This EDT is for approval and release of document RPP-6104, "AZ-101 Gamma Cart Operational Test Report".

### DATA TRANSMITTED

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<th>Sheet No.</th>
<th>Rev. No.</th>
<th>Title or Description of Data Transmitted</th>
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### KEY

- **E, S, Q, D, OR N/A** (See WHC-CN-3-5, Sec. 12.7)
  - 1. Approval
  - 2. Release
  - 3. Information
  - 4. Review
  - 5. Post-Review
  - 6. Dist. (Receipt Acknow. Required)

- **Reasons for Transmittal**
  - 1. Approved
  - 2. Approved w/ comment
  - 3. Disapproved w/ comment
  - 4. Reviewed no/ comment
  - 5. Reviewed w/ comment
  - 6. Receipt acknowledged

### SIGNATURE/DISTRIBUTION

**Approval Designator (F)**

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**Signature of EDT Originator**

3-28-00

**Authorized Representative for Receiving Organization**

3-28-00

**Design Authority/Cognizant Manager**

3-28-00

**Control No.**

- Approved
- Approved w/ comments
- Disapproved w/ comments
AZ-101 Gamma Cart Operational Test Report

RE Mendoza
Cogema Engineering
Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 628306
Org Code: Charge Code:
B&R Code: Total Pages: 240

Key Words: AZ-101, 241-AZ-101, Mixer Pumps, Gamma Cart, Sludge Mobilization, W-151, Test Report

Abstract:
Test Report documenting the successful completion of the Operational Test Procedure for the AZ-101 Gamma Carts. Gamma carts are in support of the AZ-101 Mixer Pump Test.

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Approved For Public Release
1.0 Purpose

The purpose of this test report is to document the successful completion of the gamma (also known as the Sludge Mobilization) cart system Operational Test Procedure (OTP). This OTP, OTP-260-004, "241-AZ Gamma Cart Operational Test Procedure," was performed between 2/12/2000 and 3/10/2000 within work package 2E-00-00054. The completed OTP is attached as Appendix A.

This field OTP followed the successful completion of RPP-5577, "241-AZ-101 Mixer Pump Demonstration Test Gamma Cart ATP/QTP".

2.0 System Description

The gamma carts were designed to provide data to help determine the effectiveness of the AZ-101 Mixer Pump Test.

There are two identical gamma cart systems, labeled A and B. Each system includes the cart itself housing the motor control unit and probe deployment cable, a gamma probe, a riser extension assembly, a data acquisition and control system, and associated communications/power cables. The gamma cart system description is documented in RPP-5576, "241-AZ-101 Mixer Pump Gamma Cart System Description of Operation". The system arrangement and assemblies are shown on H-2-79234, "TWRS Sludge Mobilization Cart Arrangement", H-2-79235, "TWRS Sludge Mobilization Cart Assembly", and H-2-830024, "Sheave Riser Extension Assembly".

The systems are used to lower the probes to various depths within drywells in the tank to measure the energies emitted by the sludge and slurry. The mixing of the sludge/slurry can be detected because the components of the sludge radiate at gamma energies greater than the slurry (greater than Cs-137 energy). The drywells are located at several positions around the tank allowing several test locations.

3.0 Test Summary

The gamma cart OTP tested each of the two complete systems including speed and position indicators, remote software and local control, and data acquisition.

Various combinations of the two carts and their modes of testing were tested in nine of the tank drywells (risers 14B, 14D, 14E, 14F, 15B, 15C, 15E, 15F, and 15I). The probes were deployed to several depths and data was acquired. The same depths were used in each of the drywells to assist in assembling tank baseline data.
4.0 Test Exceptions

There were a total of 7 test exceptions generated. These exceptions and their resolutions are summarized below. Copies of the signed off resolutions are included in Appendix A.

**TE #1** – Step to route cable from gamma cart to extension tool was needed in procedure.
*Resolution* – Procedure was changed with a Procedure Change Authorization.

**TE #2** – Incorrect amplifier was referred to, settings were incorrect.
*Resolution* – Accepted As-Is, correct settings were noted on exception sheet.

**TE #3** – Steps 5.2.32 and 5.2.33 out of order.
*Resolution* – Accepted As-Is, procedure allowed Test Director to perform the steps as needed.

**TE #4** – Step 5.2.32 required a hard copy of data files, no printer was available.
*Resolution* – Accepted after hard copies were printed from a different computer with a printer.

**TE #5** – Step 5.3.3 did not include information to ensure the REAL/LIVE toggle button was set to LIVE.
*Resolution* – Accepted As-Is after note made on the exception sheet. Information was provided as input to the Gamma Cart Operating procedure.

**TE #6** – Step 5.3.9 required a hard copy of data files, no printer was available.
*Resolution* – Accepted after hard copies were printed from a different computer with a printer.

**TE #7** – Steps 5.2.32 and 5.2.33 out of order.
*Resolution* – Accepted As-Is, procedure allowed Test Director to perform the steps as needed.

5.0 Conclusions

The completion of the gamma cart OTP signifies that the gamma cart systems operate in the field as designed and are ready to perform monitoring activities during the mixer pump test.
Appendix A
Completed Operational Test Procedure
RISER 14D
GAMMA CART - B
**PROCEDURE REVIEWERS SIGNATURES**

**DOCUMENT IS ACCEPTABLE**

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  **Print Name:** [Signature - Certified Operator/Use]  
  **Title/Org:** **OPS**  
  **Date:** 2-12-00  

- **QA Manager:** [Signature]  
  **Print Name:** [Signature - QA Engineer]  
  **Title/Org:** **RPP QA**  
  **Date:** 2-12-00

- **Safety Engineer:** [Signature]  
  **Print Name:** [Signature - Safety Engineer]  
  **Title/Org:** **N/A**  
  **Date:** 2/1/00

- **Radiological Controls:** [Signature]  
  **Print Name:** [Signature - Radiological Controls]  
  **Title/Org:** **N/A**  
  **Date:** 2/1/00

- **Other:** [Signature]  
  **Print Name:** [Signature - Other]  
  **Title/Org:** **M. Ward**  
  **Date:** 2/12/00

- **Cognizant Engineer:** [Signature]  
  **Print Name:** [Signature - Cognizant Engineer]  
  **Title/Org:** **CM Ward**  
  **Date:** 2/12/00

---

**PROCEDURE WRITER**

- **Signature:** [Signature]  
  **Print Name:** [Signature]  
  **Title/Org:** **CM Ward**  
  **Date:** 2/12/00

---

**APPROVAL AUTHORITY**

- **Signature:** [Signature]  
  **Print Name:** [Signature]  
  **Title/Org:** **CM Ward**  
  **Date:** 2/12/00

---

**Prepared By**

- **Name:** [Signature - Gary Pardifff]  
  **Title/Org:** **CM Ward**  
  **Date:** 2/12/00
CHANGE SUMMARY AND SIGNATURE SHEET

Procedure Title
241-A2 Gamma Cart Operational Test Procedure

Summary of Change
Add 4 missing steps

Reason for Change
Allows Gamma probe to be put through the extension tool.

(You may attach additional pages if necessary to cover all procedure changes.)

I understand the instruction contained in the Procedure/PCA/change listed above as required to maintain currency.

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(If room for additional signatures is needed, they may be placed on the back.)
241-AZ GAMMA CART OPERATIONAL TEST PROCEDURE

Last Full Revision: AO
Release Date: 02-09-2000
USQ Screening Number: TF-00-0083 R.0
Approval Designator: Q

Current Modification:
USQ Screening Number:
Approval Designator:
PCA Incorporated:

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Justification: New Procedure
Summary of Changes: N/A
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## TEST EXECUTION SHEET

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**Document Title:** 241-AZ Gamma Cart Operational Test Procedure

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<td>Recorder</td>
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<td>Operations Engineer</td>
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### TEST EXECUTION

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### APPROVAL AND ACCEPTANCE OF TEST RESULTS

- Without Exception (v)
- With Exceptions Resolved (v)
- With Exceptions Remaining (v)

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1.0 PURPOSE AND SCOPE

1.1 PURPOSE

This procedure provides instructions for performing an Operational Test Procedure for the Sludge Mobilization Cart System.

1.2 SCOPE

This procedure involves testing the Instrumentation involved with the Sludge Cart System, including: speed indicators, depth indicators, profile parameters, and retrieval functions.

This procedure may be repeated for either GAMMA CART A or GAMMA CART B as applicable. The procedure(s) may work independently or simultaneously as work progresses in field.

2.0 INFORMATION

2.1 TERMS AND DEFINITIONS

2.1.1 ALARA - As Low As Reasonably Achievable

2.2 RESPONSIBILITIES

2.2.1 Test Engineer is responsible for the following:

- All preparations for this Test have been completed
- Support Test Director and Test Personnel with the technical information and support necessary to complete this procedure

2.2.2 Operation Personnel are responsible for operating the equipment per the Test Engineer and Test Director's direction.
2.2 RESPONSIBILITIES (cont.)

2.2.3 Test Director is responsible for the following:

- The safe, efficient, and productive performance of the test
- Coordination of all testing activities
- Scheduling and conducting a pre-job meeting with test participants
- Notification of the persons performing and witnessing the test prior to the start of testing
- Notification of all involved test personnel when a change is made in the testing schedule
- Act as liaison between the participants involved with the testing
- Stopping any test or section which may cause damage to the system
- Obtaining revisions to the Test Procedure, to comply with authorized field changes or to accommodate existing field conditions
- Taking actions to resolve exceptions to the Test Procedure
- Signing the Operational Test Procedure Exception Record when a test exception has been resolved
- Evaluating recorded data, discrepancies, and exceptions
- Signing Test Execution Sheet when this Test Procedure has been performed
- Signing Exception Record when a retest to clear an exception has been executed and accepted
- Obtaining required signatures on the Test Procedure Working Copy prior to reproduction and distribution
- Preparing and issuing an Operational Test Report for the approved, accepted and completed Test Procedure
2.2 RESPONSIBILITIES (cont.)

2.2.4 QC Inspector is responsible for witnessing test execution and signing the completed sections of the test.

2.2.5 The Authorized Inspector is responsible for the following:

- Witnessing test execution
- Approval and signature of acceptance upon completion of this procedure.

2.3 REFERENCES

- HNF-SD-WM-PTP-027, Rev 3 Mixer Pump Test Plan for Double Shell Tank AZ-101
- HNF-3839 Data Collection Plan for AZ-101 Mixer Pump Tests
- RPP-5576 Gamma Cart System Description
- H-2-78973, R1 TANK AZ-101 TEMPERATURE PROBE INST PLAN AND ELEVATION
- H-2-79319, R2 TANK 101-AZ TEMPERATURE PROBE INSTALLATION SEQUENCE
- H-2-79215, R2 TWRS SLUDGE CART ENCL ELEC ASSEMBLY
- H-2-79232, R1 TWRS SLUDGE CART ENCL ELEMENTARY DIAGRAM
- H-2-79233, R0 TWRS SLUDGE CART ENCL WIRING DIAGRAM
- H-2-79234, R3 TWRS SLUDGE MOBILIZATION CART ARRANGEMENT
- H-14-010507, RO DOME PENETRATION SCHEDULES TANK 241-AZ-101
2.4 GENERAL INFORMATION

2.4.1 Procedural and technical requirement changes must be processed by Procedure Change Authorization in accordance with approved procedures. If a need for such a change is discovered in the course of running the test, the applicable portion of the test shall be stopped, and the test equipment shall be placed in a safe configuration, until the Procedure Change Authorization is approved. However, this does not prevent the running of another portion of the test unaffected by the change.

2.4.2 Operational Test steps detailed in individual Tests in Section 5.0 shall be performed sequentially, unless otherwise noted or as directed by the Test Director.

- Individual Test Procedure Sections may be performed out of sequence at the direction of the Test Director, if the intent of the test is not compromised.

- As each step is completed, each step will be checked off (or enter "N/A" for), as required in the spaces provided on the Working Copy of this Operational Test Procedure.

- Any step that requires verification of data must include recording data on the Working Copy.

2.4.3 Any non-conformance of the instrumentation, unexpected results or exceptions during testing shall be sequentially numbered and recorded in the Operational Test Procedure Exception Log and on individual Operational Test Procedure Exception Records. Thus, case-by-case resolution, recording, approval, and distribution of each exception will be achieved.
2.4 GENERAL INFORMATION (Cont).

2.4.4 Resolve test exceptions in the following manner:

- Record the action taken to resolve each exception in the "Resolution of Exception" section of the Operational Test Procedure Exception Record.

- When the action taken results in an acceptable retest, initial and date the Correction Approval section of the Exception Sheet.

- When the action taken does not result in an acceptable retest, provide a detailed explanation of why the retest action was not acceptable, and what additional plans are required. The Test Engineer then signs and dates the Resolution of Exception section of the Operational Test Procedure Exception Record, and obtains any other approvals required.

2.4.5 Upon completion of the Operational Test Procedure, obtain approval of the test performance. Each Test Execution Sheet will stand alone as approval for the system under test. The Operational Test will be complete when all the outstanding tests have been performed and the Operational Test Report is prepared. The test will be approved by checking the proper response, with or without exceptions, on the Test Execution Sheet under the "Approval and Acceptance of Test Results" section of the Test Execution Sheet.
2.4 GENERAL INFORMATION (Cont).

NOTE - The following steps detail the possible conditions that may exist at the completion of the Operational Test Procedure, and the steps necessary to complete acceptance in those conditions.

2.4.6 The completed test may be approved without test exceptions:

- Check applicable space on Test Execution Sheet to show that the Operational Test Procedure has been performed and no exceptions have been recorded.
- Appropriate individual Test Performers will sign and date the Test Execution Sheet in the spaces provided.
- Distribute requisite copies as directed by the client.
- Send the Master Copy of the completed Operational Test Procedure to the client.

2.4.7 The completed test may be approved with exceptions resolved:

- Check applicable space on Test Execution Sheet to show that this procedure has been performed with exceptions recorded and resolved.
- Appropriate individual Test Performers will sign and date the Test Execution Sheet in the spaces provided.
- Distribute requisite copies as directed by the client.
- Send the Master Copy of the completed Operational Test Procedure to the client.
2.5 RECORDS

2.5.1 All personnel involved in the performance of this test shall sign in Procedure Signature Sheet.

2.5.2 Test results shall be recorded. All entries into this test procedure shall be made in black ink. Unless specific data is required, the signature or initials as applicable, of the person accepting the item will be entered in the blank provided to indicate compliance with the stated requirements or the successful completion of the given test step.

2.5.3 Errors shall be corrected by crossing out the incorrect data with a single line and the correct response shall be written in the direct vicinity of the original item. The person making the correction shall initial and date the correction.

2.5.4 A complete working copy of this procedure and any exception records generated shall be maintained as a permanent record.

2.5.5 An Exception Log and Exception Record sheet is attached in the event exceptions to the test are made when the test is being performed. All exceptions to the test are to be dispositioned and agreed to by all witnesses. Actions taken regarding disposition are noted on the exception sheet.

2.5.6 During the performance of this test, errors in test may be encountered which require correction or adjustment to complete the test. Such corrections are to be noted in the OTP and listed as an exception.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 PERSONNEL SAFETY

3.1.1 If the performance of this procedure is suspended for any reason, ensure the equipment is left in a safe state.

3.1.2 All lockouts and tagouts or over-tagging requirements shall be performed in accordance with Tank Farm Administration Manual, HNF-IP-0842, Vol II, Section 4.9.1.

3.1.3 If any equipment problem is observed during the performance of this procedure, immediately notify the Test Director.

3.1.4 Proper lifting techniques shall be utilized throughout the procedure and personnel shall take precautions to ensure back strain, pinchpoints and protective clothing are observed.

3.2 RADIATION AND CONTAMINATION CONTROL

3.2.1 Work in radiological areas will be performed using a radiation work permit following review by Radiological Control per the ALARA procedure HNF-IP-0842, Volume VII, Section 1.1.
4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:

- Riser Swabbing equipment
- Riser extension tool

4.2 PERFORMANCE DOCUMENTS

The following procedures may be needed to perform this procedure:

- TO-040-333 LIQUID OBSERVATION WELL (LOW) SURVEILLANCE VAN STARTUP AND OPERATION PROCEDURE

4.3 CONDITIONS AND ACTIONS

NOTE - All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.3.1 All pre-testing and inspection of the system or portions of the system to be tested has been completed.

[Signature]
Test Engineer Signature 2/15/00

4.3.2 A pre-job briefing has been held, and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this ATP.

[Signature]
Test Director Signature 2/15/00

4.3.3 Test Director VERIFY section 4.3 has been COMPLETED.

[Signature]
Test Director Signature 2/15/00
5.0 PROCEDURE

5.1 SETUP

NOTE - This procedure may be repeated for either GAMMA CART A or GAMMA CART B as applicable. N/A may be entered in blocks or steps per Test Director as applicable.

5.1.1 RECORD GAMMA CART CPU number for the system being tested.

GAMMA CART IDENTIFIER # B WST-RY 403
CPU Number

5.1.2 PERFORM cleanliness check in applicable riser listed on TABLE II, per section 5.10 in procedure TO-040-333 latest rev, prior to mounting riser extension tool.

5.1.3 ENSURE GAMMA CART riser extension tool is mounted on the applicable riser.

5.1.4 ENSURE GAMMA CART is placed in line with riser extension tool to facilitate installation of probe and cables.

5.1.5 CHECK route to riser for obstacles and clearances.

5.1.6 LEVEL cart using jacks.

5.1.7 CONNECT gamma cart power cables, as follows:

   - One end to gamma cart power receptacle
   - Other end to Junction Box, JB-101-100, Power Receptacle, OR Junction Box, JB-101-101

5.1.8 CONNECT gamma cart communications cable, as follows:

   - One end to gamma cart communications receptacle
   - Other end to Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection Subsystem communications receptacle

5.1.9 PLACE gamma cart "RAISE-OFF LOWER" switch in the LOWER position.

5.1.10 CHECK that the detector probe cable is resting in the gamma cart boom cable reel.

NOTE - Step 5.1.11 and 5.1.12 requires two Operators to perform continuous action until Step 5.1.12 is complete.
5.1.11 HOLD tension on the detector probe cable until Step 5.1.12 is completed.

5.1.12 PRESS AND HOLD "RESET" button until enough detector probe cable is let-out that will allow placement of detector cable through riser extension collar AND into the riser drywell, AND

RELEASE "RESET" button.

5.1.13 INSTALL the proper detector probe on the detector probe cable.

5.1.14 ENSURE that the detector probe connections are correct and tight. AND

INSERT probe into riser extension tool.
5.1 SETUP (Cont).

- 5.1.10 ENSURE limit switch cable is connected from limit switch on riser extension tool, to the connection point on the front of the GAMMA CART.

- 5.1.11 ENSURE the "Raise - Off - Lower" selector switch is in the "OFF" position.

- 5.1.12 ENSURE the emergency stop button is pulled out.

- 5.1.13 POSITION the "SPEED" control potentiometer to MIN speed (fully counter-clockwise).

CAUTION

There is no limit switch to stop the motion when the cable is fully unwound. The cable will rewind backwards on the reel. Damage to the cable may result.

NOTE - When the cart is first powered up, or the emergency stop button has been pushed, or power has been restored after a power failure, the cable reel will not move up or down until "RESET" button is activated.

- The "Raise-Off-Lower" Switch is Manually controlled and is Operator Dependent.

- 5.1.14 ENSURE LOCAL/REMOTE switch is in the "LOCAL" position.

- 5.1.15 ENERGIZE the Cart.

- 5.1.16 SET the "SPEED" potentiometer to 2 on the GAMMA Cart.

- 5.1.17 SET the "RAISE - OFF - LOWER" switch to the "LOWER" position.

- 5.1.18 PUSH "EMERGENCY STOP" button on GAMMA CART.

- 5.1.19 VERIFY the system has stopped.

Test Director Signature 24/02/00
Test Director Print Name
5.1 SETUP (Cont).

5.1.20 SET the "RAISE-OFF-LOWER" switch to the "RAISE" position.

5.1.21 PULL "EMERGENCY STOP" out on GAMMA CART.

5.1.22 PUSH the "RESET" button on GAMMA CART to resume.

5.1.23 ENSURE limit switch activates when probe returns to the zero position.

5.1.24 SET the "RAISE-OFF-LOWER" switch to the "OFF" position.

5.1.25 SET "SPEED" potentiometer to MIN.

5.1.26 POSITION The "LOCAL REMOTE" switch to "REMOTE".

5.1.27 VERIFY by signing below section 5.1 is complete.

[Signature and Date]

Test Director Signature Date

[Signature]

Test Director Print Name

[Signature and Date]

QC Signature Date

[Signature]

QC Print Name

5.2 TEST INCREMENTAL SAMPLE MODE

SETUP

NOTE - All Steps in this section apply to either cart, except in those steps where the specific cart is indicated.

INSTRUMENT CHECK

5.2.1 IF the pushbutton for Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Central Processing Unit (CPU), AND/OR associated MONITOR, are NOT ON, PRESS the applicable ON pushbuttons.

5.2.2 ENSURE the following systems are ON AND ENSURE settings are correct for the following:

- ORTEC MINIBIN
- POWER SUPPLY

Detector Bias Power Supply (HVPS): ORTEC Mod. 478.

- \( kV: \text{.5} \)
- 0 to 1000V: (+60 volts)

Amplifier (AMP): ORTEC Mod. 673

- COARSE GAIN: 200
- FINE GAIN: 0.680
- SHAPING TIME: Both knobs set to 2 microseconds
- PZ Adjust: Do NOT change settings (in this procedure)
- BLR: Switch in AUTO (up) position
- INPUTS: Switch in POS (up) position BNC cable on terminal (from pre amplifier)
- OUTPUTS: cable on UNIPOLAR terminal (to single channel Analyzer)

5.2.3 WHEN WINDOWS login screen appears CLICK ON "CANCEL".
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

NOTE - After canceling windows login, GAMMA CART software should automatically load.

✓ 5.2.4 VERIFY "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen is displayed on Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Monitor.

[Signature]
Test Director Signature
Date: 2/29/00

Test Director Print Name

✓ 5.2.5 SELECT "Login" on the "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen.

NOTE - LOGIN passwords and information may be obtained from Test Director.

✓ 5.2.6 LOG-IN.

✓ 5.2.7 VERIFY LOCAL/REMOTE switch on display screen is in "REMOTE" position.

[Signature]
Test Director Signature
Date: 2/29/00

Test Director Print Name
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

- 5.2.8 SELECT "config" on the "Gamma Cart Display" screen.
- 5.2.9 ENTER the following data for selected riser on the "Configuration - Display" screen by pulling down applicable menu:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable (Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

- 5.2.10 ENSURE REAL/LIVE toggle button indicates "LIVE".
- 5.2.11 On the Data Collection Configuration window, SELECT the "Incremental" button.

INCREMENTAL PARAMETERS

- 5.2.12 INPUT the following Sample Collection Data:

<table>
<thead>
<tr>
<th>Sample Start Depth:</th>
<th>50.0 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval Size:</td>
<td>10.0 ft</td>
</tr>
<tr>
<td>Sample End Depth:</td>
<td>5.0 ft</td>
</tr>
</tbody>
</table>
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

- 5.2.13 CLICK ON "SAVE".
- 5.2.14 CLICK ON "EXIT".

**NOTE** - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.
- 5.2.15 CLICK ON "Start" button.
- 5.2.16 CLICK ON "EMERGENCY STOP" button on computer screen.
- 5.2.17 VERIFY System stopped.

![Signature and date]

- 5.2.18 CLICK ON "EMERGENCY STOP" again to RESET the emergency stop button on computer screen.
- 5.2.19 CLICK ON "ZERO" on display screen.
- 5.2.20 ENSURE GAMMA PROBE begins to RAISE.
- 5.2.21 CLICK ON "STOP" button on display screen.
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

✓ 5.2.22 VERIFY System stopped.

Rich Gutierrez  2-29-00
Test Director Signature  Date
Rich Gutierrez  Test Director Print Name

✓ 5.2.23 CLICK ON "ZERO" again on display screen.

✓ 5.2.24 ENSURE GAMMA PROBE begins to RAISE.

✓ 5.2.25 When probe and system zeros, CLICK ON "START" on display screen.

✓ 5.2.26 VERIFY System resumed program.

Rich Gutierrez  2-29-00
Test Director Signature  Date
Rich Gutierrez  Test Director Print Name

✓ 5.2.27 CLICK ON "STOP" button on computer screen.

✓ 5.2.28 VERIFY System stopped.

Rich Gutierrez  2-29-00
Test Director Signature  Date
Rich Gutierrez  Test Director Print Name

✓ 5.2.29 CLICK ON "ZERO" on display screen.

✓ 5.2.30 When probe and system zeros, CLICK ON "START" on display screen.

✓ 5.2.31 VERIFY System resumed program.

Rich Gutierrez  2-29-00
Test Director Signature  Date
Rich Gutierrez  Test Director Print Name
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.32 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.2.33 VERIFY system automatically ZEROs and data is collected at zero position.

NOTE - The steps in section 5.1, applicable to the Emergency stop, need not be repeated if completed for an individual GAMMA CART. The Emergency stop on BOTH GAMMA CART A and B, need to be tested only once.

NOTE - It is NOT necessary to do ALL risers in one procedure. Test Director is responsible for ensuring ALL risers have been profiled by one AND/OR the other GAMMA CART(S).

5.2.34 REPEAT applicable SETUP Steps in section 5.1 AND Incremental testing steps 5.2.1 - 5.2.15 AND Steps 5.2.32 and 5.2.33 for each of the following risers and depths per Test Director's direction.

<table>
<thead>
<tr>
<th>RISER</th>
<th>Depth inches (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14C</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14D</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14F</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14G</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14B</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14E</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>15I</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15C</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15E</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15B</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15F</td>
<td>684 (57.0)</td>
</tr>
</tbody>
</table>

* 14D riser completed with this procedure.
5.2 INCREMENTAL SAMPLE MODE (Cont).

NOTE - In the following Table, Test Director N/A blocks that are tested with a different GAMMA CART.

5.2.35 VERIFY the applicable riser in step 5.2.34 has been tested.

<table>
<thead>
<tr>
<th>RISER</th>
<th>TEST DIRECTOR SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td>NA, see cc mail letter from J. Bellamy</td>
</tr>
<tr>
<td>14C</td>
<td>NA, see cc mail letter from J. Bellamy</td>
</tr>
<tr>
<td>14D</td>
<td>R. Gutierrez 3/29/00</td>
</tr>
<tr>
<td>14F</td>
<td>R. Gutierrez 3/29/00</td>
</tr>
<tr>
<td>14G</td>
<td>NA see cc mail letter from J. Bellamy</td>
</tr>
<tr>
<td>14B</td>
<td>R. Gutierrez 3/29/00</td>
</tr>
<tr>
<td>14E</td>
<td>R. Gutierrez 3/1/00</td>
</tr>
<tr>
<td>15I</td>
<td>R. Gutierrez 3/2/00</td>
</tr>
<tr>
<td>15C</td>
<td>R. Gutierrez 3/1/00</td>
</tr>
<tr>
<td>15E</td>
<td>R. Gutierrez 3/1/00</td>
</tr>
<tr>
<td>15B</td>
<td>R. Gutierrez 3/29/00</td>
</tr>
<tr>
<td>15F</td>
<td>J. Hull/Jones/L. Hull 3-1-00 (Shift)</td>
</tr>
</tbody>
</table>

5.2.36 VERIFY by signing below section 5.2 is complete.

Rich Gutierrez
Test Director Signature 2/29/00

Rich Gutierrez
Test Director Print Name

Paul A. Werner
QC Signature 2-29-00

QC Print Name

Unresolved test exceptions at this time.
5:47 PM 2-29-00

Riser 14D
5.3 TEST USER DEFINED MODE

✓ 5.3.1 ENSURE applicable SETUP Steps in section 5.1 are completed.

CART CONTROL SCREEN

✓ 5.3.2 On the Gamma Cart Control, CLICK ON the "Config." button.

✓ 5.3.3 INPUT the following data:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>选中的立管编号</td>
</tr>
<tr>
<td>NOTE - Riser depth is automatically computed from software upon input of riser ID#.</td>
<td></td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable (Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec.(As determined by Test Director)</td>
</tr>
</tbody>
</table>

USER DEFINED PARAMETERS

✓ 5.3.4 CLICK ON "USER DEFINED".

✓ 5.3.5 ENTER depths desired for testing per Test Engineer Direction.

✓ 5.3.6 CLICK ON "SAVE" on display screen.

✓ 5.3.7 CLICK ON "EXIT".
5.3 TEST USER DEFINED MODE (Cont).

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.

- The "EMERGENCY STOP" may be used to stop at any time during the next step if unit fails to stop at limit switch. The "RESET" button will need to be pushed to resume the program.

CLICK ON Start button.

- Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

VERIFY system automatically ZEROs and data is collected at zero position.

---

Test Director Signature

Rich Gutierrez

2-29-00

Date

Rich Gutierrez

Test Director Print Name
5.3 TEST USER DEFINED MODE (Cont).

☐ 5.3.11 CLICK ON "LOGOUT" on display screen.

☐ 5.3.12 REMOVE Probe, riser extension tool, and associated equipment AND STORE per Test Director direction.

OR

☐ 5.3.13 CONTINUE in this procedure.

☐ 5.3.14 REPEAT the steps in this section (5.3) as directed for any risers as directed by Test Director.

☐ 5.3.14 VERIFY by signing below section 5.3 is complete.

Rich Gutierrez  
Test Director Signature  2/29/00  Date

Rich Gutierrez  
Test Director Print Name

Paul F. Werner  
QC Signature  2-29-00  Date

Paul F. Werner  
QC Print Name

Unresolved test exceptions at this time,  
6:45 pm 2-29-00 PDT

Riser 14 D
### TEST LOG

<table>
<thead>
<tr>
<th>Date</th>
<th>Comment</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/15/00</td>
<td>Test Engineer troubleshooting communication. Cable from Gamma last B to Monitoring system in AZ-156. We are experiencing frequency interference.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2030 Completed testing on Riser 14D, Set up to continue on riser 15B. We will be with concurrence from Test Engineer, Test Director, QA, QC, &amp; AT. The applicable steps in 5.1 &amp; 5.2 &amp; 5.3 can be performed at Test Directors direction. The step in question is 5.2.34; we interpreted this step as requiring that repeating steps in sections 5.1, 5.2 &amp; 5.3 can be left up to Test Directors direction.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GE Concurrence w/ Adams 3/1/00 per telephone concurrence dated 2/8/00</td>
<td></td>
</tr>
</tbody>
</table>
## TEST LOG

<table>
<thead>
<tr>
<th>Date</th>
<th>Comment</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-1-00</td>
<td>Set up Gamma Cart &quot;B&quot; on Riser 15C with probe 3. OTP-260-004 was performed with no new exceptions.</td>
<td>R. Stichley</td>
</tr>
<tr>
<td>3-1-00</td>
<td>A review of the OTP-260-004 was made in reference to the Revs. The OTP was started with Rev A-0, during the test 2 PCA's were generated. The current Rev is A-2, QC, AT and Test Director reviewed both Rev's, AO &amp; A-2 to ensure that test data entered on A-0 was not affected by the Rev changes. QE Concurrence with Adams 3/1/00.</td>
<td>R. Hatcher 3/1/00</td>
</tr>
<tr>
<td>3-2-00</td>
<td>Set up Gamma Cart B on Riser 14B during step 5.2.7 the display screen did not display &quot;REMOTE&quot;. Instructed operators in field to connect other cable (communication)</td>
<td></td>
</tr>
</tbody>
</table>

---

**Type**: CONTINUOUS  
**Document No.**: OTP-260-004  
**Rev/Mod**:  
**Release Date**: 02/23/2000  
**Page**: 27 of 31
<table>
<thead>
<tr>
<th>Date</th>
<th>Comment</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-2-00</td>
<td>to cart B. We did finally receive the &quot;Remote&quot; display. Proceeding with the OP. Completed readings on 14 B Riser. Operators in field going to next riser. Set up on Riser 14 F with gamma cart B. Completed survey of Riser 14 F. Moved Gamma Cart to Riser 15 I. Set Gamma Cart B to Riser. Completed survey of Riser 15 I.</td>
<td></td>
</tr>
<tr>
<td>3-2-00</td>
<td>Started OTP on Riser 14 D with 1600 Gamma Cart A and Probe 4.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Completed test on Riser 14 D. Attempted to setup Gamma Cart A on Riser 15 B and the Gamma Cart experienced problems with the top wheel not being able to turn.</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Comment</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>3-2-00</td>
<td>Step 5.1.15 limited to be turned toward probe.</td>
<td></td>
</tr>
<tr>
<td>3-2-00</td>
<td>Steps 5.2.25 thru 5.2.31</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>were not performed per Test Director direction (Step 2.4.2). Steps 5.2.16 thru 5.2.22 verified that the &quot;Emergency Stop&quot; and &quot;Stop&quot; did stop the system.</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>Completed testing on River 14 D with R. Dutting. Gamma Art A. With concurrence from Test Engineer, Test Director, QA, QC + AH. The applicable steps in 5.1 + 5.2 + 5.3 can be performed at Test Director's direction. The step in question is 5.2.34, we interpreted this step as: stating that repeating steps in sections 5.1, 5.2 + 5.3 can be left up to Test Director's direction. QE concurrence: WR Adams, 3/2/00</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Comment</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>3-2-00</td>
<td>During the Zeroing process of 5.2.33 the probe got stuck on the adapter bottom. The Emergency Stop was used by the field operator and the Gamma cart stopped. The Riser tool assembly was sent from the tension of the cable. Tool was surveyed out and Test Eng. to repair at 306 Bldg. extension. Test continued with spare tool. Operator to standby probe as it zeroes to ensure alignment as it exits the adapter and rises tool.</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Comment</td>
<td>Name</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>3/6/2000</td>
<td>Started OTP at 12:30 p.m. &lt;br&gt; Set up GammaCart A, Probe 4 at Riser 15B. After setup was complete we noticed the monitor was not receiving data. The OTP was stopped. &lt;br&gt; Inst. Techs performed ringing-out the wire and had 12 Volts on each conductor, indicating the cable is damaged. Test Engineers found replacement cable, estimated repair date is Thursday 3/9/2000. OTP was stopped at step 5.3.8.</td>
<td>L. Stuvering</td>
</tr>
<tr>
<td>3/9/2000</td>
<td>Pre-job done for OTP-320-004 to complete Riser 15B with Cart A. &lt;br&gt; Operators set up in Riser 15B with Cart A, ran the probe and OTP went well. &lt;br&gt; 1300 Instructed operators to continue to set up with riser 15C.</td>
<td>L. Stuvering</td>
</tr>
<tr>
<td>Number</td>
<td>Date</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td>01</td>
<td>2/12/00</td>
<td>Add step to route cable from Gamma C...</td>
</tr>
<tr>
<td>5.1.10</td>
<td>2/15/00</td>
<td>Previous steps not in order when PCA...</td>
</tr>
<tr>
<td>5.02</td>
<td>2/29/00</td>
<td>Settings on Gamma C... due to Amplifier being used. PCA to be...</td>
</tr>
<tr>
<td>03</td>
<td>2/29/00</td>
<td>Steps 5.2.32 and 5.2.33 are reversed. PCA to be...</td>
</tr>
<tr>
<td>04</td>
<td>2/29/00</td>
<td>Step 5.2.32 on Rev A-0, could not print hard copy due to no printer. Step 5.3.3 did not include to ensure...</td>
</tr>
<tr>
<td>05</td>
<td>2/29/00</td>
<td>5.3.9 could not print hard copy due to no printer. 5.3.10 needs to be performed before 5.3.9.</td>
</tr>
</tbody>
</table>
## Test Procedure Exception Record

<table>
<thead>
<tr>
<th>Test Step Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-9.95</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Exception Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-1-9</td>
</tr>
</tbody>
</table>

### Description of Exception:

Needed to add step to route cable from gamma cart to retention tool on new.

### Resolution of Exception:

PCA was written, TF-2000-025, to complete.

### Date of Resolution:

2/12/00

<table>
<thead>
<tr>
<th>Test Director Signature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rick Fichten</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cognizant Engineer Signature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarvendip</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality Assurance Signature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>W. Adams</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tank Farm Operations Signature:</th>
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<tbody>
<tr>
<td>R. Fichten</td>
</tr>
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**Type:** CONTINUOUS  
**Document No.:** OTP-260-004  
**Rev/Mod:** A-0  
**Release Date:** 02/09/2000  
**Page:** 28 of 30

---
## TEST PROCEDURE EXCEPTION RECORD

<table>
<thead>
<tr>
<th>Test Step Number:</th>
<th>5.2.2</th>
<th>Test Exception Number:</th>
<th>P2</th>
</tr>
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</table>

**Description of Exception:**

Settings in step 5.2.2 are to be changed per PCA due to different Amplifier to be used.

**Resolution of Exception:**

PCA will be generated. Document calls out for Model 673, the model we used was a newer model. The settings used were as follows: KV: 5, O to 1000V: +100volts, Course Gain: 1K, Fine Gain: 10.40, Shaping Time: 1usec, P2: Auto, BLE Rate: High, Input Switch: Norm(tot) or I. Inputs: Norm and Diff-BNC Conn Norm, Diff. If noise is less. MinBin & Power Supply (9001 m) Power: ON.

**Date of Resolution:** 3/23/00

**Test Director Signature:** R. Gutierrez

**Cognizant Engineer Signature:** Dajy Stuffle

**Quality Assurance Signature:** W. Adams

**Tank Farm Operations Signature:** R. Gutierrez
# TEST PROCEDURE EXCEPTION RECORD

<table>
<thead>
<tr>
<th>Test Step Number:</th>
<th>Test Exception Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2.32</td>
<td>5.2.33</td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Description of Exception:**
- delete steps 5.2.18 following
- steps 5.2.32 needs to be performed after 5.2.33.
- data needs to be reviewed after system zeros.

**Resolution of Exception:**
- PCA to be written to procedure.
- Step 2.4.2 states that individual tests in 5.0 can be performed out of order as directed by Test Director.
- After procedure was run a couple of times, AC and AT and Test Director concurred that step 2.4.2 allows Test Director to perform steps as needed.

| Date of Resolution: | 3/13/00 |

<p>| Test Director Signature: | L. Gutierrez |
| Cognizant Engineer Signature: | Daryn Shuddeff |
| Quality Assurance Signature: | W. Adams |
| Tank Farm Operations Signature: | L. Gutierrez |</p>
<table>
<thead>
<tr>
<th>Test Step Number:</th>
<th>5.2.32</th>
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</thead>
<tbody>
<tr>
<td>Test Exception Number:</td>
<td>64</td>
</tr>
</tbody>
</table>

**Description of Exception:**

hard copy not retrieved

due to no printer being hooked up.

**Resolution of Exception:**

Data downloaded to disk and printed from different computer.

**Date of Resolution:**

3/28/00

**Test Director Signature:**

Richard Stivers

**Cognizant Engineer Signature:**

Sarb Sidhu

**Quality Assurance Signature:**

W. Adams

**Tank Farm Operations Signature:**

R. Stivers
<table>
<thead>
<tr>
<th>Test Step Number:</th>
<th>5.3.3</th>
<th>Test Exception Number:</th>
<th>05</th>
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</thead>
<tbody>
<tr>
<td>Description of Exception:</td>
<td>step did not include to ensure REAL/LIVE toggle button indicates &quot;live&quot;.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolution of Exception:</td>
<td>PEA to be written. Procedure TO-260-230, Rev A-0, &quot;OPERATE TANK 241-AZ-101 GAMMA CARTS SYSTEM&quot; steps 5.4.2 &amp; 5.5.2 had the operator check that the &quot;REAL/LIVE&quot; button indicates &quot;live&quot;. Input was incorporated in TO-260-230</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of Resolution:</td>
<td>3-13-00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test Director Signature:</td>
<td>R. Hutterig</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognizant Engineer Signature:</td>
<td>Daryl Sandif</td>
<td></td>
<td></td>
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<tr>
<td>Quality Assurance Signature:</td>
<td>W. Adams</td>
<td></td>
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<td>Tank Farm Operations Signature:</td>
<td>R. Hutterig</td>
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<td></td>
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Type: CONTINUOUS
Document No.: OTP-260-004
Rev/Mod: A-2
Release Date: 02/23/2000
Page: 29 of 31
## TEST PROCEDURE EXCEPTION RECORD

<table>
<thead>
<tr>
<th>Test Step Number:</th>
<th>5.3.9</th>
<th>Test Exception Number:</th>
<th>φ6</th>
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</table>

### Description of Exception:

Hard copy not retrieved due to no printer being hooked up.

### Resolution of Exception:

This Test Exception is equivalent to Test Exception #04. Steps 5.3.9 & 5.2.32 are identical asking for the same information in two different sections of the procedure. Answering Test Exception #04 will answer Test Exception #φ6. Hard copy printed from a different computer after downloading to a disk.

### Date of Resolution: 3/23/00

### Test Director Signature: R. Dutteny

### Cognizant Engineer Signature: Dazz Sariff

### Quality Assurance Signature: W. Adams

### Tank Farm Operations Signature: R. Dutteny
## TEST PROCEDURE EXCEPTION RECORD

<table>
<thead>
<tr>
<th>Test Step Number:</th>
<th>5.3.10</th>
<th>Test Exception Number:</th>
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</table>

**Description of Exception:**

Step needs to be performed before 5.3.9. Data needs to be reviewed after it zeros.

**Resolution of Exception:**

Step 2.4.2 states that individual tests in 5.0 can be performed out of order as directed by Test Director. After procedure was ran a couple of times, QC, AT and Test Director concurred that step 2.4.2 allows Test Director to perform steps as needed.

**Date of Resolution:** 3-13-00

**Test Director Signature:** [Signature]

**Cognizant Engineer Signature:** [Signature]

**Quality Assurance Signature:** [Signature]

**Tank Farm Operations Signature:** [Signature]
<table>
<thead>
<tr>
<th>NAME (PRINT)</th>
<th>EMPLOYEE #</th>
<th>SIGNATURE</th>
<th>INITIALS</th>
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<tbody>
<tr>
<td>RA Spicer</td>
<td>67203</td>
<td>RA</td>
<td>RA</td>
</tr>
<tr>
<td>Ron Cowgill</td>
<td>58171</td>
<td>DC</td>
<td>D</td>
</tr>
<tr>
<td>Tom Clarke</td>
<td>67274</td>
<td>TKC</td>
<td>TKC</td>
</tr>
<tr>
<td>ED Encoe</td>
<td>88552</td>
<td>FE</td>
<td>FE</td>
</tr>
<tr>
<td>Ruben Mendoza</td>
<td>600-05-7433</td>
<td>RM</td>
<td>RM</td>
</tr>
<tr>
<td>Mike Long</td>
<td>69584</td>
<td>ML</td>
<td>ML</td>
</tr>
<tr>
<td>PJ Ellendorf</td>
<td>81752</td>
<td>PE</td>
<td>PE</td>
</tr>
<tr>
<td>Steve Stamper</td>
<td>51911</td>
<td>SS</td>
<td>SS</td>
</tr>
<tr>
<td>John H. Andretta</td>
<td>81910</td>
<td>AA</td>
<td>AA</td>
</tr>
<tr>
<td>Dan Edmunds</td>
<td>67885</td>
<td>DE</td>
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<tr>
<td>TK KImming</td>
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<td>J Berger</td>
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<td>JB</td>
<td>JB</td>
</tr>
<tr>
<td>JEM McKinney</td>
<td>69684</td>
<td>JMK</td>
<td>JMK</td>
</tr>
<tr>
<td>SA Taylor</td>
<td>69840</td>
<td>ST</td>
<td>ST</td>
</tr>
<tr>
<td>CW Meke</td>
<td>600481</td>
<td>CM</td>
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</tr>
<tr>
<td>Don M. Stahl</td>
<td>82054</td>
<td>DS</td>
<td>DS</td>
</tr>
<tr>
<td>Rich Gutierrez</td>
<td>67765</td>
<td>RG</td>
<td>RG</td>
</tr>
<tr>
<td>Paul A. Werner (AC)</td>
<td>56220</td>
<td>PW</td>
<td>PW</td>
</tr>
<tr>
<td>Ronald A. Arron (AC)</td>
<td>83926</td>
<td>RA</td>
<td>RA</td>
</tr>
<tr>
<td>James L. (Tim) Hill</td>
<td>84788</td>
<td>JHL</td>
<td>JHL</td>
</tr>
<tr>
<td>Robert Myers</td>
<td>88745</td>
<td>RM</td>
<td>RM</td>
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</table>
BOLT TORQUING GUIDELINES

Last Full Revision: C-0
Release Date: 12/27/99
USQ Screening Number: TF-98-1201, Rev 1
Approval Designator: S

Current Modification: C-0
USQ Screening Number:
Approval Designator:
PCA Incorporated:

<table>
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<tr>
<th>POSITION/ORG</th>
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<th>DATE</th>
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<tbody>
<tr>
<td>Pipefitter</td>
<td>Glenn Anderson</td>
<td>12/2/99</td>
</tr>
<tr>
<td>Maint Manager</td>
<td>R.G. Lee</td>
<td>12/2/99</td>
</tr>
<tr>
<td>Safety</td>
<td>Ernie Hurst</td>
<td>12/9/99</td>
</tr>
<tr>
<td>ECO</td>
<td>P.C. Miller</td>
<td>12/7/99</td>
</tr>
<tr>
<td>EQ Eng.</td>
<td>R.S. Robinson</td>
<td>12/21/99</td>
</tr>
<tr>
<td>RadCon</td>
<td>Mark Kornish</td>
<td>12/21/99</td>
</tr>
<tr>
<td>Approval Authority</td>
<td>R.L. Legg</td>
<td>12/21/99</td>
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</table>

<table>
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<th>Pages Affected</th>
<th>Summary of Change</th>
<th>Reason for Change</th>
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<tbody>
<tr>
<td>all</td>
<td>Reformat, full revision</td>
<td>2 year review</td>
</tr>
</tbody>
</table>

NEXT DUE DATE: 12/27/2001
RISER 15B
GAMMA CART - B
# 241-AZ Gamma Cart Operational Test Procedure

**Justification:** Ops Request

**Summary of Changes:** N/A

Page 13 & 14 Added steps to allow probe through extension tool.

---

### POSITION/ORG	DELEGATE	DATE

<table>
<thead>
<tr>
<th>LNPO</th>
<th>S.A. Caylor</th>
<th>02-12-2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOM</td>
<td>Robert Jones</td>
<td>02-12-2000</td>
</tr>
<tr>
<td>RAD. CON.</td>
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<tr>
<td>ECO</td>
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<td></td>
</tr>
<tr>
<td>QA</td>
<td>W.L. Adams</td>
<td>02-12-2000</td>
</tr>
<tr>
<td>Cog. Engineer</td>
<td>Gary Tardiff</td>
<td>02-12-2000</td>
</tr>
<tr>
<td>Acceptance Review</td>
<td>David W. VanDyke</td>
<td>02-14-2000</td>
</tr>
<tr>
<td>Approval Authority</td>
<td>L.M. Walker</td>
<td>02-12-2000</td>
</tr>
</tbody>
</table>

---

*Riser 15B*
4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:

- Riser Swabbing equipment
- Riser extension tool

4.2 PERFORMANCE DOCUMENTS

The following procedures may be needed to perform this procedure:

- TO-040-333 LIQUID OBSERVATION WELL (LOW) SURVEILLANCE VAN STARTUP AND OPERATION PROCEDURE

4.3 CONDITIONS AND ACTIONS

NOTE - All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.3.1 All pre-testing and inspection of the system or portions of the system to be tested has been completed.

_________________________________________  ____________________________
Test Engineer Signature                    Date

4.3.2 A pre-job briefing has been held, and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this ATP.

_________________________________________  ____________________________
Test Director Signature                    Date

4.3.3 Test Director VERIFY section 4.3 has been COMPLETED.

_________________________________________  ____________________________
Test Director Signature                    Date

☑ already tested per OTP-260-004, rev A-0.
5.0 PROCEDURE

5.1 SETUP

NOTE - This procedure may be repeated for either GAMMA CART A or GAMMA CART B as applicable. N/A may be entered in blocks or steps per Test Director as applicable.

5.1.1 RECORD GAMMA CART CPU number for the system being tested.

GAMMA CART IDENTIFIER # B WST-RY 403

5.1.2 PERFORM cleanliness check in applicable riser listed on TABLE 11, per section 5.10 in procedure TO-040-333 latest rev, prior to mounting riser extension tool.

5.1.3 ENSURE GAMMA CART riser extension tool is mounted on the applicable riser.

5.1.4 ENSURE GAMMA CART is placed in line with riser extension tool to facilitate installation of probe and cables.

5.1.5 CHECK route to riser for obstacles and clearances.

5.1.6 LEVEL cart using jacks.

5.1.7 CONNECT gamma cart power cables, as follows:
- One end to gamma cart power receptacle
- Other end to Junction Box, JB-101-100, Power Receptacle, OR Junction Box, JB-101-101

5.1.8 CONNECT gamma cart communications cable, as follows:
- One end to gamma cart communications receptacle
- Other end to Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection Subsystem communications receptacle

5.1.9 PLACE Gamma Cart "RAISE OFF LOWER" switch in the LOWER position.

5.1.10 CHECK that detector probe cable is resting in the Gamma Cart boom cable reel.
5.1 SETUP (Cont).

**CAUTION**

If sufficient tension is **NOT** held on the detector probe cable as the cable is being let out, the cable could become entangled.

**NOTE** - Step 5.1.11 and 5.1.12 require two operators to perform continuous action until step 5.1.12 is complete.

- **5.1.11** HOLD tension on the detector probe cable until step 5.1.12 is completed.

- **5.1.12** PRESS AND HOLD "RESET" button until enough detector probe cable is let-out that will allow placement of the detector cable through riser extension collar AND into riser drywell, AND

  RELEASE the "RESET" button.

- **5.1.13** INSTALL the proper detector probe on the detector probe cable.

- **5.1.14** ENSURE that the detector probe connections are correct and tight. AND

  INSERT probe into riser extension tool.

- **5.1.15** ENSURE limit switch cable is connected from limit switch on riser extension tool, to the connection point on the front of the GAMMA CART.

- **5.1.16** ENSURE the "Raise - Off - Lower" selector switch is in the "OFF" position.

- **5.1.17** ENSURE the emergency stop button is pulled out.

- **5.1.18** POSITION the "SPEED" control potentiometer to MIN speed (fully counter-clockwise).
5.1 SETUP (Cont).

CAUTION

There is no limit switch to stop the motion when the cable is fully unwound. The cable will rewind backwards on the reel. Damage to the cable may result.

NOTE - When the cart is first powered up, or the emergency stop button has been pushed, or power has been restored after a power failure, the cable reel will not move up or down until "RESET" button is activated.

- The "Raise-OFF-Lower" Switch is Manually controlled and is Operator Dependent.

5.1.19 ENSURE LOCAL/REMOTE switch is in the "LOCAL" position.

5.1.20 ENERGIZE the Cart.

5.1.21 SET the "SPEED" potentiometer to 2 on the GAMMA Cart.

5.1.22 SET the "RAISE-OFF-LOWER" switch to the "LOWER" position.

5.1.23 PUSH "EMERGENCY STOP" button on GAMMA CART.

5.1.24 VERIFY the system has stopped.

Test Director Signature

Date

Test Director Print Name

already Tested per OTP-260-004, Rev A-0
see Test Log Entry 2/29/00 2030.
5.1 SETUP (Cont).

5.1.25 SET the "RAISE-OFF-LOWER" switch to the "RAISE" position.

5.1.26 PULL "EMERGENCY STOP" out on GAMMA CART.

5.1.27 PUSH the "RESET" button on GAMMA CART to resume.

5.1.28 ENSURE limit switch activates when probe returns to the zero position.

5.1.29 SET the "RAISE-OFF-LOWER" switch to the "OFF" position.

5.1.30 SET "SPEED" potentiometer to MIN.

5.1.31 POSITION The "LOCAL REMOTE" switch to "REMOTE".

5.1.32 VERIFY by signing below section 5.1 is complete.

Test Director Signature ___________ Date ___________

Test Director Print Name ___________

QC Signature ___________ Date ___________

QC Print Name ___________

☐ Already tested per OTP-260-004, Rev A-O.

See Test log entry 2/29/00, 2000.

R. Gutiérrez 2/29/00
5.2 TEST INCREMENTAL SAMPLE MODE

SETUP

NOTE - All Steps in this section apply to either cart, except in those steps where the specific cart is indicated.

INSTRUMENT CHECK

5.2.1 IF the pushbutton for Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Central Processing Unit (CPU), AND/OR associated MONITOR, are NOT ON, PRESS the applicable ON pushbuttons.

5.2.2 ENSURE the following systems are ON AND ENSURE settings are correct for the following:

- ORTEC MINIBIN
- POWER SUPPLY

Detector Bias Power Supply (HVPS): ORTEC Mod. 478.

- kV: .5
- 0 to 1000V: (+60 volts)

Amplifier (AMP): ORTEC Mod. 673

- COARSE GAIN: 200
- FINE GAIN: 0.680
- SHAPING TIME: Both knobs set to 2 microseconds
- PZ Adjust: Do NOT change settings (in this procedure)
- BLR: Switch in AUTO (up) position
- INPUTS: Switch in POS (up) position BNC cable on terminal (from pre amplifier)
- OUTPUTS: cable on UNIPOLAR terminal (to single channel Analyzer)

5.2.3 WHEN WINDOWS login screen appears CLICK ON "CANCEL".

PAD 2/29/00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

**NOTE** - After canceling windows login, GAMMA CART software should automatically load.

**5.2.4**
VERIFY "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen is displayed on Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Monitor.

Test Director Signature: [Signature]
Date: 2/29/00
Test Director Print Name: [Name]

**5.2.5**
SELECT "Login" on the "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen.

**NOTE** - LOGIN passwords and information may be obtained from Test Director.

**5.2.6**
LOG-IN.

**5.2.7**
VERIFY LOCAL/REMOTE switch on display screen is in "REMOTE" position.

Test Director Signature: [Signature]
Date: 2/29/00
Test Director Print Name: [Name]

PAW 3.29.00

[Signature]
Date: 3.29.00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

TESTING

☐ 5.2.8 SELECT "config" on the "Gamma Cart Display" screen.

☐ 5.2.9 ENTER the following data for selected riser on the "Configuration - Display" screen by pulling down applicable menu:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable</td>
</tr>
<tr>
<td></td>
<td>(Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

☐ 5.2.10 ENSURE REAL/LIVE toggle button indicates "LIVE".

☐ 5.2.11 On the Data Collection Configuration window, SELECT the "Incremental" button.

INCREMENTAL PARAMETERS

☐ 5.2.12 INPUT the following Sample Collection Data:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Start</td>
<td>55.0 ft</td>
</tr>
<tr>
<td>Depth:</td>
<td></td>
</tr>
<tr>
<td>Interval Size:</td>
<td>10.0 ft.</td>
</tr>
<tr>
<td>Sample End Depth</td>
<td>5.0 ft</td>
</tr>
</tbody>
</table>

☐ Already tested per OTP-260-004, Rev A-0; See Test Log Entry 2/29/00, 2000.
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

- CLICK ON "SAVE".
- CLICK ON "EXIT".

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.
- CLICK ON "Start" button.
- CLICK ON "EMERGENCY STOP" button on computer screen.
- VERIFY System stopped.
- CLICK ON "Stop" button on computer screen.
- "EMERGENCY STOP" again to RESET the emergency stop button on computer screen.
- CLICK ON "ZERO" on display screen.
- ENSURE GAMMA PROBE begins to RAISE.
- CLICK ON "STOP" button on display screen.

- already tested per OTP-260-004, rev A-0, see test log entry 2/29/00, 2010.  
  P. Shettley /4/00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.22 VERIFY System stopped.

Test Director Signature  Date

Test Director Print Name

5.2.23 CLICK ON "ZERO" again on display screen.

5.2.24 ENSURE GAMMA PROBE begins to RAISE.

5.2.25 When probe and system zeros, CLICK ON "START" on display screen.

5.2.26 VERIFY System resumed program.

Test Director Signature  Date

Test Director Print Name

5.2.27 CLICK ON "STOP" button on computer screen.

5.2.28 VERIFY System stopped.

Test Director Signature  Date

Test Director Print Name

5.2.29 CLICK ON "ZERO" on display screen.

5.2.30 When probe and system zeros, CLICK ON "START" on display screen.

5.2.31 VERIFY System resumed program.

Test Director Signature  Date

Test Director Print Name

already tested per OTP-260-004, rev A-0

Sel Test Log entry, 2000.

R. Stotzky 2/29/00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.32 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.2.33 VERIFY system automatically ZEROS and data is collected at zero position.

Test Director Signature

Date

Test Director Print Name

NOTE – The steps in section 5.1, applicable to the Emergency stop, need not be repeated if completed for an individual GAMMA CART. The Emergency stop on BOTH GAMMA CART A and B, need to be tested only once.

NOTE – It is NOT necessary to do ALL risers in one procedure. Test Director is responsible for ensuring ALL risers have been profiled by one AND/OR the other GAMMA CART(S).

5.2.34 REPEAT applicable SETUP Steps in section 5.1 AND Incremental testing steps 5.2.1 - 5.2.15 AND Steps 5.2.32 and 5.2.33 for each of the following risers and depths per Test Director’s direction.

<table>
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<th>Depth</th>
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<tr>
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</tr>
<tr>
<td>14C</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14D</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14F</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14G</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14B</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14E</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>15I</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15C</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15E</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15B</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15F</td>
<td>684 (57.0)</td>
</tr>
</tbody>
</table>
5.2 INCREMENTAL SAMPLE MODE (Cont).

NOTE - In the following Table, Test Director N/A blocks that are tested with a different GAMMA CART.

5.2.35 VERIFY the applicable riser in step 5.2.34 has been tested.

<table>
<thead>
<tr>
<th>RISER</th>
<th>TEST DIRECTOR SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td></td>
</tr>
<tr>
<td>14C</td>
<td></td>
</tr>
<tr>
<td>14D</td>
<td></td>
</tr>
<tr>
<td>14F</td>
<td></td>
</tr>
<tr>
<td>14G</td>
<td></td>
</tr>
<tr>
<td>14B</td>
<td></td>
</tr>
<tr>
<td>14E</td>
<td></td>
</tr>
<tr>
<td>15I</td>
<td></td>
</tr>
<tr>
<td>15C</td>
<td></td>
</tr>
<tr>
<td>16E</td>
<td></td>
</tr>
<tr>
<td>15B</td>
<td></td>
</tr>
<tr>
<td>15F</td>
<td></td>
</tr>
</tbody>
</table>

5.2.36 VERIFY by signing below section 5.2 is complete.

Test Director Signature
Date

Test Director Print Name

QC Signature
Date

QC Print Name

already tested per OTP-260-004, Rev A-D, see Test Log entry, 2030.  

I Satur 2/29/00
5.3 TEST USER DEFINED MODE

5.3.1 ENSURE applicable SETUP Steps in section 5.1 are completed.

CART CONTROL SCREEN

5.3.2 On the Gamma Cart Control, CLICK ON the "Config." button.

5.3.3 INPUT the following data:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td>NOTE - Riser depth is automatically computed from software upon input of riser ID#.</td>
<td></td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable (Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

5.3.4 CLICK ON "USER DEFINED".

5.3.5 ENTER depths desired for testing per Test Engineer Direction.

5.3.6 CLICK ON "SAVE" on display screen.

5.3.7 CLICK ON "EXIT".
5.3 TEST USER DEFINED MODE (Cont).

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

After the following step, the program should automatically run.

The "EMERGENCY STOP" may be used to stop at any time during the next step if unit fails to stop at limit switch. The "RESET" button will need to be pushed to resume the program.

5.3.8 CLICK ON Start button.

5.3.9 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.3.10 VERIFY system automatically ZEROs and data is collected at zero position.

[Signature]  2-29-00
Test Director Signature  Date

[Signature]
Test Director Print Name
5.3 TEST USER DEFINED MODE (Cont).

- **5.3.11** CLICK ON "LOGOUT" on display screen.
- **5.3.12** REMOVE Probe, riser extension tool, and associated equipment AND
  STORE per Test Director direction.

  OR

- **5.3.13** CONTINUE in this procedure.
- **5.3.14** REPEAT the steps in this section (5.3) as directed for any risers as directed by Test Director.

- **5.3.15** VERIFY by signing below section 5.3 is complete.

  [Signature]
  Test Director Signature

  [Signature]
  Test Director Print Name

  [Signature]
  QC Signature

  2/29/00
  Date

  2/29/00
  Date
RISER 15C
GAMMA CART - B
241-AZ GAMMA CART OPERATIONAL TEST PROCEDURE

Last Full Revision: A-0
Release Date: 02-09-2000
USQ Screening Number: TF-00-0083 R.0
Approval Designator: Q

Current Modification: A-2
USQ Screening Number: TF-98-1201 R1
Approval Designator: NA
PCA Incorporated: ETF-2000-064

<table>
<thead>
<tr>
<th>POSITION/ORG</th>
<th>DELEGATE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCO/RET OPS</td>
<td>S.R. Joseph</td>
<td>02-16-2000</td>
</tr>
<tr>
<td>OE/Retrieval Ops</td>
<td>Rich Gutierrez</td>
<td>02-16-2000</td>
</tr>
<tr>
<td>RAD. CON.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cog. Engineer</td>
<td>Gary Tardiff</td>
<td>02-22-2000</td>
</tr>
<tr>
<td>Acceptance Review</td>
<td>Len Ross</td>
<td>02-23-2000</td>
</tr>
<tr>
<td>Approval Authority</td>
<td>Rich Gutierrez</td>
<td>02-23-2000</td>
</tr>
</tbody>
</table>

Justification: Provide step clarity.

Summary of Changes:
Added "suitable power source" to step 5.1.7.
4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:

- Riser Swabbing equipment
- Riser extension tool

4.2 PERFORMANCE DOCUMENTS

The following procedures may be needed to perform this procedure:

- TO-040-333 LIQUID OBSERVATION WELL (LOW) SURVEILLANCE VAN STARTUP AND OPERATION PROCEDURE

4.3 CONDITIONS AND ACTIONS

NOTE - All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.3.1 All pre-testing and inspection of the system or portions of the system to be tested has been completed.

( )
Test Engineer Signature Date

4.3.2 A pre-job briefing has been held, and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this ATP.

( )
Test Director Signature Date

4.3.3 Test Director VERIFY section 4.3 has been COMPLETED.

( )
Test Director Signature Date

[] Already Tested per OTP-260-004, Rev A-0

3.1-00
R. Gatien
5.0 PROCEDURE

5.1 SETUP

NOTE - This procedure may be repeated for either GAMMA CART A or GAMMA CART B as applicable. N/A may be entered in blocks or steps per Test Director as applicable.

✓ 5.1.1 RECORD GAMMA CART CPU number for the system being tested.

GAMMA CART IDENTIFIER # B  WST-RVY03

CPU Number

✓ 5.1.2 PERFORM cleanliness check in applicable riser listed on TABLE II, per section 5.10 in procedure TO-040-333 latest rev, prior to mounting riser extension tool.

✓ 5.1.3 ENSURE GAMMA CART riser extension tool is mounted on the applicable riser.

✓ 5.1.4 ENSURE GAMMA CART is placed in line with riser extension tool to facilitate installation of probe and cables.

✓ 5.1.5 CHECK route to riser for obstacles and clearances.

✓ 5.1.6 LEVEL cart using jacks.

✓ 5.1.7 CONNECT gamma cart power cables, as follows:

• One end to gamma cart power receptacle

• Other end to suitable power source; Junction Box, JB-101-100, Power Receptacle, OR Junction Box, JB-102-101

✓ 5.1.8 CONNECT gamma cart communications cable, as follows:

• One end to gamma cart communications receptacle

• Other end to Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection Subsystem communications receptacle

✓ 5.1.9 PLACE Gamma Cart "RAISE OFF LOWER" switch in the LOWER position.

✓ 5.1.10 CHECK that detector probe cable is resting in the Gamma Cart boom cable reel.
5.1 SETUP (Cont).

CAUTION

If sufficient tension is NOT held on the detector probe cable as the cable is being let out, the cable could become entangled.

NOTE - Step 5.1.11 and 5.1.12 require two operators to perform continuous action until step 5.1.12 is complete.

✓ 5.1.11 HOLD tension on the detector probe cable until step 5.1.12 is completed.

✓ 5.1.12 PRESS AND HOLD "RESET" button until enough detector probe cable is let-out that will allow placement of the detector cable through riser extension collar AND into riser drywell, AND

RELEASE the "RESET" button.

✓ 5.1.13 INSTALL the proper detector probe on the detector probe cable.

✓ 5.1.14 ENSURE that the detector probe connections are correct and tight. AND

INSERT probe into riser extension tool.

✓ 5.1.15 ENSURE limit switch cable is connected from limit switch on riser extension tool, to the connection point on the front of the GAMMA CART.

✓ 5.1.16 ENSURE the "Raise – Off – Lower" selector switch is in the "OFF" position.

✓ 5.1.17 ENSURE the emergency stop button is pulled out.

✓ 5.1.18 POSITION the "SPEED" control potentiometer to MIN speed (fully counter-clockwise).
5.1 SETUP (Cont).

**CAUTION**

There is no limit switch to stop the motion when the cable is fully unwound. The cable will rewind backwards on the reel. Damage to the cable may result.

NOTE - When the cart is first powered up, or the emergency stop button has been pushed, or power has been restored after a power failure, the cable reel will not move up or down until "RESET" button is activated.

The "Raise-OFF-Lower" Switch is Manually controlled and is Operator Dependent.

- 5.1.19 ENSURE LOCAL/REMOTE switch is in the "LOCAL" position.
- 5.1.20 ENERGIZE the Cart.
- 5.1.21 SET the "SPEED" potentiometer to 2 on the GAMMA Cart.
- 5.1.22 SET the "RAISE-OFF-LOWER" switch to the "LOWER" position.
- 5.1.23 PUSH "EMERGENCY STOP" button on GAMMA CART.
- 5.1.24 VERIFY the system has stopped.

Test Director Signature _______________________________ Date __________

Test Director Print Name ________________________________

Test Director Signature _______________________________ Date __________

Test Director Print Name ________________________________

A-7
5.1 SETUP (Cont).

5.1.25 SET the "RAISE-OFF-LOWER" switch to the "RAISE" position.

5.1.26 PULL "EMERGENCY STOP" out on GAMMA CART.

5.1.27 PUSH the "RESET" button on GAMMA CART to resume.

5.1.28 ENSURE limit switch activates when probe returns to the zero position.

5.1.29 SET the "RAISE-OFF-LOWER" switch to the "OFF" position.

5.1.30 SET "SPEED" potentiometer to MIN.

5.1.31 POSITION The "LOCAL REMOTE" switch to "REMOTE".

5.1.32 VERIFY by signing below section 5.1 is complete.

Test Director Signature ___________________________ Date __________

Test Director Print Name __________________________

QC Signature __________________________ Date __________

QC Print Name __________________________

ALREADY TESTED PER OTP-260-004, REV A-0
56G TEST LOG ENTRY 2-29-00, 02/23/000, 3-1-003-1-00
R. Shuring
5.2 TEST INCREMENTAL SAMPLE MODE

SETUP

NOTE - All steps in this section apply to either cart, except in those steps where the specific cart is indicated.

INSTRUMENT CHECK

\[ 5.2.1 \]
IF the pushbutton for Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Central Processing Unit (CPU), AND/OR associated MONITOR, are NOT ON, PRESS the applicable ON pushbuttons.

\[ 5.2.2 \]
ENSURE the following systems are ON AND ENSURE settings are correct for the following:

- ORTEC MINIBIN
- POWER SUPPLY

Detector Bias Power Supply (HVPS): ORTEC Mod. 478.

- kV: .5
- 0 to 1000V: (+60 volts)

Amplifier (AMP): ORTEC Mod. 673

- COARSE GAIN: 200
- FINE GAIN: 0.680
- SHAPING TIME: Both knobs set to 2 microseconds
- PZ Adjust: Do NOT change settings (in this procedure)
- BLR: Switch in AUTO (up) position
- INPUTS: Switch in POS (up) position BNC cable on terminal (from pre amplifier)
- OUTPUTS: cable on UNIPOLAR terminal (to single channel Analyzer)

\[ 5.2.3 \]
WHEN WINDOWS login screen appears CLICK ON "CANCEL".
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

NOTE - After canceling windows login, GAMMA CART software should automatically load.

☐ 5.2.4 VERIFY "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen is displayed on Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Monitor.

R. Gutierrez
Test Director Signature

3-1-00
Date

Test Director Print Name

☐ 5.2.5 SELECT "Login" on the "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen.

NOTE - LOGIN passwords and information may be obtained from Test Director.

☐ 5.2.6 LOG-IN.

☐ 5.2.7 VERIFY LOCAL/REMOTE switch on display screen is in "REMOTE" position.

R. Gutierrez
Test Director Signature

3-1-00
Date

Test Director Print Name
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

TESTING

1. 5.2.8 SELECT "config" on the "Gamma Cart Display" screen.

2. 5.2.9 ENTER the following data for selected riser on the "Configuration - Display" screen by pulling down applicable menu:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td></td>
<td>NOTE - Riser depth is automatically computed from software upon input of riser ID#.</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable (Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

3. 5.2.10 ENSURE REAL/LIVE toggle button indicates "LIVE".

4. 5.2.11 On the Data Collection Configuration window, SELECT the "Incremental" button.

INCREMENTAL PARAMETERS

5. 5.2.12 INPUT the following Sample Collection Data:

<table>
<thead>
<tr>
<th>Sample Start Depth:</th>
<th>55.0 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval Size:</td>
<td>10.0 ft</td>
</tr>
<tr>
<td>Sample End Depth:</td>
<td>5.0 ft</td>
</tr>
</tbody>
</table>

AlREADY TESTED PER OTP-260-004, REV. A-0
SEE TEST LOG ENTRY 2-29-00, 2:30-02-96
2030 HRS 3-1-00

R. Lohmey
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.13 CLICK ON "SAVE".

5.2.14 CLICK ON "EXIT".

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

After the following step, the program should automatically run.

5.2.15 CLICK ON "Start" button.

5.2.16 CLICK ON "EMERGENCY STOP" button on computer screen.

5.2.17 VERIFY System stopped.

5.2.18 CLICK ON "EMERGENCY STOP" again to RESET the emergency stop button on computer screen.

5.2.19 CLICK ON "ZERO" on display screen.

5.2.20 ENSURE GAMMA PROBE begins to RAISE.

5.2.21 CLICK ON "STOP" button on display screen.

ALREADY TESTED PER OTP-260-004, REV A-0
SEE TEST LOG ENTRY 2-24-00, 232005, 2030 HRS 3-1-00

3-1-00
R. Griffin
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.22 VERIFY System stopped.

Test Director Signature ___________________________ Date ____________
Test Director Print Name ___________________________

5.2.23 CLICK ON "ZERO" again on display screen.

5.2.24 ENSURE GAMMA PROBE begins to RAISE.

5.2.25 When probe and system zeros, CLICK ON "START" on display screen.

5.2.26 VERIFY System resumed program.

Test Director Signature ___________________________ Date ____________
Test Director Print Name ___________________________

5.2.27 CLICK ON "STOP" button on computer screen.

5.2.28 VERIFY System stopped.

Test Director Signature ___________________________ Date ____________
Test Director Print Name ___________________________

5.2.29 CLICK ON "ZERO" on display screen.

5.2.30 When probe and system zeros, CLICK ON "START" on display screen.

5.2.31 VERIFY System resumed program.

Test Director Signature ___________________________ Date ____________
Test Director Print Name ___________________________

ALREADY TESTED PER OTP 260-004, REV A-0.
SEE TEST LOG ENTRY 2-29-00 2-30-00-RS 2030 HRS 3-1-00

3-1-00
R. Datwey
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.32 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.2.33 VERIFY system automatically ZEROS and data is collected at zero position.

Test Director Signature

Date

Test Director Print Name

NOTE - The steps in section 5.1, applicable to the Emergency stop, need not be repeated if completed for an individual GAMMA CART. The Emergency stop on BOTH GAMMA CART A and B, need to be tested only once.

NOTE - It is NOT necessary to do ALL risers in one procedure. Test Director is responsible for ensuring ALL risers have been profiled by one AND/OR the other GAMMA CART(S).

5.2.34 REPEAT applicable SETUP Steps in section 5.1 AND Incremental testing steps 5.2.1 - 5.2.15 AND Steps 5.2.32 and 5.2.33 for each of the following risers and depths per Test Director's direction.

<table>
<thead>
<tr>
<th>RISER</th>
<th>Depth inches (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14C</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14D</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14F</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14G</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14B</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14E</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>15I</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15C</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15E</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15B</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15F</td>
<td>684 (57.0)</td>
</tr>
</tbody>
</table>
5.2 INCREMENTAL SAMPLE MODE (Cont).

NOTE - In the following Table, Test Director N/A blocks that are tested with a different GAMMA CART.

5.2.35 VERIFY the applicable riser in step 5.2.34 has been tested.

<table>
<thead>
<tr>
<th>RISER</th>
<th>TEST DIRECTOR SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td></td>
</tr>
<tr>
<td>14C</td>
<td></td>
</tr>
<tr>
<td>14D</td>
<td></td>
</tr>
<tr>
<td>14F</td>
<td></td>
</tr>
<tr>
<td>14G</td>
<td></td>
</tr>
<tr>
<td>14B</td>
<td></td>
</tr>
<tr>
<td>14E</td>
<td></td>
</tr>
<tr>
<td>15I</td>
<td></td>
</tr>
<tr>
<td>15C</td>
<td></td>
</tr>
<tr>
<td>15E</td>
<td></td>
</tr>
<tr>
<td>15B</td>
<td></td>
</tr>
<tr>
<td>15F</td>
<td></td>
</tr>
</tbody>
</table>

5.2.36 VERIFY by signing below section 5.2 is complete.

Test Director Signature ___________________________ Date ________

Test Director Print Name ___________________________ Date ________

QC Signature ___________________________ Date ________

QC Print Name ___________________________

ALREADY TESTED REV OTP-260-004 REV. A-01

SEE TEST LOG ENTRY 2-29-00, 2000 HX5 2000 HX5 3-1-00

3-1-00

R. Griffith
5.3 TEST USER DEFINED MODE

☐ 5.3.1 ENSURE applicable SETUP Steps in section 5.1 are completed.

CART CONTROL SCREEN

☐ 5.3.2 On the Gamma Cart Control, CLICK ON the "Config." button.

☐ 5.3.3 INPUT the following data:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable (Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec.(As determined by Test Director)</td>
</tr>
</tbody>
</table>

NOTE - Riser depth is automatically computed from software upon input of riser ID#.

USER DEFINED PARAMETERS

☐ 5.3.4 CLICK ON "USER DEFINED".

☐ 5.3.5 ENTER depths desired for testing per Test Engineer Direction.

☐ 5.3.6 CLICK ON "SAVE" on display screen.

☐ 5.3.7 CLICK ON "EXIT".
5.3 TEST USER DEFINED MODE (Cont).

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.
- The "EMERGENCY STOP" may be used to stop at any time during the next step if unit fails to stop at limit switch. The "RESET" button will need to be pushed to resume the program.

CLICK ON Start button.

Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

VERIFY system automatically ZEROS and data is collected at zero position.

R. Gutierrez 3-1-00
Test Director Signature Date

R. Gutierrez
Test Director Print Name
5.3 TEST USER DEFINED MODE (Cont).

☐ 5.3.11 CLICK ON "LOGOUT" on display screen.

☐ 5.3.12 REMOVE Probe, riser extension tool, and associated equipment AND
STORE per Test Director direction.

OR

☐ 5.3.13 REPEAT the steps in this section (5.3) as directed for any risers as directed by Test Director.

☐ 5.3.14 VERIFY by signing below section 5.3 is complete.

R. Gutierrez
Test Director Signature 3-1-00
Date

R. Gutierrez
Test Director Print Name

Ronald A. Arnot
QC Signature 3-1-00
Date

QC Print Name
RISER 14E
GAMMA CART - B
241-AZ GAMMA CART OPERATIONAL TEST PROCEDURE

Last Full Revision: A-0
Release Date: 02-09-2000
USQ Screening Number: TF-00-0083 R.0
Approval Designator: Q

Current Modification: A-2
USQ Screening Number: TF-98-1201 R1
Approval Designator: NA
PCA Incorporated: ETF-2000-064

<table>
<thead>
<tr>
<th>POSITION/ORG</th>
<th>DELEGATE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCO/RET OPS</td>
<td>S.R. Joseph</td>
<td>02-16-2000</td>
</tr>
<tr>
<td>OE/Retrieval OPS</td>
<td>Rich Gutierrez</td>
<td>02-16-2000</td>
</tr>
<tr>
<td>RAD. CON.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cog. Engineer</td>
<td>Gary Tardiff</td>
<td>02-22-2000</td>
</tr>
<tr>
<td>Acceptance Review</td>
<td>Len Ross</td>
<td>02-23-2000</td>
</tr>
<tr>
<td>Approval Authority</td>
<td>Rich Gutierrez</td>
<td>02-23-2000</td>
</tr>
</tbody>
</table>

Justification: Provide step clarity.

Summary of Changes:
Added "suitable power source" to step 5.1.7.

Gamma Cnt B
Riser 14E
3-1-00
R. Gutierrez
4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:

- Riser Swabbing equipment
- Riser extension tool

4.2 PERFORMANCE DOCUMENTS

The following procedures may be needed to perform this procedure:

- TO-040-333 LIQUID OBSERVATION WELL (LOW) SURVEILLANCE VAN STARTUP AND OPERATION PROCEDURE

4.3 CONDITIONS AND ACTIONS

NOTE - All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.3.1 All pre-testing and inspection of the system or portions of the system to be tested has been completed.

[Signature]
Test Engineer Signature
[Date]

4.3.2 A pre-job briefing has been held and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this ATP.

[Signature]
Test Director Signature
[Date]

4.3.3 Test Director VERIFY section 4.3 has been COMPLETED.

[Signature]
Test Director Signature
[Date]

[1] ALREADY TESTED ON OTP-260-004, REV. A-0

3-1-00
R Jeter
5.0 PROCEDURE

5.1 SETUP

NOTE - This procedure may be repeated for either GAMMA CART A or GAMMA CART B as applicable. N/A may be entered in blocks or steps per Test Director as applicable.

5.1.1 RECORD GAMMA CART CPU number for the system being tested.

GAMMA CART IDENTIFIER # 13 CPU Number

5.1.2 PERFORM cleanliness check in applicable riser listed on TABLE II, per section 5.10 in procedure TO-040-333 latest rev, prior to mounting riser extension tool.

5.1.3 ENSURE GAMMA CART riser extension tool is mounted on the applicable riser.

5.1.4 ENSURE GAMMA CART is placed in line with riser extension tool to facilitate installation of probe and cables.

5.1.5 CHECK route to riser for obstacles and clearances.

5.1.6 LEVEL cart using jacks.

5.1.7 CONNECT gamma cart power cables, as follows:

- One end to gamma cart power receptacle
- Other end to suitable power source: Junction Box, JB-101-100, Power Receptacle, OR Junction Box, JB-101-101

5.1.8 CONNECT gamma cart communications cable, as follows:

- One end to gamma cart communications receptacle
- Other end to Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection Subsystem communications receptacle

5.1.9 PLACE Gamma Cart "RAISE OFF LOWER" switch in the LOWER position.

5.1.10 CHECK that detector probe cable is resting in the Gamma Cart boom cable reel.
5.1 SETUP (Cont).

CAUTION

If sufficient tension is NOT held on the detector probe cable as the cable is being let out, the cable could become entangled.

NOTE - Step 5.1.11 and 5.1.12 require two operators to perform continuous action until step 5.1.12 is complete.

☐ 5.1.11 HOLD tension on the detector probe cable until step 5.1.12 is completed.

☐ 5.1.12 PRESS AND HOLD "RESET" button until enough detector probe cable is let-out that will allow placement of the detector cable through riser extension collar AND into riser drywell, AND

RELEASE the "RESET" button.

☐ 5.1.13 INSTALL the proper detector probe on the detector probe cable.

☐ 5.1.14 ENSURE that the detector probe connections are correct and tight. AND

INSERT probe into riser extension tool.

☐ 5.1.15 ENSURE limit switch cable is connected from limit switch on riser extension tool, to the connection point on the front of the GAMMA CART.

☐ 5.1.16 ENSURE the "Raise - Off - Lower" selector switch is in the "OFF" position.

☐ 5.1.17 ENSURE the emergency stop button is pulled out.

☐ 5.1.18 POSITION the "SPEED" control potentiometer to MIN speed (fully counter-clockwise).
5.1 SETUP (Cont).

CAUTION

There is no limit switch to stop the motion when the cable is fully unwound. The cable will rewind backwards on the reel. Damage to the cable may result.

NOTE - When the cart is first powered up, or the emergency stop button has been pushed, or power has been restored after a power failure, the cable reel will not move up or down until "RESET" button is activated.

- The "Raise-OFF-Lower" Switch is Manually controlled and is Operator Dependent.

1) 5.1.19 ENSURE LOCAL/REMOTE switch is in the "LOCAL" position.
2) 5.1.20 ENERGIZE the Cart.
3) 5.1.21 SET the "SPEED" potentiometer to 2 on the GAMMA Cart.
4) 5.1.22 SET the "RAISE-OFF-LOWER" switch to the "LOWER" position.
5) 5.1.23 PUSH "EMERGENCY STOP" button on GAMMA CART.
6) 5.1.24 VERIFY the system has stopped.

Test Director Signature ____________________________ Date __________

Test Director Print Name ____________________________

ALREADY TEST PER OTP-260-004 REV. A-0
SET TEST LOG ENTRY 2-29-00, 2:30:00 PM

5-1-00

R. Hutting
5.1 SETUP (Cont).

5.1.25 SET the "RAISE-OFF-LOWER" switch to the "RAISE" position.

5.1.26 PULL "EMERGENCY STOP" out on GAMMA CART.

5.1.27 PUSH the "RESET" button on GAMMA CART to resume.

5.1.28 ENSURE limit switch activates when probe returns to the zero position.

5.1.29 SET the "RAISE-OFF-LOWER" switch to the "OFF" position.

5.1.30 SET "SPEED" potentiometer to MIN.

5.1.31 POSITION The "LOCAL REMOTE" switch to "REMOTE".

5.1.32 VERIFY by signing below section 5.1 is complete.

( ) Test Director Signature  ________________ Date

( ) Test Director Print Name

( ) QC Signature  ________________ Date

( ) QC Print Name

ALREADY TESTED PER OTP-260-004, REV A-0
SEE TEST LOG ENTRY 2-29-00, 2:30-5 5/100

3-1-00
R. Sutrum
5.2 TEST INCREMENTAL SAMPLE MODE

SETUP

NOTE - All steps in this section apply to either cart, except in those steps where the specific cart is indicated.

INSTRUMENT CHECK

5.2.1 IF the pushbutton for Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Central Processing Unit (CPU), AND/OR associated MONITOR, are NOT ON, PRESS the applicable ON pushbuttons.

5.2.2 ENSURE the following systems are ON AND

ENSURE settings are correct for the following:

- ORTEC MINIBIN
- POWER SUPPLY

Detector Bias Power Supply (HVPS): ORTEC Mod. 478.
- kV: .5
- 0 to 1000V: (+60 volts)

Amplifier (AMP): ORTEC Mod. 673
- COARSE GAIN: 200
- FINE GAIN: 0.680
- SHAPING TIME: Both knobs set to 2 microseconds
- PZ Adjust: Do NOT change settings (in this procedure)
- BLR: Switch in AUTO (up) position
- INPUTS: Switch in POS (up) position BNC cable on terminal (from pre amplifier)
- OUTPUTS: cable on UNIPOLAR terminal (to single channel Analyzer)

5.2.3 WHEN WINDOWS login screen appears CLICK ON "CANCEL".
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

NOTE - After canceling windows login, GAMMA CART software should automatically load.

5.2.4 VERIFY "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen is displayed on Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Monitor.

Test Director Signature 3-1-00

Test Director Print Name

5.2.5 SELECT "Login" on the "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen.

NOTE - LOGIN passwords and information may be obtained from Test Director.

5.2.6 LOG-IN.

5.2.7 VERIFY LOCAL/REMOTE switch on display screen is in "REMOTE" position.

Test Director Signature 3-1-00

Test Director Print Name
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

TESTING

1. 5.2.8 SELECT "config" on the "Gamma Cart Display" screen.

2. 5.2.9 ENTER the following data for selected riser on the "Configuration - Display" screen by pulling down applicable menu:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec.(As determined by Test Director)</td>
</tr>
</tbody>
</table>

3. 5.2.10 ENSURE REAL/LIVE toggle button indicates "LIVE".

4. 5.2.11 On the Data Collection Configuration window, SELECT the "Incremental" button.

INCREMENTAL PARAMETERS

5. 5.2.12 INPUT the following Sample Collection Data:

<table>
<thead>
<tr>
<th>Sample Start Depth:</th>
<th>55.0 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval Size:</td>
<td>10.0 ft</td>
</tr>
<tr>
<td>Sample End Depth:</td>
<td>5.0 ft</td>
</tr>
</tbody>
</table>

ALREADY TESTED PER OTP-260-004, REV. A-0
SEE TEST LOG ENTRY 2-24-001 20:30 HRS

3-1-00
R. Gutierrez
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.13 CLICK ON "SAVE".

5.2.14 CLICK ON "EXIT".

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

After the following step, the program should automatically run.

5.2.15 CLICK ON "Start" button.

5.2.16 CLICK ON "EMERGENCY STOP" button on computer screen.

5.2.17 VERIFY System stopped.

5.2.18 CLICK ON "EMERGENCY STOP" again to RESET the emergency stop button on computer screen.

5.2.19 CLICK ON "ZERO" on display screen.

5.2.20 ENSURE GAMMA PROBE begins to RAISE.

5.2.21 CLICK ON "STOP" button on display screen.

ALREADY TESTED AND OTP-260-004 REV. A-0
See Test Log Entry 2-29-00, 2:30-01

3-1-00

R. Stutierrez
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.22 VERIFY System stopped.

Test Director Signature Date

Test Director Print Name

5.2.23 CLICK ON "ZERO" again on display screen.

5.2.24 ENSURE GAMMA PROBE begins to RAISE.

5.2.25 When probe and system zeros, CLICK ON "START" on display screen.

5.2.26 VERIFY System resumed program.

Test Director Signature Date

Test Director Print Name

5.2.27 CLICK ON "STOP" button on computer screen.

5.2.28 VERIFY System stopped.

Test Director Signature Date

Test Director Print Name

5.2.29 CLICK ON "ZERO" on display screen.

5.2.30 When probe and system zeros, CLICK ON "START" on display screen.

5.2.31 VERIFY System resumed program.

Test Director Signature Date

Test Director Print Name

Already Tested per OTP 260-004, Rev. A-0
See Test Log Entry 2-29-00, 2-30-00
3-1-00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.32 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.2.33 VERIFY system automatically ZEROs and data is collected at zero position.

Test Director Signature: ____________________________ Date: ____________

Test Director Print Name: __________________________

NOTE - The steps in section 5.1, applicable to the Emergency stop, need not be repeated if completed for an individual GAMMA CART. The Emergency stop on BOTH GAMMA CART A and B, need to be tested only once.

NOTE - It is NOT necessary to do ALL risers in one procedure. Test Director is responsible for ensuring ALL risers have been profiled by one AND/OR the other GAMMA CART(S).

5.2.34 REPEAT applicable SETUP Steps in section 5.1 AND Incremental testing steps 5.2.1 - 5.2.15 AND Steps 5.2.32 and 5.2.33 for each of the following risers and depths per Test Director's direction.

<table>
<thead>
<tr>
<th>RISER</th>
<th>Depth inches (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14C</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14D</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14F</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14G</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14B</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14E</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>15I</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15C</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15E</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15B</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15F</td>
<td>684 (57.0)</td>
</tr>
</tbody>
</table>

ALREADY TESTED RAD OTP-260-004 REV. A-0
SEE TEST A06 ENTRY 2-29-00
R. Stahion 3-1-00
5.2 INCREMENTAL SAMPLE MODE (Cont).

NOTE - In the following Table, Test Director N/A blocks that are tested with a different GAMMA CART.

5.2.35 VERIFY the applicable riser in step 5.2.34 has been tested.

<table>
<thead>
<tr>
<th>RISER</th>
<th>TEST DIRECTOR SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td></td>
</tr>
<tr>
<td>14C</td>
<td></td>
</tr>
<tr>
<td>14D</td>
<td></td>
</tr>
<tr>
<td>14F</td>
<td></td>
</tr>
<tr>
<td>14G</td>
<td></td>
</tr>
<tr>
<td>14B</td>
<td></td>
</tr>
<tr>
<td>14E</td>
<td></td>
</tr>
<tr>
<td>15I</td>
<td></td>
</tr>
<tr>
<td>15C</td>
<td></td>
</tr>
<tr>
<td>15E</td>
<td></td>
</tr>
<tr>
<td>15B</td>
<td></td>
</tr>
<tr>
<td>15F</td>
<td></td>
</tr>
</tbody>
</table>

5.2.36 VERIFY by signing below section 5.2 is complete.

Test Director Signature

Test Director Print Name

QC Signature

QC Print Name

ACKNOWLEDGED TESTED PER OTP-260-004 REV. A-C
SEE TEST LOG ENTRY 229-00, 2/20/2000

R. Sutter
3-1-00
5.3 TEST USER DEFINED MODE

5.3.1 ENSURE applicable SETUP Steps in section 5.1 are completed.

CART CONTROL SCREEN

5.3.2 On the Gamma Cart Control, CLICK ON the "Config." button.

5.3.3 INPUT the following data:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable</td>
</tr>
<tr>
<td></td>
<td>(Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

NOTE - Riser depth is automatically computed from software upon input of riser ID#.

USER DEFINED PARAMETERS

5.3.4 CLICK ON "USER DEFINED".

5.3.5 ENTER depths desired for testing per Test Engineer Direction.

5.3.6 CLICK ON "SAVE" on display screen.

5.3.7 CLICK ON "EXIT".
5.3 TEST USER DEFINED MODE (Cont).

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.

- The "EMERGENCY STOP" may be used to stop at any time during the next step if unit fails to stop at limit switch. The "RESET" button will need to be pushed to resume the program.

CLICK ON Start button.

Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

VERIFY system automatically ZEROs and data is collected at zero position.

Test Director Signature 3-1-00

Date

Test Director Print Name
5.3 TEST USER DEFINED MODE (Cont).

5.3.11 CLICK ON "LOGOUT" on display screen.

5.3.12 REMOVE Probe, riser extension tool, and associated equipment AND
STORE per Test Director direction.

OR

CONTINUE in this procedure.

5.3.13 REPEAT the steps in this section (5.3) as directed for any risers as directed by Test Director.

5.3.14 VERIFY by signing below section 5.3 is complete.

[Signatures and dates]

[Handwritten notes indicating completion by Test Director and QC]
RISER 15E
GAMMA CART - B
241-AZ GAMMA CART OPERATIONAL TEST PROCEDURE

Last Full Revision: A-0
Release Date: 02-09-2000
USQ Screening Number: TF-00-0083 R.0
Approval Designator: Q

Current Modification: A-2
USQ Screening Number: TF-98-1201 R1
Approval Designator: NA
PCA Incorporated: ETF-2000-064

<table>
<thead>
<tr>
<th>POSITION/ORG</th>
<th>DELEGATE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCO/RET OPS</td>
<td>S.B. Joseph</td>
<td>02-16-2000</td>
</tr>
<tr>
<td>OE/Retrieval OPS</td>
<td>Rich Gutierrez</td>
<td>02-16-2000</td>
</tr>
<tr>
<td>RAD. CON.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cog. Engineer</td>
<td>Gary Tardiff</td>
<td>02-22-2000</td>
</tr>
<tr>
<td>Acceptance Review</td>
<td>Len Ross</td>
<td>02-23-2000</td>
</tr>
<tr>
<td>Approval Authority</td>
<td>Rich Gutierrez</td>
<td>02-23-2000</td>
</tr>
</tbody>
</table>

Justification: Provide step clarity.

Summary of Changes:
Added "suitable power source" to step 5.1.7.

Gamma Cart B
ISE
R. Steury 3/1/00
4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:

- Riser Swabbing equipment
- Riser extension tool

4.2 PERFORMANCE DOCUMENTS

The following procedures may be needed to perform this procedure:

- TO-040-333 LIQUID OBSERVATION WELL (LOW) SURVEILLANCE VAN STARTUP AND OPERATION PROCEDURE

4.3 CONDITIONS AND ACTIONS

NOTE - All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.3.1 All pre-testing and inspection of the system or portions of the system to be tested has been completed.

Test Engineer Signature Date

4.3.2 A pre-job briefing has been held and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this ATP.

Test Director Signature Date

4.3.3 Test Director VERIFY section 4.3 has been COMPLETED.

Test Director Signature Date

already tested per ref OTP-260-004 Rev A-0
see test log entry 2/29/00, 2000.

R. Settineri 3/1/00
5.0 PROCEDURE

5.1 SETUP

NOTE - This procedure may be repeated for either GAMMA CART A or GAMMA CART B as applicable. N/A may be entered in blocks or steps per Test Director as applicable.

5.1.1 RECORD GAMMA CART CPU number for the system being tested.

GAMMA CART IDENTIFIER # B WST-RY 403

5.1.2 PERFORM cleanliness check in applicable riser listed on TABLE II, per section 5.10 in procedure TO-040-333 latest rev, prior to mounting riser extension tool.

5.1.3 ENSURE GAMMA CART riser extension tool is mounted on the applicable riser.

5.1.4 ENSURE GAMMA CART is placed in line with riser extension tool to facilitate installation of probe and cables.

5.1.5 CHECK route to riser for obstacles and clearances.

5.1.6 LEVEL cart using jacks.

5.1.7 CONNECT gamma cart power cables, as follows:

• One end to gamma cart power receptacle

• Other end to suitable power source - Junction Box, JB-101-100, Power Receptacle, OR Junction Box, JB-101-101

5.1.8 CONNECT gamma cart communications cable, as follows:

• One end to gamma cart communications receptacle

• Other end to Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection Subsystem communications receptacle

5.1.9 PLACE Gamma Cart "RAISE OFF LOWER" switch in the LOWER position.

5.1.10 CHECK that detector probe cable is resting in the Gamma Cart boom cable reel.
5.1 SETUP (Cont).

CAUTION

If sufficient tension is NOT held on the detector probe cable as the cable is being let out, the cable could become entangled.

NOTE - Step 5.1.11 and 5.1.12 require two operators to perform continuous action until step 5.1.12 is complete.

5.1.11 HOLD tension on the detector probe cable until step 5.1.12 is completed.

5.1.12 PRESS AND HOLD "RESET" button until enough detector probe cable is let-out that will allow placement of the detector cable through riser extension collar AND into riser drywell, AND

RELEASE the "RESET" button.

5.1.13 INSTALL the proper detector probe on the detector probe cable.

5.1.14 ENSURE that the detector probe connections are correct and tight. AND

INSERT probe into riser extension tool.

5.1.15 ENSURE limit switch cable is connected from limit switch on riser extension tool, to the connection point on the front of the GAMMA CART.

5.1.16 ENSURE the "Raise - Off - Lower" selector switch is in the "OFF" position.

5.1.17 ENSURE the emergency stop button is pulled out.

5.1.18 POSITION the "SPEED" control potentiometer to MIN speed (fully counter-clockwise).
5.1 SETUP (Cont).

### CAUTION

There is no limit switch to stop the motion when the cable is fully unwound. The cable will rewind backwards on the reel. Damage to the cable may result.

**NOTE** - When the cart is first powered up, or the emergency stop button has been pushed, or power has been restored after a power failure, the cable reel will not move up or down until "RESET" button is activated.

- The "Raise-OFF-Lower" Switch is Manually controlled and is Operator Dependent.

1. **5.1.19** ENSURE LOCAL/REMOTE switch is in the "LOCAL" position.
2. **5.1.20** ENERGIZE the Cart.
3. **5.1.21** SET the "SPEED" potentiometer to 2 on the GAMMA Cart.
4. **5.1.22** SET the "RAISE -OFF- LOWER" switch to the "LOWER" position.
5. **5.1.23** PUSH "EMERGENCY STOP" button on GAMMA CART.
6. **5.1.24** VERIFY the system has stopped.

**Rich Gutiérrez**
Test Director Signature

**3-1-00**
Date

**Rich Gutiérrez**
Test Director Print Name

already tested on OTP-260-004 Rev A-0
see Test Log entry 2/23/00, 2030.

**R. Gutiérrez**
3/1/00
5.1 SETUP (Cont).

- 5.1.25 SET the "RAISE-OFF-LOWER" switch to the "RAISE" position.
- 5.1.26 PULL "EMERGENCY STOP" out on GAMMA CART.
- 5.1.27 PUSH the "RESET" button on GAMMA CART to resume.
- 5.1.28 ENSURE limit switch activates when probe returns to the zero position.
- 5.1.29 SET the "RAISE-OFF-LOWER" switch to the "OFF" position.
- 5.1.30 SET "SPEED" potentiometer to MIN.
- 5.1.31 POSITION The "LOCAL REMOTE" switch to "REMOTE".
- 5.1.32 VERIFY by signing below section 5.1 is complete.

Test Director Signature ___________ Date ___________
Test Director Print Name ___________
QC Signature ___________ Date ___________
QC Print Name ___________

- already tested per OTP-260-004 Rev A
- see test log entry 2/24/00, 2030.

- L. Stutierrez 3/1/00
5.2 TEST INCREMENTAL SAMPLE MODE

SETUP

NOTE - All steps in this section apply to either cart, except in those steps where the specific cart is indicated.

INSTRUMENT CHECK

5.2.1 IF the pushbutton for Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Central Processing Unit (CPU), AND/OR associated MONITOR, are NOT ON, PRESS the applicable ON pushbuttons.

ENSURE the following systems are ON AND ENSURE settings are correct for the following:

- ORTEC MINIBIN
- POWER SUPPLY

Detector Bias Power Supply (HVPS): ORTEC Mod. 478.

- kV: .5
- 0 to 1000V: (+60 volts)

Amplifier (AMP): ORTEC Mod. 673

- COARSE GAIN: 200
- FINE GAIN: 0.680
- SHAPING TIME: Both knobs set to 2 microseconds
- PZ Adjust: Do NOT change settings (in this procedure)
- BLR: Switch in AUTO (up) position
- INPUTS: Switch in POS (up) position BNC cable on terminal (from pre amplifier)
- OUTPUTS: cable on UNIPOLAR terminal (to single channel Analyzer)

5.2.3 WHEN WINDOWS login screen appears CLICK ON "CANCEL".
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

NOTE - After canceling windows login, GAMMA CART software should automatically load.

✓ 5.2.4 VERIFY "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen is displayed on Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Monitor.

Rich Gutierrez 3-1-00
Test Director Signature  Date

Rich Gutierrez
Test Director Print Name

✓ 5.2.5 SELECT "Login" on the "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen.

NOTE - LOGIN passwords and information may be obtained from Test Director.

✓ 5.2.6 LOG-IN.

✓ 5.2.7 VERIFY LOCAL/REMOTE switch on display screen is in "REMOTE" position.

Rich Gutierrez 3-1-00
Test Director Signature  Date

Rich Gutierrez
Test Director Print Name
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

TESTING

5.2.8 SELECT "config" on the "Gamma Cart Display" screen.

5.2.9 ENTER the following data for selected riser on the "Configuration - Display" screen by pulling down applicable menu:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable</td>
</tr>
<tr>
<td></td>
<td>(Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

5.2.10 ENSURE REAL/LIVE toggle button indicates "LIVE".

5.2.11 On the Data Collection Configuration window, SELECT the "Incremental" button.

INCREMENTAL PARAMETERS

5.2.12 INPUT the following Sample Collection Data:

<table>
<thead>
<tr>
<th>Sample Start Depth:</th>
<th>55.0 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval Size:</td>
<td>10.0 ft</td>
</tr>
<tr>
<td>Sample End Depth:</td>
<td>5.0 ft</td>
</tr>
</tbody>
</table>

already tested per OTP-260-004 Rev A-0
see Test Log Entry 2/29/00 2030.

L. Battery 4/1/00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.13 CLICK ON "SAVE".
5.2.14 CLICK ON "EXIT".

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.

5.2.15 CLICK ON "Start" button.
5.2.16 CLICK ON "EMERGENCY STOP" button on computer screen.
5.2.17 VERIFY System stopped.

CLICK ON "EMERGENCY STOP" again to RESET the emergency stop button on computer screen.

CLICK ON "ZERO" on display screen.

ENSURE GAMMA PROBE begins to RAISE.

CLICK ON "STOP" button on display screen.

already tested on OTP-260-004, Rev A-0
See Test Log entry 2/29/00, 2000.

R. Satney 3/1/00

Test Director Signature

Test Director Print Name

Date
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.22 VERIFY System stopped.

Test Director Signature: ____________________________ Date: ____________
Test Director Print Name: ____________________________

5.2.23 CLICK ON "ZERO" again on display screen.

5.2.24 ENSURE GAMMA PROBE begins to RAISE.

5.2.25 When probe and system zeros, CLICK ON "START" on display screen.

5.2.26 VERIFY System resumed program.

Test Director Signature: ____________________________ Date: ____________
Test Director Print Name: ____________________________

5.2.27 CLICK ON "STOP" button on computer screen.

5.2.28 VERIFY System stopped.

Test Director Signature: ____________________________ Date: ____________
Test Director Print Name: ____________________________

5.2.29 CLICK ON "ZERO" on display screen.

5.2.30 When probe and system zeros, CLICK ON "START" on display screen.

5.2.31 VERIFY System resumed program.

Test Director Signature: ____________________________ Date: ____________
Test Director Print Name: ____________________________

already tested on OTP-260-004 Rev A-0
See Test Log entry 2/29/00, 2030.

R. Schreiber 3/1/00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.32 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.2.33 VERIFY system automatically ZEROs and data is collected at zero position.

![Signature and Date]

NOTE - The steps in section 5.1, applicable to the Emergency stop, need not be repeated if completed for an individual GAMMA CART. The Emergency stop on BOTH GAMMA CART A and B, need to be tested only once.

NOTE - It is NOT necessary to do ALL risers in one procedure. Test Director is responsible for ensuring ALL risers have been profiled by one AND/OR the other GAMMA CART(S).

5.2.34 REPEAT applicable SETUP Steps in section 5.1 AND
Incremental testing steps 5.2.1 - 5.2.15 AND Steps 5.2.32 and 5.2.33 for each of the following risers and depths per Test Director's direction.

![Table]

<table>
<thead>
<tr>
<th>RISER</th>
<th>Depth inches (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14C</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14D</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14F</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14G</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14B</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14E</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>15I</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15C</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15E</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15B</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15F</td>
<td>684 (57.0)</td>
</tr>
</tbody>
</table>

Already tested on OTP-260-004 Rev A-0
See Test log entry 2/29/00, 2000.

Reshuting 3/1/00
### 5.2 INCREMENTAL SAMPLE MODE (Cont).

**NOTE** - In the following Table, Test Director N/A blocks that are tested with a different GAMMA CART.

<table>
<thead>
<tr>
<th>RISER</th>
<th>TEST DIRECTOR SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td></td>
</tr>
<tr>
<td>14C</td>
<td></td>
</tr>
<tr>
<td>14D</td>
<td></td>
</tr>
<tr>
<td>14F</td>
<td></td>
</tr>
<tr>
<td>14G</td>
<td></td>
</tr>
<tr>
<td>14H</td>
<td></td>
</tr>
<tr>
<td>14E</td>
<td></td>
</tr>
<tr>
<td>15I</td>
<td></td>
</tr>
<tr>
<td>15C</td>
<td></td>
</tr>
<tr>
<td>15E</td>
<td></td>
</tr>
<tr>
<td>15B</td>
<td></td>
</tr>
<tr>
<td>15F</td>
<td></td>
</tr>
</tbody>
</table>

- **5.2.35** VERIFY the applicable riser in step 5.2.34 has been tested.

### Table II

- **5.2.36** VERIFY by signing below section 5.2 is complete.

<table>
<thead>
<tr>
<th>Test Director Print Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC Print Name</td>
<td>Date</td>
</tr>
</tbody>
</table>

**Note:** Already tested on OTP-260-004, Rev A-0. See Test log entry 2/29/00, 2030.
5.3 TEST USER DEFINED MODE

5.3.1 ENSURE applicable SETUP Steps in section 5.1 are completed.

CART CONTROL SCREEN

5.3.2 On the Gamma Cart Control, CLICK ON the "Config." button.

5.3.3 INPUT the following data:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td></td>
<td>NOTE - Riser depth is automatically computed from software upon input of riser ID#.</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable</td>
</tr>
<tr>
<td></td>
<td>(Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec.(As determined by Test Director)</td>
</tr>
</tbody>
</table>

USER DEFINED PARAMETERS

5.3.4 CLICK ON "USER DEFINED".

5.3.5 ENTER depths desired for testing per Test Engineer Direction.

5.3.6 CLICK ON "SAVE" on display screen.

5.3.7 CLICK ON "EXIT".
5.3 TEST USER DEFINED MODE (Cont).

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.

- The "EMERGENCY STOP" may be used to stop at any time during the next step if unit fails to stop at limit switch. The "RESET" button will need to be pushed to resume the program.

5.3.8 CLICK ON Start button.

5.3.9 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.3.10 VERIFY system automatically ZEROs and data is collected at zero position.

Test Director Signature 3-1-00
Test Director Print Name
5.3 TEST USER DEFINED MODE (Cont).

5.3.11 CLICK ON "LOGOUT" on display screen.

5.3.12 REMOVE Probe, riser extension tool, and associated equipment AND

STORE per Test Director direction.

OR

CONTINUE in this procedure.

5.3.13 REPEAT the steps in this section (5.3) as directed for any risers as directed by Test Director.

5.3.14 VERIFY by signing below section 5.3 is complete.

[Signature]
Test Director Signature

[Signature] 3-1-00
Test Director Name

[Signature] 3-1-00
QC Signature

[Signature]
QC Print Name
RISER 15F
GAMMA CART - B
241-AZ GAMMA CART OPERATIONAL TEST PROCEDURE

Last Full Revision: A-0
Release Date: 02-09-2000
USQ Screening Number: TF-00-0083 R.0
Approval Designator: Q

Current Modification: A-2
USQ Screening Number: TF-98-1201 R1
Approval Designator: NA
PCA Incorporated: ETF-2000-064

POSITION/ORG DELEGATE DATE
NCO/RET OPS S.R. Joseph 02-16-2000
OE/Retrieval OPS Rich Gutierrez 02-16-2000
RAD. CON. 
ECO 
QA 
Cog. Engineer Gary Tardiff 02-22-2000
Acceptance Review Len Ross 02-23-2000
Approval Authority Rich Gutierrez 02-23-2000

Justification: Provide step clarity.

Summary of Changes:
Added "suitable power source" to step 5.1.7.

Gamma cart B
Riser 15 F
3/1/00
4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:
- Riser Swabbing equipment
- Riser extension tool

4.2 PERFORMANCE DOCUMENTS

The following procedures may be needed to perform this procedure:
- TO-040-333 LIQUID OBSERVATION WELL (LOW) SURVEILLANCE VAN STARTUP AND OPERATION PROCEDURE

4.3 CONDITIONS AND ACTIONS

NOTE - All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.3.1 All pre-testing and inspection of the system or portions of the system to be tested has been completed.

( )

Test Engineer Signature Date

4.3.2 A pre-job briefing has been held, and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this ATP.

Test Director Signature Date

3-1-00

4.3.3 Test Director VERIFY section 4.3 has been COMPLETED.

Test Director Signature Date

3-1-00

( ) ALREADY TESTED PER OTP-260-004 REV. A0
5:05 TEST LOG ENTERED 2:29:00; 2070 HRS

3-1-00

Swing Shift
5.0 PROCEDURE

5.1 SETUP

NOTE - This procedure may be repeated for either GAMMA CART A or GAMMA CART B as applicable. N/A may be entered in blocks or steps per Test Director as applicable.

\checkmark 5.1.1 RECORD GAMMA CART CPU number for the system being tested.

GAMMA CART IDENTIFIER # B WST-04 483

CPU Number

\checkmark 5.1.2 PERFORM cleanliness check in applicable riser listed on TABLE II, per section 5.10 in procedure TO-040-333 latest rev, prior to mounting riser extension tool.

\checkmark 5.1.3 ENSURE GAMMA CART riser extension tool is mounted on the applicable riser.

\checkmark 5.1.4 ENSURE GAMMA CART is placed in line with riser extension tool to facilitate installation of probe and cables.

\checkmark 5.1.5 CHECK route to riser for obstacles and clearances.

\checkmark 5.1.6 LEVEL cart using jacks.

\checkmark 5.1.7 CONNECT gamma cart power cables, as follows:

- One end to gamma cart power receptacle
- Other end to suitable power source, Junction Box, JB-101-100, Power Receptacle, OR Junction Box, JB-101-101

\checkmark 5.1.8 CONNECT gamma cart communications cable, as follows:

- One end to gamma cart communications receptacle
- Other end to Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection Subsystem communications receptacle

\checkmark 5.1.9 PLACE Gamma Cart "RAISE OFF LOWER" switch in the LOWER position.

\checkmark 5.1.10 CHECK that detector probe cable is resting in the Gamma Cart boom cable reel.
5.1 SETUP (Cont).

CAUTION

If sufficient tension is NOT held on the detector probe cable as the cable is being let out, the cable could become entangled.

NOTE - Step 5.1.11 and 5.1.12 require two operators to perform continuous action until step 5.1.12 is complete.

- 5.1.11 HOLD tension on the detector probe cable until step 5.1.12 is completed.
- 5.1.12 PRESS AND HOLD "RESET" button until enough detector probe cable is let-out that will allow placement of the detector cable through riser extension collar AND into riser drywell, AND

RELEASE the "RESET" button.

- 5.1.13 INSTALL the proper detector probe on the detector probe cable.
- 5.1.14 ENSURE that the detector probe connections are correct and tight. AND

INSERT probe into riser extension tool.

- 5.1.15 ENSURE limit switch cable is connected from limit switch on riser extension tool, to the connection point on the front of the GAMMA CART.
- 5.1.16 ENSURE the "Raise - Off - Lower" selector switch is in the "OFF" position.
- 5.1.17 ENSURE the emergency stop button is pulled out.
- 5.1.18 POSITION the "SPEED" control potentiometer to MIN speed (fully counter-clockwise).
5.1 SETUP (Cont).

CAUTION

There is no limit switch to stop the motion when the cable is fully unwound. The cable will rewind backwards on the reel. Damage to the cable may result.

NOTE - When the cart is first powered up, or the emergency stop button has been pushed, or power has been restored after a power failure, the cable reel will not move up or down until "RESET" button is activated.

- The "Raise-OFF-Lower" Switch is Manually controlled and is Operator Dependent.

5.1.19 ENSURE LOCAL/REMOTE switch is in the "LOCAL" position.
5.1.20 ENERGIZE the Cart.
5.1.21 SET the "SPEED" potentiometer to 2 on the GAMMA Cart.
5.1.22 SET the "RAISE -OFF- LOWER" switch to the "LOWER" position.
5.1.23 PUSH "EMERGENCY STOP" button on GAMMA CART.
5.1.24 VERIFY the system has stopped.

Test Director Signature  Date

Test Director Print Name

1) Already tested per OTP-260-004 REV. A-0
   Set test log entry 3-29-96; 203046S
   3-1-96  James Hall

Type  Document No.  Rev/Mod  Release Date  Page
CONTINUOUS  OTP-260-004  A-2  02/23/2000  15 of 31
5.1 SETUP (Cont).

5.1.25 SET the "RAISE-OFF-LOWER" switch to the "RAISE" position.
5.1.26 PULL "EMERGENCY STOP" out on GAMMA CART.
5.1.27 PUSH the "RESET" button on GAMMA CART to resume.
5.1.28 ENSURE limit switch activates when probe returns to the zero position.
5.1.29 SET the "RAISE-OFF-LOWER" switch to the "OFF" position.
5.1.30 SET "SPEED" potentiometer to MIN.
5.1.31 POSITION The "LOCAL REMOTE" switch to "REMOTE".
5.1.32 VERIFY by signing below section 5.1 is complete.

___
Test Director Signature

___
Test Director Print Name

___
QC Signature

___
QC Print Name

(1) Already tested per OTP-260-004 Rev A-0
See test log entry 2-29-00, 2438 hrs.

James L. (Jim) Hurl
8-1-XX
5.2 TEST INCREMENTAL SAMPLE MODE

SETUP

NOTE - All steps in this section apply to either cart, except in those steps where the specific cart is indicated.

INSTRUMENT CHECK

5.2.1 IF the pushbutton for Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Central Processing Unit (CPU), AND/OR associated MONITOR, are NOT ON, PRESS the applicable ON pushbuttons.

5.2.2 ENSURE the following systems are ON AND

ENSURE settings are correct for the following:

- ORTEC MINIBIN
- POWER SUPPLY

Detector Bias Power Supply (HVPS): ORTEC Mod. 478.

- kV: .5
- 0 to 1000V: (+50 volts)

Amplifier (AMP): ORTEC Mod. 673

- COARSE GAIN: 200
- FINE GAIN: 0.680
- SHAPING TIME: Both knobs set to 2 microseconds
- PZ Adjust: Do NOT change settings (in this procedure)
- BLR: Switch in AUTO (up) position
- INPUTS: Switch in POS (up) position BNC cable on terminal (from pre amplifier)
- OUTPUTS: cable on UNIPOLAR terminal (to single channel Analyzer)

5.2.3 WHEN WINDOWS login screen appears CLICK ON "CANCEL".
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

NOTE - After canceling windows login, GAMMA CART software should automatically load.

5.2.4 VERIFY "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen is displayed on Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Monitor.

[Signature]
Test Director Signature

[Date]
Test Director Print Name

5.2.5 SELECT "Login" on the "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen.

NOTE - LOGIN passwords and information may be obtained from Test Director.

5.2.6 LOG-IN.

5.2.7 VERIFY LOCAL/REMOTE switch on display screen is in "REMOTE" position.

[Signature]
Test Director Signature

[Date]
Test Director Print Name
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

TESTING

5.2.8 SELECT "config" on the "Gamma Cart Display" screen.

5.2.9 ENTER the following data for selected riser on the "Configuration - Display" screen by pulling down applicable menu:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td>NOTE -</td>
<td>Riser depth is automatically computed from software upon input of riser ID#</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable</td>
</tr>
<tr>
<td></td>
<td>(Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec.(As determined by Test Director)</td>
</tr>
</tbody>
</table>

5.2.10 ENSURE REAL/LIVE toggle button indicates "LIVE".

5.2.11 On the Data Collection Configuration window, SELECT the "Incremental" button.

INCREMENTAL PARAMETERS

5.2.12 INPUT the following Sample Collection Data:

<table>
<thead>
<tr>
<th>Sample Start Depth:</th>
<th>55.0 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval Size:</td>
<td>10.0 ft</td>
</tr>
<tr>
<td>Sample End Depth:</td>
<td>5.0 ft</td>
</tr>
</tbody>
</table>

(1) Already tested per OTP-260-004, Rev. A0

See test log entry 2-29-00, 2030 EST

3-1-00

Signed right.
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.13 CLICK ON "SAVE".

5.2.14 CLICK ON "EXIT".

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

5.2.15 CLICK ON "Start" button.

5.2.16 CLICK ON "EMERGENCY STOP" button on computer screen.

5.2.17 VERIFY System stopped.

CLICK ON stop button on computer screen.

CLICK ON "ZERO" on display screen.

ENSURE GAMMA PROBE begins to RAISE.

CLICK ON "STOP" button on display screen.

Already tested per OTP-260-004 Rev. A-1-0
See Log Entry 2-29-00, 8040 this

James L. Stree 3-1-00
Author's Note
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.22 VERIFY System stopped.

Test Director Signature Date

Test Director Print Name

5.2.23 CLICK ON "ZERO" again on display screen.

5.2.24 ENSURE GAMMA PROBE begins to RAISE.

5.2.25 When probe and system zeros, CLICK ON "START" on display screen.

5.2.26 VERIFY System resumed program.

Test Director Signature Date

Test Director Print Name

5.2.27 CLICK ON "STOP" button on computer screen.

5.2.28 VERIFY System stopped.

Test Director Signature Date

Test Director Print Name

5.2.29 CLICK ON "ZERO" on display screen.

5.2.30 When probe and system zeros, CLICK ON "START" on display screen.

5.2.31 VERIFY System resumed program.

Test Director Signature Date

Test Director Print Name

Already tested per OTP-260-004, REV A-0
See test log entry 2-29-00 2300hr

3-180

James L. Steel
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.32 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.2.33 VERIFY system automatically ZEROs and data is collected at zero position.

---

NOTE - The steps in section 5.1, applicable to the Emergency stop, need not be repeated if completed for an individual GAMMA CART. The Emergency stop on BOTH GAMMA CART A and B, need to be tested only once.

NOTE - It is NOT necessary to do ALL risers in one procedure. Test Director is responsible for ensuring ALL risers have been profiled by one AND/OR the other GAMMA CART(S).

5.2.34 REPEAT applicable SETUP Steps in section 5.1 AND Incremental testing steps 5.2.1 - 5.2.15 AND Steps 5.2.32 and 5.2.33 for each of the following risers and depths per Test Director's direction.

---

TABLE I

<table>
<thead>
<tr>
<th>RISER</th>
<th>Depth inches (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14C</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14D</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14F</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14G</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14B</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14E</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>15I</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15C</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15E</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15B</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15F</td>
<td>684 (57.0)</td>
</tr>
</tbody>
</table>

---

Already tested
for OTP-260-004 Rev. A-0
Last Test Entry 2-27-90, 2:30 AM
5.2 INCREMENTAL SAMPLE MODE (Cont).

NOTE - In the following Table, Test Director N/A blocks that are tested with a different GAMMA CART.

5.2.35 VERIFY the applicable riser in step 5.2.34 has been tested.

<table>
<thead>
<tr>
<th>RISER</th>
<th>TEST DIRECTOR SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td></td>
</tr>
<tr>
<td>14C</td>
<td></td>
</tr>
<tr>
<td>14D</td>
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<td>15B</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

5.2.36 VERIFY by signing below section 5.2 is complete.

Test Director Signature
Test Director Print Name
QC Signature
QC Print Name

Already tested per OTP-260-004 Rev. A-0
See Tech Inquiry 2.29.00; 20300111
5.3 TEST USER DEFINED MODE

☐ 5.3.1 ENSURE applicable SETUP Steps in section 5.1 are completed.

CART CONTROL SCREEN

☐ 5.3.2 On the Gamma Cart Control, CLICK ON the "Config." button.

☐ 5.3.3 INPUT the following data:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>Az-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td></td>
<td>NOTE - Riser depth is</td>
</tr>
<tr>
<td></td>
<td>automatically computed</td>
</tr>
<tr>
<td></td>
<td>from software upon input</td>
</tr>
<tr>
<td></td>
<td>of riser ID#.</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable</td>
</tr>
<tr>
<td></td>
<td>(Normal is 1 or 2 for Cart A</td>
</tr>
<tr>
<td></td>
<td>and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test</td>
</tr>
<tr>
<td></td>
<td>Director)</td>
</tr>
</tbody>
</table>

USER DEFINED PARAMETERS

☐ 5.3.4 CLICK ON "USER DEFINED".

☐ 5.3.5 ENTER depths desired for testing per Test Engineer Direction.

☐ 5.3.6 CLICK ON "SAVE" on display screen.

☐ 5.3.7 CLICK ON "EXIT".
5.3 TEST USER DEFINED MODE (Cont).

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.

- The "EMERGENCY STOP" may be used to stop at any time during the next step if unit fails to stop at limit switch. The "RESET" button will need to be pushed to resume the program.

5.3.8 CLICK ON Start button.

5.3.9 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.3.10 VERIFY system automatically ZEROs and data is collected at zero position.

Test Director Signature 3-1-88
Test Director Print Name
5.3 TEST USER DEFINED MODE (Cont).

5.3.11 CLICK ON "LOGOUT" on display screen.

5.3.12 REMOVE Probe, riser extension tool, and associated equipment AND
STORE per Test Director direction.

OR

5.3.13 CONTINUE in this procedure.

5.3.14 REPEAT the steps in this section (5.3) as directed for any risers as directed by Test Director.

5.3.14 VERIFY by signing below section 5.3 is complete.

Test Director Signature

Test Director Print Name

QC Signature

QC Print Name

3-1-60

3-1-60
RISER 14B
GAMMA CART - B
241-AZ GAMMA CART OPERATIONAL TEST PROCEDURE

Last Full Revision: A-0
Release Date: 02-09-2000
USQ Screening Number: TF-00-0083 R.0
Approval Designator: Q

Current Modification: A-2
USQ Screening Number: TF-98-1201 R1
Approval Designator: NA
PCA Incorporated: ETF-2000-064

POSITION/ORG  DELEGATE  DATE
NCO/RET OPS  S.R. Joseph   02-16-2000
OE/Retrieval OPS  Rich Gutierrez   02-16-2000
RAD. CON.  
ECO  
QA  
Cog. Engineer  Gary Tardiff   02-22-2000
Acceptance Review  Len Ross   02-23-2000
Approval Authority  Rich Gutierrez   02-23-2000

Justification: Provide step clarity.

Summary of Changes:
Added "suitable power source" to step 5.1.7.
4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:

- Riser Swabbing equipment
- Riser extension tool

4.2 PERFORMANCE DOCUMENTS

The following procedures may be needed to perform this procedure:

- TO-040-333  LIQUID OBSERVATION WELL (LOW) SURVEILLANCE VAN STARTUP AND OPERATION PROCEDURE

4.3 CONDITIONS AND ACTIONS

NOTE - All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.3.1 All pre-testing and inspection of the system or portions of the system to be tested has been completed.

\[\text{Test Engineer Signature} \quad \text{Date}\]

4.3.2 A pre-job briefing has been held and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this ATP.

\[\text{Test Director Signature} \quad \text{Date}\]

4.3.3 Test Director VERIFY section 4.3 has been COMPLETED.

\[\text{Test Director Signature} \quad \text{Date}\]

1 already tested per OTP-260-004, Rev A-0

3-2-00

R. Batten
5.0 PROEDURE

5.1 SETUP

NOTE - This procedure may be repeated for either GAMMA CART A or GAMMA CART B as applicable. N/A may be entered in blocks or steps per Test Director as applicable.

5.1.1 RECORD GAMMA CART CPU number for the system being tested.

5.1.2 PERFORM cleanliness check in applicable riser listed on TABLE II, per section 5.10 in procedure TO-040-333 latest rev, prior to mounting riser extension tool.

5.1.3 ENSURE GAMMA CART riser extension tool is mounted on the applicable riser.

5.1.4 ENSURE GAMMA CART is placed in line with riser extension tool to facilitate installation of probe and cables.

5.1.5 CHECK route to riser for obstacles and clearances.

5.1.6 LEVEL cart using jacks.

5.1.7 CONNECT gamma cart power cables, as follows:

- One end to gamma cart power receptacle
- Other end to suitable power source Junction Box, JB-101-100, Power Receptacle, OR Junction Box, JB-101-101

5.1.8 CONNECT gamma cart communications cable, as follows:

- One end to gamma cart communications receptacle
- Other end to Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection Subsystem communications receptacle

5.1.9 PLACE Gamma Cart "RAISE OFF LOWER" switch in the LOWER position.

5.1.10 CHECK that detector probe cable is resting in the Gamma Cart boom cable reel.
5.1 SETUP (Cont).

CAUTION

If sufficient tension is NOT held on the detector probe cable as the cable is being let out, the cable could become entangled.

NOTE - Step 5.1.11 and 5.1.12 require two operators to perform continuous action until step 5.1.12 is complete.

☐ 5.1.11 HOLD tension on the detector probe cable until step 5.1.12 is completed.

☐ 5.1.12 PRESS AND HOLD "RESET" button until enough detector probe cable is let-out that will allow placement of the detector cable through riser extension collar AND into riser drywell, AND

RELEASE the "RESET" button.

☐ 5.1.13 INSTALL the proper detector probe on the detector probe cable.

☐ 5.1.14 ENSURE that the detector probe connections are correct and tight. AND

INSERT probe into riser extension tool.

☐ 5.1.15 ENSURE limit switch cable is connected from limit switch on riser extension tool, to the connection point on the front of the GAMMA CART.

☐ 5.1.16 ENSURE the "Raise - Off - Lower" selector switch is in the "OFF" position.

☐ 5.1.17 ENSURE the emergency stop button is pulled out.

☐ 5.1.18 POSITION the "SPEED" control potentiometer to MIN speed (fully counter-clockwise).
5.1 SETUP (Cont).

CAUTION

There is no limit switch to stop the motion when the cable is fully unwound. The cable will rewind backwards on the reel. Damage to the cable may result.

NOTE - When the cart is first powered up, or the emergency stop button has been pushed, or power has been restored after a power failure, the cable reel will not move up or down until "RESET" button is activated.

- The "Raise-Off-Lower" Switch is Manually controlled and is Operator Dependent.

☑ 5.1.19 ENSURE LOCAL/REMOTE switch is in the "LOCAL" position.
☑ 5.1.20 ENERGIZE the Cart.
☑ 5.1.21 SET the "SPEED" potentiometer to 2 on the GAMMA Cart.
☑ 5.1.22 SET the "RAISE-Off-LOWER" switch to the "LOWER" position.
☑ 5.1.23 PUSH "EMERGENCY STOP" button on GAMMA CART.
☑ 5.1.24 VERIFY the system has stopped.

Test Director Signature __________________________ Date ______________

Test Director Print Name __________________________

☑ ALREADY TESTED PER OTP-260-004 Rev. A-0
☑ SEE TEST LOG ENTR? 2-29-00 2030HRS

R. Lutineny
3-2-00
5.1 SETUP (Cont).

- **5.1.25** SET the "RAISE-OFF-LOWER" switch to the "RAISE" position.
- **5.1.26** PULL "EMERGENCY STOP" out on GAMMA CART.
- **5.1.27** PUSH the "RESET" button on GAMMA CART to resume.
- **5.1.28** ENSURE limit switch activates when probe returns to the zero position.
- **5.1.29** SET the "RAISE-OFF-LOWER" switch to the "OFF" position.
- **5.1.30** SET "SPEED" potentiometer to MIN.
- **5.1.31** POSITION The "LOCAL REMOTE" switch to "REMOTE".
- **5.1.32** VERIFY by signing below section 5.1 is complete.

**Test Director Signature**

**Date**

**Test Director Print Name**

**QC Signature**

**Date**

**QC Print Name**

**ALREADY TESTED PER OTP-260-004, REV A-0**

SEE TEST LOG ENTRY 2-29-00, 2030 HRS

**Signature**

3-2-00
5.2 TEST INCREMENTAL SAMPLE MODE

SETUP

NOTE - All steps in this section apply to either cart, except in those steps where the specific cart is indicated.

INSTRUMENT CHECK

5.2.1 IF the pushbutton for Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Central Processing Unit (CPU), AND/OR associated MONITOR, are NOT ON, PRESS the applicable ON pushbuttons.

5.2.2 ENSURE the following systems are ON AND ENSURE settings are correct for the following:

- ORTEC MINIBIN
- POWER SUPPLY

Detector Bias Power Supply (HVPS): ORTEC Mod. 478.

- kV: .5
- 0 to 1000V: (+60 volts)

Amplifier (AMP): ORTEC Mod. 673

- COARSE GAIN: 200
- FINE GAIN: 0.680
- SHAPING TIME: Both knobs set to 2 microseconds
- PZ Adjust: Do NOT change settings (in this procedure)
- BLR: Switch in AUTO (up) position
- INPUTS: Switch in POS (up) position BNC cable on terminal (from pre amplifier)
- OUTPUTS: cable on UNIPOLAR terminal (to single channel Analyzer)

5.2.3 WHEN WINDOWS login screen appears CLICK ON "CANCEL".
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

NOTE - After canceling windows login, GAMMA CART software should automatically load.

5.2.4 VERIFY "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen is displayed on Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Monitor.

Rich Gutierrez
Test Director Signature  3-2-00

Test Director Print Name

5.2.5 SELECT "Login" on the "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen.

NOTE - LOGIN passwords and information may be obtained from Test Director.

5.2.6 LOG-IN.

5.2.7 VERIFY LOCAL/REMOTE switch on display screen is in "REMOTE" position.

Rich Gutierrez
Test Director Signature  3-2-00

Test Director Print Name
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

TESTING

5.2.8 SELECT "config" on the "Gamma Cart Display" screen.

5.2.9 ENTER the following data for selected riser on the "Configuration Display" screen by pulling down applicable menu:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td></td>
<td>NOTE - Riser depth is automatically computed from software upon input of riser ID#.</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable (Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

5.2.10 ENSURE REAL/LIVE toggle button indicates "LIVE".

5.2.11 On the Data Collection Configuration window, SELECT the "Incremental" button.

INCREMENTAL PARAMETERS

5.2.12 INPUT the following Sample Collection Data:

<table>
<thead>
<tr>
<th>Sample Start Depth</th>
<th>55.0 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval Size:</td>
<td>10.0 ft</td>
</tr>
<tr>
<td>Sample End Depth:</td>
<td>5.0 ft</td>
</tr>
</tbody>
</table>


Page 19 of 31
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.13 CLICK ON "SAVE".

5.2.14 CLICK ON "EXIT".

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.

5.2.15 CLICK ON "Start" button.

5.2.16 CLICK ON "EMERGENCY STOP" button on computer screen.

5.2.17 VERIFY System stopped.

<blank>

Test Director Signature __________________________ Date ________

<blank>

Test Director Print Name __________________________

5.2.18 CLICK ON "EMERGENCY STOP" again to RESET the emergency stop button on computer screen.

5.2.19 CLICK ON "ZERO" on display screen.

5.2.20 ENSURE GAMMA PROBE begins to RAISE.

5.2.21 CLICK ON "STOP" button on display screen.

ALREADY TESTED REV OTP-260-004, REV A-0
SEE TEST LOG ENTRY 2-24-00, 2030 HRS

R. Hatley
3-2-00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.22 VERIFY System stopped.

Test Director Signature ______________________ Date

Test Director Print Name ______________________

5.2.23 CLICK ON "ZERO" again on display screen.

5.2.24 ENSURE GAMMA PROBE begins to RAISE.

5.2.25 When probe and system zeros, CLICK ON "START" on display screen.

5.2.26 VERIFY System resumed program.

Test Director Signature ______________________ Date

Test Director Print Name ______________________

5.2.27 CLICK ON "STOP" button on computer screen.

5.2.28 VERIFY System stopped.

Test Director Signature ______________________ Date

Test Director Print Name ______________________

5.2.29 CLICK ON "ZERO" on display screen.

5.2.30 When probe and system zeros, CLICK ON "START" on display screen.

5.2.31 VERIFY System resumed program.

Test Director Signature ______________________ Date

Test Director Print Name ______________________

ALREADY TESTED PER OTP-260-004, REV. A-0
SEE TEST NOG ENTRY 2-29-00, 2030 HRS

R. Hutting
3-2-00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

- **5.2.32** Test Engineer **ENSURE** data is received, AND both hard-copy and electronic files can be retrieved.

- **5.2.33** VERIFY system automatically ZEROs and data is collected at zero position.

<table>
<thead>
<tr>
<th>Test Director Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**NOTE** -

The steps in section 5.1, applicable to the Emergency stop, need not be repeated if completed for an individual GAMMA CART. The Emergency stop on BOTH GAMMA CART A and B, need to be tested only once.

**NOTE** -

It is **NOT** necessary to do ALL risers in one procedure. Test Director is responsible for ensuring ALL risers have been profiled by one AND/OR the other GAMMA CART(S).

- **5.2.34** REPEAT applicable SETUP Steps in section 5.1 AND Incremental testing steps 5.2.1 - 5.2.15 AND Steps 5.2.32 and 5.2.33 for each of the following risers and depths per Test Director's direction.

<table>
<thead>
<tr>
<th>TABLE I</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RISE</strong></td>
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<tr>
<td>----------</td>
</tr>
<tr>
<td>14A</td>
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<tr>
<td>14C</td>
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<td>14F</td>
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<tr>
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</tr>
</tbody>
</table>

**NOTE** -

The steps in section 5.1, applicable to the Emergency stop, need not be repeated if completed for an individual GAMMA CART. The Emergency stop on BOTH GAMMA CART A and B, need to be tested only once.

**NOTE** -

It is **NOT** necessary to do ALL risers in one procedure. Test Director is responsible for ensuring ALL risers have been profiled by one AND/OR the other GAMMA CART(S).

- **5.2.34** REPEAT applicable SETUP Steps in section 5.1 AND Incremental testing steps 5.2.1 - 5.2.15 AND Steps 5.2.32 and 5.2.33 for each of the following risers and depths per Test Director's direction.
5.2 INCREMENTAL SAMPLE MODE (Cont).

NOTE - In the following Table, Test Director N/A blocks that are tested with a different GAMMA CART.

5.2.35 VERIFY the applicable riser in step 5.2.34 has been tested.

<table>
<thead>
<tr>
<th>RISER</th>
<th>TEST DIRECTOR SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
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</tbody>
</table>

5.2.36 VERIFY by signing below section 5.2 is complete.

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Director Signature</td>
<td>Date</td>
</tr>
<tr>
<td>Test Director Print Name</td>
<td></td>
</tr>
<tr>
<td>QC Signature</td>
<td>Date</td>
</tr>
<tr>
<td>QC Print Name</td>
<td></td>
</tr>
</tbody>
</table>

ALREADY TESTED PFA OTP-260-004 Rev. A-0
5/29/98 TEST LOG 63794 2-29-00, 2030 HRS

R. Hertling
2-2-00
5.3 TEST USER DEFINED MODE

5.3.1 ENSURE applicable SETUP Steps in section 5.1 are completed.

CART CONTROL SCREEN

5.3.2 On the Gamma Cart Control, CLICK ON the "Config." button.

5.3.3 INPUT the following data:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td></td>
<td>NOTE - Riser depth is automatically computed from software upon input of riser ID#.</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable (Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec.(As determined by Test Director)</td>
</tr>
</tbody>
</table>

5.3.4 CLICK ON "USER DEFINED".

5.3.5 ENTER depths desired for testing per Test Engineer Direction.

5.3.6 CLICK ON "SAVE" on display screen.

5.3.7 CLICK ON "EXIT".
5.3 TEST USER Defined MODE (Cont).

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.

- The "EMERGENCY STOP" may be used to stop at any time during the next step if unit fails to stop at limit switch. The "RESET" button will need to be pushed to resume the program.

CLICK ON Start button.

Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

VERIFY system automatically ZEROs and data is collected at zero position.

Rich Gutierrez
Test Director Signature Date

Rich Gutierrez
Test Director Print Name
5.3 TEST USER DEFINED MODE (Cont).

5.3.11 CLICK ON "LOGOUT" on display screen.

5.3.12 REMOVE Probe, riser extension tool, and associated equipment AND
STORE per Test Director direction.

OR

CONTINUE in this procedure.

5.3.13 REPEAT the steps in this section (5.3) as directed for any risers as directed by Test Director.

5.3.14 VERIFY by signing below section 5.3 is complete.

Rich Mutting 3-2-00
Test Director Signature Date

Rich Gutierrez
Test Director Print Name

Todd Albert 3-2-00
QC Signature Date

Rebecca M. Hendel
QC Print Name
RISER 14F
GAMMA CART - B
241-AZ GAMMA CART OPERATIONAL TEST PROCEDURE

Last Full Revision: A-0
Release Date: 02-09-2000
USQ Screening Number: TF-00-0083 R.0
Approval Designator: Q

Current Modification: A-2
USQ Screening Number: TF-98-1201 R1
Approval Designator: NA
PCA Incorporated: ETF-2000-064

POSITION/ORG | DELEGATE | DATE
--- | --- | ---
NCO/RET OPS | S.R. Joseph | 02-16-2000
OE/Retrieval OPS | Rich Gutierrez | 02-16-2000
RAD. CON. | | |
ECO | | |
QA | | |
Cog. Engineer | Gary Tardiff | 02-22-2000
Acceptance Review | Len Ross | 02-23-2000
Approval Authority | Rich Gutierrez | 02-23-2000

Justification: Provide step clarity.

Summary of Changes:
   Added "suitable power source" to step 5.1.7.

Gammat Cart B
Riser 14F

R. Juttny 3/2/00
4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:

- Riser Swabbing equipment
- Riser extension tool

4.2 PERFORMANCE DOCUMENTS

The following procedures may be needed to perform this procedure:

- TO-040-333 LIQUID OBSERVATION WELL (LOW) SURVEILLANCE VAN STARTUP AND OPERATION PROCEDURE

4.3 CONDITIONS AND ACTIONS

NOTE - All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.3.1 All pre-testing and inspection of the system or portions of the system to be tested has been completed.

Test Engineer Signature Date

4.3.2 A pre-job briefing has been held, and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this ATP.

Test Director Signature Date

4.3.3 Test Director VERIFY section 4.3 has been COMPLETED.

Test Director Signature Date

1 ALREADY TESTED PER OTP-260-004, REV. A-0

R. Luyteng
3-2-00
5.0 PROCEDURE

5.1 SETUP

NOTE - This procedure may be repeated for either GAMMA CART A or GAMMA CART B as applicable. N/A may be entered in blocks or steps per Test Director as applicable.

5.1.1 RECORD GAMMA CART CPU number for the system being tested.

GAMMA CART IDENTIFIER # B CPU Number

5.1.2 PERFORM cleanliness check in applicable riser listed on TABLE II, per section 5.10 in procedure TO-040-333 latest rev, prior to mounting riser extension tool.

5.1.3 ENSURE GAMMA CART riser extension tool is mounted on the applicable riser.

5.1.4 ENSURE GAMMA CART is placed in line with riser extension tool to facilitate installation of probe and cables.

5.1.5 CHECK route to riser for obstacles and clearances.

5.1.6 LEVEL cart using jacks.

5.1.7 CONNECT gamma cart power cables, as follows:

- One end to gamma cart power receptacle
- Other end to suitable power source - Junction Box, JB-101-100, Power Receptacle, OR Junction Box, JB-101-101

5.1.8 CONNECT gamma cart communications cable, as follows:

- One end to gamma cart communications receptacle
- Other end to Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection Subsystem communications receptacle

5.1.9 PLACE Gamma Cart "RAISE OFF LOWER" switch in the LOWER position.

5.1.10 CHECK that detector probe cable is resting in the Gamma Cart boom cable reel.
5.1 SETUP (Cont).

**CAUTION**

If sufficient tension is NOT held on the detector probe cable as the cable is being let out, the cable could become entangled.

**NOTE** - Step 5.1.11 and 5.1.12 require two operators to perform continuous action until step 5.1.12 is complete.

- **5.1.11** HOLD tension on the detector probe cable until step 5.1.12 is completed.
- **5.1.12** PRESS AND HOLD "RESET" button until enough detector probe cable is let-out that will allow placement of the detector cable through riser extension collar AND into riser drywell, AND

RELEASE the "RESET" button.

- **5.1.13** INSTALL the proper detector probe on the detector probe cable.
- **5.1.14** ENSURE that the detector probe connections are correct and tight. AND

INSERT probe into riser extension tool.

- **5.1.15** ENSURE limit switch cable is connected from limit switch on riser extension tool, to the connection point on the front of the GAMMA CART.
- **5.1.16** ENSURE the "Raise - Off - Lower" selector switch is in the "OFF" position.
- **5.1.17** ENSURE the emergency stop button is pulled out.
- **5.1.18** POSITION the "SPEED" control potentiometer to MIN speed (fully counter-clockwise).
5.1 SETUP (Cont).

CAUTION

There is no limit switch to stop the motion when the cable is fully unwound. The cable will rewind backwards on the reel. Damage to the cable may result.

NOTE - When the cart is first powered up, or the emergency stop button has been pushed, or power has been restored after a power failure, the cable reel will not move up or down until "RESET" button is activated.

The "Raise-OFF-Lower" Switch is Manually controlled and is Operator Dependent.

5.1.19 ENSURE LOCAL/REMOTE switch is in the "LOCAL" position.
5.1.20 ENERGIZE the Cart.
5.1.21 SET the "SPEED" potentiometer to 2 on the GAMMA Cart.
5.1.22 SET the "RAISE -OFF- LOWER" switch to the "LOWER" position.
5.1.23 PUSH "EMERGENCY STOP" button on GAMMA CART.
5.1.24 VERIFY the system has stopped.

Rich Guthrie
Test Director Signature
3-2-00

Test Director Print Name

ALREADY TESTED PER OTP-260-004, REV. A-0
SEE TEST LOG ENTRY 2-29-00, 2030 HRS

R. Guthrie
3-2-00
5.1 SETUP (Cont).

5.1.25 SET the "RAISE-OFF-LOWER" switch to the "RAISE" position.

5.1.26 PULL "EMERGENCY STOP" out on GAMMA CART.

5.1.27 PUSH the "RESET" button on GAMMA CART to resume.

5.1.28 ENSURE limit switch activates when probe returns to the zero position.

5.1.29 SET the "RAISE-OFF-LOWER" switch to the "OFF" position.

5.1.30 SET "SPEED" potentiometer to MIN.

5.1.31 POSITION The "LOCAL REMOTE" switch to "REMOTE".

5.1.32 VERIFY by signing below section 5.1 is complete.

Test Director Signature Date

Test Director Print Name

QC Signature Date

QC Print Name

ALWAYS TEST الشخصية
REV. A-0
See TEST REQ ENTRY 2.29.00, 2003 HRS

Test Director Signature

Date

Test Director Print Name

QC Signature Date

QC Print Name

March 2, 2000
5.2 TEST INCREMENTAL SAMPLE MODE

SETUP

NOTE - All steps in this section apply to either cart, except in those steps where the specific cart is indicated.

INSTRUMENT CHECK

5.2.1 IF the pushbutton for Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Central Processing Unit (CPU), AND/OR associated MONITOR, are NOT ON, PRESS the applicable ON pushbuttons.

5.2.2 ENSURE the following systems are ON AND ENSURE settings are correct for the following:

- ORTEC MINIBIN
- POWER SUPPLY

Detector Bias Power Supply (HVPS): ORTEC Mod. 478.

- kV: .5
- 0 to 1000V: (+60 volts)

Amplifier (AMP): ORTEC Mod. 673

- COARSE GAIN: 200
- FINE GAIN: 0.680
- SHAPING TIME: Both knobs set to 2 microseconds
- PZ Adjust: Do NOT change settings (in this procedure)
- BLR: Switch in AUTO (up) position
- INPUTS: Switch in POS (up) position BNC cable on terminal (from pre amplifier)
- OUTPUTS: cable on UNIPOLAR terminal (to single channel Analyzer)

5.2.3 WHEN WINDOWS login screen appears CLICK ON "CANCEL".
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

NOTE - After canceling windows login, GAMMA CART software should automatically load.

5.2.4 VERIFY "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen is displayed on Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Monitor.

Test Director Signature Date

Test Director Print Name

5.2.5 SELECT "Login" on the "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen.

NOTE - LOGIN passwords and information may be obtained from Test Director.

5.2.6 LOG-IN.

5.2.7 VERIFY LOCAL/REMOTE switch on display screen is in "REMOTE" position.

Test Director Signature Date

Test Director Print Name
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

TESTING

5.2.8 SELECT "config" on the "Gamma Cart Display" screen.

5.2.9 ENTER the following data for selected riser on the "Configuration - Display" screen by pulling down applicable menu:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1-4 as applicable</td>
</tr>
<tr>
<td></td>
<td>(Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

5.2.10 ENSURE REAL/LIVE toggle button indicates "LIVE".

5.2.11 On the Data Collection Configuration window, SELECT the "Incremental" button.

INCREMENTAL PARAMETERS

5.2.12 INPUT the following Sample Collection Data:

| Sample Start Depth: | 55.0 ft |
| Sample End Depth:   | 5.0 ft  |
| Interval Size:      | 10.0 ft |

Already tested per OTP-260-004, Rev. A-0 Sec 2006 Entry 2-29-00 2030 HRS

R. Sturtevant
3-2-00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.13 CLICK ON "SAVE".

5.2.14 CLICK ON "EXIT".

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

After the following step, the program should automatically run.

5.2.15 CLICK ON "Start" button.

5.2.16 CLICK ON "EMERGENCY STOP" button on computer screen.

5.2.17 VERIFY System stopped.

5.2.18 CLICK ON "EMERGENCY STOP" again to RESET the emergency stop button on computer screen.

5.2.19 CLICK ON "ZERO" on display screen.

5.2.20 ENSURE GAMMA PROBE begins to RAISE.

5.2.21 CLICK ON "STOP" button on display screen.

Automatically Tested RPE OTP-260-004, Rev. A
Sec. Test Log Entry 2-29-00, 2030 HRS
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.22 VERIFY System stopped.

Test Director Signature Date

Test Director Print Name

5.2.23 CLICK ON "ZERO" again on display screen.

5.2.24 ENSURE GAMMA PROBE begins to RAISE.

5.2.25 When probe and system zeros, CLICK ON "START" on display screen.

5.2.26 VERIFY System resumed program.

Test Director Signature Date

Test Director Print Name

5.2.27 CLICK ON "STOP" button on computer screen.

5.2.28 VERIFY System stopped.

Test Director Signature Date

Test Director Print Name

5.2.29 CLICK ON "ZERO" on display screen.

5.2.30 When probe and system zeros, CLICK ON "START" on display screen.

5.2.31 VERIFY System resumed program.

Test Director Signature Date

Test Director Print Name

already tested on OTP-370-004 Rev A-D
29-12-00 12:30 hrs
R Shubing 3/1/00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.32 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.2.33 VERIFY system automatically ZEROs and data is collected at zero position.

Test Director Signature

Test Director Print Name

NOTE - The steps in section 5.1, applicable to the Emergency stop, need not be repeated if completed for an individual GAMMA CART. The Emergency stop on BOTH GAMMA CART A and B, need to be tested only once.

NOTE - It is NOT necessary to do ALL risers in one procedure. Test Director is responsible for ensuring ALL risers have been profiled by one AND/OR the other GAMMA CART(S).

5.2.34 REPEAT applicable SETUP Steps in section 5.1 AND Incremental testing steps 5.2.1 - 5.2.15 AND Steps 5.2.32 and 5.2.33 for each of the following risers and depths per Test Director's direction.

<table>
<thead>
<tr>
<th>RISER</th>
<th>Depth inches (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14C</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14D</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14F</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14G</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14B</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14E</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>15I</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15C</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15E</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15B</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15F</td>
<td>684 (57.0)</td>
</tr>
</tbody>
</table>
5.2 INCREMENTAL SAMPLE MODE (Cont).

NOTE - In the following Table, Test Director N/A blocks that are tested with a different GAMMA CART.

5.2.35 VERIFY the applicable riser in step 5.2.34 has been tested.

<table>
<thead>
<tr>
<th>RISER</th>
<th>TEST DIRECTOR SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td></td>
</tr>
<tr>
<td>14C</td>
<td></td>
</tr>
<tr>
<td>14D</td>
<td></td>
</tr>
<tr>
<td>14F</td>
<td></td>
</tr>
<tr>
<td>14G</td>
<td></td>
</tr>
<tr>
<td>14B</td>
<td></td>
</tr>
<tr>
<td>14E</td>
<td></td>
</tr>
<tr>
<td>15I</td>
<td></td>
</tr>
<tr>
<td>15C</td>
<td></td>
</tr>
<tr>
<td>15E</td>
<td></td>
</tr>
<tr>
<td>15B</td>
<td></td>
</tr>
<tr>
<td>15F</td>
<td></td>
</tr>
</tbody>
</table>

5.2.36 VERIFY by signing below section 5.2 is complete.

<table>
<thead>
<tr>
<th>Test Director Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Director Print Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QC Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QC Print Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

Already Tested on OTP-320-004 Rev A-0
562 Test 206 entries 2.29.00, 12:00 HRS

R. Hettzig 3/2/00

<table>
<thead>
<tr>
<th>Type</th>
<th>Document No.</th>
<th>Rev/Mod</th>
<th>Release Date</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTINUOUS</td>
<td>OTP-260-004</td>
<td>A-2</td>
<td>02/23/2000</td>
<td>23 of 31</td>
</tr>
</tbody>
</table>
5.3 TEST USER DEFINED MODE

5.3.1 ENSURE applicable SETUP Steps in section 5.1 are completed.

CART CONTROL SCREEN

5.3.2 On the Gamma Cart Control, CLICK ON the "Config." button.

5.3.3 INPUT the following data:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td></td>
<td>NOTE - Riser depth is automatically computed from software upon input of riser ID#</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable (Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

USER DEFINED PARAMETERS

5.3.4 CLICK ON "USER DEFINED".

5.3.5 ENTER depths desired for testing per Test Engineer Direction.

5.3.6 CLICK ON "SAVE" on display screen.

5.3.7 CLICK ON "EXIT".
5.3 TEST USER DEFINED MODE (Cont).

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.

- The "EMERGENCY STOP" may be used to stop at any time during the next step if unit fails to stop at limit switch. The "RESET" button will need to be pushed to resume the program.

5.3.8 CLICK ON Start button.

5.3.9 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.3.10 VERIFY system automatically ZEROs and data is collected at zero position.

Rich Gutiérrez
Test Director Signature

3/2/04
Date

Rich Gutiérrez
Test Director Print Name
5.3 TEST USER DEFINED MODE (Cont).

- 5.3.11 CLICK ON "LOGOUT" on display screen.
- 5.3.12 REMOVE Probe, riser extension tool, and associated equipment AND STORE per Test Director direction.

OR

CONTINUE in this procedure.

- 5.3.13 REPEAT the steps in this section (5.3) as directed for any risers as directed by Test Director.
- 5.3.14 VERIFY by signing below section 5.3 is complete.

[Signatures and dates]

Test Director Signature: Rich Gutierrez Date: 3-2-99
Test Director Print Name: [Signature]

QC Signature: [Signature] Date: 3-2-00
QC Print Name: [Signature]
RISER 151
GAMMA CART - B
241-AZ GAMMA CART OPERATIONAL TEST PROCEDURE

Last Full Revision: A-0
Release Date: 02-09-2000
USQ Screening Number: TF-00-0083 R.0
Approval Designator: Q

Current Modification: A-2
USQ Screening Number: TF-98-1201 R1
Approval Designator: NA
PCA Incorporated: ETF-2000-064

POSITION/ORG    DELEGATE               DATE            

NCO/RET OPS      S.R. Joseph            02-16-2000     
OE/Retrieval OPS Rich Gutierrez          02-16-2000     
RAD. CON.        ______________________   _______         
ECO              ______________________   _______         
QA               ______________________   _______         
Cog. Engineer    Gary Tardiff           02-22-2000     
Acceptance Review Len Ross               02-23-2000     
Approval Authority Rich Gutierrez        02-23-2000     

Justification: Provide step clarity.

Summary of Changes:
Added "suitable power source" to step 5.1.7.

Gamma Cart C
Riser 15 I
3/1/00 R. Gutierrez

Type       Document No.      Rev/Mod    Release Date    Page
CONTINUOUS OTP-260-004 A-2 02/23/2000 1 of 31
4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:

- Riser Swabbing equipment
- Riser extension tool

4.2 PERFORMANCE DOCUMENTS

The following procedures may be needed to perform this procedure:

- TO-040-333 LIQUID OBSERVATION WELL (LOW) SURVEILLANCE VAN STARTUP AND OPERATION PROCEDURE

4.3 CONDITIONS AND ACTIONS

NOTE - All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.3.1 All pre-testing and inspection of the system or portions of the system to be tested has been completed.

\[\text{Signature} \quad \text{Date}\]

4.3.2 A pre-job briefing has been held, and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this ATP.

\[\text{Signature} \quad \text{Date}\]

4.3.3 Test Director VERIFY section 4.3 has been COMPLETED.

\[\text{Signature} \quad \text{Date}\]

(Already tested per OTP-260-004, Rev. A-0)
5.0 PROCEDURE

5.1 SETUP

NOTE - This procedure may be repeated for either GAMMA CART A or GAMMA CART B as applicable. N/A may be entered in blocks or steps per Test Director as applicable.

✓ 5.1.1 RECORD GAMMA CART CPU number for the system being tested.

GAMMA CART IDENTIFIER # B CPU Number

✓ 5.1.2 PERFORM cleanliness check in applicable riser listed on TABLE 11, per section 5.10 in procedure TO-040-333 latest rev, prior to mounting riser extension tool.

✓ 5.1.3 ENSURE GAMMA CART riser extension tool is mounted on the applicable riser.

✓ 5.1.4 ENSURE GAMMA CART is placed in line with riser extension tool to facilitate installation of probe and cables.

✓ 5.1.5 CHECK route to riser for obstacles and clearances.

✓ 5.1.6 LEVEL cart using jacks.

✓ 5.1.7 CONNECT gamma cart power cables, as follows:

- One end to gamma cart power receptacle
- Other end to suitable power source - Junction Box, JB-101-100, Power Receptacle, OR Junction Box, JB-101-101

✓ 5.1.8 CONNECT gamma cart communications cable, as follows:

- One end to gamma cart communications receptacle
- Other end to Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection Subsystem communications receptacle

✓ 5.1.9 PLACE Gamma Cart "RAISE OFF LOWER" switch in the LOWER position.

✓ 5.1.10 CHECK that detector probe cable is resting in the Gamma Cart boom cable reel.
5.1 SETUP (Cont).

CAUTION

If sufficient tension is NOT held on the detector probe cable as the cable is being let out, the cable could become entangled.

NOTE - Step 5.1.11 and 5.1.12 require two operators to perform continuous action until step 5.1.12 is complete.

5.1.11 HOLD tension on the detector probe cable until step 5.1.12 is completed.

5.1.12 PRESS AND HOLD "RESET" button until enough detector probe cable is let-out that will allow placement of the detector cable through riser extension collar AND into riser drywell, AND

RELEASE the "RESET" button.

5.1.13 INSTALL the proper detector probe on the detector probe cable.

5.1.14 ENSURE that the detector probe connections are correct and tight. AND

INSERT probe into riser extension tool.

5.1.15 ENSURE limit switch cable is connected from limit switch on riser extension tool, to the connection point on the front of the GAMMA CART.

5.1.16 ENSURE the "Raise - Off - Lower" selector switch is in the "OFF" position.

5.1.17 ENSURE the emergency stop button is pulled out.

5.1.18 POSITION the "SPEED" control potentiometer to MIN speed (fully counter-clockwise).
5.1 SETUP (Cont).

CAUTION

There is no limit switch to stop the motion when the cable is fully unwound. The cable will rewind backwards on the reel. Damage to the cable may result.

NOTE - When the cart is first powered up, or the emergency stop button has been pushed, or power has been restored after a power failure, the cable reel will not move up or down until "RESET" button is activated.

- The "Raise-OFF-Lower" Switch is Manually controlled and is Operator Dependent.

☐ 5.1.19 ENSURE LOCAL/REMOTE switch is in the "LOCAL" position.
☐ 5.1.20 ENERGIZE the Cart.
☐ 5.1.21 SET the "SPEED" potentiometer to 2 on the GAMMA Cart.
☐ 5.1.22 SET the "RAISE -OFF- LOWER" switch to the "LOWER" position.
☒ 5.1.23 PUSH "EMERGENCY STOP" button on GAMMA CART.
☒ 5.1.24 VERIFY the system has stopped.

Test Director Signature ___________________________ Date ____________
Test Director Print Name ___________________________

☐ ALREADY TESTED PER OTP-260-004, REV A-0
SEE TEST LOG ENTRY 2-29-00, 2030 HRS

L. Butterly
7-2-00
5.1 SETUP (Cont).

5.1.25 SET the "RAISE-OFF-LOWER" switch to the "RAISE" position.

5.1.26 PULL "EMERGENCY STOP" out on GAMMA CART.

5.1.27 PUSH the "RESET" button on GAMMA CART to resume.

5.1.28 ENSURE limit switch activates when probe returns to the zero position.

5.1.29 SET the "RAISE-OFF-LOWER" switch to the "OFF" position.

5.1.30 SET "SPEED" potentiometer to MIN.

5.1.31 POSITION The "LOCAL REMOTE" switch to "REMOTE".

5.1.32 VERIFY by signing below section 5.1 is complete.

Test Director Signature ___________________________ Date ____________

Test Director Print Name ___________________________

QC Signature ___________________________ Date ____________

QC Print Name ___________________________

Already tested per OTP-260-004, REV. A-0
See TEST LOG ENTRY 2-29-00, 2030 hrs

R. Garrett
3-2-00
5.2 TEST INCREMENTAL SAMPLE MODE

SETUP

NOTE - All steps in this section apply to either cart, except in those steps where the specific cart is indicated.

INSTRUMENT CHECK

5.2.1 IF the pushbutton for Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Central Processing Unit (CPU), AND/OR associated MONITOR, are NOT ON, PRESS the applicable ON pushbuttons.

5.2.2 ENSURE the following systems are ON AND ENSURE settings are correct for the following:

- ORTEC MINIBIN
- POWER SUPPLY

Detector Bias Power Supply (HVPS): ORTEC Mod. 478.

- kV: .5
- 0 to 1000V: (+60 volts)

Amplifier (AMP): ORTEC Mod. 673

- COARSE GAIN: 200
- FINE GAIN: 0.680
- SHAPING TIME: Both knobs set to 2 microseconds
- PZ Adjust: Do NOT change settings (in this procedure)
- BLR: Switch in AUTO (up) position
- INPUTS: Switch in POS (up) position BNC cable on terminal (from pre amplifier)
- OUTPUTS: cable on UNIPOLAR terminal (to single channel Analyzer)

5.2.3 WHEN WINDOWS login screen appears CLICK ON "CANCEL".
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

NOTE - After canceling windows login, GAMMA CART software should automatically load.

✓ 5.2.4 VERIFY "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen is displayed on Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Monitor.

[Signature]
Test Director Signature 3-2-00

Test Director Print Name

✓ 5.2.5 SELECT "Login" on the "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen.

NOTE - LOGIN passwords and information may be obtained from Test Director.

✓ 5.2.6 LOG-IN.

✓ 5.2.7 VERIFY LOCAL/REMOTE switch on display screen is in "REMOTE" position.

[Signature]
Test Director Signature 3-2-00

Test Director Print Name
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

TESTING

1. 5.2.8 SELECT "config" on the "Gamma Cart Display" screen.

2. 5.2.9 ENTER the following data for selected riser on the "Configuration - Display" screen by pulling down applicable menu:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable</td>
</tr>
<tr>
<td></td>
<td>(Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

3. 5.2.10 ENSURE REAL/LIVE toggle button indicates "LIVE".

4. 5.2.11 On the Data Collection Configuration window, SELECT the "Incremental" button.

INCREMENTAL PARAMETERS

5. 5.2.12 INPUT the following Sample Collection Data:

<table>
<thead>
<tr>
<th>Sample Start Depth:</th>
<th>55.0 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval Size:</td>
<td>10.0 ft</td>
</tr>
<tr>
<td>Sample End Depth:</td>
<td>5.0 ft</td>
</tr>
</tbody>
</table>

© ALREADY TEST PER OTP-260-004, 1200.14-D  
SOC TEST LOG DUMPY 2-28-00, 12030 HRS
R. Hatunig

3-2-00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.13 CLICK ON "SAVE".
5.2.14 CLICK ON "EXIT".

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

After the following step, the program should automatically run.

5.2.15 CLICK ON "Start" button.
5.2.16 CLICK ON "EMERGENCY STOP" button on computer screen.
5.2.17 VERIFY System stopped.

CLICK ON "EMERGENCY STOP" again to RESET the emergency stop button on computer screen.
5.2.19 CLICK ON "ZERO" on display screen.
5.2.20 ENSURE GAMMA PROBE begins to RAISE.
5.2.21 CLICK ON "STOP" button on display screen.

ALREADY TESTED PER OTP-260-004, REV. A-0
SEE TEST LOG ENTRY 2-29-00, 2:030 HRS
R. Jatney
3-2-00

Test Director Signature
Test Director Print Name
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.22 VERIFY System stopped.

Test Director Signature  Date

Test Director Print Name

5.2.23 CLICK ON "ZERO" again on display screen.

5.2.24 ENSURE GAMMA PROBE begins to RAISE.

5.2.25 When probe and system zeros, CLICK ON "START" on display screen.

5.2.26 VERIFY System resumed program.

Test Director Signature  Date

Test Director Print Name

5.2.27 CLICK ON "STOP" button on computer screen.

5.2.28 VERIFY System stopped.

Test Director Signature  Date

Test Director Print Name

5.2.29 CLICK ON "ZERO" on display screen.

5.2.30 When probe and system zeros, CLICK ON "START" on display screen.

5.2.31 VERIFY System resumed program.

Test Director Signature  Date

Test Director Print Name

ALREADY TESTED PER OTP-260-004, REV. A-0.
SEE TEST LOG ENTRIES 2-23-00, 2030 ACS.

7-2-00 L. Stukenri

Type  Document No.  Rev/Mod  Release Date  Page
CONTINUOUS  OTP-260-004  A-2  02/23/2000  21 of 31
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.32 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.2.33 VERIFY system automatically ZEROS and data is collected at zero position.

Test Director Signature  \( \square \)  Date  \( \square \)

Test Director Print Name  \( \square \)

NOTE - The steps in section 5.1, applicable to the Emergency stop, need not be repeated if completed for an individual GAMMA CART. The Emergency stop on BOTH GAMMA CART A and B, need to be tested only once.

NOTE - It is NOT necessary to do ALL risers in one procedure. Test Director is responsible for ensuring ALL risers have been profiled by one AND/OR the other GAMMA CART(S).

5.2.34 REPEAT applicable SETUP Steps in section 5.1 AND Incremental testing steps 5.2.1 - 5.2.15 AND Steps 5.2.32 and 5.2.33 for each of the following risers and depths per Test Director's direction.

### TABLE I

<table>
<thead>
<tr>
<th>RISER</th>
<th>Depth (inches (ft))</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14C</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14D</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14F</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14G</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14B</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14E</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>15I</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15C</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15E</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15B</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15F</td>
<td>684 (57.0)</td>
</tr>
</tbody>
</table>

ALREADY TESTED footprint OTP-260-004 REV. A-0. SEE TEST LOG ENTRY 2-27-00 1:2070 hrs.

R. Gutierrez 2-2-00
5.2 INCREMENTAL SAMPLE MODE (Cont).

NOTE - In the following Table, Test Director N/A blocks that are tested with a different GAMMA CART.

5.2.35 VERIFY the applicable riser in step 5.2.34 has been tested.

<table>
<thead>
<tr>
<th>RISER</th>
<th>TEST DIRECTOR SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td></td>
</tr>
<tr>
<td>14C</td>
<td></td>
</tr>
<tr>
<td>14D</td>
<td></td>
</tr>
<tr>
<td>14F</td>
<td></td>
</tr>
<tr>
<td>14G</td>
<td></td>
</tr>
<tr>
<td>14H</td>
<td></td>
</tr>
<tr>
<td>15I</td>
<td></td>
</tr>
<tr>
<td>15C</td>
<td></td>
</tr>
<tr>
<td>15E</td>
<td></td>
</tr>
<tr>
<td>15F</td>
<td></td>
</tr>
</tbody>
</table>

5.2.36 VERIFY by signing below section 5.2 is complete.

Test Director Signature

Test Director Print Name

QC Signature

QC Print Name

ALREADY TESTED PER OTP-260-004 REV. A-0
SEE TEST LOG ENTRY 2-29-00, 2030 HRS

R. Blunting

3-2-00
5.3 TEST USER DEFINED MODE

5.3.1 ENSURE applicable SETUP Steps in section 5.1 are completed.

CART CONTROL SCREEN

5.3.2 On the Gamma Cart Control, CLICK ON the "Config." button.

5.3.3 INPUT the following data:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td>NOTE</td>
<td>Riser depth is automatically computed from software upon input of riser ID#.</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable</td>
</tr>
<tr>
<td></td>
<td>(Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

USER DEFINED PARAMETERS

5.3.4 CLICK ON "USER DEFINED".

5.3.5 ENTER depths desired for testing per Test Engineer Direction.

5.3.6 CLICK ON "SAVE" on display screen.

5.3.7 CLICK ON "EXIT".
5.3 TEST USER DEFINED MODE (Cont).

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.

- The "EMERGENCY STOP" may be used to stop at any time during the next step if unit fails to stop at limit switch. The "RESET" button will need to be pushed to resume the program.

CLICK ON Start button.

Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

VERIFY system automatically ZEROs and data is collected at zero position.

Test Director Signature: [Signature]

Date: 3-2000

Test Director Print Name: [Name]
5.3 TEST USER DEFINED MODE (Cont).

5.3.11 CLICK ON "LOGOUT" on display screen.

5.3.12 REMOVE Probe, riser extension tool, and associated equipment AND

STORE per Test Director direction.

OR

CONTINUE in this procedure.

5.3.13 REPEAT the steps in this section (5.3) as directed for any risers as directed by Test Director.

5.3.14 VERIFY by signing below section 5.3 is complete.

Rich Gutierrez
Test Director Signature

Rich Gutierrez
Test Director Print Name

3-2-00
Date

3-2-00
Date

Romero A. Romero
QC Signature

QC Print Name
RISER 14D
GAMMA CART - A
## 241-AZ GAMMA CART OPERATIONAL TEST PROCEDURE

<table>
<thead>
<tr>
<th>POSITION/ORG</th>
<th>DELEGATE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCO/RET OPS</td>
<td>S.R. Joseph</td>
<td>02-16-2000</td>
</tr>
<tr>
<td>OE/Retrieval OPS</td>
<td>Rich Gutierrez</td>
<td>02-16-2000</td>
</tr>
<tr>
<td>RAD. CON.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cog. Engineer</td>
<td>Gary Tardiff</td>
<td>02-22-2000</td>
</tr>
<tr>
<td>Acceptance Review</td>
<td>Len Ross</td>
<td>02-23-2000</td>
</tr>
<tr>
<td>Approval Authority</td>
<td>Rich Gutierrez</td>
<td>02-23-2000</td>
</tr>
</tbody>
</table>

### Justification:
Provide step clarity.

### Summary of Changes:
- Added "suitable power source" to step 5.1.7.
4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:

- Riser Swabbing equipment
- Riser extension tool

4.2 PERFORMANCE DOCUMENTS

The following procedures may be needed to perform this procedure:

- TO-040-333 LIQUID OBSERVATION WELL (LOW) SURVEILLANCE VAN STARTUP AND OPERATION PROCEDURE

4.3 CONDITIONS AND ACTIONS

NOTE - All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.3.1 All pre-testing and inspection of the system or portions of the system to be tested has been completed.

Bill Ybelnich 03/02/2000
Test Engineer Signature Date

4.3.2 A pre-job briefing has been held, and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this ATP.

Rich Actiery 3-2-00
Test Director Signature Date

4.3.3 Test Director VERIFY section 4.3 has been COMPLETED.

Rich Actiery 3-2-00
Test Director Signature Date
5.0 PROCEDURE

5.1 SETUP

NOTE - This procedure may be repeated for either GAMMA CART A or GAMMA CART B as applicable. N/A may be entered in blocks or steps per Test Director as applicable.

5.1.1 RECORD GAMMA CART CPU number for the system being tested.

GAMMA CART IDENTIFIER # A WL6X789 CPU Number

5.1.2 PERFORM cleanliness check in applicable riser listed on TABLE II, per section 5.10 in procedure TO-040-333 latest rev, prior to mounting riser extension tool.

5.1.3 ENSURE GAMMA CART riser extension tool is mounted on the applicable riser.

5.1.4 ENSURE GAMMA CART is placed in line with riser extension tool to facilitate installation of probe and cables.

5.1.5 CHECK route to riser for obstacles and clearances.

5.1.6 LEVEL cart using jacks.

5.1.7 CONNECT gamma cart power cables, as follows:
   - One end to gamma cart power receptacle
   - Other end to suitable power source Junction Box, JB 101-100, Power Receptacle, OR Junction Box, JB 101-101

5.1.8 CONNECT gamma cart communications cable, as follows:
   - One end to gamma cart communications receptacle
   - Other end to Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection Subsystem communications receptacle

5.1.9 PLACE Gamma Cart "RAISE OFF LOWER" switch in the LOWER position.

5.1.10 CHECK that detector probe cable is resting in the Gamma Cart boom cable reel.
5.1 SETUP (Cont).

CAUTION

If sufficient tension is NOT held on the detector probe cable as the cable is being let out, the cable could become entangled.

NOTE - Step 5.1.11 and 5.1.12 require two operators to perform continuous action until step 5.1.12 is complete.

5.1.11 HOLD tension on the detector probe cable until step 5.1.12 is completed.

5.1.12 PRESS AND HOLD "RESET" button until enough detector probe cable is let-out that will allow placement of the detector cable through riser extension collar AND into riser drywell, AND

RELEASE the "RESET" button.

5.1.13 INSTALL the proper detector probe on the detector probe cable.

5.1.14 ENSURE that the detector probe connections are correct and tight. AND

INSERT probe into riser extension tool.

5.1.15 ENSURE limit switch cable is connected from limit switch on riser extension tool, to the connection point on the front of the GAMMA CART.

5.1.16 ENSURE the "Raise - Off - Lower" selector switch is in the "OFF" position.

5.1.17 ENSURE the emergency stop button is pulled out.

5.1.18 POSITION the "SPEED" control potentiometer to MIN speed (fully counter-clockwise).
5.1 SETUP (Cont).

CAUTION

There is no limit switch to stop the motion when the cable is fully unwound. The cable will rewind backwards on the reel. Damage to the cable may result.

NOTE - When the cart is first powered up, or the emergency stop button has been pushed, or power has been restored after a power failure, the cable reel will not move up or down until "RESET" button is activated.

- The "Raise-Off-Lower" Switch is Manually controlled and is Operator Dependent.

☐ 5.1.19 ENSURE LOCAL/REMOTE switch is in the "LOCAL" position.
☐ 5.1.20 ENERGIZE the Cart.
☐ 5.1.21 SET the "SPEED" potentiometer to 2 on the GAMMA Cart.
☐ 5.1.22 SET the "RAISE -OFF- LOWER" switch to the "LOWER" position.
☐ 5.1.23 PUSH "EMERGENCY STOP" button on GAMMA CART.
☐ 5.1.24 VERIFY the system has stopped.

Rich Gutierrez
Test Director Signature
3-2-00
Date

Rich Gutierrez
Test Director Print Name
5.1 SETUP (Cont).

- 5.1.25 SET the "RAISE-OFF-LOWER" switch to the "RAISE" position.
- 5.1.26 PULL "EMERGENCY STOP" out on GAMMA CART.
- 5.1.27 PUSH the "RESET" button on GAMMA CART to resume.
- 5.1.28 ENSURE limit switch activates when probe returns to the zero position.
- 5.1.29 SET the "RAISE-OFF-LOWER" switch to the "OFF" position.
- 5.1.30 SET "SPEED" potentiometer to MIN.
- 5.1.31 POSITION The "LOCAL REMOTE" switch to "REMOTE".
- 5.1.32 VERIFY by signing below section 5.1 is complete.

Rich 
Test Director Signature 3/2/00 Date
Guthrie
Test Director Print Name

Raul 
QC Signature 3/2/00 Date
Alvista
QC Print Name
5.2 TEST INCREMENTAL SAMPLE MODE

SETUP

NOTE - All Steps in this section apply to either cart, except in those steps where the specific cart is indicated.

INSTRUMENT CHECK

5.2.1 IF the pushbutton for Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Central Processing Unit (CPU), AND/OR associated MONITOR, are NOT ON, PRESS the applicable ON pushbuttons.

5.2.2 ENSURE the following systems are ON AND

ENSURE settings are correct for the following:

- ORTEC MINIBIN
- POWER SUPPLY

Detector Bias Power Supply (HVPS): ORTEC Mod. 478.

- $kV$: $-5^\circ^\circ$
- 0 to 1000V: $\pm 600$ volts
- Power: ON

Amplifier (AMP): ORTEC Mod. 673

- COARSE GAIN: $200 - 500$
- FINE GAIN: $0 - 680$ 10.40
- SHAPING TIME: Both knobs set to 2 microseconds
- PZ Adjust: Do NOT change settings (in this procedure)
- BLR: Switch in AUTO (up) position
- INPUTS: Switch in POS (up) position BNC cable on terminal (from pre amplifier)
- OUTPUTS: cable on UNIPOLAR terminal (to single channel Analyzer) is on the back.

5.2.3 WHEN WINDOWS login screen appears CLICK ON "CANCEL".
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

NOTE - After canceling windows login, GAMMA CART software should automatically load.

5.2.4 VERIFY "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen is displayed on Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Monitor.

Test Director Signature: [Signature]
Date: 3-2-00
Test Director Print Name: [Name]

5.2.5 SELECT "Login" on the "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen.

NOTE - LOGIN passwords and information may be obtained from Test Director.

5.2.6 LOG-IN.

5.2.7 VERIFY LOCAL/REMOTE switch on display screen is in "REMOTE" position.

Test Director Signature: [Signature]
Date: 3-2-00
Test Director Print Name: [Name]
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

**TESTING**

- **5.2.8** SELECT "config" on the "Gamma Cart Display" screen.
- **5.2.9** ENTER the following data for selected riser on the "Configuration - Display" screen by pulling down applicable menu:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable</td>
</tr>
<tr>
<td>(Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
<td></td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

- **5.2.10** ENSURE REAL/LIVE toggle button indicates "LIVE".
- **5.2.11** On the Data Collection Configuration window, SELECT the "Incremental" button.

**INCREMENTAL PARAMETERS**

- **5.2.12** INPUT the following Sample Collection Data:

<table>
<thead>
<tr>
<th>Sample Start Depth:</th>
<th>55.0 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval Size:</td>
<td>10.0 ft</td>
</tr>
<tr>
<td>Sample End Depth:</td>
<td>5.0 ft</td>
</tr>
</tbody>
</table>
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.13 CLICK ON "SAVE".

5.2.14 CLICK ON "EXIT".

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

After the following step, the program should automatically run.

5.2.15 CLICK ON "Start" button.

5.2.16 CLICK ON "EMERGENCY STOP" button on computer screen.

5.2.17 VERIFY System stopped.

5.2.18 CLICK ON "EMERGENCY STOP" again to RESET the emergency stop button on computer screen.

5.2.19 CLICK ON "ZERO" on display screen.

5.2.20 ENSURE GAMMA PROBE begins to RAISE.

5.2.21 CLICK ON "STOP" button on display screen.

Rich Gutierrez

Test Director Signature

3-2-00

Date

Rich Gutierrez

Test Director Print Name
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

- 5.2.22 VERIFY System stopped.
  
- 5.2.23 CLICK ON "ZERO" again on display screen.
- 5.2.24 ENSURE GAMMA PROBE begins to RAISE.
- 5.2.25 When probe and system zeros, CLICK ON "START" on display screen.
- 5.2.26 VERIFY System resumed program.

- 5.2.27 CLICK ON "STOP" button on computer screen.
- 5.2.28 VERIFY System stopped.
- 5.2.29 CLICK ON "ZERO" on display screen.
- 5.2.30 When probe and system zeros, CLICK ON "START" on display screen.
- 5.2.31 VERIFY System resumed program.

- See Test Log Entry 3/2/00, 2015 entry.
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.32 [CHECKED] Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.2.33 [CHECKED] VERIFY system automatically ZEROs and data is collected at zero position.

Rich Gutierrez
Test Director Signature
3-2-xx

Rich Gutierrez
Test Director Print Name

NOTE - The steps in section 5.1, applicable to the Emergency stop, need not be repeated if completed for an individual GAMMA CART. The Emergency stop on BOTH GAMMA CART A and B, need to be tested only once.

NOTE - It is NOT necessary to do ALL risers in one procedure. Test Director is responsible for ensuring ALL risers have been profiled by one AND/OR the other GAMMA CART(S).

5.2.34 [CHECKED] REPEAT applicable SETUP Steps in section 5.1 AND Incremental testing steps 5.2.1 - 5.2.15 AND Steps 5.2.32 and 5.2.33 for each of the following risers and depths per Test Director's direction.

<table>
<thead>
<tr>
<th>RISER</th>
<th>Depth (inches/ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14C</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14D</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14F</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14G</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14B</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14E</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>15I</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15C</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15E</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15B</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15F</td>
<td>684 (57.0)</td>
</tr>
</tbody>
</table>

* 14D riser completed with this procedure.
5.2 INCREMENTAL SAMPLE MODE (Cont).

NOTE - In the following Table, Test Director N/A blocks that are tested with a different GAMMA CART.

5.2.35 VERIFY the applicable riser in step 5.2.34 has been tested.

<table>
<thead>
<tr>
<th>RISER</th>
<th>TEST DIRECTOR SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td>N/A</td>
</tr>
<tr>
<td>14C</td>
<td>R. Gutierrez 3/2/00</td>
</tr>
<tr>
<td>14D</td>
<td></td>
</tr>
<tr>
<td>14F</td>
<td></td>
</tr>
<tr>
<td>14G</td>
<td></td>
</tr>
<tr>
<td>14H</td>
<td></td>
</tr>
<tr>
<td>14I</td>
<td></td>
</tr>
<tr>
<td>15I</td>
<td></td>
</tr>
<tr>
<td>15C</td>
<td></td>
</tr>
<tr>
<td>15E</td>
<td></td>
</tr>
<tr>
<td>15B</td>
<td></td>
</tr>
<tr>
<td>15F</td>
<td></td>
</tr>
</tbody>
</table>

5.2.36 VERIFY by signing below section 5.2 is complete.

Test Director Signature: Rich Gutierrez
Date: 3/2/00
Test Director Print Name: Rich Gutierrez

QC Signature
Date

QC Print Name

UNRESOLVED TEST EXECUTIONS AT THIS TIME
5.3 TEST USER DEFINED MODE

5.3.1 ENSURE applicable SETUP Steps in section 5.1 are completed.

CART CONTROL SCREEN

5.3.2 On the Gamma Cart Control, CLICK ON the "Config." button.

5.3.3 INPUT the following data:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td></td>
<td>NOTE - Riser depth is automatically computed from software upon input of riser ID#.</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable (Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

USER DEFINED PARAMETERS

5.3.4 CLICK ON "USER DEFINED".

5.3.5 ENTER depths desired for testing per Test Engineer Direction.

5.3.6 CLICK ON "SAVE" on display screen.

5.3.7 CLICK ON "EXIT".
5.3 TEST USER DEFINED MODE (Cont).

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.

- The "EMERGENCY STOP" may be used to stop at any time during the next step if unit fails to stop at limit switch. The "RESET" button will need to be pushed to resume the program.

CLICK ON Start button.

5.3.8

5.3.9 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.3.10 VERIFY system automatically ZEROs and data is collected at zero position.

Test Director Signature

Test Director Print Name

Test Director Print Name

Test Director Print Name

Test Director Print Name

Test Director Print Name

Test Director Print Name
5.3 TEST USER DEFINED MODE (Cont).

5.3.11 CLICK ON "LOGOUT" on display screen.

5.3.12 REMOVE Probe, riser extension tool, and associated equipment AND

STORE per Test Director direction.

OR

CONTINUE in this procedure.

5.3.13 REPEAT the steps in this section (5.3) as directed for any risers as directed by Test Director.

5.3.14 VERIFY by signing below section 5.3 is complete.

Rich Gutierrez                      3/2/2000
Test Director Signature        Date

Rich Gutierrez                    3/2/2000
Test Director Print Name

Jared Albright                    3/2/2000
QC Signature                     Date

Ramiro M. Navot
QC Print Name
<table>
<thead>
<tr>
<th>Name (Print)</th>
<th>Employee #</th>
<th>Signature</th>
<th>Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steve Stamps</td>
<td>81911</td>
<td>Signature</td>
<td>RG</td>
</tr>
<tr>
<td>John H. Andrews</td>
<td>81910</td>
<td>Signature</td>
<td>DR</td>
</tr>
<tr>
<td>Joe E. Valdez</td>
<td>67192</td>
<td>Signature</td>
<td>D V</td>
</tr>
<tr>
<td>Twinkle</td>
<td>600615</td>
<td>Signature</td>
<td>MP</td>
</tr>
<tr>
<td>George Doss</td>
<td>84193</td>
<td>Signature</td>
<td>KD</td>
</tr>
<tr>
<td>Robert Taylor</td>
<td>83745</td>
<td>Signature</td>
<td>R T</td>
</tr>
<tr>
<td>Fernando A. Amaro</td>
<td>82926</td>
<td>Signature</td>
<td>RA</td>
</tr>
<tr>
<td>Rich Gutierrez</td>
<td>67765</td>
<td>Signature</td>
<td>RG</td>
</tr>
</tbody>
</table>
RISER 15B
GAMMA CART - A
241-AZ GAMMA CART OPERATIONAL TEST PROCEDURE

Last Full Revision: A-0
Release Date: 02-09-2000
USQ Screening Number: TF-00-0083 R.0
Approval Designator: Q

Current Modification: A-2
USQ Screening Number: TF-98-1201 R1
Approval Designator: NA
PCA Incorporated: ETF-2000-064

POSITION/ORG  DELEGATE  DATE
NCO/RET OPS  S.R. Joseph  02-16-2000
OE/Retrieval OPS  Rich Gutierrez  02-16-2000
RAD. CON.  
ECO  
QA  
Cog. Engineer  Gary Tardiff  02-22-2000
Acceptance Review  Len Ross  02-23-2000
Approval Authority  Rich Gutierrez  02-23-2000

Justification: Provide step clarity.

Summary of Changes:
Added "suitable power source" to step 5.1.7.

GAMMA CART A  (Probe 4)
Riser 15 B

[Signature]
3/11/00
4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:

- Riser Swabbing equipment
- Riser extension tool

4.2 PERFORMANCE DOCUMENTS

The following procedures may be needed to perform this procedure:

- TO-040-333 LIQUID OBSERVATION WELL (LOW) SURVEILLANCE VAN STARTUP AND OPERATION PROCEDURE

4.3 CONDITIONS AND ACTIONS

NOTE - All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.3.1 All pre-testing and inspection of the system or portions of the system to be tested has been completed.

☐ Test Engineer Signature Date

4.3.2 A pre-job briefing has been held and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this ATP.

☐ Test Director Signature Date

4.3.3 Test Director VERIFY section 4.3 has been COMPLETED.

☐ Test Director Signature Date

☐ already completed on OTP-260-004, Rev A-2, dated 3/2/00.

5.0 PROCEDURE

5.1 SETUP

NOTE - This procedure may be repeated for either GAMMA CART A or GAMMA CART B as applicable. N/A may be entered in blocks or steps per Test Director as applicable.

✓ 5.1.1 RECORD GAMMA CART CPU number for the system being tested.

GAMMA CART IDENTIFIER # A WCG8789

CPU Number

✓ 5.1.2 PERFORM cleanliness check in applicable riser listed on TABLE II, per section 5.10 in procedure TO-040-333 latest rev, prior to mounting riser extension tool.

✓ 5.1.3 ENSURE GAMMA CART riser extension tool is mounted on the applicable riser.

✓ 5.1.4 ENSURE GAMMA CART is placed in line with riser extension tool to facilitate installation of probe and cables.

✓ 5.1.5 CHECK route to riser for obstacles and clearances.

✓ 5.1.6 LEVEL cart using jacks.

✓ 5.1.7 CONNECT gamma cart power cables, as follows:
  - One end to gamma cart power receptacle
  - Other end to suitable power source - Junction Box, JB-101-100, Power Receptacle, OR Junction Box, JB-101-101

✓ 5.1.8 CONNECT gamma cart communications cable, as follows:
  - One end to gamma cart communications receptacle
  - Other end to Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection Subsystem communications receptacle

✓ 5.1.9 PLACE Gamma Cart "RAISE OFF LOWER" switch in the LOWER position.

✓ 5.1.10 CHECK that detector probe cable is resting in the Gamma Cart boom cable reel.
5.1 SETUP (Cont).

CAUTION

If sufficient tension is NOT held on the detector probe cable as the cable is being let out, the cable could become entangled.

NOTE - Step 5.1.11 and 5.1.12 require two operators to perform continuous action until step 5.1.12 is complete.

5.1.11 HOLD tension on the detector probe cable until step 5.1.12 is completed.

5.1.12 PRESS AND HOLD "RESET" button until enough detector probe cable is let-out that will allow placement of the detector cable through riser extension collar AND into riser drywell, AND

RELEASE the "RESET" button.

5.1.13 INSTALL the proper detector probe on the detector probe cable.

5.1.14 ENSURE that the detector probe connections are correct and tight. AND

INSERT probe into riser extension tool.

5.1.15 ENSURE limit switch cable is connected from limit switch on riser extension tool, to the connection point on the front of the GAMMA CART.

5.1.16 ENSURE the "Raise - Off - Lower" selector switch is in the "OFF" position.

5.1.17 ENSURE the emergency stop button is pulled out.

5.1.18 POSITION the "SPEED" control potentiometer to MIN speed (fully counter-clockwise).
5.1 SETUP (Cont).

CAUTION

There is no limit switch to stop the motion when the cable is fully unwound. The cable will rewind backwards on the reel. Damage to the cable may result.

NOTE - When the cart is first powered up, or the emergency stop button has been pushed, or power has been restored after a power failure, the cable reel will not move up or down until "RESET" button is activated.

- The "Raise-OFF-Lower" Switch is Manually controlled and is Operator Dependent.

☐ 5.1.19 ENSURE LOCAL/REMOTE switch is in the "LOCAL" position.
☐ 5.1.20 ENERGIZE the Cart.
☐ 5.1.21 SET the "SPEED" potentiometer to 2 on the GAMMA Cart.
☐ 5.1.22 SET the "RAISE -OFF- LOWER" switch to the "LOWER" position.
☐ 5.1.23 PUSH "EMERGENCY STOP" button on GAMMA CART.
☐ 5.1.24 VERIFY the system has stopped.

Test Director Signature Date

Test Director Print Name

☐ already tested per OTP-260-004, Rev A2, dated 3/2/00.

R. Hatting 3/6/2000
5.1 SETUP (Cont).

5.1.25 SET the "RAISE-OFF-LOWER" switch to the "RAISE" position.
5.1.26 PULL "EMERGENCY STOP" out on GAMMA CART.
5.1.27 PUSH the "RESET" button on GAMMA CART to resume.
5.1.28 ENSURE limit switch activates when probe returns to the zero position.
5.1.29 SET the "RAISE-OFF-LOWER" switch to the "OFF" position.
5.1.30 SET "SPEED" potentiometer to MIN.
5.1.31 POSITION The "LOCAL REMOTE" switch to "REMOTE".
5.1.32 VERIFY by signing below section 5.1 is complete.

Test Director Signature _____________________________ Date ______________

Test Director Print Name ___________________________ Date ______________

QC Signature ___________________________ Date ______________

QC Print Name ____________________________

☑️ already tested per OTP-260-004, Rev A-2, dated 3/4/00

5.2 TEST INCREMENTAL SAMPLE MODE

SETUP

NOTE - All steps in this section apply to either cart, except in those steps where the specific cart is indicated.

INSTRUMENT CHECK

5.2.1 IF the pushbutton for Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Central Processing Unit (CPU), AND/OR associated MONITOR, are NOT ON, PRESS the applicable ON pushbuttons.

5.2.2 ENSURE the following systems are ON AND ENSURE settings are correct for the following:

- ORTEC MINIBIN
- POWER SUPPLY

DéteCtor Bias Power Supply (HVPS): ORTEC Mod. 478.

- KV: .5
- 0 to 1000V: (+60 volts)

Amplifier (AMP): ORTEC Mod. 673

- COARSE GAIN: 200
- FINE GAIN: 0.680
- SHAPING TIME: Both knobs set to 2 microseconds
- PZ Adjust: Do NOT change settings (in this procedure)
- BLR: Switch in AUTO (up) position
- INPUTS: Switch in POS (up) position BNC cable on terminal (from pre amplifier)
- OUTPUTS: cable on UNIPOLAR terminal (to single channel Analyzer)

5.2.3 WHEN WINDOWS login screen appears CLICK ON "CANCEL".

Reperformed 3-10-00
R. D'Arcy 3-10-00

R. D'Arcy 3-6-2000
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

NOTE - After canceling windows login, GAMMA CART software should automatically load.

5.2.4 VERIFY "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen is displayed on Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Monitor.

Rich Gutierrez  3-6-2000
Test Director Signature  Date

Test Director Print Name

5.2.5 SELECT "Login" on the "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen.

NOTE - LOGIN passwords and information may be obtained from Test Director.

5.2.6 LOG-IN.

5.2.7 VERIFY LOCAL/REMOTE switch on display screen is in "REMOTE" position.

Rich Gutierrez  3-6-2000
Test Director Signature  Date

Test Director Print Name

Re-performed 3-10-00
Paul A. Werner  3-10-00

Rich Gutierrez  3-6-2000
Paul A. Werner  3-6-00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

**TESTING**

5.2.8 SELECT "config" on the "Gamma Cart Display" screen.

5.2.9 ENTER the following data for selected riser on the "Configuration - Display" screen by pulling down applicable menu:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
</tbody>
</table>
|                       | NOTE - Riser depth is automatically computed from software upon input of riser ID#.
| Probe Type:           | 1 - 4 as applicable (Normal is 1 or 2 for Cart A and 3 or 4 for Cart B) |
| Survey Time:          | Sec. (As determined by Test Director)     |

5.2.10 ENSURE REAL/LIVE toggle button indicates "LIVE".

5.2.11 On the Data Collection Configuration window, SELECT the "Incremental" button.

**INCREMENTAL PARAMETERS**

5.2.12 INPUT the following Sample Collection Data:

<table>
<thead>
<tr>
<th>Sample Start Depth:</th>
<th>55.0 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval Size:</td>
<td>10.0 ft</td>
</tr>
<tr>
<td>Sample End Depth:</td>
<td>5.0 ft</td>
</tr>
</tbody>
</table>

(Steps not needed, previously tested on OTP-260-004 Rev A2 3/2/2000)

R. Britting 3/2/00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.13 CLICK ON "SAVE".

5.2.14 CLICK ON "EXIT".

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

After the following step, the program should automatically run.

5.2.15 CLICK ON "Start" button.

5.2.16 CLICK ON "EMERGENCY STOP" button on computer screen.

5.2.17 VERIFY System stopped.

Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

5.2.18 CLICK ON "EMERGENCY STOP" again to RESET the emergency stop button on computer screen.

5.2.19 CLICK ON "ZERO" on display screen.

5.2.20 ENSURE GAMMA PROBE begins to RAISE.

5.2.21 CLICK ON "STOP" button on display screen.

\( \text{\textcopyright } \text{see note on page 19.} \)

\( R. \text{Stutey} \)
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.22 VERIFY System stopped.

Test Director Signature  Date

Test Director Print Name

5.2.23 CLICK ON "ZERO" again on display screen.

5.2.24 ENSURE GAMMA PROBE begins to RAISE.

5.2.25 When probe and system zeros, CLICK ON "START" on display screen.

5.2.26 VERIFY System resumed program.

Test Director Signature  Date

Test Director Print Name

5.2.27 CLICK ON "STOP" button on computer screen.

5.2.28 VERIFY System stopped.

Test Director Signature  Date

Test Director Print Name

5.2.29 CLICK ON "ZERO" on display screen.

5.2.30 When probe and system zeros, CLICK ON "START" on display screen.

5.2.31 VERIFY System resumed program.

Test Director Signature  Date

Test Director Print Name

0 see note on Page 19
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.32 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.2.33 VERIFY system automatically ZEROs and data is collected at zero position.

Test Director Signature ___________ Date ___________

Test Director Print Name ___________

NOTE - The steps in section 5.1, applicable to the Emergency stop, need not be repeated if completed for an individual GAMMA CART. The Emergency stop on BOTH GAMMA CART A and B, need to be tested only once.

NOTE - It is NOT necessary to do ALL risers in one procedure. Test Director is responsible for ensuring ALL risers have been profiled by one AND/OR the other GAMMA CART(S).

5.2.34 REPEAT applicable SETUP Steps in section 5.1 AND Incremental testing steps 5.2.1 - 5.2.15 AND Steps 5.2.32 and 5.2.33 for each of the following risers and depths per Test Director's direction.

<table>
<thead>
<tr>
<th>RISER</th>
<th>Depth (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14C</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14D</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14F</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14G</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14B</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14E</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>15I</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15C</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15E</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15B</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15F</td>
<td>684 (57.0)</td>
</tr>
</tbody>
</table>
5.2 INCREMENTAL SAMPLE MODE (Cont).

**NOTE** - In the following Table, Test Director N/A blocks that are tested with a different GAMMA CART.

5.2.35 VERIFY the applicable riser in step 5.2.34 has been tested.

<table>
<thead>
<tr>
<th>RISER</th>
<th>TEST DIRECTOR SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td></td>
</tr>
<tr>
<td>14C</td>
<td></td>
</tr>
<tr>
<td>14D</td>
<td></td>
</tr>
<tr>
<td>14F</td>
<td></td>
</tr>
<tr>
<td>14G</td>
<td></td>
</tr>
<tr>
<td>14B</td>
<td></td>
</tr>
<tr>
<td>14E</td>
<td></td>
</tr>
<tr>
<td>15I</td>
<td></td>
</tr>
<tr>
<td>15C</td>
<td></td>
</tr>
<tr>
<td>15E</td>
<td></td>
</tr>
<tr>
<td>15B</td>
<td></td>
</tr>
<tr>
<td>15F</td>
<td></td>
</tr>
</tbody>
</table>

5.2.36 VERIFY by signing below section 5.2 is complete.

Test Director Signature __________ Date __________

Test Director Print Name __________

QC Signature __________ Date __________

QC Print Name __________

5.3 TEST USER DEFINED MODE

5.3.1 ENSURE applicable SETUP Steps in section 5.1 are completed.

CART CONTROL SCREEN

5.3.2 On the Gamma Cart Control, CLICK ON the "Config." button.

5.3.3 INPUT the following data:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
</tbody>
</table>
| NOTE -        | Riser depth is automatically computed from software upon input of riser ID#.
| Probe Type:   | 1 - 4 as applicable (Normal is 1 or 2 for Cart A and 3 or 4 for Cart B) |
| Survey Time:  | Sec. (As determined by Test Director)      |

USER DEFINED PARAMETERS

5.3.4 CLICK ON "USER DEFINED".

5.3.5 ENTER depths desired for testing per Test Engineer Direction.

5.3.6 CLICK ON "SAVE" on display screen.

5.3.7 CLICK ON "EXIT".

NOTE - Riser depth is automatically computed from software upon input of riser ID#.
5.3 TEST USER DEFINED MODE (Cont).

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.

- The "EMERGENCY STOP" may be used to stop at any time during the next step if unit fails to stop at limit switch. The "RESET" button will need to be pushed to resume the program.

CLICK ON Start button.

5.3.8

5.3.9

Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.3.10

VERIFY system automatically ZEROS and data is collected at zero position.

Rich Gutierrez
Test Director Signature

3-10-00
Date

Rich Gutierrez
Test Director Print Name
5.3 TEST USER DEFINED MODE (Cont).

✓ 5.3.11 CLICK ON "LOGOUT" on display screen.

✓ 5.3.12 REMOVE Probe, riser extension tool, and associated equipment AND

STORE per Test Director direction.

OR

CONTINUE in this procedure.

✓ 5.3.13 REPEAT the steps in this section (5.3) as directed for any risers as directed by Test Director.

✓ 5.3.14 VERIFY by signing below section 5.3 is complete.

Rich Mattingly
Test Director Signature 3-10-00 Date

Rich Gutierrez
Test Director Print Name

Paul A. Werner
QC Signature 2-10-00 Date

Paul A. Werner
QC Print Name

Riser 15B
PAW
3-10-00
RISER 15C
GAMMA CART - A
## 241-AZ GAMMA CART OPERATIONAL TEST PROCEDURE

**Position/Org** | **Delegate** | **Date**  
--- | --- | ---  
NCO/RET OPS | S.R. Joseph | 02-16-2000  
OE/Retrieval OPS | Rich Gutierrez | 02-16-2000  
RAD. CON. | |  
ECO | |  
QA | |  
Cog. Engineer | Gary Tardiff | 02-22-2000  
Acceptance Review | Len Ross | 02-23-2000  
Approval Authority | Rich Gutierrez | 02-23-2000  

### Justification: Provide step clarity.

Summary of Changes:


Added "suitable power source" to step 5.1.7.
4.0 PREREQUISITES

4.1 SPECIAL TOOLS, EQUIPMENT, AND SUPPLIES

The following supplies may be needed to perform this procedure:

- Riser Swabbing equipment
- Riser extension tool

4.2 PERFORMANCE DOCUMENTS

The following procedures may be needed to perform this procedure:

- TO-040-333 LIQUID OBSERVATION WELL (LOW) SURVEILLANCE VAN STARTUP AND OPERATION PROCEDURE

4.3 CONDITIONS AND ACTIONS

NOTE - All signators on this procedure shall document their signature on Procedure Signature Sheet.

4.3.1 All pre-testing and inspection of the system or portions of the system to be tested has been completed.

[Signature]
Test Engineer Signature

Date

4.3.2 A pre-job briefing has been held, and all participants have been thoroughly briefed on job safety, hazards, and their responsibilities before performing this ATP.

[Signature]
Test Director Signature

Date

4.3.3 Test Director VERIFY section 4.3 has been COMPLETED.

[Signature]
Test Director Signature

Date

☐ previously tested on OTP-260-004
Rev A-0

R. Antiey 3/10/00
5.0 PROCEDURE

5.1 SETUP

NOTE - This procedure may be repeated for either GAMMA CART A or GAMMA CART B as applicable. N/A may be entered in blocks or steps per Test Director as applicable.

☐ 5.1.1 RECORD GAMMA CART CPU number for the system being tested.

GAMMA CART IDENTIFIER # A WC68789

CPU Number

☐ 5.1.2 PERFORM cleanliness check in applicable riser listed on TABLE II, per section 5.10 in procedure TO-040-333 latest rev, prior to mounting riser extension tool.

☐ 5.1.3 ENSURE GAMMA CART riser extension tool is mounted on the applicable riser.

☐ 5.1.4 ENSURE GAMMA CART is placed in line with riser extension tool to facilitate installation of probe and cables.

☐ 5.1.5 CHECK route to riser for obstacles and clearances.

☐ 5.1.6 LEVEL cart using jacks.

☐ 5.1.7 CONNECT gamma cart power cables, as follows:

• One end to gamma cart power receptacle

• Other end to suitable power source: Junction Box, JB-101-100, Power Receptacle, OR Junction Box, JB-101-101

☐ 5.1.8 CONNECT gamma cart communications cable, as follows:

• One end to gamma cart communications receptacle

• Other end to Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection Subsystem communications receptacle

☐ 5.1.9 PLACE Gamma Cart "RAISE OFF LOWER" switch in the LOWER position.

☐ 5.1.10 CHECK that detector probe cable is resting in the Gamma Cart boom cable reel.
5.1 SETUP (Cont).

CAUTION

If sufficient tension is NOT held on the detector probe cable as the cable is being let out, the cable could become entangled.

NOTE - Step 5.1.11 and 5.1.12 require two operators to perform continuous action until step 5.1.12 is complete.

☐ 5.1.11 HOLD tension on the detector probe cable until step 5.1.12 is completed.

☐ 5.1.12 PRESS AND HOLD "RESET" button until enough detector probe cable is let-out that will allow placement of the detector cable through riser extension collar AND into riser drywell, AND

RELEASE the "RESET" button.

☐ 5.1.13 INSTALL the proper detector probe on the detector probe cable.

☐ 5.1.14 ENSURE that the detector probe connections are correct and tight. AND

INSERT probe into riser extension tool.

☐ 5.1.15 ENSURE limit switch cable is connected from limit switch on riser extension tool, to the connection point on the front of the GAMMA CART.

☐ 5.1.16 ENSURE the "Raise - Off - Lower" selector switch is in the "OFF" position.

☐ 5.1.17 ENSURE the emergency stop button is pulled out.

☐ 5.1.18 POSITION the "SPEED" control potentiometer to MIN speed (fully counter-clockwise).
5.1 SETUP (Cont).

CAUTION

There is no limit switch to stop the motion when the cable is fully unwound. The cable will rewind backwards on the reel. Damage to the cable may result.

NOTE - When the cart is first powered up, or the emergency stop button has been pushed, or power has been restored after a power failure, the cable reel will not move up or down until "RESET" button is activated.

The "Raise-OFF-Lower" Switch is Manually controlled and is Operator Dependent.

5.1.19 ENSURE LOCAL/REMOTE switch is in the "LOCAL" position.

5.1.20 ENERGIZE the Cart.

5.1.21 SET the "SPEED" potentiometer to 2 on the GAMMA Cart.

5.1.22 SET the "RAISE-OFF-LOWER" switch to the "LOWER" position.

5.1.23 PUSH "EMERGENCY STOP" button on GAMMA CART.

5.1.24 VERIFY the system has stopped.

Test Director Signature

Date

Test Director Print Name

already tested per OTP-260-004 Rev A-0

R. B. Bailey 3/10/00
5.1 SETUP (Cont).

5.1.25 SET the "RAISE-OFF-LOWER" switch to the "RAISE" position.

5.1.26 PULL "EMERGENCY STOP" out on GAMMA CART.

5.1.27 PUSH the "RESET" button on GAMMA CART to resume.

5.1.28 ENSURE limit switch activates when probe returns to the zero position.

5.1.29 SET the "RAISE-OFF-LOWER" switch to the "OFF" position.

5.1.30 SET "SPEED" potentiometer to MIN.

5.1.31 POSITION The "LOCAL REMOTE" switch to "REMOTE".

5.1.32 VERIFY by signing below section 5.1 is complete.

Test Director Signature ___________________________ Date ____________

Test Director Print Name __________________________

QC Signature __________________________ Date ____________

QC Print Name __________________________

☑ previously tested on OTP-260-004 A-0

L. Satin 3/10/00
5.2 TEST INCREMENTAL SAMPLE MODE

SETUP

NOTE - All Steps in this section apply to either cart, except in those steps where the specific cart is indicated.

INSTRUMENT CHECK

5.2.1 IF the pushbutton for Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Central Processing Unit (CPU), AND/OR associated MONITOR, are NOT ON, PRESS the applicable ON pushbuttons.

5.2.2 ENSURE the following systems are ON AND ENSURE settings are correct for the following:

- ORTEC MINIBIN
- POWER SUPPLY

Detector Bias Power Supply (HVPS): ORTEC Mod. 478.

- kV: .5
- 0 to 1000V: (+60 volts)

Amplifier (AMP): ORTEC Mod. 673

- COARSE GAIN: 200
- FINE GAIN: 0.680
- SHAPING TIME: Both knobs set to 2 microseconds
- PZ Adjust: Do NOT change settings (in this procedure)
- BLR: Switch in AUTO (up) position
- INPUTS: Switch in POS (up) position BNC cable on terminal (from pre amplifier)
- OUTPUTS: cable on UNIPOLAR terminal(to single channel Analyzer)

5.2.3 WHEN WINDOWS login screen appears CLICK ON "CANCEL".
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

NOTE — After canceling windows login, GAMMA CART software should automatically load.

5.2.4 VERIFY "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen is displayed on Tank 241-AZ-101 Gamma Cart A AND/OR B Data Collection System Monitor.

Rich Gutierrez  
Test Director Signature  
Date 3-10-00

Rich Gutierrez  
Test Director Print Name

5.2.5 SELECT "Login" on the "GAMMA CART SPECTRUM ANALYZER AND CONTROL SYSTEM" screen.

NOTE — LOGIN passwords and information may be obtained from Test Director.

5.2.6 LOG-IN.

5.2.7 VERIFY LOCAL/REMOTE switch on display screen is in "REMOTE" position.

Rich Gutierrez  
Test Director Signature  
Date 3-10-00

Rich Gutierrez  
Test Director Print Name

Paul M. Wens  
3-10-00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

TESTING

5.2.8 SELECT "config" on the "Gamma Cart Display" screen.

5.2.9 ENTER the following data for selected riser on the "Configuration - Display" screen by pulling down applicable menu:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td>NOTE -</td>
<td>Riser depth is automatically computed from software upon input of riser ID#.</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable (Normal is 1 or 2 for Cart A and 3 or 4 for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

5.2.10 ENSURE REAL/LIVE toggle button indicates "LIVE".

5.2.11 On the Data Collection Configuration window, SELECT the "Incremental" button.

INCREMENTAL PARAMETERS

5.2.12 INPUT the following Sample Collection Data:

<table>
<thead>
<tr>
<th>Sample Start Depth:</th>
<th>55.0 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval Size:</td>
<td>10.0 ft</td>
</tr>
<tr>
<td>Sample End Depth:</td>
<td>5.0 ft</td>
</tr>
</tbody>
</table>

1 previously tested on OTP-260-004 A-0

/Signature 3/6/00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.13 CLICK ON "SAVE".
5.2.14 CLICK ON "EXIT".

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

After the following step, the program should automatically run.

5.2.15 CLICK ON "Start" button.
5.2.16 CLICK ON "EMERGENCY STOP" button on computer screen.
5.2.17 VERIFY System stopped.

Test Director Signature

Test Director Name

5.2.18 CLICK ON "EMERGENCY STOP" again to RESET the emergency stop button on computer screen.
5.2.19 CLICK ON "ZERO" on display screen.
5.2.20 ENSURE GAMMA PROBE begins to RAISE.
5.2.21 CLICK ON "STOP" button on display screen.

0 Previously tested on OTP-320-004 Rev 1.0

R. Steining 3/10/00
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.22 VERIFY System stopped.

Test Director Signature Date

Test Director Print Name

5.2.23 CLICK ON "ZERO" again on display screen.

5.2.24 ENSURE GAMMA PROBE begins to RAISE.

5.2.25 When probe and system zeros, CLICK ON "START" on display screen.

5.2.26 VERIFY System resumed program.

Test Director Signature Date

Test Director Print Name

5.2.27 CLICK ON "STOP" button on computer screen.

5.2.28 VERIFY System stopped.

Test Director Signature Date

Test Director Print Name

5.2.29 CLICK ON "ZERO" on display screen.

5.2.30 When probe and system zeros, CLICK ON "START" on display screen.

5.2.31 VERIFY System resumed program.

Test Director Signature Date

Test Director Print Name

1 Previously tested on OTP-260-084 Rev A-0

R. Helms 3/11/01
5.2 TEST INCREMENTAL SAMPLE MODE (Cont).

5.2.32 Test Engineer **ENSURE** data is received, **AND** both hard-copy and electronic files can be retrieved.

5.2.33 **VERIFY** system automatically **ZEROs** and data is collected at zero position.

---

**TABLE I**

<table>
<thead>
<tr>
<th>RISER</th>
<th>Depth inches (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14C</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14D</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14F</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14G</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14B</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>14E</td>
<td>660 (55.0)</td>
</tr>
<tr>
<td>15I</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15C</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15E</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15B</td>
<td>684 (57.0)</td>
</tr>
<tr>
<td>15F</td>
<td>684 (57.0)</td>
</tr>
</tbody>
</table>

---

**NOTE** - The steps in section 5.1, applicable to the Emergency stop, need not be repeated if completed for an individual GAMMA CART. The Emergency stop on BOTH GAMMA CART A and B need to be tested only once.

**NOTE** - It is NOT necessary to do ALL risers in one procedure. Test Director is responsible for ensuring ALL risers have been profiled by one AND/OR the other GAMMA CART(S).

5.2.34 **REPEAT** applicable SETUP Steps in section 5.1 **AND** Incremental testing steps 5.2.1 - 5.2.15 **AND** Steps 5.2.32 and 5.2.33 for each of the following risers and depths per Test Director's direction.
5.2 INCREMENTAL SAMPLE MODE (Cont).

NOTE - In the following Table, Test Director N/A blocks that are tested with a different GAMMA CART.

5.2.35 VERIFY the applicable riser in step 5.2.34 has been tested.

<table>
<thead>
<tr>
<th>RISER</th>
<th>TEST DIRECTOR SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>14A</td>
<td></td>
</tr>
<tr>
<td>14C</td>
<td></td>
</tr>
<tr>
<td>14D</td>
<td></td>
</tr>
<tr>
<td>14E</td>
<td></td>
</tr>
<tr>
<td>14F</td>
<td></td>
</tr>
<tr>
<td>14G</td>
<td></td>
</tr>
<tr>
<td>14B</td>
<td></td>
</tr>
<tr>
<td>15I</td>
<td></td>
</tr>
<tr>
<td>15C</td>
<td></td>
</tr>
<tr>
<td>15E</td>
<td></td>
</tr>
<tr>
<td>15F</td>
<td></td>
</tr>
</tbody>
</table>

5.2.36 VERIFY by signing below section 5.2 is complete.

Test Director Signature   Date
Test Director Print Name
QC Signature   Date
QC Print Name

(1) Previously tested on OTP-320-004 Rev A-0

R. Shierff 3/10/00
5.3 TEST USER DEFINED MODE

5.3.1 ENSURE applicable SETUP Steps in section 5.1 are completed.

CART CONTROL SCREEN

5.3.2 On the Gamma Cart Control, CLICK ON the "Config." button.

5.3.3 INPUT the following data:

<table>
<thead>
<tr>
<th>POSITION</th>
<th>DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Number:</td>
<td>AZ-101</td>
</tr>
<tr>
<td>Cart:</td>
<td>A OR B</td>
</tr>
<tr>
<td>Riser ID: ft.</td>
<td>Selected riser number</td>
</tr>
<tr>
<td></td>
<td>NOTE - Riser depth is automatically</td>
</tr>
<tr>
<td></td>
<td>computed from software upon input of</td>
</tr>
<tr>
<td></td>
<td>riser ID#</td>
</tr>
<tr>
<td>Probe Type:</td>
<td>1 - 4 as applicable</td>
</tr>
<tr>
<td></td>
<td>(Normal is 1 or 2 for Cart A and 3 or 4</td>
</tr>
<tr>
<td></td>
<td>for Cart B)</td>
</tr>
<tr>
<td>Survey Time:</td>
<td>Sec. (As determined by Test Director)</td>
</tr>
</tbody>
</table>

USER DEFINED PARAMETERS

5.3.4 CLICK ON "USER DEFINED".

5.3.5 ENTER depths desired for testing per Test Engineer Direction.

5.3.6 CLICK ON "SAVE" on display screen.

5.3.7 CLICK ON "EXIT".
5.3 TEST USER DEFINED MODE (Cont).

NOTE - Test Engineer may manipulate parameters at any time during the following steps as necessary to ensure data retrieval and system configuration, with concurrence of Test Director.

- After the following step, the program should automatically run.

- The "EMERGENCY STOP" may be used to stop at any time during the next step if unit fails to stop at limit switch. The "RESET" button will need to be pushed to resume the program.

5.3.8 CLICK ON Start button.

5.3.9 Test Engineer ENSURE data is received, AND both hard-copy and electronic files can be retrieved.

5.3.10 VERIFY system automatically ZEROs and data is collected at zero position.

Test Director Signature: 3/10/00

Test Director Signature: 3/10/00

Test Director Print Name: Gutierrez

Date: 3/10/00
5.3 TEST USER DEFINED MODE (Cont).

5.3.11 CLICK ON "LOGOUT" on display screen.

5.3.12 REMOVE Probe, riser extension tool, and associated equipment AND
STORE per Test Director direction.

OR

CONTINUE in this procedure.

5.3.13 REPEAT the steps in this section (5.3) as directed for any risers as directed by Test Director.

5.3.14 VERIFY by signing below section 5.3 is complete.

Test Director Signature: [Signature]
Date: 3/10/00

Test Director Print Name: [Name]

QC Signature: [Signature]
Date: 3/10/00

QC Print Name: [Name]

Riser 15 C