: 2-11-00

C. SET THE SAMPLER STRAIGHT UP WITH THE VALVE MECHANISM DOWN AND OBSERVE LEAKAGE OVER A ONE HOUR DURATION. NO LEAKAGE SHALL OCCUR.
A 1 HOUR DURATION. NO LEAKAGE SHALL OCCUR.

ALSO NOTE ANY LEAKAGE AT THE ENTRY OF THE CABLE P/N H-2-690140-58, INTO THE VALVE HOUSING P/N H-2-690140-27, IF LEAKAGE APPEARS AT THIS POINT ADJUST, SCREW PN H-2-690140-20 TO APPLY MORE PRESSURE TO THE O-RING CABLE SEAL P/N H-2-690140-57 NO LEAKAGE SHALL OCCUR.

RECORD LEAKAGE 0

WITNESS Q.C.

DATE 9-24-99

D.

SERIAL NO. 98-646	SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA
SERIAL NO. 98-649	SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA
SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA
SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA
SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA
SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA
SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA
SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA
SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA	SERIAL NO. NA

H = HOLD POINT

W = WITNESS POINT

V = VERIFICATION

COMMENTS :

WORK ORDER 2H9903375/F

PAGE 498 OF

INSPECTION
RECORD

DYNACORP TRI-CITY SERVICES ACCEPT

PCP No. <i>N/A</i>	W.O. No. <i>2H0004040/F</i>
PO. No. <i>N/A</i>	Item(s) No. <i>SEE BELOW</i>
Item Description:	
<i>1 EA. PN 53+21</i>	
<i>1 EA. PINTLE ROD MODIFIED</i>	
<i>H-2-690140 REV. 3 +</i>	
<i>SKETCH # 1</i>	
<i>GS/QL-3</i>	
Inspected By <i>JHB</i>	Stamp
Date <i>11-2-99</i>	

2H00-0404F
PINTLE ROD
H-2-690140
GS/QL-3

ITEM # 30
RPP-5251
SKETCH #1
98-689