18 STA. # 2

DEC 05 1994

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1	WHC-SD-WM-OTR-163		0	OPERABILITY TEST REPORT FOR 211BA FLOW PROPORTIONAL SAMPLER	E,Q	2	-	-

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 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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2	1	Cog.Eng.: G.E. ENTROP/S6-70 12/1/94	CENTRAL FILES L8-04	3	
2	1	Cog. Mgr.: D.W. WILSON/S6-70 12/1/94	OSTI (2) L8-07	3	
2	1	QA: D.D. MCAFFEE/S4-69 12/1/94			
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G.E. ENTROP 12/1/94 Signature of EDT Originator Date	Authorized Representative for Receiving Organization Date	D. W. Wilson 12/1/94 Cognizant Manager Date	[] Approved [] Approved w/comments [] Disapproved w/comments

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RELEASE AUTHORIZATION

Document Number:	WHC-SD-WM-OTR-163, REV 0
Document Title:	Operability Test Report for 211BA Flow Proportional Sampler
Release Date:	12/2/94

This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

Kara M. Broz — December 2, 1994

DISCLAIMER

A-6001-400.2 (09/94) WEF256

DT

SUPPORTING DOCUMENT

1. Total Pages 14

2. Title	3. Number	4. Rev No.
Operability Test Report for 211BA Flow Proportional Sampler	WHC-SD-WM-OTR-163	0

5. Key Words

OTR/211BA/SAMPLER

APPROVED FOR PUBLIC RELEASE

KMB 12/2/94

6. Author

Name: R. D. Weissenfels

Signature

Organization/Charge Code 16610/KBEP5

7. Abstract

This operability report will verify that the 211-BA flow proportional sampler functions as intended by design. The sampler was installed by Project W-007H and is part of BAT/AKART for the BCE liquid effluent stream.

8. RELEASE STAMP

OFFICIAL RELEASE
BY WHC
DATE DEC 05 1994
STA. # 2
18

RECORD OF REVISION

(1) Document Number: WHC-SD-WM-OTR-163, REV. 0

(2) Title: Operability Test Report for 211BA Flow Proportional Sampler

CHANGE CONTROL RECORD

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release	
		(5) Cog. Engr.	(6) Cog. Mgr. Date
0 RS	(7) Engineering Data Transmittal #606964	R.D. Weissenfels	D. W. Wilson 12/1/94

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OPERATIONAL TEST REPORT FOR THE 211-BA

FLOW PROPORTIONAL SAMPLER

I. SUMMARY

This report documents the operational testing of the liquid effluent sampler, located in 211-BA, as a flow proportional sampler. The sampler components consist of two major sub-assemblies: the electronics enclosure and the intake hose. The enclosure includes the microprocessor based controller and system electronics, the sample measuring chamber and the vacuum pressure control components. In addition, the alarm response equipment, both locally (211-BA) and with the Facility Process Monitor and Control System (FPMCS) (271-B), were also tested.

All items tested performed as required.

Sampler

The flow proportional sampler and its microprocessor based controller were tested by programming the sampler to withdraw liquid from the BCE stream in the 211-BA sump at approximatley 3 minute intervals, based upon a current flow rate of 130 gpm. The volume of effluent withdrawn for each sample and deposited into a graduated cylinder was set at 40ml. Each sample taken was compared for repeatability and volume captured. The sampling intervals were consistantly at three minutes and the volume dispensed with each sampling cycle was precisely 40ml.

Alarm Relays

This model of sampler was purchased equipted with two alarm circuits: 1) loss of flow while sampling and, 2) loss of power to sampler. Signals from both circuits are connected into local alarm lights at the front of the sampler as well as to the FPMCS.

Confirmation of alarm status were indicated at both locations for both events and verified.

II. PROBLEM AREAS

None detected

MASTER COPY

III. COMPLETED OTP

TEST EXECUTION SHEET

OPERABILITY TEST PROCEDURE WHC-SD-WM-OTP-163 REV 0 DATE November 11, 1993

TEST TITLE Operability Test Procedure for 211-BA Flow Proportional Sampler

LOCATION Building 211-BA

PROJECT NUMBER W-007H

PROJECT TITLE B Plant Process Condensate Treatment Facility

EXECUTED BY

RON WEISSENFELS ENV. Eng GEEntrop	11/29/94		R Weissenfels RON WEISSENFELS ENV. ENG'G	11/29/94	
Project/Cog Engineer	Organization	Date	Test Director	Organization	Date
Bryan L. Jackson	Ops.	11-29-94	T. W. Thompson		
BRYAN L. JACKSON	Ops.	11-29-94	T. W. Thompson	QA	11/29/94
Test Witness	Organization	Date	Test Recorder	Organization	Date
James C. Williams	Instruments	11-29-94			
Test Operator	Organization	Date			

TEST APPROVAL AND ACCEPTANCE

Without exceptions X	With exceptions resolved	With exceptions outstanding

N/A			W Mitchell	12/1/94	
Safety		Date	Quality Assurance Engineer		Date
	12/1/94			12/6/94	
B Plant Transition Operations		Date	Project/Cog Engineer		Date
D E Wilson	12/1/94				
Cognizant Engineer Manager		Date			

TEST EXCEPTION SHEET

Exception No.:_____

Recorded By:_____ Date:_____

Step. No.:_____ Requirement:_____

Objectors:_____

Description of Problem:_____

Planned Action:_____

Action Taken:_____

RETEST EXECUTION AND ACCEPTANCE

Retest Approved and Accepted _____ Exception Approved as-is _____ Other _____

Transition Operations	Org	Date	Project/Cog Engineer	Org	Date
Test Director	Org	Date	Test Witness	Org	Date
Quality Assurance Engineer		Date			

Explanation of Acceptance:_____

Page _____

1.0 TEST PLAN

1.1 PURPOSE OF OPERABILITY TEST

The purpose of this Operability Test Procedure (OTP) is to verify the 211-BA flow proportional sampler system and components function correctly as intended by design.

1.2 SCOPE

System test will include the sampling system, all associated instrumentation, and Facility Process Monitor and Control System (FPMCS).

1.3 REFERENCES

1.3.1 DRAWINGS

- H-2-77735, REV 2, "BCE RADIATION MONITOR & SAMPLER"
- H-2-818314, REV 0, "Electrical/Instm Conduit Plan"
- H-2-818313, REV 0, "Electrical Elementary/Wiring Diagram"
- H-2-818310, REV 0, "Electrical Instm Wire Run List"
- H-2-818332, REV 0, "Instrumentation Interconn. Diagram BCE Chemical Sewer"

1.3.2 SPECIFICATIONS

TN Technologies, Inc. Operation and Maintenance Manual for Model 6900 Sampler.

1.3.3 PROCEDURES

- WHC-SD-W007H-ATP-002, "BCE Selector Valve and Flow Proportional Sampler"

1.4 DESCRIPTION OF SYSTEM

The combined chemical sewer stream from B Plant flows through sump 211BA-SMP-01 located in 211-BA and is continuously monitored for gamma and beta radiation and pH. 211-BA has been upgraded to include a flow proportional sampler. The sampler is a TN Technologies, Incorporated, Model 6900 sampler. A specified sample volume will be withdrawn at programmed intervals from the 211BA sump and deposited in a 19 liter (5 gal.) plastic carboy.

The sampler will be programmed per the vendor installation and operations manual by B Plant instrument maintenance personnel. Samples will be taken during five consecutive sample cycles with the sample volumes and sample frequencies recorded for comparison purposes. Additional tests related to the sampler include the alarm circuitry for loss of power and failure to obtain sample.

1.5 INTERFACE AREAS

The main systems that interface with the 211-BA Sampler system are:

1. 211-BA flow monitor (existing)
2. Facility Process Monitor and Control System (FPMCS)
3. B Plant Chemical Sewer

2.0 OCCUPATIONAL SAFETY AND HEALTH

Individuals shall carry out their assigned work in a safe manner to protect themselves, others and the equipment from undue hazards and to prevent damage to property and environment. Facility line managers shall assure the safety of all activities within their areas to prevent injury, property damage, or interruption of operation. Performance of test activities shall always include safety and health aspects as delineated in the Operations Manuals. Provisions of Industrial Safety Manual, WHC-CM-4-3, Vol 1-3, also are significant in the performance of this procedure.

3.0 RESPONSIBILITIES

3.1 GENERAL

Each organization participating in this OTP will designate personnel to assume the responsibilities and duties as defined below for their respective roles. The designees shall become familiar with the test and the systems involved to the extent that they can perform their assigned duties. The name of these designees shall be provided to the Recorder for listing on the Recorder's copy of the Test Execution sheet prior to the performance of any part of this OTP.

3.2 PROJECT/COGNIZANT ENGINEER

3.2.1 Designate a Test Director.

3.2.2 Coordinate testing with B Plant Operations.

3.2.3 Act as liaison between the participants in the testing.

3.2.4 Conduct a pretest kickoff meeting with test participants.

3.2.5 Take necessary action to clear exceptions to the test.

3.2.6 Sign Test Execution sheet when test has been performed.

3.2.7 Sign Test Exception sheet when exceptions have been resolved.

3.2.8 Provide a distribution list for the approved and accepted OTP.

3.2.9 Initiate ECNs to document required field changes to the OTP to accommodate existing field conditions.

3.3 TEST DIRECTOR

3.3.1 Coordinate and direct all testing.

3.3.2 Designate Test Recorder.

3.3.3 Stop any test which, in the judgment of the Director, may cause damage to the system until the problem has been resolved.

3.3.4 After verifying there is no adverse impact, may alter the sequence of steps in testing.

3.3.5 Ensure that required environmental conditions are maintained.

3.3.6 If a test is to be suspended for a period of time, ensure that the system is left in a safe mode.

3.3.7 Before restarting suspended test, reverify the test prerequisites.

3.3.8 Evaluate recorded data, discrepancies, and exceptions.

3.3.9 Obtain information or changes necessary to clear or resolve objections during the performance of the test.

3.3.10 Sign Test Execution sheet when test has been performed.

3.3.11 Sign Test Exception sheet when exceptions have been resolved.

3.3.12 Obtain required signatures on the master prior to reproduction and distribution.

3.4 TEST RECORDER (Designated by Test Director)

3.4.1 Designate a master copy.

3.4.2 Record names of all designated personnel on master copy of OTP prior to start of testing.

3.4.3 Observe tests and record test data.

3.4.4 Initial and date each procedure step on the master copy as it is completed.

3.4.5 Record objections and exceptions on an Exception sheet.

3.4.6 Notify the Test Director at time the objection is made.

3.4.7 Sign Test Execution sheet when test has been performed.

3.4.8 Sign Test Exception sheet when exceptions have been resolved.

3.4.9 After test is finished, assign alpha numeric page numbers to added data sheets and Test Exception forms.

3.4.10 Submit the completed master copy to the Test Director.

3.5 TEST WITNESS (QUALITY CONTROL)

3.5.1 Witness, initial and date each test on the master copy next to the step number.

3.5.2 Initial and date each minor "inked in change" made in the field.

3.5.3 Sign Test Execution sheet when test has been performed.

3.5.4 Sign Test Exception sheet when exceptions have been resolved.

3.6 QUALITY ASSURANCE ENGINEER

Discrepancies, deviations, or irregularities involving OTP and equipment performance noted on the Exception List are jointly resolved between the cognizant engineer and the Quality Assurance engineer.

3.6.1 Sign Test Execution sheet when test has been performed.

3.6.2 Sign Test Exception sheet when exceptions have been resolved.

3.7 TEST OPERATOR

3.7.1 Perform test under direction of the Test Director.

3.7.2 Provide labor, equipment, and test instruments required for performing tests which have not been designated as being provided by others.

3.7.3 Sign Test Execution sheet when test has been performed.

3.8 B PLANT TRANSITION OPERATIONS

3.8.1 Operate and monitor the Facility Process Monitor and Control System (FPMCS).

3.8.2 Establish a communication link for the test.

3.8.3 Sign Test Execution sheet when test has been performed.

3.8.4 Sign Test Exception sheet when exception has been resolved.

3.9 CRAFT SUPPORT

3.9.1 Provide necessary support as required during testing.

3.9.2 Provide labor, equipment, and test instruments required for performing tests which have not been designated as being provided by others.

4.0 EQUIPMENT REQUIRED

Supplied by Test Operator unless otherwise noted.

4.1 Sample container: one (1) 50 ml graduated cylinder or approved equal measuring device.

4.2 Miscellaneous craft tools as required.

4.3 19 liter carboy.

5.0 PRE-TEST REQUIREMENTS

5.1 GENERAL

The following conditions shall exist at the start of the acceptance testing for each portion of the system being tested.

5.1.1 Conduct pre-job meeting to familiarize all participating personnel with test objectives.

5.1.2 Voice communications are available between 211-BA, the B Plant dispatcher, and (if necessary) Room 201 in Building 271-B.

5.1.3 B Plant dispatcher has been notified of intended activity.

5.1.4 Equipment and component labeling is in place with permanent or temporary labels. Where temporary labels exists, verify work requests are in place or initiated by Project engineer.

5.1.5 Power is available to components of systems being tested.

5.1.6 Verify sampler has been pre-programmed to take a sample every 12,300 liters (3,250 gallons), or at an interval designated by Test Director.

6.0 RECORDING AND RESOLVING EXCEPTIONS

6.1 GENERAL

Exceptions to the required test results are sequentially numbered and recorded on individual Test Exception sheets. This enables case-by-case resolution and approval of each exception.

6.2 RECORDING

6.2.1 Number each exception sequentially as it occurs and record it on a Test Exception form.

6.2.2 Enter name of objecting party for each exception.

6.2.3 Enter planned action to resolve each exception when such determination is made.

6.3 RETEST/RESOLUTION

Record the action taken to resolve each exception. Action taken may not be the same as planned action.

6.3.1 When action taken results in an acceptable retest, sign and date Retest Execution and Acceptance section of the Test Exception sheet.

6.3.2 When action taken does not involve an acceptable retest, and does not resolve exception, strike out the Retest Execution and Acceptance section of the Test Exception sheet.

6.4 APPROVAL AND ACCEPTANCE

The Cognizant Engineer provides final approval and acceptance of the exceptions by checking one of the following on Test Exception sheet:

6.4.1 Retest Approved and Accepted: Applicable when Retest Execution and Acceptance section is completed.

6.4.2 Exception Accepted as-is: Requires detailed explanation.

6.4.3 Other: Requires detailed explanation.

The Cognizant Engineer signs and dates the Test Exception sheet and obtains other approvals, if required.

6.5 DISTRIBUTION

A copy of the approved Test Exception sheet is distributed to each participant. The signed original is attached to the master OTP.

7.0 TEST EXECUTION

7.1 WITHOUT EXCEPTION

7.1.1 Check applicable space on Test Execution Sheet to show that the OTP has been performed and no exceptions have been recorded.

7.1.2 Sign and date Test Execution Sheet.

7.1.3 Return master OTP to the Cognizant Engineer.

7.2 WITH EXCEPTIONS RESOLVED

7.2.1 Check applicable space on Test Execution Sheet to show that the OTP has been performed with exceptions recorded and resolved.

7.2.2 Return master OTP to the Cognizant Engineer.

7.3 WITH EXCEPTIONS OUTSTANDING

7.3.1 Check applicable space on Test Execution Sheet to show that the OTP has been performed with exceptions recorded.

7.3.2 Sign and date Test Execution Sheet in the space provided.

7.3.3 Return master OTP to the Cognizant Engineer.

8.0 PROCEDURE STEPS

1. In 211-BA, verify that the sampler POWER light is illuminated and the MISSED SAMPLE light is OFF.

   Init./Date JWT 11/29/94

2. Collect a minimum of five consecutive samples into the volumetric measuring container (be sure to allow the contents of the tube to completely drain). Record the volume collected for each sample to the nearest ml. Record the time and flowrate at each sampling cycle. Flowrate can be represented by percent as indicated on flowmeter.

Volume	Time	Flowrate	Initial
Sample No. 1 40 ml.	1328	142	TWT
Sample No. 2 40 ml.	1331	136	TWT
Sample No. 3 40 ml.	1334	139	TWT
Sample No. 4 40 ml.	1337	138	TWT
Sample No. 5 40 ml.	1340	139	TWT
Sample No. 6 _____ml.			
Sample No. 7 _____ml.			
Sample No. 8 _____ml.			
Sample No. 9 _____ml.			
Sample No. 10 _____ml.			

3. Verify that the volume of sample collected for each sample is 40+/-5ml.

Init./Date TWT 11/28/94

If any sample volumes exceeded the allowed volume range, recalibrate the primary sampler per sampler Installation and Operation Manual. Continue collecting samples and recalibrating the sampler as necessary until 5 consecutive samples are collected with volumes ranging between 35 ml and 45 ml.

4. When the sampling volume has been verified, test for a missed sample by disconnecting the sample transport line at a quick disconnect. Allow the sampler to progress through a sampling cycle. Verify that the MISSED SAMPLE light has illuminated.

Init./Date TWT 11/28/94

5. Confirm FPMCS receives system failure alarm on OIU, Tag No., XFA-BCE, in Area 2, Group A.

Init./Date TWT 11/28/94

6. Reconnect the sample transport tubing. Allow the sampler to cycle through another sampling series. Verify that the MISSED SAMPLE light is OFF.

Init./Date TWT 11/28/94

7. Verify FPMCS alarm, XFA-BCE, clears.

Init./Date TWT 11/28/94

8. Request electrician to interrupt power to sampler by opening circuit breaker 23 in lighting panel 211BA-LP-A.

Init./Date WHC 11/29/94

9. Confirm POWER light on sampler is OFF.

Init./Date WHC 11/29/94

10. Confirm FPMCS OIU receives power failure alarm on OIU Tag JFA-BCE in Area 2, Group A.

Init./Date WHC 11/29/94

11. Restore power to sampler via circuit breaker 23 in lighting panel 211BA-LP-A.

Init./Date WHC 11/29/94

12. Confirm FPMCS alarm JFA-BCE clears.

Init./Date WHC 11/29/94

13. Notify B Plant Operations that the sampler Operability Test Procedure has been completed. Note any exceptions.

Init./Date WHC 11/29/94