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TEST REPORT

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RENDERED TO

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AREVA	AREVA NP Inc.
	58-9224232-000

PRODUCTS EVALUATED: PCI-Promatec SF-150NH High Density Silicone Elastomer

EVALUATION PROPERTY: Seismic Pressure Resistance (Seismic Pressure Test 7)

Report of Testing pressure resistance capabilities for compliance with the applicable requirements of AREVA NP Inc. Test Plan, Document No. 51-9209334-000

1 Table of Contents

2 Introduction

Intertek Testing Services NA (Intertek) has conducted testing for AREVA NP Inc., on the pressure resistance capabilities of PCI-Promatec SF-150NH High Density Silicone Elastomer (SF-150NH) through a 12" thick concrete deck for compliance with the applicable requirements of and in accordance with AREVA NP Inc. Document No. 51-9209334-000, *Detailed Test Plan for Conducting MOX Seismic Pressure Test 7.* This evaluation took place on January 28, 2014.

This project was undertaken to evaluate the seismic pressure resistance capabilities of the test assemblies using alternating pressures at the air pressure increments above atmospheric pressure.

3 Test Samples

3.1. SAMPLE SELECTION

The sealant materials were not independently selected for testing; they were supplied by AREVA NP Inc., and were received on January 9, 2014. The samples were received with Certificates of Conformance and are considered traceable. Basic information on sealant material(s) is presented in the table below.

Sealant Material	Lot /Batch#	Expiration Date
SF-150NH	NH014B01	7/31/2014

Information regarding receiving dates and origin can be found in Appendix F: Quality Documents. All samples were received in good condition at the Evaluation Center.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

The test deck was constructed of a 12" thick normal weight reinforced concrete slab measuring approximately 96" x 96" (8' x 8'). The test deck was used to simulate a boundary in which the penetration seal assemblies may be installed. The test deck was not considered an integral part of the penetration seal assembly being tested and therefore was not intended to replicate MOX-specific plant conditions and not considered integral in bounding the performance of the penetration seal assemblies (e.g., concrete blend, compressive strength, rebar size and spacing).

Seismic Pressure Test 7 consisted of a pair of 12" x 18" openings, one without penetrants, and the other penetrated by two (2) conduits and two (2) pipes. All sides of the openings were unlined, bare concrete (i.e., no liners, coatings or sleeve materials). The installation and documentation of penetration seal assemblies contained within the test slab was performed by AREVA under AREVA's Quality Assurance Program (Reference 12.4 in the Test Plan found in Appendix D). Using alternating pressure, this test evaluated seismic pressure resistance capabilities of the following configurations:

Penetration P1 - Test Penetration P1 was a 12” x 18” opening penetrated by two (2) conduits and two (2) pipes, sealed with an 8” depth of Promatec SF-150NH High-Density Silicone Elastomer (SF-150NH) with no permanent damming, installed as described in AREVA NP Inc. Document 01-9198306 (latest revision), *Installation Instruction Manual for MOX Penetration Seal Test Program* [Test Plan Reference 12.5]. The tested conduits included one (1) 2” diameter Rigid Galvanized Steel (RGS) and one (1) 2” diameter Stainless Steel (SS) conduit. The tested pipes included one (1) 2” diameter Schedule 40 Carbon Steel (CS) and one Schedule 10 Stainless Steel (SS) pipe. The conduits and pipes were capped on at least one side (Note: caps and/or cover plates are construction aids only and are not being qualified by this seismic pressure test). The cap/welded cover plate was made air tight, so that any leakage during the test must pass though the seal assembly and not internal to the pipe.

Penetration P2 - Test Penetration P2 was a 12” x 18” opening free of penetrating items, sealed with an 8” depth of Promatec SF-150NH High-Density Silicone Elastomer (SF-150NH) with no permanent damming.

4 Testing and Evaluation Methods

The Test Plan in Appendix D defines the test methods, acceptance criteria and test report documentation requirements for penetration seal Seismic Pressure Test 7. Additionally, this detailed test plan defines the roles and responsibilities of MOX Services, AREVA, the selected testing laboratory, and any other subcontracted entity engaged in support of seismic pressure testing efforts.

The detailed test plan also describes the procurement plan for materials associated with penetration seal Seismic Pressure Test 7 and identifies the entities responsible for procuring the various components of the test assembly based on the quality level assigned to each component. The Test Plan also establishes minimum quality requirements for the penetration seal materials used in the test assembly and links quality requirements in the AREVA QA program to customer/project quality requirements.

The configuration being tested by Seismic Pressure Test 7 was a pair of rectangular openings (one without penetrants, the other penetrated by pipes and conduits) sealed with Promatec SF-150NH High-Density Silicone Elastomer (SF-150NH) as described in Section 2.2.

4.1. TEST APPARATUS

In the absence of any consensus codes or standards related to the pressure testing of penetration seal assemblies for seismic qualification purposes, the MOX Penetration Seal Program has developed a standardized method for conducting seismic pressure testing of MOX penetration seal designs. Specifically, seismic pressure testing will be used to evaluate the seismic inertia of the self-weight of the seal assembly by applying an equivalent pressure to alternating sides of a penetration seal assembly. In support of this effort, Intertek assisted in the design and construction of a pressure test apparatus to be use in the conduct of MOX penetration seal pressure tests.

The pressure chamber apparatus consists of two hemispherical 72" diameter steel pressure vessels, calibrated equipment and a data acquisition system. The apparatus accurately maintains the desired air pressure, using one of two sensitive, manually adjustable pressure regulators; a high (0-15 psi) and a low (0-2 psi) range. The sealed collection chamber feeds any leakage air back to the test device, where it is channeled through one of two calibrated flow meters, once again, a high (0-200 L/min) and a low (0-20 L/min) range. A calibrated electronic pressure transducer (0-5 psi) measures the differential pressure between the two chambers and the data acquisition software determines the net pressure drop across the test seal and the leakage through the seal. The chambers are interchangeable and the direction can be reversed very quickly so both can serve as the pressure or the collection chamber.

The primary components described above include the devices described on the following pages:

Pressure Chamber	2-piece hemispherical 72” diameter steel vessel 3 connection ports per piece 16 flange attachment points per piece Flange attachment via 3/8” diameter holes @ 22-1/2° spacing

Pressure Cart	Stainless steel rolling cart with control equipment and associated Data Acquisition System

Regulator (low) Control Air, Inc., Amherst, NH
Type 700
0-2 psi

Regulator (high) Control Air, Inc., Amherst, NH
Type 700
0-15 psi

Mass Flow Meter Omega Engineering, Inc., Stamford, CT
Model No. FMA-872A-V-NIST
Serial No. 4270050001001
0-20 lpm

Mass Flow Meter Omega Engineering, Inc., Stamford, CT
Model No. FMA-875A-V-NIST
Serial No. 4270050003001
0-200 lpm

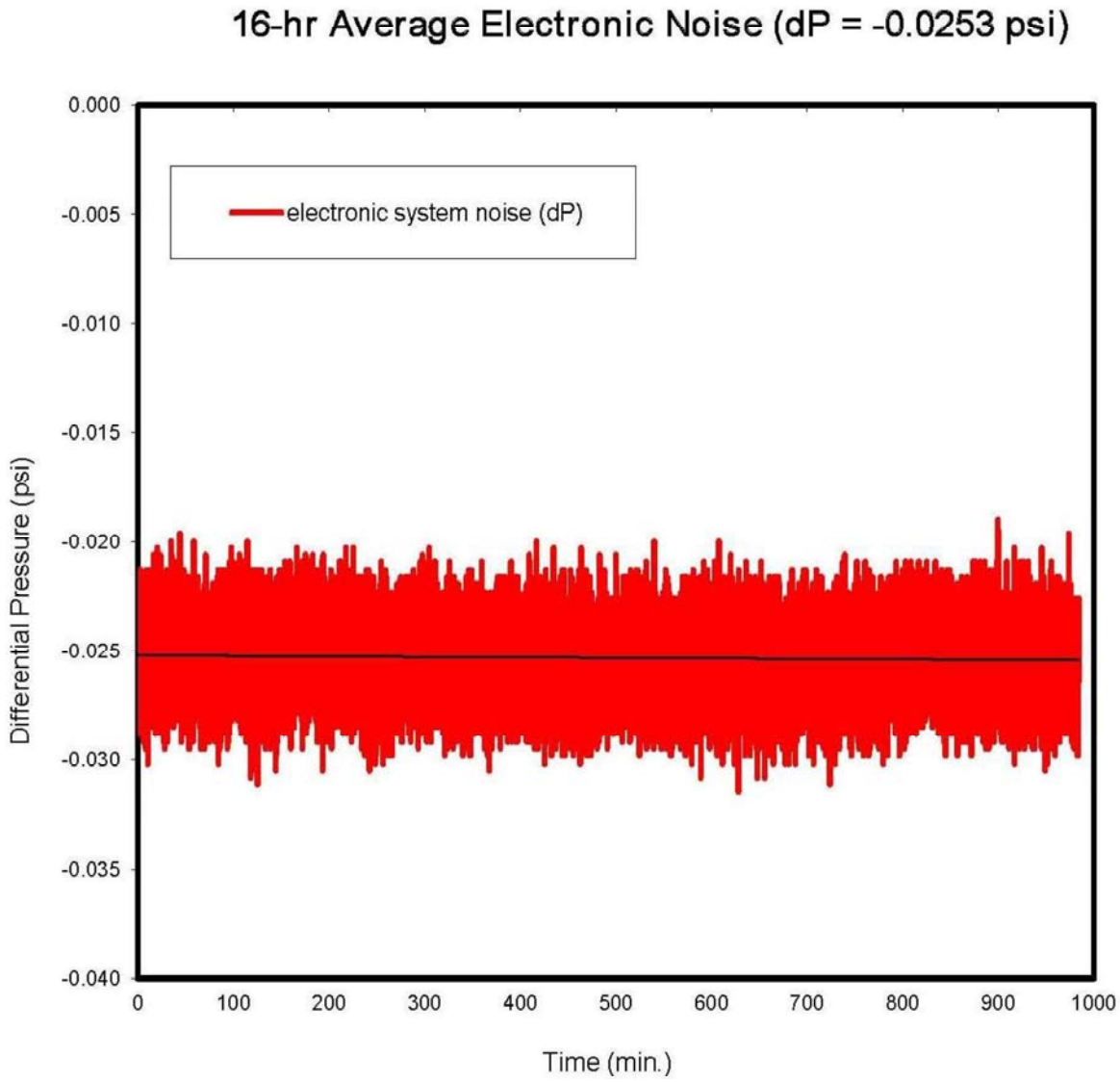
Pressure Transducer Omegadyne Inc., Sunbury, OH
Model No. PX409-005 DWUV
Serial No. 406707
Pressure Range: 0-5 psi
Input 0-100mVdc

Power Supply	Omega Engineering, Inc., Stamford, CT Model No. PSS-10 +10V @ 400 mA Input 115 VAC 50/60 Hz
Multifunction DAQ	National Instruments, Model No. NI USB-6210 16 Input, 16-bit, 250 kS/s, Multifunction I/O

Dedicated CPU

HP Compaq Pro-6300 Microtower
Serial No. MXL3090LN6
OS Windows 7 Pro

Additionally, during initial system start-up testing and verification, it was discovered that the data acquisition system (DAQ) was so sensitive that "signal noise" resulted in data fluctuations for reported differential pressure even when the system was at equilibrium (i.e., both high side and low side pressure chambers were at atmospheric conditions). After collecting data for 16 hours overnight, the average fluctuation was -0.025 psi.



As seen above, the average data fluctuation due to "signal noise" was -0.025 psi. For this test, the Test Plan required pressure was applied and maintained using the DAQ reported differential pressure without consideration for any "signal noise". Since the "signal noise" always reported some level of negative pressure at the beginning of the test, this method assured that the tests were conducted with additional margin, as the actual differential pressure that the test specimen was subjected to was equal to the DAQ reported differential pressure plus the additional pressure needed to overcome the negative "signal noise" reported at the beginning of the test when both pressure chambers were at atmospheric conditions.

4.2. TEST STANDARD

AREVA NP Inc. Document No. 51-9209334-000

Seismically qualified penetration seals at the MOX facility are required to remain in the opening (penetration) during and after a Design Earthquake seismic event. In order demonstrate that a penetration seal would remain in place, the seal has to be evaluated for two conditions: 1) The seismic inertia of the self-weight of the seal has to be evaluated; and 2) The seismic deflection of the commodities penetrating the seal has to be considered.

Seismic pressure testing was used to evaluate the seismic inertia of the self-weight of the seal assembly. This was accomplished by applying a pressure to alternating sides of the penetration seal to demonstrate that the seal would not become dislodged from the opening due to the seismic inertia of the self-weight of the seal. The seismic deflection of commodities that penetrate the seal will be addressed by a separate analysis.

Ultimately, the overall seismic qualification of MOX penetration seal assemblies will be captured in a penetration seal seismic qualification report that will tie together the results of seismic pressure testing with other analyses performed to address seismic deflection of commodities that penetrate the seal.

The acceptance criterion for evaluating the seismic inertia of the seal self-weight is calculated in MOX Services Calculation "Penetration Seal Seismic Requirements" [Test Plan Reference 12.1] and expressed as an equivalent pressure. Testing at this equivalent pressure qualified that a penetration seal assembly would remain in place (i.e., the penetration seal would not become dislodged from the opening or otherwise catastrophically fail such that a substantial leakage path was created) during the design earthquake seismic event.

The relative movement of the items penetrating a seal and the movement of the wall / seal during a seismic event were not considered as a part of this test. A separate engineering evaluation is required to evaluate the effect of movement on a seal with penetrating items during a seismic event.

No pressure inducing events were required to be considered concurrently with a seismic event.

The table below identifies the differential pressure levels (stages) for conducting this seismic pressure test, as well as, the acceptance criteria in order to be considered.

Differential Seismic Pressure Test Levels

Test Stage	Differential Pressure (inch w.g.)	Required Hold Time (minutes)	Acceptance Criteria	Basis for the Selected Differential Pressure
1-4	82 (Note 1)	5	Penetration Seal Remains in Opening (Does not become dislodged)	Testing at this differential pressure meets the seismic demand expressed as a pressure [Test Plan Reference 12.1]

Note 1: For Seismic Pressure Test 7, a nominal density of 155 pcf was used for Promatec SF-150NH High-Density Silicone Elastomer seal material installed for the purposes of determining the test penetration seal's weight per square foot. 155 pcf bounds the installed seal material density, with margin. 155 pcf times a seal depth of 8", yields a seal weight of approximately 103.3 psf. Based on Figure B-3.1 of Test Plan Reference 12.1, the corresponding seismic pressure for a seal weight of 103.3 psf is approximately 81.5 inches w.g. Therefore, for Seismic Pressure Test 7 an equivalent seismic pressure of 82 inches w.g. was used.

The test assembly was be attached to the seismic pressure test apparatus and subjected to the pressures identified in the table above as described below.

For Stage 1, the test assembly was attached to the pressure test apparatus and subjected to air pressure at the select pressure level identified in the table. Once this pressure had been obtained, the pressure was maintained for the hold time specified. If the penetration seal catastrophically failed during this time, the time of failure was to be noted and the test stopped.

Once the designated hold time for Stage 1 had been achieved, the pressure was vented from the test chamber. Next, the pressure identified for Stage 2 was applied to the opposite side of the penetration seal and held for the designated hold time. If the penetration seal catastrophically failed during this time, the time of failure was to be noted and the test stopped.

Once the designated hold time for Stage 2 had been achieved, the pressure was vented from the test chamber. Next, the pressure identified in the table for Stage 3 was applied to the original side of the penetration seal and held for the designated hold time. If the penetration seal catastrophically failed during this time, the time of failure was to be noted and the test stopped.

Once the designated hold time for Stage 3 had been achieved, the pressure was vented from the test chamber. Finally, the pressure identified in the table for Stage 4 was applied to the opposite side of the penetration seal and held for the designated hold time. If the penetration seal catastrophically fails during this time, the time of failure was to be noted and the test shall stopped.

Following completion of Stage 4 pressure testing, the pressure was vented from the test chamber. At this point, the test was continued at the discretion of the AREVA test engineer and the testing laboratory manager in charge. Subsequent pressures, and hold times were recorded as directed by the AREVA test engineer.

NOTE: The pressure used for the testing performed above is based on a seal material depth of 8" inch. Since the test was successful, a recommended subsequent testing pressure of 102 inches w.g. was attempted. Success at the 102 inch w.g. pressure seismically qualifies 1.25 times the installed seal depths (i.e., up to a 10" thick seal). Since the 102 inch w.g. was successful, a recommended subsequent testing pressure of 123 inches w.g. was attempted. Success at the 123 inch w.g. pressure seismically qualifies 1.5 times the installed seal depths (i.e., up to a 12" thick seal). These tests were designated Stages 1a-4a and 1b-4b, respectively.

If at any pressure level (or test stage) the penetration seal became dislodged from the opening or otherwise catastrophically fails, the seismic pressure test was to be terminated and the time to failure and pressure at which the failure occurred recorded.

5 Testing and Evaluation Results

5.1. RESULTS AND OBSERVATIONS

The test was initiated at 1:35 p.m. on January 28, 2014. Scott Groesbeck, representing AREVA NP Inc., was present to witness the test. The ambient temperature at the start of the test was 45°F, with a relative humidity of 32%.

The test procedure followed that presented in Section 9.0 of the Test Plan, except that at the completion of Stage 4 the pressure was not vented from the bottom chamber. In lieu of this, the bottom chamber pressure was increased to the Stage 1a level of 102" w.g. and the test continued. This resulted in Stage 4a concluding with the pressure being applied to the top side of the test assembly. A similar process was followed, the top side pressure of 123 w.g. applied, and the test continued for Stages 1b-4b. This minor deviation from the prescribed test method was conducted with the verbal approval of the AREVA Test Engineer and is deemed to have had no adverse impact on the outcome of the test results.

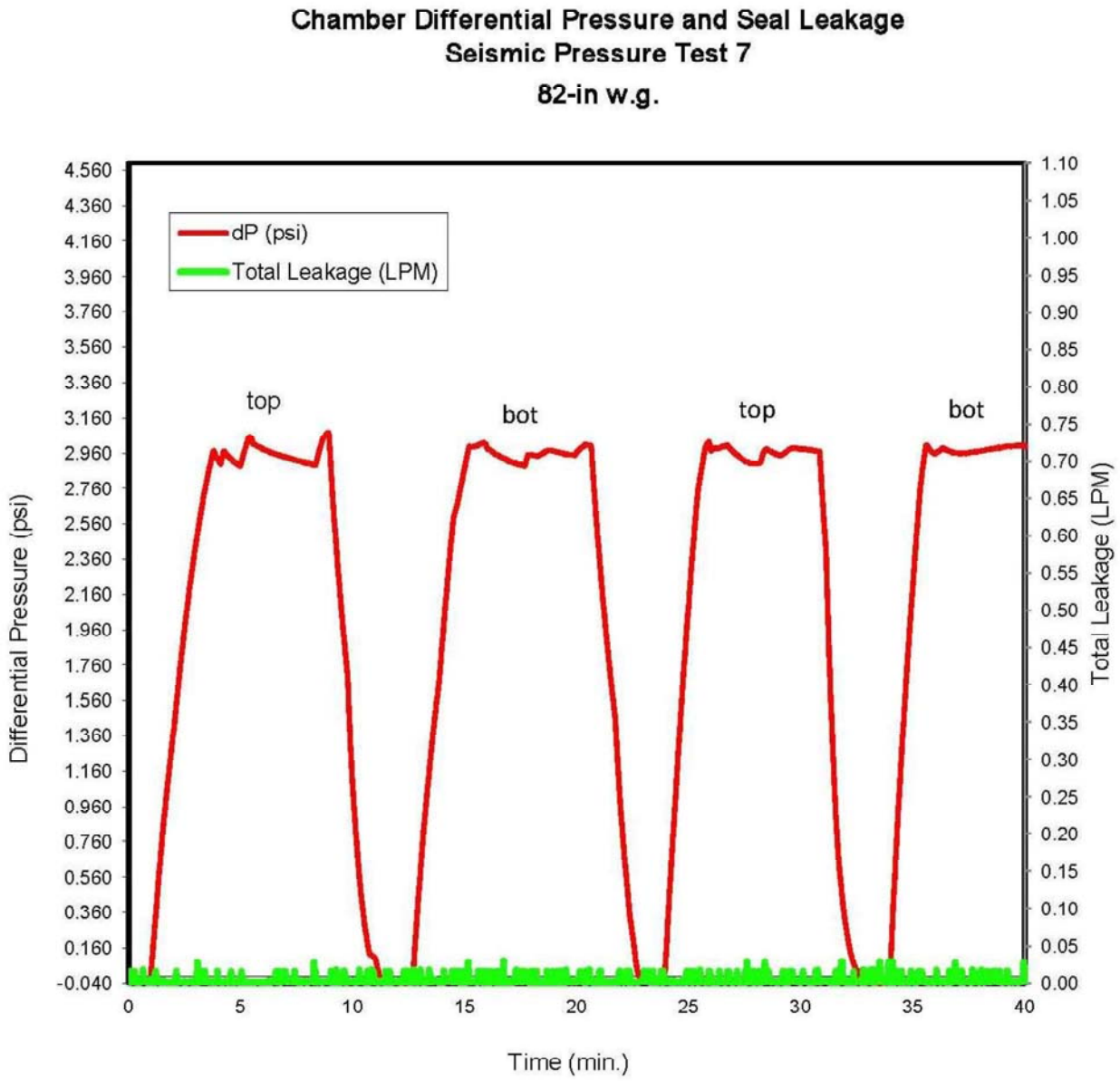
The graph and table on the following page(s) provides a summary of results and observations for the various pressure stages, any observed leakage, and whether the seal remained in place. Appendix B of this test report contains the raw data for this test.

The graphs are based on data collected throughout the entire test process, including the time periods between stages when the pressure chamber was being vented and refilled. Pressure spikes and leakage rates displayed for time periods between stages should not be misinterpreted, as recorded leakage may have been caused by intentional venting of the pressure chamber though a mass flow meter.

Additionally, it should be noted that when changing between mass flowmeters during a pressure a test, valve lineups and flowpath routes are changed. The time it takes to manipulate the valves, differences in tubing sizes, orifice sizes and mass flowmeter throughput capacity all affect bonnet pressure on the leakage side of the test assembly which can affect recorded leakage values. Generally, the input air on the opposite side of the test assembly remains constant during this time period, since manipulation of the input pressure regulator would require additional operator action. This results in reported differential pressure fluctuations which typically show up as pressure spikes when the raw data is graphed. Within a few minutes of mass flowmeter switchover, the system stabilizes to the new lineup and the data results in a more uniform graph.

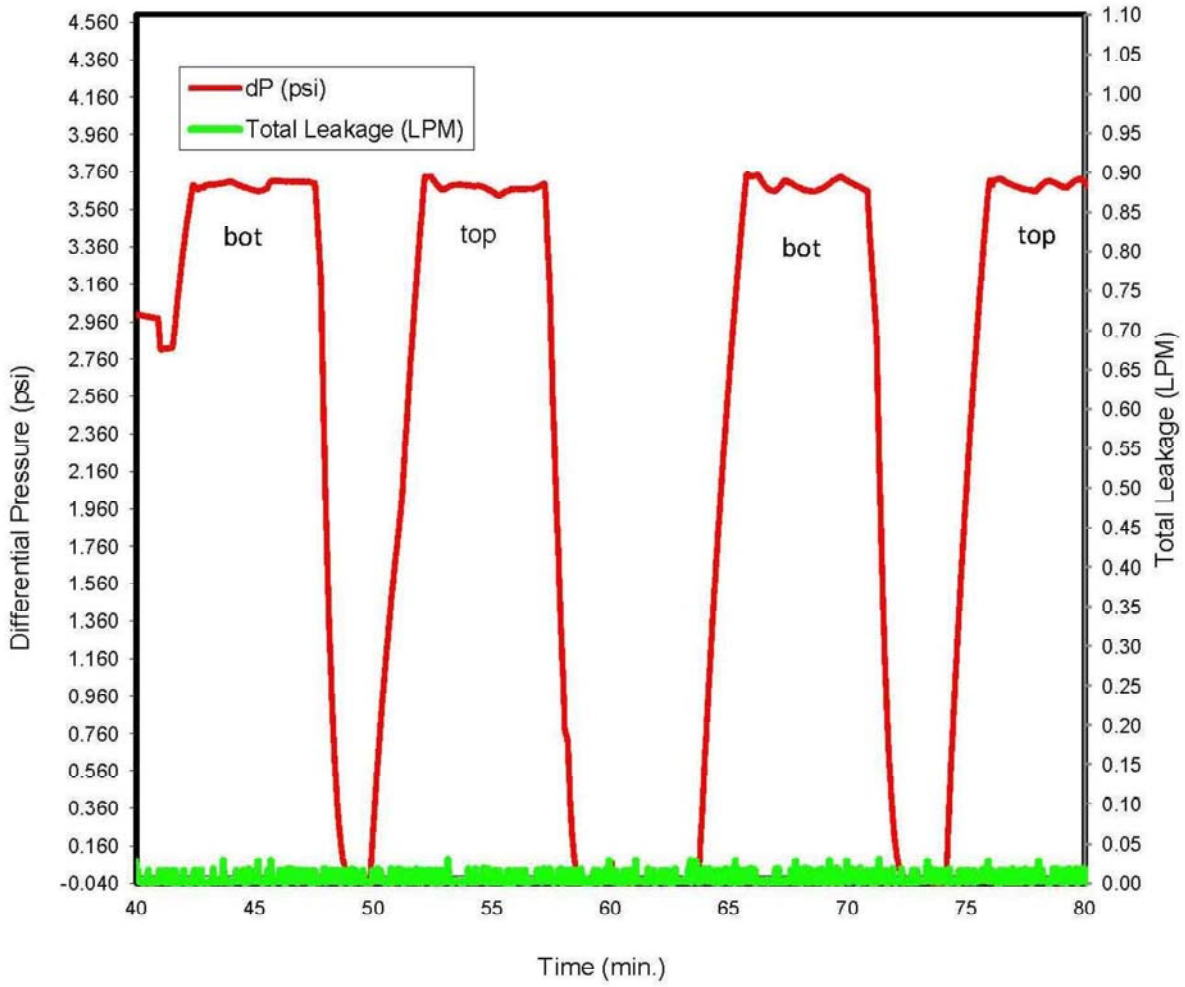
Therefore, it is important to analyze the data compiled during the hold times for each pressure stage and not the data before, after or in between pressure stages. The summary table presented after the graphs identifies the approximate start time and stop times for each pressure stage of this test. These times can be correlated to the data under the "Time (min)" heading for the raw data contained in Appendix B of this report. The official start and stop times for each pressure stage were timed using a traceable, calibrated stopwatch.

Stage 1-4

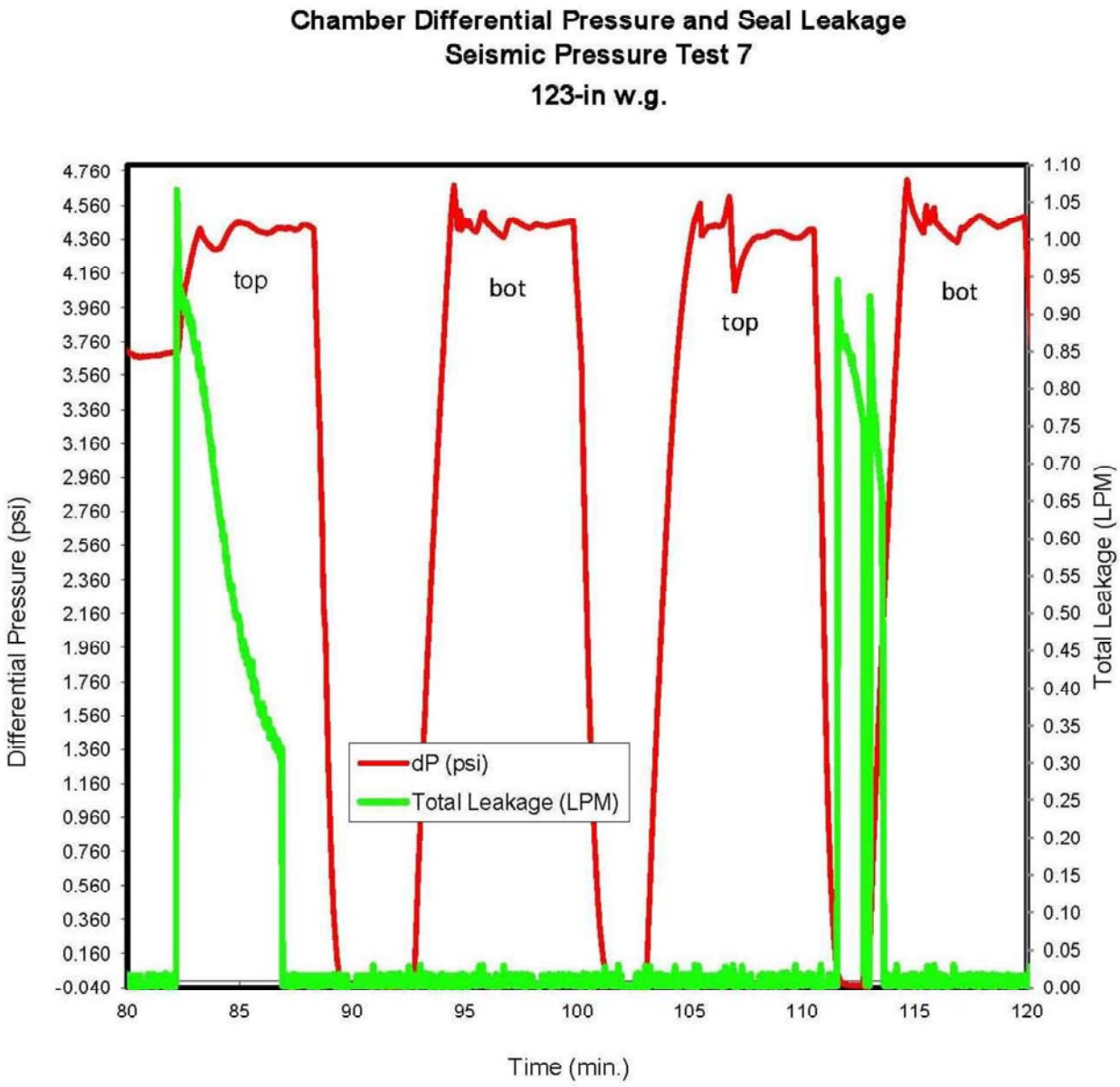

Chamber Differential Pressure and Seal Leakage
Seismic Pressure Test 7
82-in w.g.
dP (psi)
Total Leakage (LPM)
top
bot
top
bot
Differential Pressure (psi)
Total Leakage (LPM)
Time (min.)
4.560
4.360
4.160
3.960
3.760
3.560
3.360
3.160
2.960
2.760
2.560
2.360
2.160
1.960
1.760
1.560
1.360
1.160
0.960
0.760
0.560
0.360
0.160
-0.040
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0
5
10
15
20
25
30
35
40

Stage 1a-4a

Chamber Differential Pressure and Seal Leakage
Seismic Pressure Test 7
102-in w.g.



Stage 1b-4b



Note: During the third cycle of this pressure level, the pressure variance at ~T=107 minutes was due to a top bonnet leak developing at the concrete slab interface. An attempt was made to slow the bonnet leak and a decision was made to run this stage for an extra minute to account for the lost time due to the pressure drop from the bonnet leak.

Test Results and Observations

Test Stage	Pressurized Side	Differential Pressure (inch w.g.)	Start Time (min)	Required Hold Time (minutes)	Acceptance Criteria	PASS/FAIL
1	TOP	82	3.8	5	Seal Remains In Place	PASS
2	BOTTOM	82	15.2	5	Seal Remains In Place	PASS
3	TOP	82	25.7	5	Seal Remains In Place	PASS
4	BOTTOM	82	35.6	5	Seal Remains In Place	PASS
1a	BOTTOM	102	42.4	5	Seal Remains In Place	PASS
2a	TOP	102	52.1	5	Seal Remains In Place	PASS
3a	BOTTOM	102	65.7	5	Seal Remains In Place	PASS
4a	TOP	102	76	5	Seal Remains In Place	PASS
1b	TOP	123	83.2	5	Seal Remains In Place	PASS
2b	BOTTOM	123	94.4	5	Seal Remains In Place	PASS
3b	TOP	123	105	5	Seal Remains In Place	PASS
4b	BOTTOM	123	114	5	Seal Remains In Place	PASS

5.2. POST TEST EXAMINATION

Following completion of Seismic Pressure Test 7, the top bonnet was removed and the top side of the test specimen was visually inspected. This inspection revealed the following:

- Integrity of seal and conditions on the exposed side of the penetration
  - No visual changes were observed.
- Location of any penetration seal degradation
  - No visual changes were observed.
- Condition of seal to barrier interface
  - No visual changes were observed.
- Condition of seal to penetrating item interfaces
  - No visual changes were observed.

Finally, the slab was removed from the bottom bonnet and the bottom side of the test assembly was inspected. No visual changes were noted on the bottom side of the test assembly.

Note: The pipes for this test were re-purposed for another test. In order to remove the pipes from the SF-150NH seal, a sledge hammer had to be used with significant force to drive the pipes from the seal. Appendix C contains some pictures of the pipes during and after the removal process.

6 Conclusion

Intertek Testing Services NA (Intertek) has conducted testing for AREVA NP Inc., on the pressure resistance capabilities of PCI-Promatec SF-150NH High Density Silicone Elastomer (SF-150NH) through a 12" thick concrete deck for compliance with the applicable requirements of and in accordance with AREVA NP Inc. Document No. 51-9209334-000, *Detailed Test Plan for Conducting MOX Seismic Pressure Test 7*. This evaluation took place on January 28, 2014.

The seals in Seismic Pressure Test 7 met the acceptance criteria as defined in the Test Plan.

This project was undertaken to evaluate the seismic pressure resistance capabilities of the test assembly using alternating pressures at the air pressure increments above atmospheric pressure.

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The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

INTERTEK TESTING SERVICES NA

Reported by: [redacted]
Mike Dey
Staff Engineer

Reviewed by: [redacted]
Project Engineer, Fire Resistance

Reviewed by: [redacted]
Michael A. Brown
Quality Supervisor

APPENDIX A
Assembly Drawings

AREVA

Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

APPENDIX A: TEST DECK/TEST SLAB DRAWINGS

The test deck (test slab) for Seismic Pressure Test 7 is depicted on page A-2.

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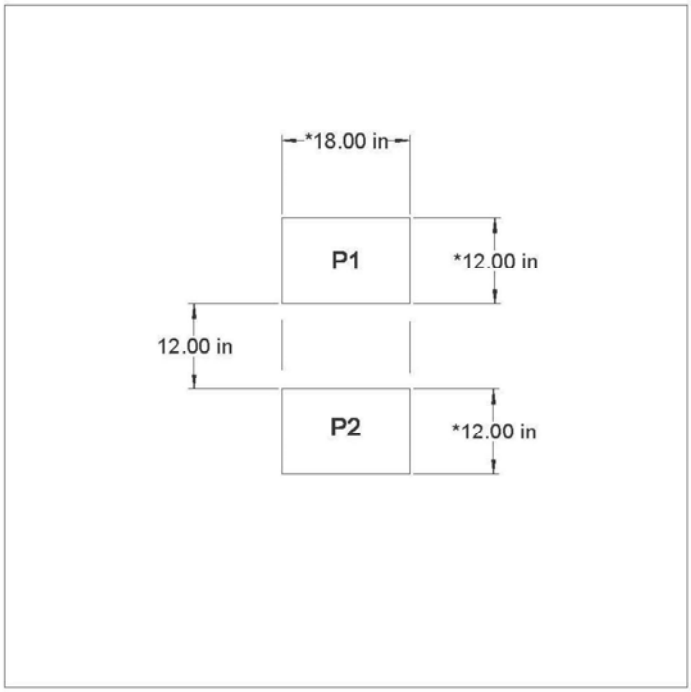
Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

Seismic Pressure Test 7



NOTES:

1. TOLERANCE ON ALL SLAB DIMENSIONS IS +/- 1/4"
2. * INDICATES DIMENSIONS TO BE VERIFIED BY AREVA QC.
3. SEE PAGE A-3 FOR PENETRATING COMMODITIES.
4. SEE PAGES A-4 AND A-5 FOR SECTION A - A AND SECTION B - B.

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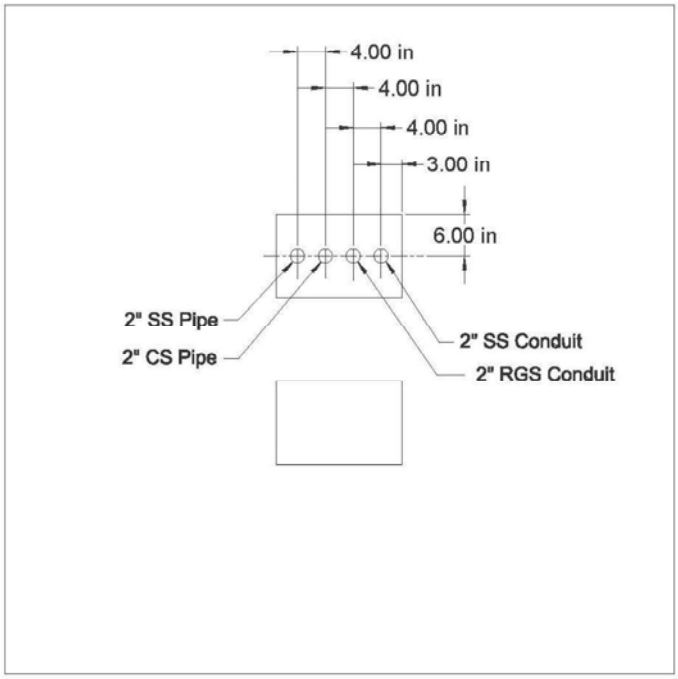
Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

Seismic Pressure Test 7



NOTES:

1. TOLERANCE ON ALL DIMENSIONS IS +/- 1/4"
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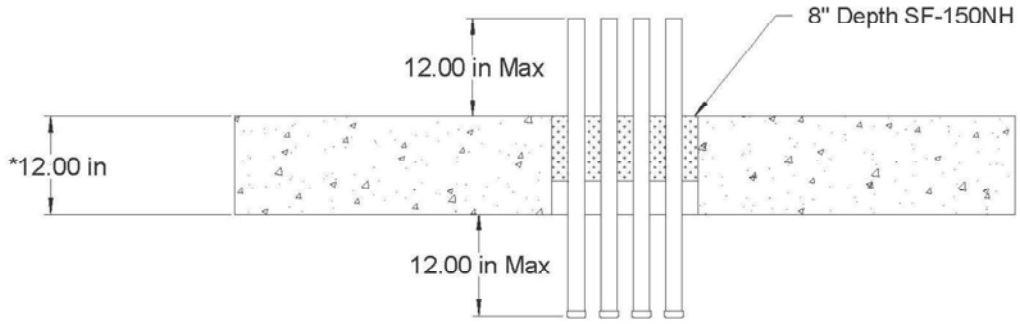
Intertek

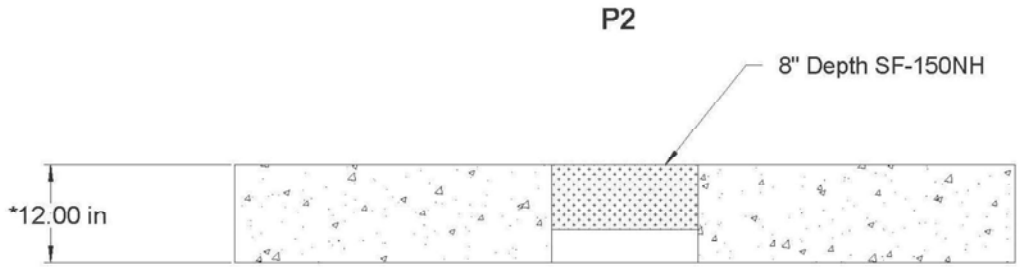
P1



Section A-A

NOTES:

1. TOLERANCE ON ALL SLAB DIMENSIONS IS +/- 1/4"
2. * INDICATES DIMENSIONS TO BE VERIFIED BY AREVA QC.



Section B-B

NOTES:

1. TOLERANCE ON ALL SLAB DIMENSIONS IS +/- 1/4"
2. * INDICATES DIMENSIONS TO BE VERIFIED BY AREVA QC.

APPENDIX B
Test Data

Areva NP, Inc. Project No. G101276459SAT-021 January 28, 2014

Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
0	-0.0259	0	0	0
0.0333	-0.0285	0	0.001	0.001
0.0667	-0.0295	0	0	0
0.1	-0.0282	0	0	0
0.1333	-0.0249	0	0	0
0.1667	-0.0265	0	0	0
0.2	-0.0246	0.0101	0	0.0101
0.2333	-0.0292	0.0101	0.001	0.0111
0.2667	-0.0275	0.0101	0	0.0101
0.3	-0.0252	0.0101	0	0.0101
0.3333	-0.0255	0	0	0
0.3667	-0.0249	0	0	0
0.4	-0.0279	0.0101	0	0.0101
0.4333	-0.0269	0.0232	0	0.0232
0.4667	-0.0305	0.0232	0	0.0232
0.5	-0.0275	0	0	0
0.5333	-0.0269	0	0	0
0.5667	-0.0269	0	0	0
0.6	-0.0275	0.0232	0	0.0232
0.6333	-0.0279	0.0101	0	0.0101
0.6667	-0.0249	0.0101	0	0.0101
0.7	-0.0279	0	0	0
0.7333	-0.0262	0.0232	0.001	0.0242
0.7667	-0.0302	0	0	0
0.8	-0.0249	0	0	0
0.8333	-0.0279	0.0101	0	0.0101
0.8667	-0.0246	0.0101	0	0.0101
0.9	-0.0269	0	0.001	0.001
0.9333	-0.0282	0	0	0
0.9667	-0.0097	0	0	0
1	0.0314	0	0.001	0.001
1.0333	0.0834	0.0101	0	0.0101
1.0667	0.1341	0	0.001	0.001
1.1	0.1828	0.0101	0	0.0101
1.1333	0.2285	0	0	0
1.1667	0.2786	0	0.001	0.001
1.2	0.3339	0.0101	0	0.0101
1.2333	0.3898	0.0232	0	0.0232
1.2667	0.4435	0	0.001	0.001
1.3	0.4948	0.0232	0	0.0232
1.3333	0.5488	0	0	0
1.3667	0.5991	0	0	0
1.4	0.6462	0	0.001	0.001

Areva NP, Inc. Project No. G101276459SAT-021 January 28, 2014

Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
1.4333	0.6966	0	0.001	0.001
1.4667	0.7377	0	0.001	0.001
1.5	0.7861	0	0	0
1.5333	0.8338	0	0	0
1.5667	0.8759	0.0101	0	0.0101
1.6	0.9187	0	0.001	0.001
1.6333	0.9589	0	0.001	0.001
1.6667	1.0056	0	0	0
1.7	1.0455	0	0	0
1.7333	1.0836	0.0232	0.0023	0.0255
1.7667	1.1231	0.0101	0	0.0101
1.8	1.1606	0	0	0
1.8333	1.2005	0.0101	0	0.0101
1.8667	1.2377	0.0101	0.001	0.0111
1.9	1.2752	0	0.001	0.001
1.9333	1.3147	0.0101	0	0.0101
1.9667	1.3469	0.0101	0	0.0101
2	1.3822	0	0.001	0.001
2.0333	1.4138	0.0101	0	0.0101
2.0667	1.4585	0	0	0
2.1	1.5046	0.0101	0	0.0101
2.1333	1.5441	0.0101	0	0.0101
2.1667	1.5865	0.0101	0.0023	0.0124
2.2	1.63	0.0101	0	0.0101
2.2333	1.6725	0	0.001	0.001
2.2667	1.7116	0.0101	0	0.0101
2.3	1.7514	0.0101	0.001	0.0111
2.3333	1.7896	0.0101	0	0.0101
2.3667	1.8258	0	0	0
2.4	1.862	0.0101	0.001	0.0111
2.4333	1.9035	0.0101	0	0.0101
2.4667	1.9391	0	0	0
2.5	1.9736	0	0.001	0.001
2.5333	2.0088	0.0101	0	0.0101
2.5667	2.044	0.0101	0	0.0101
2.6	2.0796	0.0232	0	0.0232
2.6333	2.1099	0.0232	0.001	0.0242
2.6667	2.1441	0	0	0
2.7	2.1816	0	0	0
2.7333	2.2106	0	0	0
2.7667	2.2425	0.0101	0	0.0101
2.8	2.2741	0	0	0
2.8333	2.3037	0.0232	0	0.0232

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
2.8667	2.334	0.0101	0	0.0101
2.9	2.3626	0.0232	0	0.0232
2.9333	2.391	0.0232	0	0.0232
2.9667	2.4212	0.0101	0	0.0101
3	2.4505	0	0.001	0.001
3.0333	2.4778	0	0.0023	0.0023
3.0667	2.5035	0	0.001	0.001
3.1	2.5282	0.0101	0.001	0.0111
3.1333	2.5578	0.0101	0	0.0101
3.1667	2.5805	0.0101	0.001	0.0111
3.2	2.6072	0	0.001	0.001
3.2333	2.6322	0.0101	0.001	0.0111
3.2667	2.6562	0.0232	0.001	0.0242
3.3	2.6816	0.0101	0	0.0101
3.3333	2.7066	0.0232	0	0.0232
3.3667	2.73	0.0364	0.001	0.0374
3.4	2.7484	0	0.001	0.001
3.4333	2.7724	0	0	0
3.4667	2.7938	0.0101	0	0.0101
3.5	2.8139	0.0101	0	0.0101
3.5333	2.8346	0	0	0
3.5667	2.854	0	0.001	0.001
3.6	2.8754	0.0101	0	0.0101
3.6333	2.8922	0.0101	0	0.0101
3.6667	2.9136	0.0101	0	0.0101
3.7	2.9301	0.0232	0	0.0232
3.7333	2.9478	0.0101	0	0.0101
3.7667	2.9686	0	0.001	0.001
3.8	2.9729	0	0	0
3.8333	2.9623	0	0	0
3.8667	2.9492	0.0101	0	0.0101
3.9	2.9419	0	0	0
3.9333	2.9324	0	0	0
3.9667	2.9278	0.0232	0.001	0.0242
4	2.9195	0	0	0
4.0333	2.9113	0	0.001	0.001
4.0667	2.9037	0.0101	0.001	0.0111
4.1	2.8981	0.0101	0	0.0101
4.1333	2.9133	0.0101	0	0.0101
4.1667	2.9327	0	0	0
4.2	2.9492	0.0101	0	0.0101
4.2333	2.9709	0.0101	0.0023	0.0124
4.2667	2.9679	0.0232	0	0.0232

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
4.3	2.964	0.0101	0.001	0.0111
4.3333	2.9561	0.0232	0	0.0232
4.3667	2.9525	0	0	0
4.4	2.9465	0.0101	0	0.0101
4.4333	2.9432	0.0101	0	0.0101
4.4667	2.9409	0.0101	0.001	0.0111
4.5	2.9307	0.0101	0	0.0101
4.5333	2.9311	0.0101	0	0.0101
4.5667	2.9258	0	0	0
4.6	2.9241	0	0.001	0.001
4.6333	2.9215	0.0101	0	0.0101
4.6667	2.9113	0.0101	0	0.0101
4.7	2.912	0	0	0
4.7333	2.9067	0.0101	0	0.0101
4.7667	2.9067	0	0	0
4.8	2.9008	0	0.001	0.001
4.8333	2.8985	0	0	0
4.8667	2.8958	0.0101	0.001	0.0111
4.9	2.8968	0.0232	0	0.0232
4.9333	2.8906	0	0.001	0.001
4.9667	2.8863	0	0	0
5	2.8995	0.0101	0	0.0101
5.0333	2.911	0.0101	0.001	0.0111
5.0667	2.9245	0.0101	0	0.0101
5.1	2.9429	0.0232	0	0.0232
5.1333	2.9564	0.0101	0.001	0.0111
5.1667	2.9689	0.0101	0	0.0101
5.2	2.9841	0.0101	0.001	0.0111
5.2333	2.9979	0.0101	0.001	0.0111
5.2667	3.0133	0.0101	0.001	0.0111
5.3	3.0249	0.0101	0.001	0.0111
5.3333	3.037	0	0	0
5.3667	3.0499	0	0	0
5.4	3.0502	0	0	0
5.4333	3.0436	0	0.001	0.001
5.4667	3.0436	0	0	0
5.5	3.0374	0	0	0
5.5333	3.0147	0	0.001	0.001
5.5667	3.0104	0.0101	0	0.0101
5.6	3.0081	0.0232	0.001	0.0242
5.6333	3.0081	0	0	0
5.6667	3.0031	0	0	0
5.7	3.0008	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
5.7333	3.0002	0.0101	0	0.0101
5.7667	2.9946	0.0101	0	0.0101
5.8	2.9943	0.0364	0	0.0364
5.8333	2.9949	0	0.001	0.001
5.8667	2.989	0.0101	0.001	0.0111
5.9	2.988	0.0101	0.001	0.0111
5.9333	2.9887	0	0.001	0.001
5.9667	2.9811	0.0101	0.001	0.0111
6	2.9817	0.0101	0.001	0.0111
6.0333	2.9781	0	0.001	0.001
6.0667	2.9775	0	0.001	0.001
6.1	2.9765	0	0	0
6.1333	2.9735	0	0	0
6.1667	2.9725	0.0101	0	0.0101
6.2	2.9706	0.0101	0.001	0.0111
6.2333	2.9706	0	0	0
6.2667	2.9699	0.0232	0	0.0232
6.3	2.9633	0.0101	0	0.0101
6.3333	2.9643	0.0101	0.001	0.0111
6.3667	2.96	0.0101	0	0.0101
6.4	2.962	0	0	0
6.4333	2.9587	0.0101	0	0.0101
6.4667	2.9571	0.0232	0.001	0.0242
6.5	2.9567	0	0	0
6.5333	2.9551	0.0364	0.001	0.0374
6.5667	2.9534	0	0	0
6.6	2.9518	0.0101	0	0.0101
6.6333	2.9502	0.0232	0	0.0232
6.6667	2.9511	0	0	0
6.7	2.9495	0	0	0
6.7333	2.9455	0	0.001	0.001
6.7667	2.9446	0.0101	0	0.0101
6.8	2.9426	0	0	0
6.8333	2.9419	0.0101	0	0.0101
6.8667	2.9396	0.0232	0.001	0.0242
6.9	2.9413	0.0101	0.001	0.0111
6.9333	2.9376	0.0232	0	0.0232
6.9667	2.937	0.0101	0.001	0.0111
7	2.939	0.0232	0	0.0232
7.0333	2.9353	0	0	0
7.0667	2.9373	0	0	0
7.1	2.932	0.0232	0	0.0232
7.1333	2.9304	0.0232	0	0.0232

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
7.1667	2.9301	0.0232	0	0.0232
7.2	2.9284	0	0	0
7.2333	2.9258	0	0.001	0.001
7.2667	2.9268	0.0101	0.001	0.0111
7.3	2.9278	0.0101	0	0.0101
7.3333	2.9248	0	0	0
7.3667	2.9218	0.0101	0	0.0101
7.4	2.9241	0.0101	0.001	0.0111
7.4333	2.9199	0	0	0
7.4667	2.9202	0	0.001	0.001
7.5	2.9162	0.0101	0	0.0101
7.5333	2.9166	0	0	0
7.5667	2.9153	0.0101	0	0.0101
7.6	2.9169	0	0.001	0.001
7.6333	2.9149	0	0	0
7.6667	2.912	0	0	0
7.7	2.9139	0.0101	0.001	0.0111
7.7333	2.911	0	0	0
7.7667	2.909	0	0	0
7.8	2.9074	0	0.0023	0.0023
7.8333	2.9097	0.0101	0	0.0101
7.8667	2.9084	0.0232	0.001	0.0242
7.9	2.9028	0.0101	0.001	0.0111
7.9333	2.9067	0	0.001	0.001
7.9667	2.9021	0.0101	0.001	0.0111
8	2.9018	0.0232	0	0.0232
8.0333	2.9001	0.0232	0	0.0232
8.0667	2.9034	0.0101	0	0.0101
8.1	2.8978	0	0.001	0.001
8.1333	2.8981	0.0232	0.001	0.0242
8.1667	2.8978	0.0101	0.001	0.0111
8.2	2.8952	0	0.001	0.001
8.2333	2.8949	0.0101	0.001	0.0111
8.2667	2.8912	0.0232	0	0.0232
8.3	2.8926	0	0.001	0.001
8.3333	2.8932	0.0101	0	0.0101
8.3667	2.9047	0.0232	0.001	0.0242
8.4	2.9205	0	0.001	0.001
8.4333	2.9367	0	0	0
8.4667	2.9528	0	0	0
8.5	2.9686	0.0101	0	0.0101
8.5333	2.9844	0	0.001	0.001
8.5667	2.9992	0	0.0023	0.0023

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
8.6	3.0143	0.0101	0	0.0101
8.6333	3.0249	0	0	0
8.6667	3.0397	0.0232	0.001	0.0242
8.7	3.0463	0	0.001	0.001
8.7333	3.0558	0	0.001	0.001
8.7667	3.0581	0.0101	0	0.0101
8.8	3.0647	0	0.001	0.001
8.8333	3.0686	0.0101	0.001	0.0111
8.8667	3.0749	0.0364	0	0.0364
8.9	3.0762	0.0232	0	0.0232
8.9333	3.0765	0	0	0
8.9667	3.0048	0	0	0
9	2.9307	0.0101	0	0.0101
9.0333	2.8596	0.0101	0	0.0101
9.0667	2.7895	0.0101	0.001	0.0111
9.1	2.7194	0	0.0023	0.0023
9.1333	2.6543	0	0	0
9.1667	2.5983	0	0	0
9.2	2.5417	0.0101	0.001	0.0111
9.2333	2.4851	0.0101	0.001	0.0111
9.2667	2.4311	0	0	0
9.3	2.3738	0	0.001	0.001
9.3333	2.3176	0	0.001	0.001
9.3667	2.2669	0.0101	0	0.0101
9.4	2.2168	0.0101	0	0.0101
9.4333	2.1652	0	0.0023	0.0023
9.4667	2.1145	0.0101	0.0023	0.0124
9.5	2.0664	0.0232	0	0.0232
9.5333	2.0157	0	0.001	0.001
9.5667	1.969	0.0101	0	0.0101
9.6	1.9242	0.0101	0.001	0.0111
9.6333	1.8815	0.0232	0	0.0232
9.6667	1.838	0	0	0
9.7	1.7906	0.0101	0	0.0101
9.7333	1.7495	0	0	0
9.7667	1.7087	0	0	0
9.8	1.6047	0.0101	0.001	0.0111
9.8333	1.4974	0.0232	0	0.0232
9.8667	1.4012	0.0101	0	0.0101
9.9	1.3084	0.0101	0	0.0101
9.9333	1.2268	0	0	0
9.9667	1.1508	0	0.0023	0.0023
10	1.0747	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
10.0333	1.004	0	0	0
10.0667	0.9401	0	0	0
10.1	0.8796	0.0101	0.001	0.0111
10.1333	0.823	0.0101	0.001	0.0111
10.1667	0.7654	0	0	0
10.2	0.7097	0	0	0
10.2333	0.6571	0	0	0
10.2667	0.6061	0	0	0
10.3	0.5567	0.0101	0	0.0101
10.3333	0.5159	0.0101	0	0.0101
10.3667	0.4721	0	0.001	0.001
10.4	0.4329	0	0	0
10.4333	0.3954	0.0101	0	0.0101
10.4667	0.3553	0.0232	0	0.0232
10.5	0.322	0.0101	0.001	0.0111
10.5333	0.2884	0	0.001	0.001
10.5667	0.2585	0	0	0
10.6	0.2345	0.0101	0.001	0.0111
10.6333	0.2058	0	0	0
10.6667	0.1828	0	0	0
10.7	0.1578	0	0.001	0.001
10.7333	0.1361	0	0	0
10.7667	0.1249	0	0	0
10.8	0.1235	0.0101	0	0.0101
10.8333	0.1196	0	0	0
10.8667	0.117	0	0	0
10.9	0.1124	0.0101	0	0.0101
10.9333	0.1107	0	0.001	0.001
10.9667	0.1064	0.0101	0.001	0.0111
11	0.1005	0.0101	0.001	0.0111
11.0333	0.0903	0	0.001	0.001
11.0667	0.0663	0	0	0
11.1	0.0455	0	0	0
11.1333	0.0321	0	0.001	0.001
11.1667	0.011	0.0232	0.001	0.0242
11.2	0.0008	0	0	0
11.2333	-0.0065	0	0	0
11.2667	-0.0114	0	0.001	0.001
11.3	-0.0137	0	0	0
11.3333	-0.0216	0.0101	0.001	0.0111
11.3667	-0.0193	0.0101	0.001	0.0111
11.4	-0.0219	0.0101	0.001	0.0111
11.4333	-0.0209	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
11.4667	-0.0206	0.0232	0.0023	0.0255
11.5	-0.02	0.0101	0	0.0101
11.5333	-0.0216	0.0101	0.001	0.0111
11.5667	-0.0226	0.0101	0	0.0101
11.6	-0.0219	0.0232	0.0023	0.0255
11.6333	-0.0236	0	0	0
11.6667	-0.0255	0	0	0
11.7	-0.0232	0.0101	0.0023	0.0124
11.7333	-0.0249	0.0101	0.001	0.0111
11.7667	-0.0223	0	0	0
11.8	-0.0206	0	0	0
11.8333	-0.0321	0.0232	0.001	0.0242
11.8667	-0.0246	0.0101	0.001	0.0111
11.9	-0.0252	0.0232	0.001	0.0242
11.9333	-0.0229	0.0101	0.001	0.0111
11.9667	-0.0255	0	0	0
12	-0.0265	0.0232	0.0023	0.0255
12.0333	-0.0255	0.0232	0	0.0232
12.0667	-0.0298	0.0101	0.001	0.0111
12.1	-0.0272	0.0232	0.0023	0.0255
12.1333	-0.065	0.0101	0.001	0.0111
12.1667	-0.068	0	0	0
12.2	-0.0677	0.0101	0.001	0.0111
12.2333	-0.067	0.0232	0	0.0232
12.2667	-0.0683	0	0.001	0.001
12.3	-0.0644	0	0	0
12.3333	-0.0608	0	0	0
12.3667	-0.0588	0	0.001	0.001
12.4	-0.0548	0	0.001	0.001
12.4333	-0.0558	0	0	0
12.4667	-0.0532	0	0.001	0.001
12.5	-0.0496	0.0101	0	0.0101
12.5333	-0.0522	0.0101	0.001	0.0111
12.5667	-0.0502	0.0101	0	0.0101
12.6	-0.0492	0	0	0
12.6333	-0.0499	0	0	0
12.6667	-0.0453	0	0	0
12.7	0.008	0.0101	0.001	0.0111
12.7333	0.0732	0.0101	0	0.0101
12.7667	0.1423	0	0	0
12.8	0.2081	0	0.0023	0.0023
12.8333	0.269	0.0232	0	0.0232
12.8667	0.3306	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
12.9	0.3882	0.0101	0	0.0101
12.9333	0.4507	0	0	0
12.9667	0.5037	0	0	0
13	0.5577	0	0	0
13.0333	0.613	0.0232	0.001	0.0242
13.0667	0.6689	0	0	0
13.1	0.7216	0.0101	0.001	0.0111
13.1333	0.7703	0	0	0
13.1667	0.8223	0.0232	0	0.0232
13.2	0.8664	0.0101	0	0.0101
13.2333	0.9184	0	0.001	0.001
13.2667	0.9622	0	0	0
13.3	1.0083	0	0	0
13.3333	1.0517	0.0101	0.001	0.0111
13.3667	1.0978	0.0364	0	0.0364
13.4	1.1419	0	0.0023	0.0023
13.4333	1.1837	0.0101	0.001	0.0111
13.4667	1.2291	0	0	0
13.5	1.2656	0	0.001	0.001
13.5333	1.3081	0	0	0
13.5667	1.3502	0	0	0
13.6	1.3874	0.0232	0.001	0.0242
13.6333	1.4259	0	0	0
13.6667	1.4654	0.0101	0	0.0101
13.7	1.5003	0	0.0023	0.0023
13.7333	1.5408	0.0101	0	0.0101
13.7667	1.5714	0.0101	0	0.0101
13.8	1.6096	0.0101	0.0023	0.0124
13.8333	1.6441	0	0	0
13.8667	1.682	0.0101	0.0023	0.0124
13.9	1.7307	0	0	0
13.9333	1.7844	0	0	0
13.9667	1.8383	0.0101	0	0.0101
14	1.89	0	0	0
14.0333	1.941	0	0.001	0.001
14.0667	1.9927	0.0232	0.001	0.0242
14.1	2.0431	0.0101	0	0.0101
14.1333	2.0941	0.0101	0	0.0101
14.1667	2.1418	0	0	0
14.2	2.1902	0	0	0
14.2333	2.2405	0	0	0
14.2667	2.2866	0	0.001	0.001
14.3	2.3324	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
14.3333	2.3791	0.0101	0	0.0101
14.3667	2.4193	0.0101	0.001	0.0111
14.4	2.4657	0.0232	0	0.0232
14.4333	2.5124	0.0232	0	0.0232
14.4667	2.5552	0.0232	0	0.0232
14.5	2.594	0.0232	0.001	0.0242
14.5333	2.6075	0.0101	0	0.0101
14.5667	2.625	0	0	0
14.6	2.6391	0.0101	0	0.0101
14.6333	2.6549	0	0	0
14.6667	2.6694	0.0101	0.001	0.0111
14.7	2.6872	0	0	0
14.7333	2.7092	0.0101	0.001	0.0111
14.7667	2.7326	0	0.001	0.001
14.8	2.754	0.0101	0	0.0101
14.8333	2.7777	0.0101	0.001	0.0111
14.8667	2.7938	0	0	0
14.9	2.8162	0	0.001	0.001
14.9333	2.8392	0.0101	0	0.0101
14.9667	2.8606	0	0	0
15	2.8787	0.0101	0	0.0101
15.0333	2.9024	0.0232	0	0.0232
15.0667	2.9195	0.0101	0.0023	0.0124
15.1	2.9386	0.0101	0	0.0101
15.1333	2.9594	0	0	0
15.1667	2.9791	0	0	0
15.2	2.9972	0	0	0
15.2333	2.9975	0	0.001	0.001
15.2667	2.9943	0	0	0
15.3	2.9939	0.0232	0	0.0232
15.3333	2.9936	0.0101	0.0023	0.0124
15.3667	2.9959	0.0101	0	0.0101
15.4	2.9939	0.0101	0	0.0101
15.4333	2.9985	0.0101	0.001	0.0111
15.4667	2.9962	0	0.0023	0.0023
15.5	2.9992	0.0232	0	0.0232
15.5333	2.9975	0	0.001	0.001
15.5667	3.0005	0.0232	0	0.0232
15.6	3.0051	0	0	0
15.6333	3.0068	0	0	0
15.6667	3.0094	0	0	0
15.7	3.0094	0.0232	0.001	0.0242
15.7333	3.011	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
15.7667	3.0143	0.0232	0.001	0.0242
15.8	3.0127	0	0	0
15.8333	3.0203	0	0	0
15.8667	3.013	0	0.001	0.001
15.9	3.013	0.0101	0.001	0.0111
15.9333	3.0087	0	0	0
15.9667	3.0022	0.0101	0	0.0101
16	2.9857	0.0232	0	0.0232
16.0333	2.9785	0.0232	0.001	0.0242
16.0667	2.9817	0.0101	0.001	0.0111
16.1	2.9794	0.0232	0	0.0232
16.1333	2.9758	0	0	0
16.1667	2.9742	0.0101	0	0.0101
16.2	2.9699	0.0101	0	0.0101
16.2333	2.9666	0	0	0
16.2667	2.9646	0	0	0
16.3	2.9604	0	0	0
16.3333	2.9571	0	0.001	0.001
16.3667	2.9511	0	0	0
16.4	2.9521	0	0.001	0.001
16.4333	2.9475	0.0101	0	0.0101
16.4667	2.9488	0.0101	0	0.0101
16.5	2.9465	0.0101	0	0.0101
16.5333	2.9436	0.0232	0	0.0232
16.5667	2.9399	0.0101	0	0.0101
16.6	2.9386	0	0.001	0.001
16.6333	2.934	0.0232	0.001	0.0242
16.6667	2.933	0	0.001	0.001
16.7	2.9334	0.0101	0.001	0.0111
16.7333	2.9288	0	0.001	0.001
16.7667	2.9278	0.0101	0	0.0101
16.8	2.9278	0.0101	0	0.0101
16.8333	2.9228	0	0.001	0.001
16.8667	2.9212	0.0232	0	0.0232
16.9	2.9215	0.0232	0	0.0232
16.9333	2.9176	0.0232	0.001	0.0242
16.9667	2.9126	0.0101	0	0.0101
17	2.9159	0	0	0
17.0333	2.9123	0.0232	0	0.0232
17.0667	2.9097	0.0101	0	0.0101
17.1	2.9087	0	0.001	0.001
17.1333	2.9084	0.0101	0.001	0.0111
17.1667	2.906	0.0364	0	0.0364

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
17.2	2.9051	0.0101	0	0.0101
17.2333	2.9044	0.0101	0	0.0101
17.2667	2.9005	0.0101	0.001	0.0111
17.3	2.9044	0.0101	0	0.0101
17.3333	2.8988	0	0	0
17.3667	2.8968	0.0232	0	0.0232
17.4	2.8958	0.0232	0	0.0232
17.4333	2.8958	0.0101	0.001	0.0111
17.4667	2.8981	0	0	0
17.5	2.8949	0.0101	0	0.0101
17.5333	2.8909	0.0101	0.001	0.0111
17.5667	2.8929	0.0232	0.0023	0.0255
17.6	2.8909	0.0101	0	0.0101
17.6333	2.8896	0	0.001	0.001
17.6667	2.8879	0.0101	0.001	0.0111
17.7	2.8919	0.0101	0	0.0101
17.7333	2.9084	0	0	0
17.7667	2.9274	0.0101	0.0023	0.0124
17.8	2.9403	0.0101	0	0.0101
17.8333	2.9492	0	0	0
17.8667	2.9498	0	0	0
17.9	2.9511	0.0101	0.001	0.0111
17.9333	2.9518	0	0.001	0.001
17.9667	2.9511	0	0	0
18	2.9478	0	0	0
18.0333	2.9485	0.0101	0.0023	0.0124
18.0667	2.9452	0.0101	0	0.0101
18.1	2.9452	0.0101	0	0.0101
18.1333	2.9459	0	0	0
18.1667	2.9449	0.0232	0.001	0.0242
18.2	2.9462	0.0101	0	0.0101
18.2333	2.9419	0.0101	0	0.0101
18.2667	2.9429	0	0	0
18.3	2.9455	0.0232	0	0.0232
18.3333	2.9459	0.0101	0.001	0.0111
18.3667	2.9459	0	0	0
18.4	2.9511	0.0232	0	0.0232
18.4333	2.9515	0	0	0
18.4667	2.9564	0.0232	0.001	0.0242
18.5	2.962	0	0	0
18.5333	2.96	0	0.0023	0.0023
18.5667	2.9617	0.0101	0.001	0.0111
18.6	2.9669	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
18.6333	2.9702	0.0101	0.001	0.0111
18.6667	2.9709	0.0232	0.001	0.0242
18.7	2.9715	0.0232	0	0.0232
18.7333	2.9738	0	0	0
18.7667	2.9765	0	0.001	0.001
18.8	2.9732	0.0101	0.001	0.0111
18.8333	2.9752	0	0	0
18.8667	2.9762	0	0	0
18.9	2.9719	0	0	0
18.9333	2.9729	0.0101	0.001	0.0111
18.9667	2.9712	0	0.001	0.001
19	2.9715	0	0.0023	0.0023
19.0333	2.9699	0.0101	0	0.0101
19.0667	2.9692	0.0101	0.0023	0.0124
19.1	2.9646	0.0232	0	0.0232
19.1333	2.9663	0.0101	0	0.0101
19.1667	2.965	0	0.001	0.001
19.2	2.9653	0.0101	0	0.0101
19.2333	2.9633	0	0.001	0.001
19.2667	2.9613	0.0232	0	0.0232
19.3	2.9617	0.0101	0.001	0.0111
19.3333	2.9623	0.0101	0.001	0.0111
19.3667	2.9597	0	0	0
19.4	2.9574	0	0	0
19.4333	2.9534	0.0101	0	0.0101
19.4667	2.9518	0.0232	0.001	0.0242
19.5	2.9561	0.0101	0	0.0101
19.5333	2.9528	0.0232	0	0.0232
19.5667	2.9541	0.0101	0	0.0101
19.6	2.9515	0.0101	0	0.0101
19.6333	2.9502	0	0	0
19.6667	2.9515	0.0101	0	0.0101
19.7	2.9505	0	0	0
19.7333	2.9502	0	0.001	0.001
19.7667	2.9495	0.0101	0	0.0101
19.8	2.9492	0	0	0
19.8333	2.9495	0	0	0
19.8667	2.9472	0.0232	0.001	0.0242
19.9	2.9475	0.0101	0.001	0.0111
19.9333	2.9472	0.0101	0.001	0.0111
19.9667	2.9577	0	0	0
20	2.9673	0.0101	0	0.0101
20.0333	2.9679	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
20.0667	2.9755	0	0.001	0.001
20.1	2.9781	0	0	0
20.1333	2.9811	0.0101	0.001	0.0111
20.1667	2.9883	0.0232	0	0.0232
20.2	2.991	0	0	0
20.2333	2.9939	0.0101	0	0.0101
20.2667	2.9923	0.0232	0.001	0.0242
20.3	3.0002	0.0232	0	0.0232
20.3333	3.0045	0	0.001	0.001
20.3667	3.0068	0	0	0
20.4	3.0094	0.0101	0	0.0101
20.4333	3.0054	0	0.001	0.001
20.4667	3.0054	0.0101	0	0.0101
20.5	3.0038	0	0	0
20.5333	3.0054	0.0101	0	0.0101
20.5667	3.0058	0	0.001	0.001
20.6	3.0005	0.0232	0	0.0232
20.6333	3.0022	0	0	0
20.6667	2.9725	0.0101	0.0023	0.0124
20.7	2.9054	0	0	0
20.7333	2.8373	0.0101	0	0.0101
20.7667	2.7741	0.0232	0	0.0232
20.8	2.7105	0.0101	0	0.0101
20.8333	2.65	0.0101	0.001	0.0111
20.8667	2.597	0.0101	0	0.0101
20.9	2.5417	0.0101	0	0.0101
20.9333	2.489	0	0.0036	0.0036
20.9667	2.4377	0.0101	0.0023	0.0124
21	2.385	0.0101	0.001	0.0111
21.0333	2.3343	0.0101	0	0.0101
21.0667	2.286	0	0.001	0.001
21.1	2.2333	0.0101	0.001	0.0111
21.1333	2.1852	0	0.001	0.001
21.1667	2.1385	0.0101	0.001	0.0111
21.2	2.0914	0.0232	0	0.0232
21.2333	2.0454	0.0101	0	0.0101
21.2667	2.0039	0	0.001	0.001
21.3	1.9542	0.0232	0	0.0232
21.3333	1.9134	0.0232	0	0.0232
21.3667	1.8709	0.0101	0.001	0.0111
21.4	1.8298	0	0	0
21.4333	1.7857	0	0	0
21.4667	1.7455	0.0232	0.001	0.0242

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
21.5	1.705	0.0232	0	0.0232
21.5333	1.6665	0.0101	0	0.0101
21.5667	1.631	0	0.0023	0.0023
21.6	1.5885	0	0	0
21.6333	1.5543	0	0	0
21.6667	1.5191	0.0232	0.001	0.0242
21.7	1.4789	0.0232	0.001	0.0242
21.7333	1.4361	0	0.001	0.001
21.7667	1.3515	0	0	0
21.8	1.2689	0.0101	0	0.0101
21.8333	1.1988	0	0.001	0.001
21.8667	1.1291	0	0.001	0.001
21.9	1.0665	0	0.001	0.001
21.9333	1.0027	0.0232	0	0.0232
21.9667	0.9421	0.0232	0.001	0.0242
22	0.8815	0.0101	0	0.0101
22.0333	0.8263	0.0101	0	0.0101
22.0667	0.7693	0.0101	0	0.0101
22.1	0.7193	0.0101	0	0.0101
22.1333	0.6716	0	0.001	0.001
22.1667	0.6242	0	0	0
22.2	0.5794	0.0101	0	0.0101
22.2333	0.5327	0	0.001	0.001
22.2667	0.4919	0.0101	0	0.0101
22.3	0.4418	0.0101	0	0.0101
22.3333	0.3915	0.0101	0.0023	0.0124
22.3667	0.3477	0	0.0023	0.0023
22.4	0.3115	0.0101	0.001	0.0111
22.4333	0.2769	0.0101	0	0.0101
22.4667	0.2529	0.0101	0.001	0.0111
22.5	0.2233	0.0101	0	0.0101
22.5333	0.2012	0	0	0
22.5667	0.1614	0	0.001	0.001
22.6	0.1209	0.0101	0	0.0101
22.6333	0.0854	0.0101	0	0.0101
22.6667	0.0577	0.0101	0	0.0101
22.7	0.0344	0.0101	0	0.0101
22.7333	0.0172	0	0	0
22.7667	0.0041	0.0101	0.001	0.0111
22.8	-0.0058	0.0101	0	0.0101
22.8333	-0.0114	0	0.001	0.001
22.8667	-0.0173	0	0	0
22.9	-0.0163	0.0101	0.001	0.0111

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
22.9333	-0.02	0	0.001	0.001
22.9667	-0.0213	0.0232	0	0.0232
23	-0.0223	0.0101	0.001	0.0111
23.0333	-0.0232	0	0	0
23.0667	-0.0223	0.0101	0	0.0101
23.1	-0.0242	0	0	0
23.1333	-0.0232	0.0101	0	0.0101
23.1667	-0.0239	0	0.001	0.001
23.2	-0.0219	0	0	0
23.2333	-0.02	0.0232	0	0.0232
23.2667	-0.0216	0	0	0
23.3	-0.0302	0.0364	0.001	0.0374
23.3333	-0.0275	0.0101	0	0.0101
23.3667	-0.0255	0.0101	0	0.0101
23.4	-0.0252	0.0101	0.001	0.0111
23.4333	-0.0255	0	0	0
23.4667	-0.0292	0	0	0
23.5	-0.0302	0	0	0
23.5333	-0.0137	0.0232	0.001	0.0242
23.5667	-0.0153	0	0	0
23.6	-0.0341	0.0101	0.001	0.0111
23.6333	-0.0321	0	0	0
23.6667	-0.0344	0.0101	0.001	0.0111
23.7	-0.0288	0	0.0023	0.0023
23.7333	-0.0341	0.0232	0.001	0.0242
23.7667	-0.0341	0	0.001	0.001
23.8	-0.0361	0.0101	0.0023	0.0124
23.8333	-0.0364	0.0101	0.001	0.0111
23.8667	-0.0377	0.0101	0	0.0101
23.9	-0.0384	0	0	0
23.9333	0.0087	0.0101	0	0.0101
23.9667	0.0692	0.0232	0	0.0232
24	0.1463	0.0101	0	0.0101
24.0333	0.2249	0.0101	0	0.0101
24.0667	0.3019	0.0101	0	0.0101
24.1	0.3793	0	0	0
24.1333	0.4537	0.0101	0.001	0.0111
24.1667	0.5188	0.0101	0	0.0101
24.2	0.5926	0	0	0
24.2333	0.6617	0.0101	0	0.0101
24.2667	0.7269	0.0232	0.001	0.0242
24.3	0.7914	0	0	0
24.3333	0.8542	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
24.3667	0.9158	0.0101	0	0.0101
24.4	0.9875	0	0	0
24.4333	1.058	0	0	0
24.4667	1.1291	0	0	0
24.5	1.1965	0.0101	0	0.0101
24.5333	1.262	0	0.001	0.001
24.5667	1.3292	0.0101	0	0.0101
24.6	1.3937	0	0	0
24.6333	1.4572	0.0101	0.001	0.0111
24.6667	1.5197	0.0101	0	0.0101
24.7	1.5842	0	0.001	0.001
24.7333	1.6458	0.0101	0	0.0101
24.7667	1.7064	0	0	0
24.8	1.7679	0.0101	0.001	0.0111
24.8333	1.8235	0	0.001	0.001
24.8667	1.8841	0	0.001	0.001
24.9	1.9407	0.0232	0	0.0232
24.9333	2.0013	0.0101	0	0.0101
24.9667	2.0552	0	0	0
25	2.1122	0	0.001	0.001
25.0333	2.1678	0.0232	0	0.0232
25.0667	2.2211	0.0101	0	0.0101
25.1	2.2777	0	0.001	0.001
25.1333	2.3317	0.0232	0	0.0232
25.1667	2.3847	0.0101	0	0.0101
25.2	2.4354	0	0	0
25.2333	2.4844	0	0	0
25.2667	2.5377	0	0	0
25.3	2.5884	0.0232	0.001	0.0242
25.3333	2.6368	0	0.001	0.001
25.3667	2.6852	0.0101	0	0.0101
25.4	2.7313	0.0101	0.001	0.0111
25.4333	2.7681	0.0101	0	0.0101
25.4667	2.7902	0.0101	0.001	0.0111
25.5	2.8175	0.0101	0.001	0.0111
25.5333	2.8422	0.0101	0.0023	0.0124
25.5667	2.8666	0	0	0
25.6	2.8896	0.0101	0	0.0101
25.6333	2.9153	0	0	0
25.6667	2.9419	0.0101	0.0023	0.0124
25.7	2.9636	0	0	0
25.7333	2.9893	0.0101	0	0.0101
25.7667	2.9972	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
25.8	3.0061	0.0232	0.001	0.0242
25.8333	3.014	0.0101	0	0.0101
25.8667	3.0183	0	0.001	0.001
25.9	3.0232	0.0101	0	0.0101
25.9333	3.0054	0	0.0023	0.0023
25.9667	2.9834	0	0	0
26	2.9709	0.0232	0.0023	0.0255
26.0333	2.9821	0.0101	0	0.0101
26.0667	2.989	0	0	0
26.1	2.9864	0	0.001	0.001
26.1333	2.991	0	0	0
26.1667	2.987	0	0	0
26.2	2.9854	0	0	0
26.2333	2.987	0.0232	0.001	0.0242
26.2667	2.9896	0.0101	0.001	0.0111
26.3	2.986	0	0	0
26.3333	2.9867	0.0232	0	0.0232
26.3667	2.9867	0.0101	0	0.0101
26.4	2.9887	0.0101	0	0.0101
26.4333	2.9923	0.0101	0.001	0.0111
26.4667	2.9913	0	0	0
26.5	2.9962	0	0	0
26.5333	2.9969	0	0	0
26.5667	2.9966	0	0.001	0.001
26.6	2.9972	0	0	0
26.6333	3.0018	0.0101	0.001	0.0111
26.6667	3.0018	0	0	0
26.7	3.0025	0	0	0
26.7333	3.0038	0.0101	0	0.0101
26.7667	2.9956	0.0232	0.001	0.0242
26.8	2.992	0.0101	0	0.0101
26.8333	2.9867	0	0.001	0.001
26.8667	2.9844	0	0.001	0.001
26.9	2.9768	0.0101	0	0.0101
26.9333	2.9742	0	0.001	0.001
26.9667	2.9702	0.0101	0	0.0101
27	2.9659	0	0	0
27.0333	2.9597	0	0.001	0.001
27.0667	2.9587	0.0101	0.001	0.0111
27.1	2.9518	0	0	0
27.1333	2.9508	0.0101	0	0.0101
27.1667	2.9511	0.0101	0.001	0.0111
27.2	2.9413	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
27.2333	2.9416	0	0.0023	0.0023
27.2667	2.938	0	0	0
27.3	2.9353	0.0101	0	0.0101
27.3333	2.9311	0.0101	0.001	0.0111
27.3667	2.9251	0.0232	0.0023	0.0255
27.4	2.9238	0	0	0
27.4333	2.9215	0	0.001	0.001
27.4667	2.9195	0.0101	0	0.0101
27.5	2.9159	0	0.001	0.001
27.5333	2.9126	0.0101	0.0023	0.0124
27.5667	2.9116	0.0101	0	0.0101
27.6	2.9116	0.0101	0	0.0101
27.6333	2.9107	0.0101	0	0.0101
27.6667	2.9054	0	0	0
27.7	2.9057	0	0.001	0.001
27.7333	2.9024	0.0101	0.001	0.0111
27.7667	2.9005	0	0	0
27.8	2.9031	0	0	0
27.8333	2.9028	0	0	0
27.8667	2.9021	0.0101	0.001	0.0111
27.9	2.8988	0.0101	0	0.0101
27.9333	2.9008	0	0	0
27.9667	2.8998	0.0232	0.0023	0.0255
28	2.8998	0.0101	0.0023	0.0124
28.0333	2.9021	0	0.0023	0.0023
28.0667	2.8988	0	0	0
28.1	2.9001	0	0	0
28.1333	2.9005	0.0101	0	0.0101
28.1667	2.9037	0.0101	0	0.0101
28.2	2.9057	0.0101	0.001	0.0111
28.2333	2.9153	0.0101	0	0.0101
28.2667	2.933	0.0232	0.0023	0.0255
28.3	2.9475	0.0101	0.0023	0.0124
28.3333	2.962	0.0364	0	0.0364
28.3667	2.9699	0.0232	0	0.0232
28.4	2.9765	0.0101	0	0.0101
28.4333	2.9801	0	0	0
28.4667	2.9827	0.0232	0	0.0232
28.5	2.9827	0	0	0
28.5333	2.9775	0.0101	0	0.0101
28.5667	2.9742	0	0	0
28.6	2.9712	0	0	0
28.6333	2.9719	0.0101	0.001	0.0111

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
28.6667	2.9686	0.0101	0	0.0101
28.7	2.9692	0	0.001	0.001
28.7333	2.9617	0	0	0
28.7667	2.9617	0	0	0
28.8	2.9594	0	0.001	0.001
28.8333	2.9584	0.0101	0	0.0101
28.8667	2.9554	0.0101	0	0.0101
28.9	2.9492	0	0	0
28.9333	2.9521	0	0	0
28.9667	2.9508	0	0	0
29	2.9485	0	0.001	0.001
29.0333	2.9449	0.0101	0.0023	0.0124
29.0667	2.9452	0.0101	0	0.0101
29.1	2.9449	0	0	0
29.1333	2.9462	0.0101	0	0.0101
29.1667	2.9462	0.0101	0	0.0101
29.2	2.9525	0.0232	0.001	0.0242
29.2333	2.9544	0	0	0
29.2667	2.9571	0	0	0
29.3	2.962	0	0	0
29.3333	2.9617	0.0232	0	0.0232
29.3667	2.9679	0	0	0
29.4	2.9709	0	0	0
29.4333	2.9755	0.0101	0	0.0101
29.4667	2.9758	0	0	0
29.5	2.9804	0	0	0
29.5333	2.9824	0.0101	0	0.0101
29.5667	2.9834	0.0101	0	0.0101
29.6	2.9841	0	0.001	0.001
29.6333	2.9883	0	0	0
29.6667	2.988	0	0.0023	0.0023
29.7	2.985	0.0101	0.001	0.0111
29.7333	2.9883	0	0.001	0.001
29.7667	2.9887	0	0	0
29.8	2.9854	0	0	0
29.8333	2.9873	0.0101	0.001	0.0111
29.8667	2.9854	0.0232	0	0.0232
29.9	2.9854	0	0.001	0.001
29.9333	2.9857	0.0101	0	0.0101
29.9667	2.9804	0.0101	0	0.0101
30	2.9824	0.0232	0	0.0232
30.0333	2.9801	0	0	0
30.0667	2.9814	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
30.1	2.9811	0	0	0
30.1333	2.9817	0.0101	0	0.0101
30.1667	2.9804	0	0	0
30.2	2.9785	0.0232	0	0.0232
30.2333	2.9817	0.0232	0	0.0232
30.2667	2.9788	0	0	0
30.3	2.9801	0	0	0
30.3333	2.9798	0.0101	0	0.0101
30.3667	2.9765	0.0101	0	0.0101
30.4	2.9785	0.0101	0	0.0101
30.4333	2.9794	0.0232	0	0.0232
30.4667	2.9742	0.0101	0.001	0.0111
30.5	2.9768	0.0232	0	0.0232
30.5333	2.9735	0.0232	0.001	0.0242
30.5667	2.9722	0.0101	0	0.0101
30.6	2.9722	0	0	0
30.6333	2.9755	0.0101	0.001	0.0111
30.6667	2.9715	0.0101	0.001	0.0111
30.7	2.9689	0	0.001	0.001
30.7333	2.9696	0.0232	0	0.0232
30.7667	2.9686	0.0101	0	0.0101
30.8	2.9683	0.0101	0.001	0.0111
30.8333	2.9686	0.0101	0	0.0101
30.8667	2.9255	0.0232	0.001	0.0242
30.9	2.8508	0	0.001	0.001
30.9333	2.7767	0	0	0
30.9667	2.7109	0	0	0
31	2.6404	0	0.001	0.001
31.0333	2.5776	0.0101	0.0023	0.0124
31.0667	2.5173	0.0101	0	0.0101
31.1	2.4647	0	0	0
31.1333	2.3956	0.0101	0.001	0.0111
31.1667	2.2511	0.0232	0.001	0.0242
31.2	2.1059	0	0	0
31.2333	1.9585	0.0232	0.001	0.0242
31.2667	1.8248	0	0.001	0.001
31.3	1.7152	0	0	0
31.3333	1.601	0.0101	0.001	0.0111
31.3667	1.4954	0.0101	0.001	0.0111
31.4	1.3868	0.0101	0	0.0101
31.4333	1.2834	0.0101	0.0023	0.0124
31.4667	1.1857	0	0.001	0.001
31.5	1.0922	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
31.5333	1.004	0	0.0023	0.0023
31.5667	0.9191	0.0101	0	0.0101
31.6	0.8404	0	0	0
31.6333	0.7631	0	0.001	0.001
31.6667	0.7015	0.0101	0	0.0101
31.7	0.6465	0.0232	0	0.0232
31.7333	0.5995	0	0	0
31.7667	0.555	0.0101	0	0.0101
31.8	0.5139	0.0101	0	0.0101
31.8333	0.4688	0.0101	0.001	0.0111
31.8667	0.431	0	0	0
31.9	0.3931	0.0101	0.001	0.0111
31.9333	0.3576	0.0101	0	0.0101
31.9667	0.3256	0	0.001	0.001
32	0.2947	0	0	0
32.0333	0.2664	0.0101	0.001	0.0111
32.0667	0.2368	0.0101	0	0.0101
32.1	0.2147	0.0101	0	0.0101
32.1333	0.1897	0	0.0023	0.0023
32.1667	0.1696	0.0101	0	0.0101
32.2	0.1476	0	0	0
32.2333	0.1285	0	0.001	0.001
32.2667	0.1143	0.0101	0	0.0101
32.3	0.0952	0	0.001	0.001
32.3333	0.0811	0.0101	0.001	0.0111
32.3667	0.0686	0	0	0
32.4	0.0561	0	0.001	0.001
32.4333	0.0492	0	0.001	0.001
32.4667	0.0367	0.0232	0	0.0232
32.5	-0.0275	0.0101	0	0.0101
32.5333	-0.0282	0	0	0
32.5667	-0.0279	0	0	0
32.6	-0.0279	0	0	0
32.6333	0.0301	0.0101	0	0.0101
32.6667	-0.0298	12.6601	0.001	12.6611
32.7	-0.1233	12.2656	0	12.2656
32.7333	-0.124	11.9369	0.001	11.9379
32.7667	-0.1177	11.6476	0	11.6476
32.8	-0.1197	11.3451	0.001	11.3461
32.8333	-0.1151	11.0821	0	11.0821
32.8667	-0.1098	10.898	0	10.898
32.9	-0.1105	10.635	0	10.635
32.9333	-0.1088	10.4509	0	10.4509

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
32.9667	-0.1042	10.1748	0	10.1748
33	-0.1042	9.6883	0.001	9.6893
33.0333	-0.0901	8.7283	0.001	8.7293
33.0667	-0.0825	8.0445	0	8.0445
33.1	-0.0835	7.5711	0.001	7.5722
33.1333	-0.0769	7.1241	0.001	7.1251
33.1667	-0.072	6.7033	0	6.7033
33.2	-0.0693	6.2562	0	6.2562
33.2333	-0.065	5.8617	0.0023	5.864
33.2667	-0.0608	5.4409	0.001	5.4419
33.3	-0.0591	5.1779	0	5.1779
33.3333	-0.0594	5.0727	0	5.0727
33.3667	-0.0532	4.7703	0.0023	4.7726
33.4	-0.0502	4.5467	0	4.5467
33.4333	-0.0496	4.3363	0	4.3363
33.4667	-0.0506	4.1785	0.001	4.1795
33.5	-0.0479	4.047	0	4.047
33.5333	-0.0492	3.8366	0.001	3.8376
33.5667	-0.0479	3.6657	0	3.6657
33.6	-0.0453	3.5605	0.001	3.5615
33.6333	-0.0433	3.1923	0	3.1923
33.6667	-0.0436	2.9687	0	2.9687
33.7	-0.0453	0	0	0
33.7333	-0.04	0	0	0
33.7667	-0.041	0.0232	0	0.0232
33.8	-0.0394	0	0.001	0.001
33.8333	-0.041	0	0.0023	0.0023
33.8667	-0.0407	0.0101	0	0.0101
33.9	-0.042	0	0.001	0.001
33.9333	-0.0407	0	0.001	0.001
33.9667	-0.0186	0	0.001	0.001
34	0.0495	0.0101	0.001	0.0111
34.0333	0.1347	0.0101	0	0.0101
34.0667	0.2253	0	0.001	0.001
34.1	0.3144	0	0.0023	0.0023
34.1333	0.4	0.0101	0	0.0101
34.1667	0.4869	0	0	0
34.2	0.5705	0.0101	0	0.0101
34.2333	0.6521	0.0101	0.001	0.0111
34.2667	0.7295	0	0.001	0.001
34.3	0.8095	0	0.001	0.001
34.3333	0.8878	0	0	0
34.3667	0.9632	0.0232	0.001	0.0242

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
34.4	1.0336	0	0	0
34.4333	1.109	0	0	0
34.4667	1.1794	0	0.001	0.001
34.5	1.2518	0	0	0
34.5333	1.3203	0	0.0023	0.0023
34.5667	1.3864	0	0	0
34.6	1.4598	0	0	0
34.6333	1.5214	0.0101	0	0.0101
34.6667	1.5885	0	0	0
34.7	1.6553	0.0101	0.001	0.0111
34.7333	1.7175	0	0	0
34.7667	1.7801	0.0101	0	0.0101
34.8	1.8449	0	0	0
34.8333	1.9068	0.0232	0	0.0232
34.8667	1.9664	0.0101	0	0.0101
34.9	2.0282	0.0101	0	0.0101
34.9333	2.0862	0.0101	0.001	0.0111
34.9667	2.1451	0.0101	0.001	0.0111
35	2.2043	0.0101	0.001	0.0111
35.0333	2.2619	0.0101	0.001	0.0111
35.0667	2.3189	0.0101	0.001	0.0111
35.1	2.3742	0	0.001	0.001
35.1333	2.4321	0.0232	0.0023	0.0255
35.1667	2.4871	0.0101	0	0.0101
35.2	2.5397	0.0101	0.001	0.0111
35.2333	2.598	0.0101	0.001	0.0111
35.2667	2.6503	0.0101	0.001	0.0111
35.3	2.7046	0.0232	0	0.0232
35.3333	2.754	0	0	0
35.3667	2.7997	0.0101	0.001	0.0111
35.4	2.8382	0	0	0
35.4333	2.8679	0.0101	0	0.0101
35.4667	2.8965	0.0232	0	0.0232
35.5	2.9251	0.0232	0	0.0232
35.5333	2.9541	0.0232	0.001	0.0242
35.5667	2.9798	0	0	0
35.6	3.0025	0.0232	0.001	0.0242
35.6333	3.0038	0	0	0
35.6667	3.0005	0.0101	0	0.0101
35.7	2.989	0.0232	0.001	0.0242
35.7333	2.9854	0.0101	0.001	0.0111
35.7667	2.9758	0	0	0
35.8	2.9715	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
35.8333	2.9683	0	0.001	0.001
35.8667	2.963	0	0	0
35.9	2.962	0	0.001	0.001
35.9333	2.9587	0.0101	0.001	0.0111
35.9667	2.9551	0.0101	0.001	0.0111
36	2.9554	0.0232	0	0.0232
36.0333	2.9607	0.0101	0	0.0101
36.0667	2.962	0	0	0
36.1	2.9656	0	0	0
36.1333	2.9689	0.0232	0.001	0.0242
36.1667	2.9709	0	0	0
36.2	2.9709	0.0101	0.001	0.0111
36.2333	2.9755	0.0101	0	0.0101
36.2667	2.9791	0.0101	0	0.0101
36.3	2.9847	0	0	0
36.3333	2.9864	0.0101	0	0.0101
36.3667	2.987	0.0232	0	0.0232
36.4	2.9847	0	0.0023	0.0023
36.4333	2.9794	0.0101	0	0.0101
36.4667	2.9827	0.0101	0	0.0101
36.5	2.9765	0	0.0023	0.0023
36.5333	2.9725	0.0101	0	0.0101
36.5667	2.9745	0.0101	0	0.0101
36.6	2.9722	0.0101	0.001	0.0111
36.6333	2.9706	0	0.001	0.001
36.6667	2.9699	0.0232	0.001	0.0242
36.7	2.9686	0	0	0
36.7333	2.9663	0.0101	0.001	0.0111
36.7667	2.961	0	0	0
36.8	2.9646	0.0232	0	0.0232
36.8333	2.959	0	0	0
36.8667	2.9604	0.0101	0	0.0101
36.9	2.9594	0.0232	0.001	0.0242
36.9333	2.959	0.0101	0	0.0101
36.9667	2.9574	0	0	0
37	2.9587	0.0101	0.001	0.0111
37.0333	2.9554	0	0.001	0.001
37.0667	2.9577	0.0101	0	0.0101
37.1	2.9567	0.0232	0	0.0232
37.1333	2.9571	0.0101	0	0.0101
37.1667	2.9567	0	0	0
37.2	2.9577	0	0.001	0.001
37.2333	2.9617	0	0.001	0.001

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
37.2667	2.958	0	0	0
37.3	2.959	0	0	0
37.3333	2.9613	0.0101	0.001	0.0111
37.3667	2.9567	0	0.001	0.001
37.4	2.9604	0.0101	0	0.0101
37.4333	2.9604	0	0.0023	0.0023
37.4667	2.961	0.0101	0	0.0101
37.5	2.9607	0.0101	0	0.0101
37.5333	2.962	0.0101	0	0.0101
37.5667	2.9623	0.0101	0.001	0.0111
37.6	2.9646	0.0101	0.001	0.0111
37.6333	2.9623	0.0232	0.001	0.0242
37.6667	2.964	0	0.001	0.001
37.7	2.9627	0	0.001	0.001
37.7333	2.9666	0.0101	0	0.0101
37.7667	2.9669	0.0101	0.001	0.0111
37.8	2.965	0.0101	0.001	0.0111
37.8333	2.9676	0	0	0
37.8667	2.965	0	0	0
37.9	2.9689	0.0101	0	0.0101
37.9333	2.9683	0.0101	0.001	0.0111
37.9667	2.9709	0.0232	0	0.0232
38	2.9715	0.0232	0	0.0232
38.0333	2.9715	0	0.001	0.001
38.0667	2.9715	0	0.001	0.001
38.1	2.9729	0.0101	0.001	0.0111
38.1333	2.9755	0.0232	0	0.0232
38.1667	2.9735	0.0101	0.001	0.0111
38.2	2.9745	0	0	0
38.2333	2.9748	0.0101	0	0.0101
38.2667	2.9775	0	0	0
38.3	2.9788	0.0101	0.001	0.0111
38.3333	2.9798	0.0101	0.001	0.0111
38.3667	2.9794	0.0232	0	0.0232
38.4	2.9798	0	0.001	0.001
38.4333	2.9801	0.0101	0	0.0101
38.4667	2.9824	0.0101	0.001	0.0111
38.5	2.9841	0	0	0
38.5333	2.9811	0.0101	0.001	0.0111
38.5667	2.9847	0	0	0
38.6	2.9837	0	0	0
38.6333	2.9837	0.0101	0.0023	0.0124
38.6667	2.9847	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
38.7	2.9873	0.0232	0.001	0.0242
38.7333	2.9883	0	0	0
38.7667	2.9877	0.0101	0	0.0101
38.8	2.9883	0	0.001	0.001
38.8333	2.9913	0.0101	0	0.0101
38.8667	2.986	0	0	0
38.9	2.988	0.0101	0	0.0101
38.9333	2.9887	0.0232	0.001	0.0242
38.9667	2.99	0.0101	0	0.0101
39	2.992	0.0101	0	0.0101
39.0333	2.9916	0.0101	0	0.0101
39.0667	2.9949	0	0.001	0.001
39.1	2.9939	0.0101	0	0.0101
39.1333	2.9975	0.0101	0	0.0101
39.1667	2.9966	0.0101	0	0.0101
39.2	2.9982	0.0101	0	0.0101
39.2333	2.9966	0	0.001	0.001
39.2667	2.9985	0.0101	0.001	0.0111
39.3	2.9995	0	0	0
39.3333	2.9982	0	0	0
39.3667	2.9975	0	0.001	0.001
39.4	2.9962	0	0	0
39.4333	2.9998	0	0.001	0.001
39.4667	3.0008	0.0232	0.001	0.0242
39.5	2.9992	0	0	0
39.5333	2.9989	0	0	0
39.5667	3.0018	0	0.001	0.001
39.6	3.0005	0.0232	0	0.0232
39.6333	3.0031	0.0232	0.001	0.0242
39.6667	3.0015	0.0101	0	0.0101
39.7	3.0025	0	0	0
39.7333	3.0058	0	0	0
39.7667	3.0008	0	0.001	0.001
39.8	3.0045	0.0232	0.001	0.0242
39.8333	3.0045	0.0232	0.001	0.0242
39.8667	3.0038	0.0101	0	0.0101
39.9	3.0008	0	0.001	0.001
39.9333	3.0002	0	0	0
39.9667	3.0018	0.0101	0	0.0101
40	2.9969	0.0232	0	0.0232
40.0333	2.9975	0.0101	0	0.0101
40.0667	2.9972	0	0.001	0.001
40.1	2.9956	0.0232	0	0.0232

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
40.1333	2.9969	0	0	0
40.1667	2.9949	0.0101	0	0.0101
40.2	2.9956	0.0101	0	0.0101
40.2333	2.9933	0.0232	0	0.0232
40.2667	2.9956	0.0101	0	0.0101
40.3	2.9896	0.0101	0.001	0.0111
40.3333	2.9913	0.0101	0	0.0101
40.3667	2.99	0	0	0
40.4	2.9893	0.0101	0	0.0101
40.4333	2.989	0	0	0
40.4667	2.9857	0	0.001	0.001
40.5	2.9883	0	0	0
40.5333	2.9873	0.0232	0.0023	0.0255
40.5667	2.9837	0.0101	0	0.0101
40.6	2.985	0	0.0023	0.0023
40.6333	2.986	0.0232	0.0023	0.0255
40.6667	2.9817	0	0	0
40.7	2.9811	0.0101	0	0.0101
40.7333	2.9827	0	0.001	0.001
40.7667	2.9804	0	0.001	0.001
40.8	2.9798	0.0232	0	0.0232
40.8333	2.9778	0	0	0
40.8667	2.9794	0.0232	0	0.0232
40.9	2.9801	0.0232	0.001	0.0242
40.9333	2.9564	0.0101	0.0023	0.0124
40.9667	2.8902	0	0.0023	0.0023
41	2.8221	0	0.001	0.001
41.0333	2.8106	0.0101	0.001	0.0111
41.0667	2.8113	0	0.001	0.001
41.1	2.8113	0	0	0
41.1333	2.8119	0	0	0
41.1667	2.8162	0.0232	0	0.0232
41.2	2.8142	0	0	0
41.2333	2.8109	0	0.001	0.001
41.2667	2.8175	0	0	0
41.3	2.8172	0.0101	0	0.0101
41.3333	2.8182	0.0232	0	0.0232
41.3667	2.8152	0	0.001	0.001
41.4	2.8149	0.0101	0	0.0101
41.4333	2.8172	0.0232	0	0.0232
41.4667	2.8162	0.0101	0.001	0.0111
41.5	2.8172	0	0	0
41.5333	2.8261	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
41.5667	2.8577	0	0	0
41.6	2.9011	0.0101	0.001	0.0111
41.6333	2.9472	0.0101	0	0.0101
41.6667	2.9867	0	0	0
41.7	3.0291	0	0	0
41.7333	3.0713	0.0101	0.001	0.0111
41.7667	3.1124	0	0	0
41.8	3.1516	0	0.001	0.001
41.8333	3.1878	0	0.001	0.001
41.8667	3.2273	0.0364	0	0.0364
41.9	3.2622	0	0	0
41.9333	3.298	0.0101	0.001	0.0111
41.9667	3.3296	0	0.001	0.001
42	3.3639	0	0.001	0.001
42.0333	3.3974	0	0	0
42.0667	3.431	0	0.0023	0.0023
42.1	3.4603	0	0	0
42.1333	3.4916	0.0101	0	0.0101
42.1667	3.5189	0.0101	0.001	0.0111
42.2	3.5465	0.0101	0.001	0.0111
42.2333	3.5719	0.0101	0.001	0.0111
42.2667	3.5985	0	0	0
42.3	3.6252	0.0232	0.001	0.0242
42.3333	3.6502	0.0101	0.001	0.0111
42.3667	3.6752	0.0101	0.001	0.0111
42.4	3.6914	0.0101	0	0.0101
42.4333	3.6891	0	0.001	0.001
42.4667	3.6835	0.0101	0	0.0101
42.5	3.6795	0.0101	0	0.0101
42.5333	3.6726	0.0232	0	0.0232
42.5667	3.6673	0.0101	0.001	0.0111
42.6	3.6637	0.0232	0.001	0.0242
42.6333	3.6686	0.0101	0	0.0101
42.6667	3.6739	0.0101	0	0.0101
42.7	3.6779	0	0	0
42.7333	3.6792	0.0101	0	0.0101
42.7667	3.6782	0	0.001	0.001
42.8	3.6746	0.0364	0	0.0364
42.8333	3.6752	0	0	0
42.8667	3.6802	0.0232	0.001	0.0242
42.9	3.6861	0.0232	0.001	0.0242
42.9333	3.6907	0	0.001	0.001
42.9667	3.6884	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
43	3.6887	0.0232	0	0.0232
43.0333	3.6914	0.0101	0	0.0101
43.0667	3.6937	0.0232	0	0.0232
43.1	3.6887	0.0101	0.001	0.0111
43.1333	3.6904	0.0101	0	0.0101
43.1667	3.693	0	0	0
43.2	3.691	0	0.001	0.001
43.2333	3.6937	0.0101	0	0.0101
43.2667	3.6927	0.0101	0.001	0.0111
43.3	3.6943	0.0101	0.0036	0.0137
43.3333	3.6914	0	0	0
43.3667	3.6956	0	0	0
43.4	3.6937	0.0232	0.0023	0.0255
43.4333	3.6966	0.0101	0	0.0101
43.4667	3.6943	0.0232	0.001	0.0242
43.5	3.6973	0.0232	0	0.0232
43.5333	3.6973	0.0364	0.001	0.0374
43.5667	3.6986	0.0232	0	0.0232
43.6	3.6963	0	0	0
43.6333	3.6989	0	0	0
43.6667	3.7006	0.0101	0.001	0.0111
43.7	3.6989	0.0101	0	0.0101
43.7333	3.7042	0.0101	0	0.0101
43.7667	3.7006	0	0	0
43.8	3.7065	0.0101	0	0.0101
43.8333	3.7035	0.0101	0.0023	0.0124
43.8667	3.7072	0	0	0
43.9	3.7075	0	0	0
43.9333	3.7068	0.0101	0	0.0101
43.9667	3.7085	0.0101	0.0023	0.0124
44	3.7104	0	0	0
44.0333	3.7055	0	0	0
44.0667	3.7062	0.0101	0.001	0.0111
44.1	3.7029	0.0232	0	0.0232
44.1333	3.6993	0.0101	0	0.0101
44.1667	3.6986	0.0101	0	0.0101
44.2	3.696	0.0101	0	0.0101
44.2333	3.6923	0.0101	0	0.0101
44.2667	3.692	0	0	0
44.3	3.6887	0	0	0
44.3333	3.6887	0.0101	0.001	0.0111
44.3667	3.6868	0	0.001	0.001
44.4	3.6871	0.0232	0.001	0.0242

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
44.4333	3.6818	0.0101	0	0.0101
44.4667	3.6815	0.0101	0.001	0.0111
44.5	3.6815	0	0	0
44.5333	3.6775	0	0	0
44.5667	3.6752	0.0232	0	0.0232
44.6	3.6779	0	0	0
44.6333	3.6756	0	0	0
44.6667	3.6729	0.0101	0	0.0101
44.7	3.6742	0	0.0023	0.0023
44.7333	3.6703	0	0	0
44.7667	3.6693	0.0232	0	0.0232
44.8	3.67	0	0	0
44.8333	3.6647	0.0101	0	0.0101
44.8667	3.665	0	0	0
44.9	3.665	0	0.0023	0.0023
44.9333	3.664	0.0101	0	0.0101
44.9667	3.6624	0.0101	0	0.0101
45	3.6591	0.0101	0.0023	0.0124
45.0333	3.6598	0.0232	0	0.0232
45.0667	3.6598	0	0.001	0.001
45.1	3.6588	0	0.001	0.001
45.1333	3.6575	0.0232	0	0.0232
45.1667	3.6568	0	0.0023	0.0023
45.2	3.6571	0	0.0023	0.0023
45.2333	3.6601	0.0101	0.0023	0.0124
45.2667	3.6604	0.0232	0	0.0232
45.3	3.6604	0.0101	0	0.0101
45.3333	3.6614	0.0101	0	0.0101
45.3667	3.6637	0	0	0
45.4	3.6677	0.0101	0	0.0101
45.4333	3.6686	0.0101	0.001	0.0111
45.4667	3.6703	0.0232	0	0.0232
45.5	3.6706	0	0	0
45.5333	3.6749	0.0101	0	0.0101
45.5667	3.6874	0	0.001	0.001
45.6	3.695	0	0	0
45.6333	3.7049	0	0	0
45.6667	3.7095	0	0	0
45.7	3.7081	0.0101	0	0.0101
45.7333	3.7124	0	0.001	0.001
45.7667	3.7124	0.0101	0.001	0.0111
45.8	3.7147	0.0101	0	0.0101
45.8333	3.7124	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
45.8667	3.7114	0	0.001	0.001
45.9	3.7118	0	0	0
45.9333	3.7128	0.0101	0	0.0101
45.9667	3.7137	0.0232	0.001	0.0242
46	3.7128	0.0101	0.001	0.0111
46.0333	3.7118	0	0	0
46.0667	3.7114	0	0.001	0.001
46.1	3.7118	0.0232	0	0.0232
46.1333	3.7118	0.0101	0	0.0101
46.1667	3.7098	0.0101	0	0.0101
46.2	3.7118	0	0.001	0.001
46.2333	3.7085	0	0.001	0.001
46.2667	3.7075	0	0	0
46.3	3.7075	0.0364	0	0.0364
46.3333	3.7062	0.0101	0	0.0101
46.3667	3.7111	0	0.001	0.001
46.4	3.7075	0	0	0
46.4333	3.7108	0	0	0
46.4667	3.7091	0	0.001	0.001
46.5	3.7078	0	0	0
46.5333	3.7085	0.0232	0.001	0.0242
46.5667	3.7058	0.0101	0	0.0101
46.6	3.7095	0.0101	0.001	0.0111
46.6333	3.7065	0.0101	0.0023	0.0124
46.6667	3.7078	0.0101	0.001	0.0111
46.7	3.7078	0.0101	0.001	0.0111
46.7333	3.7101	0.0101	0	0.0101
46.7667	3.7078	0	0	0
46.8	3.7088	0.0232	0.0023	0.0255
46.8333	3.7035	0.0232	0	0.0232
46.8667	3.7045	0.0101	0.001	0.0111
46.9	3.7098	0.0101	0.001	0.0111
46.9333	3.7072	0	0	0
46.9667	3.7058	0.0101	0.001	0.0111
47	3.7088	0	0	0
47.0333	3.7065	0	0	0
47.0667	3.7091	0	0	0
47.1	3.7058	0.0101	0	0.0101
47.1333	3.7032	0.0101	0	0.0101
47.1667	3.7042	0	0	0
47.2	3.7029	0.0101	0.001	0.0111
47.2333	3.7088	0	0.001	0.001
47.2667	3.7062	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
47.3	3.7058	0.0232	0	0.0232
47.3333	3.7042	0.0101	0	0.0101
47.3667	3.7052	0	0.001	0.001
47.4	3.7019	0	0	0
47.4333	3.7016	0.0101	0	0.0101
47.4667	3.6996	0.0101	0	0.0101
47.5	3.6976	0	0	0
47.5333	3.6976	0	0.001	0.001
47.5667	3.6499	0	0	0
47.6	3.5752	0	0.001	0.001
47.6333	3.4978	0	0.001	0.001
47.6667	3.4254	0.0101	0	0.0101
47.7	3.3593	0.0101	0	0.0101
47.7333	3.2951	0.0232	0.001	0.0242
47.7667	3.2345	0	0	0
47.8	3.0604	0	0	0
47.8333	2.8455	0	0.001	0.001
47.8667	2.6411	0.0232	0	0.0232
47.9	2.4489	0.0101	0	0.0101
47.9333	2.2646	0	0.001	0.001
47.9667	2.0914	0	0	0
48	1.9206	0.0101	0.001	0.0111
48.0333	1.7646	0	0.001	0.001
48.0667	1.6152	0	0	0
48.1	1.4727	0	0	0
48.1333	1.3357	0	0	0
48.1667	1.211	0.0232	0.001	0.0242
48.2	1.0942	0	0	0
48.2333	0.9846	0.0101	0	0.0101
48.2667	0.8796	0	0.001	0.001
48.3	0.7848	0.0101	0	0.0101
48.3333	0.6969	0	0.001	0.001
48.3667	0.612	0.0101	0.001	0.0111
48.4	0.5353	0.0101	0.001	0.0111
48.4333	0.4622	0	0	0
48.4667	0.3957	0.0101	0	0.0101
48.5	0.3365	0	0.0023	0.0023
48.5333	0.2881	0	0	0
48.5667	0.2378	0	0.001	0.001
48.6	0.196	0	0	0
48.6333	0.1581	0	0	0
48.6667	0.1252	0.0101	0	0.0101
48.7	0.0939	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
48.7333	0.0739	0.0101	0	0.0101
48.7667	0.0538	0	0.0023	0.0023
48.8	0.0363	0	0.0023	0.0023
48.8333	0.0232	0.0101	0.001	0.0111
48.8667	0.0143	0	0	0
48.9	0.0067	0	0	0
48.9333	-0.0042	0.0101	0	0.0101
48.9667	-0.0061	0	0	0
49	-0.0127	0.0101	0.001	0.0111
49.0333	-0.016	0.0101	0	0.0101
49.0667	-0.0117	0.0101	0.001	0.0111
49.1	-0.0167	0	0.001	0.001
49.1333	-0.0176	0	0.001	0.001
49.1667	-0.0176	0	0	0
49.2	-0.0193	0.0232	0	0.0232
49.2333	-0.0186	0.0232	0	0.0232
49.2667	-0.0196	0.0101	0	0.0101
49.3	-0.0242	0	0	0
49.3333	-0.0246	0	0	0
49.3667	-0.0259	0	0.001	0.001
49.4	-0.0288	0	0	0
49.4333	-0.0265	0	0	0
49.4667	-0.0147	0	0.001	0.001
49.5	-0.017	0	0	0
49.5333	-0.0144	0.0232	0	0.0232
49.5667	-0.016	0	0.001	0.001
49.6	-0.0374	0.0101	0	0.0101
49.6333	-0.044	0	0.001	0.001
49.6667	-0.0446	0.0101	0	0.0101
49.7	-0.0545	0.0101	0	0.0101
49.7333	-0.0519	0	0.001	0.001
49.7667	-0.0539	0.0101	0.001	0.0111
49.8	-0.0542	0.0101	0	0.0101
49.8333	-0.0571	0	0	0
49.8667	-0.0091	0	0	0
49.9	0.061	0.0101	0	0.0101
49.9333	0.1338	0	0	0
49.9667	0.2032	0	0	0
50	0.269	0.0101	0	0.0101
50.0333	0.3362	0.0101	0	0.0101
50.0667	0.3984	0.0232	0.0023	0.0255
50.1	0.4622	0.0232	0	0.0232
50.1333	0.5271	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
50.1667	0.584	0.0101	0	0.0101
50.2	0.6409	0.0232	0	0.0232
50.2333	0.7005	0.0101	0	0.0101
50.2667	0.7555	0	0.001	0.001
50.3	0.8098	0.0232	0.001	0.0242
50.3333	0.8687	0	0.001	0.001
50.3667	0.9204	0.0101	0	0.0101
50.4	0.9711	0	0	0
50.4333	1.0224	0.0101	0	0.0101
50.4667	1.0715	0.0101	0	0.0101
50.5	1.1205	0	0	0
50.5333	1.1709	0.0101	0	0.0101
50.5667	1.2202	0.0101	0	0.0101
50.6	1.2637	0.0101	0.001	0.0111
50.6333	1.3127	0	0	0
50.6667	1.3608	0	0	0
50.7	1.4039	0.0101	0	0.0101
50.7333	1.448	0.0101	0	0.0101
50.7667	1.4927	0.0101	0	0.0101
50.8	1.5352	0.0232	0.001	0.0242
50.8333	1.5773	0.0101	0	0.0101
50.8667	1.6142	0.0232	0.001	0.0242
50.9	1.6593	0.0232	0.001	0.0242
50.9333	1.6981	0	0	0
50.9667	1.7347	0	0.0023	0.0023
51	1.7774	0	0	0
51.0333	1.8127	0.0101	0	0.0101
51.0667	1.8508	0	0	0
51.1	1.89	0	0	0
51.1333	1.9265	0	0.001	0.001
51.1667	1.9604	0.0101	0	0.0101
51.2	2.0124	0.0101	0.001	0.0111
51.2333	2.0819	0	0.0023	0.0023
51.2667	2.1494	0	0.001	0.001
51.3	2.2244	0.0101	0	0.0101
51.3333	2.2873	0.0101	0.001	0.0111
51.3667	2.3574	0.0232	0	0.0232
51.4	2.4216	0.0101	0	0.0101
51.4333	2.4917	0.0232	0	0.0232
51.4667	2.5542	0.0101	0.001	0.0111
51.5	2.621	0.0101	0	0.0101
51.5333	2.6845	0.0101	0	0.0101
51.5667	2.7458	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
51.6	2.8047	0	0	0
51.6333	2.8656	0.0101	0	0.0101
51.6667	2.9271	0.0101	0	0.0101
51.7	2.988	0	0.001	0.001
51.7333	3.0453	0.0101	0	0.0101
51.7667	3.1019	0	0.001	0.001
51.8	3.1621	0.0232	0	0.0232
51.8333	3.2158	0	0	0
51.8667	3.2727	0.0101	0	0.0101
51.9	3.328	0	0.001	0.001
51.9333	3.3843	0.0101	0	0.0101
51.9667	3.4353	0.0232	0	0.0232
52	3.4909	0	0.001	0.001
52.0333	3.5416	0	0	0
52.0667	3.5936	0.0101	0	0.0101
52.1	3.6456	0	0	0
52.1333	3.695	0.0101	0.001	0.0111
52.1667	3.7318	0.0101	0	0.0101
52.2	3.7355	0	0.001	0.001
52.2333	3.7345	0.0232	0	0.0232
52.2667	3.7325	0	0	0
52.3	3.7348	0.0101	0	0.0101
52.3333	3.7345	0.0232	0	0.0232
52.3667	3.7328	0.0101	0	0.0101
52.4	3.7318	0.0101	0	0.0101
52.4333	3.7322	0	0	0
52.4667	3.7266	0.0101	0	0.0101
52.5	3.7216	0.0101	0.0023	0.0124
52.5333	3.7128	0.0101	0.001	0.0111
52.5667	3.7108	0	0.001	0.001
52.6	3.7026	0.0101	0	0.0101
52.6333	3.6986	0.0232	0	0.0232
52.6667	3.6917	0.0101	0	0.0101
52.7	3.6904	0	0	0
52.7333	3.6825	0.0101	0.001	0.0111
52.7667	3.6802	0.0101	0	0.0101
52.8	3.6756	0	0	0
52.8333	3.6729	0.0232	0	0.0232
52.8667	3.6673	0	0	0
52.9	3.6663	0.0101	0.001	0.0111
52.9333	3.667	0.0232	0.001	0.0242
52.9667	3.6654	0.0101	0	0.0101
53	3.6667	0.0101	0.001	0.0111

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
53.0333	3.67	0.0101	0	0.0101
53.0667	3.6746	0.0232	0	0.0232
53.1	3.6756	0.0232	0	0.0232
53.1333	3.6746	0	0.001	0.001
53.1667	3.6792	0.0101	0.001	0.0111
53.2	3.6812	0	0	0
53.2333	3.6854	0	0	0
53.2667	3.6838	0.0232	0	0.0232
53.3	3.6861	0.0101	0.001	0.0111
53.3333	3.6877	0.0232	0	0.0232
53.3667	3.6897	0	0	0
53.4	3.6887	0.0101	0	0.0101
53.4333	3.6884	0.0101	0.001	0.0111
53.4667	3.6897	0.0101	0.001	0.0111
53.5	3.6891	0	0.001	0.001
53.5333	3.6897	0	0.001	0.001
53.5667	3.693	0	0.0023	0.0023
53.6	3.6927	0.0101	0.001	0.0111
53.6333	3.693	0	0	0
53.6667	3.6887	0	0	0
53.7	3.6927	0	0	0
53.7333	3.69	0.0101	0.001	0.0111
53.7667	3.6887	0	0	0
53.8	3.6894	0	0.001	0.001
53.8333	3.6877	0.0101	0	0.0101
53.8667	3.6884	0.0101	0.001	0.0111
53.9	3.6914	0.0101	0.001	0.0111
53.9333	3.6858	0	0.001	0.001
53.9667	3.6877	0.0101	0	0.0101
54	3.6881	0	0.001	0.001
54.0333	3.6881	0.0101	0	0.0101
54.0667	3.6897	0.0101	0	0.0101
54.1	3.6861	0	0.001	0.001
54.1333	3.6871	0	0	0
54.1667	3.6831	0	0	0
54.2	3.6864	0.0101	0.001	0.0111
54.2333	3.6825	0	0.001	0.001
54.2667	3.6821	0.0101	0.001	0.0111
54.3	3.6831	0.0101	0.001	0.0111
54.3333	3.6861	0	0	0
54.3667	3.6841	0.0101	0	0.0101
54.4	3.6858	0.0232	0	0.0232
54.4333	3.6864	0	0.001	0.001

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
54.4667	3.6835	0.0232	0.0023	0.0255
54.5	3.6848	0.0101	0	0.0101
54.5333	3.6831	0.0101	0	0.0101
54.5667	3.6831	0.0101	0	0.0101
54.6	3.6792	0.0232	0	0.0232
54.6333	3.6782	0.0101	0	0.0101
54.6667	3.6765	0.0101	0.001	0.0111
54.7	3.6752	0	0	0
54.7333	3.6736	0.0101	0	0.0101
54.7667	3.6713	0	0	0
54.8	3.6726	0.0101	0	0.0101
54.8333	3.6657	0	0.0023	0.0023
54.8667	3.6627	0.0101	0	0.0101
54.9	3.6647	0	0.001	0.001
54.9333	3.6598	0.0364	0	0.0364
54.9667	3.6594	0.0101	0	0.0101
55	3.6552	0	0	0
55.0333	3.6519	0.0101	0.001	0.0111
55.0667	3.6502	0.0101	0	0.0101
55.1	3.6486	0.0232	0.001	0.0242
55.1333	3.6466	0	0.001	0.001
55.1667	3.6413	0	0	0
55.2	3.6407	0	0.001	0.001
55.2333	3.6367	0.0101	0	0.0101
55.2667	3.6367	0.0101	0.001	0.0111
55.3	3.6308	0.0232	0.001	0.0242
55.3333	3.6364	0.0101	0	0.0101
55.3667	3.6397	0.0101	0	0.0101
55.4	3.64	0.0101	0	0.0101
55.4333	3.6453	0.0101	0.001	0.0111
55.4667	3.6446	0.0101	0.001	0.0111
55.5	3.6492	0.0101	0	0.0101
55.5333	3.6532	0.0101	0	0.0101
55.5667	3.6548	0.0101	0	0.0101
55.6	3.6561	0.0101	0.001	0.0111
55.6333	3.6548	0.0101	0	0.0101
55.6667	3.6601	0.0101	0	0.0101
55.7	3.6588	0	0	0
55.7333	3.6624	0.0101	0	0.0101
55.7667	3.6631	0	0	0
55.8	3.6647	0.0232	0	0.0232
55.8333	3.67	0.0101	0	0.0101
55.8667	3.6683	0	0.001	0.001

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
55.9	3.665	0.0101	0	0.0101
55.9333	3.6686	0	0	0
55.9667	3.6706	0.0101	0.001	0.0111
56	3.6693	0	0	0
56.0333	3.669	0	0	0
56.0667	3.668	0	0	0
56.1	3.6667	0.0232	0.001	0.0242
56.1333	3.6706	0.0101	0.001	0.0111
56.1667	3.6663	0.0232	0	0.0232
56.2	3.669	0	0.001	0.001
56.2333	3.666	0.0101	0	0.0101
56.2667	3.6654	0.0232	0	0.0232
56.3	3.668	0.0101	0.001	0.0111
56.3333	3.668	0	0.001	0.001
56.3667	3.6673	0	0.001	0.001
56.4	3.669	0.0101	0.001	0.0111
56.4333	3.666	0	0	0
56.4667	3.6713	0.0101	0	0.0101
56.5	3.668	0.0232	0.001	0.0242
56.5333	3.67	0.0101	0	0.0101
56.5667	3.668	0.0101	0	0.0101
56.6	3.6719	0.0101	0	0.0101
56.6333	3.6693	0	0	0
56.6667	3.6696	0.0232	0.0023	0.0255
56.7	3.6673	0	0	0
56.7333	3.6686	0.0101	0	0.0101
56.7667	3.669	0.0101	0	0.0101
56.8	3.6733	0	0	0
56.8333	3.6749	0.0101	0	0.0101
56.8667	3.6772	0	0.001	0.001
56.9	3.6765	0.0232	0.001	0.0242
56.9333	3.6789	0.0101	0	0.0101
56.9667	3.6821	0	0.001	0.001
57	3.6851	0.0101	0.001	0.0111
57.0333	3.6864	0.0101	0	0.0101
57.0667	3.6851	0	0	0
57.1	3.6914	0	0	0
57.1333	3.6953	0.0101	0	0.0101
57.1667	3.6917	0	0	0
57.2	3.6973	0.0101	0.001	0.0111
57.2333	3.6877	0	0	0
57.2667	3.6219	0	0.001	0.001
57.3	3.5182	0.0101	0.0023	0.0124

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
57.3333	3.4172	0	0	0
57.3667	3.3194	0	0	0
57.4	3.2276	0.0232	0	0.0232
57.4333	3.1447	0	0.001	0.001
57.4667	3.0189	0	0	0
57.5	2.8514	0.0101	0	0.0101
57.5333	2.7049	0	0	0
57.5667	2.5529	0	0.001	0.001
57.6	2.4206	0.0101	0	0.0101
57.6333	2.2896	0.0101	0	0.0101
57.6667	2.1675	0.0101	0.001	0.0111
57.7	2.0496	0.0101	0.001	0.0111
57.7333	1.9387	0	0.001	0.001
57.7667	1.8321	0	0	0
57.8	1.7129	0	0.001	0.001
57.8333	1.5859	0	0.0023	0.0023
57.8667	1.4602	0.0101	0	0.0101
57.9	1.343	0	0	0
57.9333	1.2686	0	0	0
57.9667	1.1544	0.0101	0	0.0101
58	1.0622	0.0101	0	0.0101
58.0333	0.9105	0.0101	0	0.0101
58.0667	0.7861	0	0	0
58.1	0.7634	0.0232	0.001	0.0242
58.1333	0.7558	0	0	0
58.1667	0.7423	0	0	0
58.2	0.7048	0	0	0
58.2333	0.5932	0.0101	0	0.0101
58.2667	0.4889	0.0101	0	0.0101
58.3	0.3984	0	0	0
58.3333	0.3141	0	0.001	0.001
58.3667	0.2489	0.0232	0	0.0232
58.4	0.1884	0	0	0
58.4333	0.138	0.0101	0.001	0.0111
58.4667	0.0982	0.0101	0.001	0.0111
58.5	0.0627	0	0	0
58.5333	0.0376	0.0101	0.001	0.0111
58.5667	0.0179	0	0.001	0.001
58.6	0.0041	0	0	0
58.6333	-0.0045	0.0232	0	0.0232
58.6667	-0.0097	0	0.001	0.001
58.7	-0.0147	0.0101	0.001	0.0111
58.7333	-0.0193	0	0.001	0.001

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
58.7667	-0.0203	0	0	0
58.8	-0.0232	0	0.001	0.001
58.8333	-0.0206	0.0101	0	0.0101
58.8667	-0.0203	0	0.001	0.001
58.9	-0.0229	0	0	0
58.9333	-0.0219	0.0232	0.001	0.0242
58.9667	-0.0239	0.0101	0	0.0101
59	-0.0213	0	0	0
59.0333	-0.0232	0.0101	0	0.0101
59.0667	-0.0246	0.0101	0	0.0101
59.1	-0.0265	0.0101	0.001	0.0111
59.1333	-0.0229	0.0101	0.001	0.0111
59.1667	-0.0242	0.0101	0.001	0.0111
59.2	-0.0282	0	0	0
59.2333	-0.0272	0	0.001	0.001
59.2667	-0.0252	0.0101	0	0.0101
59.3	-0.0272	0.0101	0.001	0.0111
59.3333	-0.0236	0	0.001	0.001
59.3667	-0.0255	0	0.001	0.001
59.4	-0.0239	0	0	0
59.4333	-0.0236	0	0	0
59.4667	-0.0275	0.0101	0.0023	0.0124
59.5	-0.0236	0	0	0
59.5333	-0.0239	0.0101	0	0.0101
59.5667	-0.0229	0.0101	0.001	0.0111
59.6	-0.0186	0.0101	0	0.0101
59.6333	-0.017	0	0.001	0.001
59.6667	-0.0127	0.0232	0	0.0232
59.7	-0.0279	0	0.001	0.001
59.7333	-0.0252	0.0101	0.001	0.0111
59.7667	-0.0265	0	0	0
59.8	-0.0295	0.0232	0.001	0.0242
59.8333	-0.0239	0	0.001	0.001
59.8667	-0.0249	0.0101	0.001	0.0111
59.9	-0.0295	0.0101	0	0.0101
59.9333	-0.0252	0.0101	0.001	0.0111
59.9667	-0.0269	0.0101	0	0.0101
60	-0.0242	0	0	0
60.0333	-0.0262	0	0.0036	0.0036
60.0667	0.0656	0	0	0
60.1	-0.0269	0.0101	0.001	0.0111
60.1333	-0.0255	0.0101	0	0.0101
60.1667	-0.0252	0.0101	0.001	0.0111

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
60.2	-0.0249	0	0.001	0.001
60.2333	-0.0282	0.0232	0.001	0.0242
60.2667	-0.0288	0	0.001	0.001
60.3	-0.0265	0.0101	0	0.0101
60.3333	-0.0295	0.0101	0.001	0.0111
60.3667	-0.0315	0	0	0
60.4	-0.0874	0	0.001	0.001
60.4333	-0.0723	0.0101	0	0.0101
60.4667	-0.068	0.0101	0	0.0101
60.5	-0.067	0.0101	0	0.0101
60.5333	-0.0588	0	0.001	0.001
60.5667	-0.0575	0.0232	0.001	0.0242
60.6	-0.0522	0	0.001	0.001
60.6333	-0.0525	0.0101	0	0.0101
60.6667	-0.0525	0	0.001	0.001
60.7	-0.0483	0.0101	0	0.0101
60.7333	-0.0463	0	0.001	0.001
60.7667	-0.0466	0.0101	0.001	0.0111
60.8	-0.0456	0	0	0
60.8333	-0.0413	0	0	0
60.8667	-0.0427	0	0.001	0.001
60.9	-0.04	0.0101	0	0.0101
60.9333	-0.0427	0.0101	0.001	0.0111
60.9667	-0.0404	0.0101	0.001	0.0111
61	-0.0404	0	0	0
61.0333	-0.039	0	0	0
61.0667	-0.0397	0.0101	0	0.0101
61.1	-0.0381	0.0232	0	0.0232
61.1333	-0.0361	0.0101	0	0.0101
61.1667	-0.0367	0	0	0
61.2	-0.0377	0.0101	0	0.0101
61.2333	-0.0367	0	0.001	0.001
61.2667	-0.0344	0	0	0
61.3	-0.0361	0.0101	0	0.0101
61.3333	-0.0321	0.0101	0	0.0101
61.3667	-0.0331	0	0	0
61.4	-0.0361	0	0.001	0.001
61.4333	-0.0331	0.0101	0	0.0101
61.4667	-0.0364	0	0	0
61.5	-0.0364	0.0101	0	0.0101
61.5333	-0.0321	0.0232	0.001	0.0242
61.5667	-0.0321	0.0101	0	0.0101
61.6	-0.0331	0	0.001	0.001

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
61.6333	-0.0321	0	0	0
61.6667	-0.0338	0.0101	0.001	0.0111
61.7	-0.0325	0.0232	0	0.0232
61.7333	-0.0302	0	0.001	0.001
61.7667	-0.0338	0.0101	0	0.0101
61.8	-0.0292	0.0232	0.001	0.0242
61.8333	-0.0298	0	0.0023	0.0023
61.8667	-0.0325	0	0.001	0.001
61.9	-0.0331	0	0	0
61.9333	-0.0321	0	0.001	0.001
61.9667	-0.0318	0.0101	0	0.0101
62	-0.0282	0	0.001	0.001
62.0333	-0.0298	0	0	0
62.0667	-0.0288	0.0101	0	0.0101
62.1	-0.0279	0.0101	0.001	0.0111
62.1333	-0.0282	0.0101	0	0.0101
62.1667	-0.0279	0.0101	0	0.0101
62.2	-0.0298	0	0	0
62.2333	-0.0305	0.0101	0	0.0101
62.2667	-0.0288	0	0	0
62.3	-0.0321	0.0101	0	0.0101
62.3333	-0.0292	0.0101	0.001	0.0111
62.3667	-0.0295	0.0101	0.001	0.0111
62.4	-0.0308	0.0232	0	0.0232
62.4333	-0.0315	0	0.001	0.001
62.4667	-0.0279	0.0101	0	0.0101
62.5	-0.0282	0	0	0
62.5333	-0.0302	0	0.0023	0.0023
62.5667	-0.0292	0.0101	0	0.0101
62.6	-0.0305	0.0101	0	0.0101
62.6333	-0.0269	0	0	0
62.6667	-0.0255	0	0	0
62.7	-0.0282	0	0	0
62.7333	-0.0275	0	0	0
62.7667	-0.0288	0	0	0
62.8	-0.0282	0.0232	0	0.0232
62.8333	-0.0282	0.0101	0	0.0101
62.8667	-0.0308	0.0232	0.0023	0.0255
62.9	-0.0279	0.0101	0	0.0101
62.9333	-0.0292	0	0.001	0.001
62.9667	-0.0279	0.0101	0	0.0101
63	-0.0292	0	0	0
63.0333	-0.0285	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
63.0667	-0.0288	0	0.001	0.001
63.1	-0.0288	0	0.0023	0.0023
63.1333	-0.0259	0.0101	0	0.0101
63.1667	-0.0262	0.0232	0	0.0232
63.2	-0.0265	0.0232	0	0.0232
63.2333	-0.0305	0	0.001	0.001
63.2667	-0.0262	0	0.001	0.001
63.3	-0.0285	0	0	0
63.3333	-0.0279	0.0101	0.0023	0.0124
63.3667	-0.0252	0.0101	0	0.0101
63.4	-0.0292	0	0.001	0.001
63.4333	-0.0249	0	0	0
63.4667	-0.0285	0	0	0
63.5	-0.0308	0	0.001	0.001
63.5333	-0.0269	0	0	0
63.5667	-0.0295	0	0	0
63.6	-0.0272	0.0101	0.001	0.0111
63.6333	-0.0279	0.0101	0	0.0101
63.6667	-0.0272	0	0.001	0.001
63.7	-0.0288	0.0232	0	0.0232
63.7333	0.0304	0	0.001	0.001
63.7667	0.1074	0.0101	0.001	0.0111
63.8	0.1861	0.0101	0	0.0101
63.8333	0.2598	0.0232	0.001	0.0242
63.8667	0.3378	0	0	0
63.9	0.4188	0.0232	0.001	0.0242
63.9333	0.5067	0.0232	0	0.0232
63.9667	0.5919	0	0	0
64	0.6758	0	0.001	0.001
64.0333	0.7548	0	0	0
64.0667	0.8335	0	0.001	0.001
64.1	0.9141	0.0101	0	0.0101
64.1333	0.9882	0.0232	0	0.0232
64.1667	1.0642	0.0101	0	0.0101
64.2	1.1379	0.0101	0	0.0101
64.2333	1.212	0	0.0023	0.0023
64.2667	1.2818	0.0232	0	0.0232
64.3	1.3529	0.0232	0	0.0232
64.3333	1.421	0.0232	0.001	0.0242
64.3667	1.4934	0.0101	0	0.0101
64.4	1.5582	0	0.001	0.001
64.4333	1.6277	0.0101	0	0.0101
64.4667	1.6938	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
64.5	1.7603	0	0.0023	0.0023
64.5333	1.8242	0.0101	0	0.0101
64.5667	1.8864	0	0.0023	0.0023
64.6	1.9522	0.0101	0	0.0101
64.6333	2.0131	0	0	0
64.6667	2.0747	0	0.001	0.001
64.7	2.1326	0	0	0
64.7333	2.1954	0.0101	0.001	0.0111
64.7667	2.2534	0	0.001	0.001
64.8	2.3143	0.0232	0	0.0232
64.8333	2.3722	0	0.001	0.001
64.8667	2.4318	0.0232	0	0.0232
64.9	2.4877	0	0.001	0.001
64.9333	2.5443	0	0	0
64.9667	2.5983	0	0	0
65	2.6556	0.0232	0	0.0232
65.0333	2.7122	0.0101	0.001	0.0111
65.0667	2.7658	0.0101	0	0.0101
65.1	2.8178	0.0101	0	0.0101
65.1333	2.8744	0.0232	0.0023	0.0255
65.1667	2.9258	0.0232	0	0.0232
65.2	2.9765	0	0	0
65.2333	3.0308	0	0	0
65.2667	3.0808	0.0232	0.001	0.0242
65.3	3.1322	0.0101	0.001	0.0111
65.3333	3.1822	0.0101	0	0.0101
65.3667	3.2335	0	0	0
65.4	3.2796	0.0101	0.0023	0.0124
65.4333	3.33	0.0101	0	0.0101
65.4667	3.3747	0.0101	0	0.0101
65.5	3.4238	0	0	0
65.5333	3.4728	0.0101	0	0.0101
65.5667	3.5228	0.0232	0	0.0232
65.6	3.5663	0.0101	0	0.0101
65.6333	3.613	0.0101	0	0.0101
65.6667	3.6598	0	0	0
65.7	3.7029	0.0101	0	0.0101
65.7333	3.7397	0	0	0
65.7667	3.7467	0.0232	0.001	0.0242
65.8	3.7453	0	0.0023	0.0023
65.8333	3.7407	0	0.001	0.001
65.8667	3.7371	0.0101	0	0.0101
65.9	3.7345	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
65.9333	3.7374	0.0101	0	0.0101
65.9667	3.7361	0	0	0
66	3.7345	0	0	0
66.0333	3.7388	0.0101	0.001	0.0111
66.0667	3.7374	0.0101	0	0.0101
66.1	3.7388	0	0	0
66.1333	3.7397	0.0101	0.0023	0.0124
66.1667	3.7407	0	0.0023	0.0023
66.2	3.7434	0.0232	0.001	0.0242
66.2333	3.7424	0.0101	0.001	0.0111
66.2667	3.7358	0	0	0
66.3	3.7243	0.0101	0	0.0101
66.3333	3.7213	0.0101	0	0.0101
66.3667	3.7147	0	0.001	0.001
66.4	3.7049	0.0101	0	0.0101
66.4333	3.7002	0.0101	0	0.0101
66.4667	3.6927	0	0.001	0.001
66.5	3.6864	0.0101	0	0.0101
66.5333	3.6848	0	0	0
66.5667	3.6779	0.0101	0.001	0.0111
66.6	3.6772	0	0	0
66.6333	3.6693	0.0101	0.001	0.0111
66.6667	3.6654	0.0232	0	0.0232
66.7	3.664	0.0101	0.001	0.0111
66.7333	3.6637	0.0101	0	0.0101
66.7667	3.6608	0.0101	0	0.0101
66.8	3.6588	0	0	0
66.8333	3.6594	0	0	0
66.8667	3.6608	0.0232	0.001	0.0242
66.9	3.6578	0.0101	0.001	0.0111
66.9333	3.6617	0.0101	0.001	0.0111
66.9667	3.6614	0	0.001	0.001
67	3.6621	0.0101	0.001	0.0111
67.0333	3.6654	0	0.001	0.001
67.0667	3.6719	0.0101	0	0.0101
67.1	3.6759	0	0.001	0.001
67.1333	3.6782	0.0101	0.001	0.0111
67.1667	3.6835	0.0232	0	0.0232
67.2	3.6917	0.0101	0	0.0101
67.2333	3.6953	0	0	0
67.2667	3.7029	0	0	0
67.3	3.7062	0.0232	0.0023	0.0255
67.3333	3.7121	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
67.3667	3.7154	0.0101	0	0.0101
67.4	3.7121	0	0	0
67.4333	3.7085	0	0	0
67.4667	3.7049	0	0	0
67.5	3.7055	0.0101	0.0023	0.0124
67.5333	3.7055	0.0101	0.001	0.0111
67.5667	3.7006	0.0101	0	0.0101
67.6	3.6976	0.0101	0	0.0101
67.6333	3.6996	0.0101	0.0023	0.0124
67.6667	3.6963	0.0101	0	0.0101
67.7	3.6943	0	0	0
67.7333	3.6887	0.0101	0	0.0101
67.7667	3.6881	0	0	0
67.8	3.6844	0	0	0
67.8333	3.6818	0.0101	0	0.0101
67.8667	3.6821	0.0101	0.001	0.0111
67.9	3.6798	0.0232	0	0.0232
67.9333	3.6769	0.0101	0	0.0101
67.9667	3.6762	0	0.001	0.001
68	3.6749	0.0101	0.001	0.0111
68.0333	3.6736	0.0101	0	0.0101
68.0667	3.6686	0.0101	0.001	0.0111
68.1	3.666	0	0.001	0.001
68.1333	3.6677	0.0232	0	0.0232
68.1667	3.6627	0.0101	0	0.0101
68.2	3.665	0.0232	0	0.0232
68.2333	3.666	0	0.001	0.001
68.2667	3.6611	0.0232	0.001	0.0242
68.3	3.6604	0.0101	0	0.0101
68.3333	3.6598	0	0	0
68.3667	3.6584	0.0101	0	0.0101
68.4	3.6598	0.0232	0	0.0232
68.4333	3.6538	0.0232	0.001	0.0242
68.4667	3.6581	0.0101	0	0.0101
68.5	3.6548	0.0101	0.001	0.0111
68.5333	3.6558	0.0101	0.001	0.0111
68.5667	3.6571	0	0.001	0.001
68.6	3.6535	0.0101	0	0.0101
68.6333	3.6568	0	0	0
68.6667	3.6588	0.0101	0.0023	0.0124
68.7	3.6594	0.0101	0.001	0.0111
68.7333	3.6627	0	0	0
68.7667	3.6631	0	0.0023	0.0023

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
68.8	3.665	0.0101	0	0.0101
68.8333	3.6673	0.0101	0.001	0.0111
68.8667	3.67	0.0232	0.0023	0.0255
68.9	3.671	0.0232	0.001	0.0242
68.9333	3.6729	0	0	0
68.9667	3.6736	0	0	0
69	3.6752	0.0101	0.001	0.0111
69.0333	3.6808	0	0.001	0.001
69.0667	3.6828	0.0101	0	0.0101
69.1	3.6851	0	0.001	0.001
69.1333	3.6877	0.0101	0	0.0101
69.1667	3.691	0	0	0
69.2	3.694	0.0101	0.0023	0.0124
69.2333	3.6966	0.0101	0.001	0.0111
69.2667	3.6989	0	0	0
69.3	3.7029	0.0232	0.001	0.0242
69.3333	3.7055	0.0101	0.001	0.0111
69.3667	3.7104	0.0101	0.0023	0.0124
69.4	3.7131	0.0101	0	0.0101
69.4333	3.7164	0.0101	0	0.0101
69.4667	3.7157	0	0	0
69.5	3.72	0.0232	0.001	0.0242
69.5333	3.722	0.0232	0	0.0232
69.5667	3.7266	0	0	0
69.6	3.7259	0	0	0
69.6333	3.7292	0.0232	0.001	0.0242
69.6667	3.7305	0	0	0
69.7	3.7341	0	0	0
69.7333	3.7332	0	0	0
69.7667	3.7279	0	0	0
69.8	3.7279	0.0232	0.001	0.0242
69.8333	3.7236	0	0	0
69.8667	3.7207	0.0232	0	0.0232
69.9	3.721	0.0232	0	0.0232
69.9333	3.7134	0.0101	0	0.0101
69.9667	3.7154	0	0.001	0.001
70	3.7134	0.0232	0.001	0.0242
70.0333	3.7072	0.0101	0	0.0101
70.0667	3.7055	0	0	0
70.1	3.7078	0.0101	0.001	0.0111
70.1333	3.7042	0.0101	0	0.0101
70.1667	3.6983	0	0.001	0.001
70.2	3.6999	0.0232	0	0.0232

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
70.2333	3.6963	0.0101	0	0.0101
70.2667	3.6953	0	0.001	0.001
70.3	3.691	0	0.001	0.001
70.3333	3.6914	0	0	0
70.3667	3.6858	0	0.001	0.001
70.4	3.6838	0.0101	0.001	0.0111
70.4333	3.6841	0.0101	0	0.0101
70.4667	3.6828	0.0232	0	0.0232
70.5	3.6805	0	0	0
70.5333	3.6789	0	0.001	0.001
70.5667	3.6752	0.0101	0	0.0101
70.6	3.6723	0.0101	0	0.0101
70.6333	3.671	0.0232	0	0.0232
70.6667	3.6686	0.0101	0	0.0101
70.7	3.6667	0	0	0
70.7333	3.667	0.0101	0	0.0101
70.7667	3.6631	0.0101	0	0.0101
70.8	3.6601	0	0.001	0.001
70.8333	3.6581	0.0101	0	0.0101
70.8667	3.5837	0.0101	0	0.0101
70.9	3.5107	0	0.0036	0.0036
70.9333	3.436	0	0.001	0.001
70.9667	3.3665	0	0.0023	0.0023
71	3.3007	0.0101	0	0.0101
71.0333	3.2388	0.0101	0	0.0101
71.0667	3.1779	0	0.001	0.001
71.1	3.1147	0	0	0
71.1333	3.0591	0.0101	0	0.0101
71.1667	2.9946	0	0.0023	0.0023
71.2	2.9403	0.0101	0	0.0101
71.2333	2.8119	0	0.001	0.001
71.2667	2.6029	0.0101	0.001	0.0111
71.3	2.4091	0.0101	0.001	0.0111
71.3333	2.227	0	0.001	0.001
71.3667	2.0533	0.0232	0	0.0232
71.4	1.8887	0.0232	0.001	0.0242
71.4333	1.7261	0.0101	0.001	0.0111
71.4667	1.58	0.0101	0	0.0101
71.5	1.4404	0	0	0
71.5333	1.3065	0	0	0
71.5667	1.1827	0.0232	0	0.0232
71.6	1.0616	0.0232	0.0023	0.0255
71.6333	0.9543	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
71.6667	0.8499	0.0232	0.001	0.0242
71.7	0.7571	0	0.0023	0.0023
71.7333	0.6676	0.0101	0.001	0.0111
71.7667	0.584	0	0.001	0.001
71.8	0.5096	0	0.001	0.001
71.8333	0.4425	0.0232	0	0.0232
71.8667	0.3773	0.0101	0	0.0101
71.9	0.3223	0	0	0
71.9333	0.2707	0.0101	0	0.0101
71.9667	0.2243	0.0101	0	0.0101
72	0.1861	0	0.001	0.001
72.0333	0.1472	0.0101	0	0.0101
72.0667	0.115	0	0	0
72.1	0.09	0	0	0
72.1333	0.0692	0	0.001	0.001
72.1667	0.0449	0	0	0
72.2	0.0311	0.0232	0	0.0232
72.2333	0.0222	0.0101	0.001	0.0111
72.2667	0.0087	0	0.001	0.001
72.3	0.0024	0.0232	0.0023	0.0255
72.3333	-0.0018	0	0	0
72.3667	-0.0051	0	0	0
72.4	-0.0124	0.0232	0.0023	0.0255
72.4333	-0.0121	0.0101	0	0.0101
72.4667	-0.0183	0.0101	0	0.0101
72.5	-0.016	0	0	0
72.5333	-0.0186	0.0232	0.001	0.0242
72.5667	-0.018	0.0101	0.0023	0.0124
72.6	-0.0226	0.0101	0.001	0.0111
72.6333	-0.0219	0	0	0
72.6667	-0.0209	0.0101	0	0.0101
72.7	-0.0196	0.0101	0	0.0101
72.7333	-0.0229	0	0	0
72.7667	-0.0196	0.0101	0.001	0.0111
72.8	-0.0239	0.0232	0	0.0232
72.8333	-0.0213	0.0101	0	0.0101
72.8667	-0.0232	0	0.0023	0.0023
72.9	-0.0226	0.0232	0.001	0.0242
72.9333	-0.0236	0	0	0
72.9667	-0.0216	0.0101	0	0.0101
73	-0.0246	0	0	0
73.0333	-0.0249	0	0	0
73.0667	-0.0246	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
73.1	-0.0252	0.0101	0.001	0.0111
73.1333	-0.0209	0.0101	0	0.0101
73.1667	-0.0265	0.0101	0	0.0101
73.2	-0.0232	0.0101	0	0.0101
73.2333	-0.0252	0.0101	0	0.0101
73.2667	-0.0246	0.0232	0.001	0.0242
73.3	-0.0203	0	0.001	0.001
73.3333	-0.0226	0	0.001	0.001
73.3667	-0.0226	0	0	0
73.4	-0.0216	0.0101	0.001	0.0111
73.4333	-0.0213	0	0.001	0.001
73.4667	-0.013	0	0.001	0.001
73.5	-0.0282	0.0101	0	0.0101
73.5333	-0.0367	0.0232	0	0.0232
73.5667	-0.0443	0	0.001	0.001
73.6	-0.0433	0	0.001	0.001
73.6333	-0.0463	0.0101	0	0.0101
73.6667	-0.0423	0.0101	0	0.0101
73.7	-0.0427	0	0	0
73.7333	-0.0456	0.0101	0.001	0.0111
73.7667	-0.0423	0.0232	0.001	0.0242
73.8	-0.044	0	0	0
73.8333	-0.0433	0	0	0
73.8667	-0.0282	0	0	0
73.9	-0.0427	0.0101	0.001	0.0111
73.9333	-0.043	0.0101	0	0.0101
73.9667	-0.042	0	0	0
74	-0.0427	0	0	0
74.0333	-0.0436	0.0101	0	0.0101
74.0667	-0.042	0.0101	0.001	0.0111
74.1	-0.0423	0	0	0
74.1333	-0.0427	0	0	0
74.1667	0.0317	0.0101	0	0.0101
74.2	0.1196	0	0	0
74.2333	0.218	0.0232	0.001	0.0242
74.2667	0.3177	0.0101	0	0.0101
74.3	0.4138	0	0	0
74.3333	0.504	0	0	0
74.3667	0.5965	0	0.001	0.001
74.4	0.6867	0.0101	0	0.0101
74.4333	0.7696	0	0.0023	0.0023
74.4667	0.8549	0	0.001	0.001
74.5	0.9388	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
74.5333	1.0191	0.0232	0	0.0232
74.5667	1.1017	0	0	0
74.6	1.1817	0	0.001	0.001
74.6333	1.261	0.0101	0	0.0101
74.6667	1.3338	0.0101	0	0.0101
74.7	1.4095	0.0101	0	0.0101
74.7333	1.4825	0	0.001	0.001
74.7667	1.5569	0	0	0
74.8	1.6303	0	0	0
74.8333	1.7004	0	0.001	0.001
74.8667	1.7702	0.0101	0	0.0101
74.9	1.8423	0	0	0
74.9333	1.9117	0	0.001	0.001
74.9667	1.9776	0.0232	0.001	0.0242
75	2.0457	0.0101	0.0023	0.0124
75.0333	2.1145	0	0	0
75.0667	2.1796	0.0101	0	0.0101
75.1	2.2448	0.0101	0	0.0101
75.1333	2.307	0	0	0
75.1667	2.3732	0	0.001	0.001
75.2	2.4377	0.0101	0	0.0101
75.2333	2.4982	0.0101	0.001	0.0111
75.2667	2.5634	0.0101	0.0023	0.0124
75.3	2.6223	0.0101	0	0.0101
75.3333	2.6845	0.0101	0.001	0.0111
75.3667	2.7435	0	0	0
75.4	2.7991	0.0101	0	0.0101
75.4333	2.8623	0	0.001	0.001
75.4667	2.9133	0	0.0023	0.0023
75.5	2.9771	0.0101	0.001	0.0111
75.5333	3.0318	0.0101	0	0.0101
75.5667	3.0907	0.0101	0	0.0101
75.6	3.1447	0	0	0
75.6333	3.1967	0	0	0
75.6667	3.253	0.0101	0.001	0.0111
75.7	3.3079	0	0	0
75.7333	3.3586	0	0	0
75.7667	3.4126	0	0.001	0.001
75.8	3.4639	0.0101	0	0.0101
75.8333	3.5169	0.0101	0.001	0.0111
75.8667	3.5676	0.0232	0.001	0.0242
75.9	3.6134	0.0101	0	0.0101
75.9333	3.6565	0.0232	0	0.0232

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
75.9667	3.6871	0	0	0
76	3.7124	0	0	0
76.0333	3.7049	0.0101	0.001	0.0111
76.0667	3.6983	0	0.001	0.001
76.1	3.6891	0.0232	0	0.0232
76.1333	3.7032	0.0101	0.001	0.0111
76.1667	3.7144	0	0	0
76.2	3.7147	0.0101	0	0.0101
76.2333	3.7167	0.0101	0	0.0101
76.2667	3.7174	0.0101	0	0.0101
76.3	3.7183	0.0101	0.001	0.0111
76.3333	3.718	0.0232	0.0023	0.0255
76.3667	3.7207	0	0	0
76.4	3.723	0.0101	0	0.0101
76.4333	3.7243	0	0	0
76.4667	3.7246	0.0101	0.001	0.0111
76.5	3.72	0.0232	0	0.0232
76.5333	3.717	0	0.001	0.001
76.5667	3.7154	0.0101	0.001	0.0111
76.6	3.7085	0	0	0
76.6333	3.7091	0.0101	0	0.0101
76.6667	3.7062	0.0101	0.0023	0.0124
76.7	3.7026	0.0101	0	0.0101
76.7333	3.7029	0.0232	0	0.0232
76.7667	3.6993	0.0101	0	0.0101
76.8	3.6976	0.0101	0.001	0.0111
76.8333	3.6943	0.0101	0.001	0.0111
76.8667	3.6956	0.0232	0	0.0232
76.9	3.6914	0	0	0
76.9333	3.6894	0	0.001	0.001
76.9667	3.6894	0	0.001	0.001
77	3.6864	0.0101	0.001	0.0111
77.0333	3.6844	0	0.001	0.001
77.0667	3.6861	0	0	0
77.1	3.6798	0	0.001	0.001
77.1333	3.6812	0.0101	0	0.0101
77.1667	3.6808	0.0101	0	0.0101
77.2	3.6779	0.0101	0	0.0101
77.2333	3.6772	0	0.001	0.001
77.2667	3.6752	0	0.001	0.001
77.3	3.6726	0.0101	0	0.0101
77.3333	3.6713	0.0101	0	0.0101
77.3667	3.6713	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
77.4	3.6667	0.0101	0	0.0101
77.4333	3.6706	0.0101	0.001	0.0111
77.4667	3.668	0.0101	0	0.0101
77.5	3.668	0	0	0
77.5333	3.6644	0.0232	0	0.0232
77.5667	3.6657	0.0101	0.001	0.0111
77.6	3.6647	0	0	0
77.6333	3.6617	0.0101	0.001	0.0111
77.6667	3.6634	0	0.001	0.001
77.7	3.6631	0	0.001	0.001
77.7333	3.6631	0.0232	0.001	0.0242
77.7667	3.6624	0	0.0023	0.0023
77.8	3.6575	0	0	0
77.8333	3.6617	0	0	0
77.8667	3.6588	0.0101	0	0.0101
77.9	3.6581	0.0101	0	0.0101
77.9333	3.6542	0.0101	0	0.0101
77.9667	3.6637	0	0	0
78	3.6644	0	0.0023	0.0023
78.0333	3.6716	0.0101	0.001	0.0111
78.0667	3.6736	0.0101	0	0.0101
78.1	3.6785	0.0232	0	0.0232
78.1333	3.6825	0.0101	0.001	0.0111
78.1667	3.6858	0.0232	0	0.0232
78.2	3.6907	0	0.001	0.001
78.2333	3.6953	0	0	0
78.2667	3.6963	0.0101	0.001	0.0111
78.3	3.7016	0	0.001	0.001
78.3333	3.7045	0	0	0
78.3667	3.7068	0	0	0
78.4	3.7108	0.0101	0	0.0101
78.4333	3.7088	0.0101	0	0.0101
78.4667	3.7131	0.0101	0	0.0101
78.5	3.7118	0.0232	0.001	0.0242
78.5333	3.7128	0.0101	0.001	0.0111
78.5667	3.7072	0	0	0
78.6	3.7072	0.0101	0.001	0.0111
78.6333	3.7042	0	0.001	0.001
78.6667	3.7049	0	0	0
78.7	3.7026	0	0	0
78.7333	3.7006	0	0	0
78.7667	3.6986	0	0.001	0.001
78.8	3.6979	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
78.8333	3.694	0	0.001	0.001
78.8667	3.6933	0.0101	0	0.0101
78.9	3.6897	0.0101	0.001	0.0111
78.9333	3.6894	0	0	0
78.9667	3.6841	0	0.001	0.001
79	3.6835	0	0.001	0.001
79.0333	3.6848	0	0	0
79.0667	3.6792	0	0.001	0.001
79.1	3.6765	0.0232	0.0023	0.0255
79.1333	3.6795	0.0101	0	0.0101
79.1667	3.6782	0	0	0
79.2	3.6772	0	0	0
79.2333	3.6746	0.0232	0	0.0232
79.2667	3.6756	0.0101	0	0.0101
79.3	3.6821	0.0101	0	0.0101
79.3333	3.6871	0.0101	0	0.0101
79.3667	3.6917	0.0101	0.001	0.0111
79.4	3.692	0.0101	0	0.0101
79.4333	3.6966	0.0101	0.001	0.0111
79.4667	3.7002	0.0101	0	0.0101
79.5	3.7026	0	0.0023	0.0023
79.5333	3.7075	0.0101	0	0.0101
79.5667	3.7101	0.0101	0	0.0101
79.6	3.7124	0	0.001	0.001
79.6333	3.7121	0	0.001	0.001
79.6667	3.7147	0.0232	0	0.0232
79.7	3.7147	0.0101	0.001	0.0111
79.7333	3.7197	0.0101	0	0.0101
79.7667	3.7203	0.0101	0.001	0.0111
79.8	3.7236	0.0232	0.001	0.0242
79.8333	3.721	0	0.001	0.001
79.8667	3.7174	0	0.001	0.001
79.9	3.7147	0.0101	0	0.0101
79.9333	3.7118	0	0	0
79.9667	3.7068	0.0101	0	0.0101
80	3.7039	0.0101	0	0.0101
80.0333	3.7019	0.0101	0	0.0101
80.0667	3.6976	0.0232	0	0.0232
80.1	3.6914	0.0101	0.001	0.0111
80.1333	3.6891	0	0.001	0.001
80.1667	3.6864	0	0.001	0.001
80.2	3.6868	0	0.0023	0.0023
80.2333	3.6854	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
80.2667	3.6818	0	0	0
80.3	3.6785	0.0101	0.001	0.0111
80.3333	3.6719	0	0	0
80.3667	3.6756	0	0	0
80.4	3.6706	0	0.001	0.001
80.4333	3.6723	0	0	0
80.4667	3.6746	0.0101	0	0.0101
80.5	3.6706	0	0.001	0.001
80.5333	3.6677	0.0101	0	0.0101
80.5667	3.668	0.0101	0.001	0.0111
80.6	3.6696	0	0	0
80.6333	3.67	0	0	0
80.6667	3.6706	0	0	0
80.7	3.6742	0	0.001	0.001
80.7333	3.6706	0	0.0023	0.0023
80.7667	3.6719	0.0101	0.001	0.0111
80.8	3.6726	0.0101	0.001	0.0111
80.8333	3.6733	0.0101	0	0.0101
80.8667	3.67	0.0101	0.0023	0.0124
80.9	3.6756	0	0	0
80.9333	3.6762	0	0.001	0.001
80.9667	3.6733	0.0101	0.001	0.0111
81	3.6746	0	0	0
81.0333	3.6779	0	0	0
81.0667	3.6769	0	0	0
81.1	3.6772	0.0101	0	0.0101
81.1333	3.6775	0.0232	0	0.0232
81.1667	3.6769	0.0101	0	0.0101
81.2	3.6762	0	0	0
81.2333	3.6779	0	0	0
81.2667	3.6782	0.0101	0.001	0.0111
81.3	3.6795	0.0232	0.001	0.0242
81.3333	3.6765	0.0101	0	0.0101
81.3667	3.6762	0.0232	0	0.0232
81.4	3.6789	0	0	0
81.4333	3.6795	0.0101	0	0.0101
81.4667	3.6779	0	0.0023	0.0023
81.5	3.6808	0.0232	0.001	0.0242
81.5333	3.6825	0.0101	0.0023	0.0124
81.5667	3.6851	0.0101	0	0.0101
81.6	3.6868	0.0101	0.001	0.0111
81.6333	3.6874	0.0101	0.001	0.0111
81.6667	3.6891	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
81.7	3.69	0.0232	0	0.0232
81.7333	3.6907	0.0232	0	0.0232
81.7667	3.6907	0	0	0
81.8	3.6923	0.0101	0	0.0101
81.8333	3.695	0.0101	0.001	0.0111
81.8667	3.6917	0.0101	0	0.0101
81.9	3.6907	0.0101	0.001	0.0111
81.9333	3.6947	0.0232	0	0.0232
81.9667	3.6947	0.0101	0.001	0.0111
82	3.6914	0	0.001	0.001
82.0333	3.694	0	0.001	0.001
82.0667	3.696	0.0232	0	0.0232
82.1	3.6927	0.0101	0	0.0101
82.1333	3.6947	0	0	0
82.1667	3.6917	0	0	0
82.2	3.6917	0	0	0
82.2333	3.6914	0.0101	0	0.0101
82.2667	3.7075	0	0.001	0.001
82.3	3.7463	0	0	0
82.3333	3.7957	0	0.001	0.001
82.3667	3.849	0.0101	0	0.0101
82.4	3.8974	0.0232	0	0.0232
82.4333	3.9464	0.0232	0	0.0232
82.4667	3.9882	0.0101	0	0.0101
82.5	4.0202	0.0232	0	0.0232
82.5333	4.0478	0	0.001	0.001
82.5667	4.0709	0.0232	0	0.0232
82.6	4.0906	0.0232	0	0.0232
82.6333	4.1097	0.0101	0	0.0101
82.6667	4.1321	0.0101	0	0.0101
82.7	4.1521	0.0101	0	0.0101
82.7333	4.1719	0.0101	0	0.0101
82.7667	4.1956	0	0	0
82.8	4.216	0.0232	0	0.0232
82.8333	4.2413	0.0101	0.001	0.0111
82.8667	4.2604	0.0101	0.001	0.0111
82.9	4.2766	0.0101	0	0.0101
82.9333	4.2966	0	0	0
82.9667	4.3147	0	0	0
83	4.3309	0.0101	0	0.0101
83.0333	4.3453	0	0	0
83.0667	4.3605	0	0	0
83.1	4.3723	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
83.1333	4.3881	0.0101	0	0.0101
83.1667	4.3993	0	0	0
83.2	4.4102	0	0	0
83.2333	4.4227	0	0	0
83.2667	4.4135	0	0	0
83.3	4.3997	0.0101	0	0.0101
83.3333	4.3845	0.0101	0	0.0101
83.3667	4.375	0.0101	0.0023	0.0124
83.4	4.3671	0.0101	0	0.0101
83.4333	4.3598	0.0101	0	0.0101
83.4667	4.3546	0.0101	0	0.0101
83.5	4.3457	0.0232	0	0.0232
83.5333	4.343	0	0	0
83.5667	4.3368	0	0	0
83.6	4.3309	0	0.001	0.001
83.6333	4.3253	0.0232	0	0.0232
83.6667	4.3203	0	0.001	0.001
83.7	4.317	0	0.001	0.001
83.7333	4.3118	0.0101	0.001	0.0111
83.7667	4.3088	0.0232	0	0.0232
83.8	4.3035	0	0.001	0.001
83.8333	4.3019	0.0232	0.001	0.0242
83.8667	4.3003	0	0.0023	0.0023
83.9	4.3019	0.0232	0	0.0232
83.9333	4.3003	0	0	0
83.9667	4.3009	0.0232	0	0.0232
84	4.3026	0	0	0
84.0333	4.3042	0.0101	0.001	0.0111
84.0667	4.3065	0	0.0023	0.0023
84.1	4.3095	0	0.001	0.001
84.1333	4.3082	0	0	0
84.1667	4.3147	0	0	0
84.2	4.3226	0.0101	0	0.0101
84.2333	4.3309	0.0101	0.001	0.0111
84.2667	4.3378	0	0	0
84.3	4.3483	0.0101	0.001	0.0111
84.3333	4.3592	0.0101	0.001	0.0111
84.3667	4.3658	0.0101	0	0.0101
84.4	4.3796	0	0	0
84.4333	4.3855	0	0	0
84.4667	4.3944	0.0101	0	0.0101
84.5	4.4029	0.0101	0.0023	0.0124
84.5333	4.4099	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
84.5667	4.4151	0.0232	0.001	0.0242
84.6	4.4234	0.0101	0	0.0101
84.6333	4.428	0.0101	0	0.0101
84.6667	4.4362	0.0232	0.001	0.0242
84.7	4.4375	0	0.001	0.001
84.7333	4.4415	0.0101	0.001	0.0111
84.7667	4.4457	0.0232	0	0.0232
84.8	4.4494	0	0	0
84.8333	4.4526	0	0	0
84.8667	4.4563	0	0.0036	0.0036
84.9	4.4573	0.0101	0	0.0101
84.9333	4.4566	0	0.001	0.001
84.9667	4.4563	0	0.001	0.001
85	4.4536	0.0101	0.001	0.0111
85.0333	4.4573	0.0232	0	0.0232
85.0667	4.4536	0.0232	0	0.0232
85.1	4.454	0.0232	0	0.0232
85.1333	4.4507	0.0101	0.001	0.0111
85.1667	4.4526	0.0232	0.001	0.0242
85.2	4.4533	0.0101	0	0.0101
85.2333	4.4507	0	0	0
85.2667	4.4507	0	0.0023	0.0023
85.3	4.4477	0.0232	0	0.0232
85.3333	4.4494	0.0101	0	0.0101
85.3667	4.4467	0.0101	0	0.0101
85.4	4.4454	0.0101	0.001	0.0111
85.4333	4.4444	0	0.001	0.001
85.4667	4.4372	0.0232	0	0.0232
85.5	4.4372	0.0232	0.0023	0.0255
85.5333	4.4339	0.0101	0	0.0101
85.5667	4.4293	0.0232	0.001	0.0242
85.6	4.4263	0	0.001	0.001
85.6333	4.4237	0	0	0
85.6667	4.422	0	0	0
85.7	4.4178	0.0101	0	0.0101
85.7333	4.4171	0.0101	0	0.0101
85.7667	4.4102	0.0101	0.001	0.0111
85.8	4.4095	0.0101	0.001	0.0111
85.8333	4.4085	0.0364	0.001	0.0374
85.8667	4.4076	0.0101	0	0.0101
85.9	4.4023	0.0101	0	0.0101
85.9333	4.4046	0.0101	0.001	0.0111
85.9667	4.4006	0.0101	0.001	0.0111

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
86	4.4013	0.0232	0	0.0232
86.0333	4.3993	0.0101	0	0.0101
86.0667	4.3974	0.0101	0	0.0101
86.1	4.3993	0.0232	0.001	0.0242
86.1333	4.3983	0	0.001	0.001
86.1667	4.3967	0.0101	0.0023	0.0124
86.2	4.3927	0.0101	0.001	0.0111
86.2333	4.3941	0.0101	0	0.0101
86.2667	4.3967	0.0101	0	0.0101
86.3	4.3957	0	0	0
86.3333	4.3954	0.0232	0	0.0232
86.3667	4.3974	0.0101	0.001	0.0111
86.4	4.4023	0.0232	0	0.0232
86.4333	4.402	0	0.001	0.001
86.4667	4.4082	0.0101	0.001	0.0111
86.5	4.4072	0.0101	0	0.0101
86.5333	4.4138	0.0232	0	0.0232
86.5667	4.4174	0	0	0
86.6	4.4164	0	0.001	0.001
86.6333	4.4217	0	0.001	0.001
86.6667	4.4217	0.0101	0	0.0101
86.7	4.4283	0.0101	0	0.0101
86.7333	4.4276	0	0	0
86.7667	4.4276	0	0	0
86.8	4.4266	0.0232	0	0.0232
86.8333	4.4234	0.0232	0	0.0232
86.8667	4.4266	0.0232	0.001	0.0242
86.9	4.424	0.0232	0	0.0232
86.9333	4.4224	0	0	0
86.9667	4.4237	0	0.001	0.001
87	4.4194	0.0364	0	0.0364
87.0333	4.4234	0.0101	0	0.0101
87.0667	4.4207	0	0	0
87.1	4.426	0.0101	0	0.0101
87.1333	4.4243	0.0101	0.001	0.0111
87.1667	4.4234	0.0101	0	0.0101
87.2	4.4263	0	0	0
87.2333	4.425	0.0101	0	0.0101
87.2667	4.427	0	0	0
87.3	4.4227	0	0.001	0.001
87.3333	4.4237	0.0232	0.001	0.0242
87.3667	4.4181	0.0101	0	0.0101
87.4	4.4184	0.0101	0.0023	0.0124

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
87.4333	4.4141	0.0101	0.001	0.0111
87.4667	4.4132	0.0101	0.001	0.0111
87.5	4.4132	0.0232	0	0.0232
87.5333	4.4171	0.0232	0	0.0232
87.5667	4.4158	0.0232	0.0023	0.0255
87.6	4.4174	0	0	0
87.6333	4.4227	0.0101	0	0.0101
87.6667	4.427	0	0.001	0.001
87.7	4.4326	0	0.001	0.001
87.7333	4.4382	0	0.001	0.001
87.7667	4.4401	0	0.001	0.001
87.8	4.4398	0.0101	0.001	0.0111
87.8333	4.4434	0.0101	0	0.0101
87.8667	4.4444	0.0101	0	0.0101
87.9	4.4418	0	0	0
87.9333	4.4418	0	0.001	0.001
87.9667	4.4431	0.0101	0	0.0101
88	4.4411	0	0.001	0.001
88.0333	4.4405	0.0101	0.001	0.0111
88.0667	4.4395	0	0	0
88.1	4.4365	0	0	0
88.1333	4.4313	0	0.001	0.001
88.1667	4.4322	0.0232	0.001	0.0242
88.2	4.4286	0	0	0
88.2333	4.4257	0	0.0023	0.0023
88.2667	4.4214	0.0101	0	0.0101
88.3	4.4178	0.0101	0	0.0101
88.3333	4.2779	0.0101	0	0.0101
88.3667	4.0909	0.0232	0	0.0232
88.4	3.9102	0	0	0
88.4333	3.746	0.0101	0	0.0101
88.4667	3.6051	0.0101	0.001	0.0111
88.5	3.4702	0.0101	0.001	0.0111
88.5333	3.3395	0	0.001	0.001
88.5667	3.2177	0.0101	0	0.0101
88.6	3.0084	0.0232	0.001	0.0242
88.6333	2.8478	0	0	0
88.6667	2.6651	0.0232	0	0.0232
88.7	2.4222	0.0101	0	0.0101
88.7333	2.1935	0.0232	0.001	0.0242
88.7667	2.1336	0	0.001	0.001
88.8	2.0697	0.0101	0.001	0.0111
88.8333	1.889	0	0.001	0.001

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
88.8667	1.6833	0.0232	0	0.0232
88.9	1.4806	0.0101	0.001	0.0111
88.9333	1.3022	0	0.0023	0.0023
88.9667	1.1393	0.0101	0	0.0101
89	0.9905	0.0101	0.001	0.0111
89.0333	0.8546	0.0101	0.0023	0.0124
89.0667	0.7288	0	0	0
89.1	0.6153	0	0	0
89.1333	0.5185	0	0.001	0.001
89.1667	0.426	0	0.001	0.001
89.2	0.347	0	0.001	0.001
89.2333	0.2796	0	0.001	0.001
89.2667	0.218	0	0.001	0.001
89.3	0.168	0.0101	0	0.0101
89.3333	0.1196	0	0	0
89.3667	0.088	0	0.001	0.001
89.4	0.0577	0	0	0
89.4333	0.037	0.0101	0	0.0101
89.4667	0.0195	0	0	0
89.5	0.007	0.0101	0	0.0101
89.5333	0.0005	0.0232	0	0.0232
89.5667	-0.0071	0	0.001	0.001
89.6	-0.0097	0.0101	0.001	0.0111
89.6333	-0.015	0	0	0
89.6667	-0.0163	0.0232	0	0.0232
89.7	-0.017	0	0	0
89.7333	-0.019	0	0.001	0.001
89.7667	-0.0193	0	0	0
89.8	-0.0229	0.0101	0	0.0101
89.8333	-0.0229	0	0	0
89.8667	-0.0242	0	0.001	0.001
89.9	-0.0193	0.0232	0	0.0232
89.9333	-0.0219	0.0101	0	0.0101
89.9667	-0.0223	0.0101	0	0.0101
90	-0.0206	0.0101	0	0.0101
90.0333	-0.0242	0	0.001	0.001
90.0667	-0.0206	0.0101	0	0.0101
90.1	-0.017	0.0101	0	0.0101
90.1333	-0.0134	0.0101	0	0.0101
90.1667	-0.0117	0.0232	0	0.0232
90.2	-0.0295	0	0.0023	0.0023
90.2333	-0.0302	0.0101	0	0.0101
90.2667	-0.0275	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
90.3	-0.0292	0.0101	0	0.0101
90.3333	-0.0259	0	0	0
90.3667	-0.0262	0.0232	0.0023	0.0255
90.4	-0.0292	0.0232	0.001	0.0242
90.4333	-0.0295	0	0	0
90.4667	-0.0259	0	0.001	0.001
90.5	-0.0272	0.0101	0	0.0101
90.5333	-0.0285	0.0101	0	0.0101
90.5667	-0.0252	0	0	0
90.6	-0.0282	0	0	0
90.6333	-0.0321	0	0.001	0.001
90.6667	-0.0295	0	0.001	0.001
90.7	-0.0255	0	0.001	0.001
90.7333	-0.0308	0.0101	0	0.0101
90.7667	-0.0255	0.0232	0.001	0.0242
90.8	-0.0259	0	0.001	0.001
90.8333	-0.0259	0.0232	0.0023	0.0255
90.8667	-0.0269	0.0101	0	0.0101
90.9	-0.0269	12.4234	0.001	12.4244
90.9333	-0.1207	11.6476	0.001	11.6486
90.9667	-0.1068	10.898	0.001	10.899
91	-0.1042	10.2537	0	10.2537
91.0333	-0.1006	9.6883	0	9.6883
91.0667	-0.0933	9.1228	0.001	9.1238
91.1	-0.0894	8.6363	0	8.6363
91.1333	-0.0845	8.1234	0	8.1234
91.1667	-0.0825	7.7947	0.001	7.7957
91.2	-0.0756	7.4265	0.001	7.4275
91.2333	-0.0772	6.9794	0.001	6.9804
91.2667	-0.0703	6.5981	0.001	6.5991
91.3	-0.0677	6.3351	0	6.3351
91.3333	-0.0647	6.0063	0.001	6.0073
91.3667	-0.0627	5.7302	0	5.7302
91.4	-0.0585	5.4672	0.001	5.4682
91.4333	-0.0601	5.1122	0	5.1122
91.4667	-0.0581	4.8886	0.001	4.8896
91.5	-0.0539	4.6388	0.001	4.6398
91.5333	-0.0522	4.4152	0	4.4152
91.5667	-0.0545	4.2574	0.001	4.2584
91.6	-0.0506	4.0733	0	4.0733
91.6333	-0.0502	3.8761	0	3.8761
91.6667	-0.0469	3.7577	0	3.7577
91.7	-0.046	3.521	0	3.521

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
91.7333	-0.0463	3.3501	0.001	3.3511
91.7667	-0.044	3.3106	0	3.3106
91.8	-0.042	3.1265	0	3.1265
91.8333	-0.0473	2.995	0.001	2.996
91.8667	-0.0413	0	0.0023	0.0023
91.9	-0.04	0	0.001	0.001
91.9333	-0.0413	0.0232	0.001	0.0242
91.9667	-0.0394	0	0.001	0.001
92	-0.0407	0.0101	0	0.0101
92.0333	-0.0423	0	0	0
92.0667	-0.0397	0	0.001	0.001
92.1	-0.0384	0	0	0
92.1333	-0.0397	0.0101	0	0.0101
92.1667	-0.0381	0.0101	0	0.0101
92.2	-0.0377	0	0	0
92.2333	-0.0377	0	0.001	0.001
92.2667	-0.0364	0.0101	0	0.0101
92.3	-0.0348	0.0101	0	0.0101
92.3333	-0.0367	0	0	0
92.3667	-0.0371	0	0	0
92.4	-0.0354	0	0	0
92.4333	-0.0361	0.0101	0.0023	0.0124
92.4667	-0.0331	0.0101	0	0.0101
92.5	-0.0348	0	0	0
92.5333	-0.0334	0.0101	0	0.0101
92.5667	-0.0371	0	0	0
92.6	-0.0344	0.0232	0	0.0232
92.6333	-0.0364	0.0101	0.001	0.0111
92.6667	-0.0318	0.0232	0	0.0232
92.7	-0.0334	0.0232	0.0023	0.0255
92.7333	-0.0341	0.0232	0	0.0232
92.7667	0.0176	0.0101	0	0.0101
92.8	0.1387	0.0101	0	0.0101
92.8333	0.2654	0.0101	0.001	0.0111
92.8667	0.3908	0.0232	0	0.0232
92.9	0.5073	0.0232	0.001	0.0242
92.9333	0.6235	0.0101	0	0.0101
92.9667	0.7384	0	0	0
93	0.8523	0	0.0023	0.0023
93.0333	0.9595	0	0	0
93.0667	1.0678	0.0101	0.001	0.0111
93.1	1.1699	0	0	0
93.1333	1.2758	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
93.1667	1.3749	0	0	0
93.2	1.4796	0.0101	0	0.0101
93.2333	1.5737	0.0232	0	0.0232
93.2667	1.6715	0.0101	0	0.0101
93.3	1.7702	0	0.001	0.001
93.3333	1.8666	0	0.0023	0.0023
93.3667	1.9598	0	0	0
93.4	2.051	0.0101	0	0.0101
93.4333	2.1434	0	0	0
93.4667	2.2382	0.0232	0	0.0232
93.5	2.3264	0	0.001	0.001
93.5333	2.4176	0.0101	0.001	0.0111
93.5667	2.5048	0.0101	0	0.0101
93.6	2.596	0.0101	0	0.0101
93.6333	2.6812	0.0101	0.001	0.0111
93.6667	2.7701	0.0101	0.001	0.0111
93.7	2.8554	0.0232	0	0.0232
93.7333	2.9386	0.0101	0.001	0.0111
93.7667	3.0272	0	0.001	0.001
93.8	3.1048	0.0232	0	0.0232
93.8333	3.1924	0	0	0
93.8667	3.2747	0	0	0
93.9	3.3566	0	0.001	0.001
93.9333	3.4373	0.0101	0	0.0101
93.9667	3.5156	0.0364	0	0.0364
94	3.6008	0	0	0
94.0333	3.6769	0.0101	0.001	0.0111
94.0667	3.7569	0	0	0
94.1	3.8358	0.0101	0.001	0.0111
94.1333	3.9139	0	0.001	0.001
94.1667	3.9902	0	0	0
94.2	4.0679	0.0101	0	0.0101
94.2333	4.1419	0.0232	0	0.0232
94.2667	4.2193	0.0232	0	0.0232
94.3	4.2914	0	0	0
94.3333	4.3658	0	0	0
94.3667	4.4382	0.0232	0	0.0232
94.4	4.5112	0.0101	0	0.0101
94.4333	4.5731	0.0101	0	0.0101
94.4667	4.6133	0	0	0
94.5	4.6488	0	0.001	0.001
94.5333	4.6758	0	0.001	0.001
94.5667	4.6195	0.0101	0.001	0.0111

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
94.6	4.5448	0	0.001	0.001
94.6333	4.4895	0.0101	0	0.0101
94.6667	4.4299	0.0101	0	0.0101
94.7	4.4191	0.0232	0	0.0232
94.7333	4.4645	0	0	0
94.7667	4.5099	0	0	0
94.8	4.5297	0.0101	0.001	0.0111
94.8333	4.48	0.0101	0.001	0.0111
94.8667	4.4155	0	0	0
94.9	4.4375	0	0	0
94.9333	4.4632	0	0	0
94.9667	4.476	0.0101	0	0.0101
95	4.452	0	0	0
95.0333	4.4375	0.0101	0	0.0101
95.0667	4.4415	0	0	0
95.1	4.451	0.0101	0.001	0.0111
95.1333	4.4586	0	0.001	0.001
95.1667	4.4605	0	0.001	0.001
95.2	4.4632	0.0232	0	0.0232
95.2333	4.4563	0.0101	0.001	0.0111
95.2667	4.4289	0	0	0
95.3	4.424	0	0	0
95.3333	4.4181	0.0101	0	0.0101
95.3667	4.4168	0	0.0023	0.0023
95.4	4.4122	0.0101	0	0.0101
95.4333	4.4076	0	0	0
95.4667	4.4059	0.0101	0.001	0.0111
95.5	4.4023	0.0232	0.001	0.0242
95.5333	4.4046	0	0	0
95.5667	4.4171	0.0101	0	0.0101
95.6	4.4342	0	0	0
95.6333	4.4494	0	0.001	0.001
95.6667	4.4645	0.0101	0	0.0101
95.7	4.4819	0	0	0
95.7333	4.4984	0	0.001	0.001
95.7667	4.5135	0.0101	0	0.0101
95.8	4.5172	0	0.001	0.001
95.8333	4.5214	0.0101	0	0.0101
95.8667	4.5185	0.0232	0	0.0232
95.9	4.4865	0	0	0
95.9333	4.4638	0.0101	0.001	0.0111
95.9667	4.4645	0	0	0
96	4.4586	0.0232	0	0.0232

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
96.0333	4.4526	0.0232	0.001	0.0242
96.0667	4.4497	0.0232	0.001	0.0242
96.1	4.4421	0	0	0
96.1333	4.4398	0.0232	0	0.0232
96.1667	4.4375	0.0101	0	0.0101
96.2	4.4313	0	0.001	0.001
96.2333	4.428	0	0.001	0.001
96.2667	4.4207	0.0101	0.001	0.0111
96.3	4.4164	0.0101	0.0023	0.0124
96.3333	4.4115	0	0	0
96.3667	4.4092	0	0	0
96.4	4.4072	0.0101	0	0.0101
96.4333	4.4006	0	0	0
96.4667	4.399	0.0101	0	0.0101
96.5	4.3957	0	0	0
96.5333	4.3921	0.0232	0	0.0232
96.5667	4.3855	0	0	0
96.6	4.3848	0.0364	0.001	0.0374
96.6333	4.3799	0.0101	0.001	0.0111
96.6667	4.3806	0	0	0
96.7	4.3733	0	0	0
96.7333	4.3727	0	0	0
96.7667	4.3789	0.0101	0	0.0101
96.8	4.3911	0.0232	0	0.0232
96.8333	4.4046	0.0232	0.001	0.0242
96.8667	4.422	0.0101	0.001	0.0111
96.9	4.4362	0	0	0
96.9333	4.4507	0.0232	0	0.0232
96.9667	4.4589	0	0	0
97	4.4684	0.0101	0	0.0101
97.0333	4.4711	0	0.001	0.001
97.0667	4.4747	0	0.001	0.001
97.1	4.477	0.0101	0	0.0101
97.1333	4.4734	0	0	0
97.1667	4.476	0.0101	0.001	0.0111
97.2	4.4727	0	0	0
97.2333	4.4698	0.0232	0	0.0232
97.2667	4.4665	0	0	0
97.3	4.4645	0	0	0
97.3333	4.4573	0.0232	0	0.0232
97.3667	4.4602	0	0	0
97.4	4.4576	0	0.0023	0.0023
97.4333	4.4536	0.0232	0	0.0232

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
97.4667	4.4484	0.0101	0	0.0101
97.5	4.448	0.0232	0	0.0232
97.5333	4.4494	0	0	0
97.5667	4.4421	0.0101	0	0.0101
97.6	4.4401	0	0.001	0.001
97.6333	4.4411	0	0	0
97.6667	4.4375	0.0101	0	0.0101
97.7	4.4345	0.0232	0	0.0232
97.7333	4.4355	0	0	0
97.7667	4.4316	0.0101	0	0.0101
97.8	4.4283	0	0	0
97.8333	4.4257	0.0101	0.001	0.0111
97.8667	4.426	0.0101	0	0.0101
97.9	4.427	0.0101	0.001	0.0111
97.9333	4.4243	0.0101	0.001	0.0111
97.9667	4.4276	0	0	0
98	4.4313	0.0101	0	0.0101
98.0333	4.4355	0	0	0
98.0667	4.4352	0.0101	0.001	0.0111
98.1	4.4418	0.0101	0	0.0101
98.1333	4.4451	0	0.001	0.001
98.1667	4.4487	0	0	0
98.2	4.4471	0.0232	0	0.0232
98.2333	4.4497	0	0.001	0.001
98.2667	4.448	0	0	0
98.3	4.4431	0.0101	0	0.0101
98.3333	4.4438	0.0101	0.001	0.0111
98.3667	4.4441	0.0101	0.001	0.0111
98.4	4.4405	0.0232	0	0.0232
98.4333	4.4424	0.0232	0.001	0.0242
98.4667	4.4401	0	0	0
98.5	4.4385	0.0101	0	0.0101
98.5333	4.4365	0	0.001	0.001
98.5667	4.4395	0	0	0
98.6	4.4355	0.0101	0	0.0101
98.6333	4.4378	0.0101	0.001	0.0111
98.6667	4.4395	0.0101	0	0.0101
98.7	4.4352	0	0	0
98.7333	4.4382	0.0232	0	0.0232
98.7667	4.4392	0.0101	0	0.0101
98.8	4.4385	0.0101	0.001	0.0111
98.8333	4.4434	0.0101	0.001	0.0111
98.8667	4.4447	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
98.9	4.4444	0	0.001	0.001
98.9333	4.4447	0	0.001	0.001
98.9667	4.4457	0.0101	0.001	0.0111
99	4.4428	0.0101	0	0.0101
99.0333	4.4451	0.0101	0	0.0101
99.0667	4.4457	0.0101	0	0.0101
99.1	4.4497	0.0232	0.001	0.0242
99.1333	4.45	0.0101	0.001	0.0111
99.1667	4.4494	0.0101	0	0.0101
99.2	4.4467	0.0101	0.001	0.0111
99.2333	4.4533	0	0	0
99.2667	4.452	0	0.001	0.001
99.3	4.4517	0	0	0
99.3333	4.4546	0.0232	0	0.0232
99.3667	4.4559	0.0232	0.001	0.0242
99.4	4.4556	0	0.001	0.001
99.4333	4.454	0	0.001	0.001
99.4667	4.4553	0	0.0023	0.0023
99.5	4.4605	0	0	0
99.5333	4.4573	0.0101	0	0.0101
99.5667	4.4615	0	0.001	0.001
99.6	4.4589	0.0232	0.001	0.0242
99.6333	4.4605	0	0.0023	0.0023
99.6667	4.4605	0.0101	0	0.0101
99.7	4.4612	0	0.0023	0.0023
99.7333	4.4648	0.0101	0	0.0101
99.7667	4.4635	0.0101	0	0.0101
99.8	4.4648	0.0101	0.001	0.0111
99.8333	4.4642	0.0101	0	0.0101
99.8667	4.3779	0	0	0
99.9	4.2914	0.0232	0.0023	0.0255
99.9333	4.2061	0	0.001	0.001
99.9667	4.1314	0.0101	0.001	0.0111
100	4.0564	0.0101	0	0.0101
100.0333	3.9849	0.0101	0.001	0.0111
100.0667	3.9175	0.0232	0	0.0232
100.1	3.8457	0.0101	0	0.0101
100.1333	3.7792	0	0.001	0.001
100.1667	3.7098	0	0.001	0.001
100.2	3.5834	0.0232	0	0.0232
100.2333	3.3438	0.0101	0	0.0101
100.2667	3.1249	0	0.001	0.001
100.3	2.9159	0.0232	0	0.0232

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
100.3333	2.7119	0	0	0
100.3667	2.5223	0.0101	0	0.0101
100.4	2.3373	0.0101	0.0023	0.0124
100.4333	2.1635	0	0.001	0.001
100.4667	1.9996	0	0	0
100.5	1.8373	0	0.0023	0.0023
100.5333	1.6919	0.0101	0	0.0101
100.5667	1.5517	0.0101	0	0.0101
100.6	1.4164	0.0101	0	0.0101
100.6333	1.29	0.0101	0	0.0101
100.6667	1.1725	0	0	0
100.7	1.0622	0	0	0
100.7333	0.9517	0	0.001	0.001
100.7667	0.8588	0	0.0036	0.0036
100.8	0.7621	0	0.001	0.001
100.8333	0.6788	0	0	0
100.8667	0.5968	0.0101	0.001	0.0111
100.9	0.5228	0	0	0
100.9333	0.4547	0	0	0
100.9667	0.3971	0	0.001	0.001
101	0.3368	0	0.001	0.001
101.0333	0.2848	0.0232	0	0.0232
101.0667	0.2391	0.0101	0	0.0101
101.1	0.1966	0	0	0
101.1333	0.1607	0.0101	0.001	0.0111
101.1667	0.1265	0	0	0
101.2	0.1025	0.0101	0	0.0101
101.2333	0.0765	0	0	0
101.2667	0.0581	0.0101	0	0.0101
101.3	0.0409	0.0101	0.001	0.0111
101.3333	0.0255	0.0101	0.001	0.0111
101.3667	0.0153	0	0	0
101.4	0.0044	0.0101	0	0.0101
101.4333	-0.0028	0.0101	0	0.0101
101.4667	-0.0094	0.0101	0.0023	0.0124
101.5	-0.0101	0	0	0
101.5333	-0.0101	0.0101	0	0.0101
101.5667	-0.013	0	0	0
101.6	-0.0144	0	0.001	0.001
101.6333	-0.0147	0.0101	0	0.0101
101.6667	-0.0163	0	0.001	0.001
101.7	-0.0173	0.0101	0	0.0101
101.7333	-0.0153	0.0101	0.001	0.0111

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
101.7667	-0.0186	0	0	0
101.8	-0.0206	0	0	0
101.8333	-0.019	0.0101	0.001	0.0111
101.8667	-0.0213	0	0	0
101.9	-0.0193	0.0101	0	0.0101
101.9333	-0.0223	0	0.001	0.001
101.9667	-0.0236	0.0101	0	0.0101
102	-0.0246	0	0	0
102.0333	-0.0242	0	0	0
102.0667	-0.0239	0.0101	0	0.0101
102.1	-0.0269	0.0101	0.001	0.0111
102.1333	-0.0252	0	0	0
102.1667	-0.0292	0	0	0
102.2	-0.0259	0	0	0
102.2333	-0.0246	0.0101	0	0.0101
102.2667	-0.0252	0.0101	0.001	0.0111
102.3	-0.0252	0.0101	0	0.0101
102.3333	-0.0232	0.0101	0.001	0.0111
102.3667	-0.0259	0	0	0
102.4	-0.0252	0	0.001	0.001
102.4333	-0.0239	0.0101	0	0.0101
102.4667	-0.0242	0	0	0
102.5	-0.0246	0	0.001	0.001
102.5333	-0.0252	0.0101	0	0.0101
102.5667	-0.0269	0	0	0
102.6	-0.0295	0	0	0
102.6333	-0.0279	0	0.0023	0.0023
102.6667	-0.0295	0	0	0
102.7	-0.0295	0	0	0
102.7333	-0.0088	0	0	0
102.7667	-0.0469	0	0	0
102.8	-0.042	0	0.001	0.001
102.8333	-0.0463	0.0232	0.001	0.0242
102.8667	-0.044	0.0101	0.0023	0.0124
102.9	-0.042	0.0101	0.0023	0.0124
102.9333	-0.0423	0.0101	0.001	0.0111
102.9667	-0.046	0	0	0
103	-0.0433	0.0101	0.001	0.0111
103.0333	-0.046	0.0101	0	0.0101
103.0667	-0.0018	0.0232	0	0.0232
103.1	0.0896	0	0.0023	0.0023
103.1333	0.1894	0	0	0
103.1667	0.2993	0.0232	0	0.0232

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
103.2	0.4171	0.0101	0.001	0.0111
103.2333	0.5346	0	0	0
103.2667	0.6479	0.0101	0	0.0101
103.3	0.7604	0.0232	0.001	0.0242
103.3333	0.8694	0	0	0
103.3667	0.975	0	0	0
103.4	1.0794	0	0	0
103.4333	1.1797	0	0.0023	0.0023
103.4667	1.2791	0	0	0
103.5	1.3835	0.0232	0.001	0.0242
103.5333	1.4776	0	0	0
103.5667	1.5734	0.0101	0	0.0101
103.6	1.6698	0.0101	0	0.0101
103.6333	1.76	0.0101	0	0.0101
103.6667	1.8568	0	0.001	0.001
103.7	1.9466	0.0101	0	0.0101
103.7333	2.0375	0.0101	0.001	0.0111
103.7667	2.127	0	0.001	0.001
103.8	2.2168	0	0	0
103.8333	2.3057	0.0101	0.0023	0.0124
103.8667	2.3949	0	0	0
103.9	2.4818	0.0101	0	0.0101
103.9333	2.5664	0.0101	0	0.0101
103.9667	2.6523	0.0232	0.0023	0.0255
104	2.7326	0.0232	0	0.0232
104.0333	2.8162	0.0101	0	0.0101
104.0667	2.8958	0	0.001	0.001
104.1	2.9768	0.0232	0.001	0.0242
104.1333	3.0542	0.0101	0	0.0101
104.1667	3.1266	0.0101	0.001	0.0111
104.2	3.2	0	0.0023	0.0023
104.2333	3.2688	0	0	0
104.2667	3.3392	0.0101	0	0.0101
104.3	3.403	0.0101	0.001	0.0111
104.3333	3.4629	0.0101	0.001	0.0111
104.3667	3.5205	0.0101	0	0.0101
104.4	3.5801	0.0101	0.001	0.0111
104.4333	3.6374	0	0	0
104.4667	3.6904	0	0	0
104.5	3.7391	0.0101	0	0.0101
104.5333	3.7865	0.0232	0	0.0232
104.5667	3.8358	0.0101	0.0023	0.0124
104.6	3.8836	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
104.6333	3.9293	0.0101	0	0.0101
104.6667	3.9685	0.0101	0	0.0101
104.7	4.0096	0.0101	0.001	0.0111
104.7333	4.0501	0.0232	0	0.0232
104.7667	4.0873	0.0101	0.001	0.0111
104.8	4.1229	0.0232	0	0.0232
104.8333	4.1591	0	0	0
104.8667	4.19	0.0232	0.001	0.0242
104.9	4.2246	0	0.001	0.001
104.9333	4.2548	0.0101	0	0.0101
104.9667	4.2851	0	0	0
105	4.3118	0.0101	0	0.0101
105.0333	4.3384	0.0101	0	0.0101
105.0667	4.3638	0.0101	0	0.0101
105.1	4.3901	0	0.001	0.001
105.1333	4.4138	0	0.001	0.001
105.1667	4.4352	0	0	0
105.2	4.4556	0	0.0023	0.0023
105.2333	4.4786	0.0101	0.001	0.0111
105.2667	4.4892	0	0	0
105.3	4.5	0	0	0
105.3333	4.5116	0.0101	0	0.0101
105.3667	4.5277	0.0364	0	0.0364
105.4	4.5438	0	0.001	0.001
105.4333	4.5583	0	0	0
105.4667	4.5698	0.0101	0	0.0101
105.5	4.4773	0	0.001	0.001
105.5333	4.3809	0	0.001	0.001
105.5667	4.3809	0	0	0
105.6	4.3901	0.0232	0.0023	0.0255
105.6333	4.3993	0	0	0
105.6667	4.4053	0	0.001	0.001
105.7	4.4112	0.0232	0	0.0232
105.7333	4.4148	0.0232	0	0.0232
105.7667	4.4204	0	0	0
105.8	4.4243	0.0101	0.001	0.0111
105.8333	4.4313	0	0.001	0.001
105.8667	4.4326	0.0232	0.001	0.0242
105.9	4.4349	0	0	0
105.9333	4.4329	0.0101	0	0.0101
105.9667	4.4365	0	0	0
106	4.4339	0.0232	0	0.0232
106.0333	4.4362	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
106.0667	4.4359	0	0	0
106.1	4.4428	0	0	0
106.1333	4.4388	0	0.001	0.001
106.1667	4.4415	0.0101	0.001	0.0111
106.2	4.4362	0.0101	0	0.0101
106.2333	4.4365	0.0232	0	0.0232
106.2667	4.4362	0.0101	0	0.0101
106.3	4.4355	0	0.001	0.001
106.3333	4.4339	0	0	0
106.3667	4.4368	0	0	0
106.4	4.4362	0	0	0
106.4333	4.4398	0.0101	0.001	0.0111
106.4667	4.4461	0.0101	0	0.0101
106.5	4.4553	0	0	0
106.5333	4.4744	0	0	0
106.5667	4.4816	0.0232	0.001	0.0242
106.6	4.5073	0.0101	0.001	0.0111
106.6333	4.53	0.0101	0.001	0.0111
106.6667	4.5527	0.0101	0.0023	0.0124
106.7	4.5701	0	0	0
106.7333	4.5906	0.0101	0.001	0.0111
106.7667	4.6083	0.0101	0.001	0.0111
106.8	4.5886	0	0	0
106.8333	4.4707	0.0101	0	0.0101
106.8667	4.3559	0.0101	0	0.0101
106.9	4.2716	0	0	0
106.9333	4.2009	0	0	0
106.9667	4.1255	0	0	0
107	4.0541	0	0	0
107.0333	4.0692	0.0101	0	0.0101
107.0667	4.0955	0	0.001	0.001
107.1	4.114	0	0	0
107.1333	4.1327	0	0	0
107.1667	4.1521	0	0.001	0.001
107.2	4.1729	0.0101	0.001	0.0111
107.2333	4.1907	0.0101	0	0.0101
107.2667	4.2058	0.0101	0	0.0101
107.3	4.2236	0.0101	0.0023	0.0124
107.3333	4.2334	0	0	0
107.3667	4.2492	0.0101	0	0.0101
107.4	4.2604	0.0101	0	0.0101
107.4333	4.2693	0.0101	0	0.0101
107.4667	4.2812	0	0.001	0.001

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
107.5	4.293	0	0	0
107.5333	4.2993	0	0.001	0.001
107.5667	4.3065	0	0.0023	0.0023
107.6	4.3174	0.0232	0.001	0.0242
107.6333	4.324	0.0101	0.001	0.0111
107.6667	4.3296	0	0	0
107.7	4.3365	0.0232	0	0.0232
107.7333	4.343	0.0101	0	0.0101
107.7667	4.3453	0.0101	0.001	0.0111
107.8	4.3513	0.0101	0	0.0101
107.8333	4.3592	0	0	0
107.8667	4.3608	0.0101	0.001	0.0111
107.9	4.3677	0	0	0
107.9333	4.3671	0.0101	0	0.0101
107.9667	4.3704	0.0232	0	0.0232
108	4.37	0.0101	0	0.0101
108.0333	4.3769	0.0101	0.001	0.0111
108.0667	4.3743	0.0232	0.001	0.0242
108.1	4.3743	0.0101	0	0.0101
108.1333	4.373	0.0101	0	0.0101
108.1667	4.3773	0.0101	0	0.0101
108.2	4.3769	0.0101	0	0.0101
108.2333	4.3756	0	0	0
108.2667	4.3796	0.0101	0	0.0101
108.3	4.3769	0	0.0023	0.0023
108.3333	4.3789	0.0101	0.0023	0.0124
108.3667	4.3812	0	0	0
108.4	4.3829	0	0	0
108.4333	4.3845	0.0101	0	0.0101
108.4667	4.3845	0	0	0
108.5	4.3911	0	0.001	0.001
108.5333	4.3931	0	0.001	0.001
108.5667	4.3911	0	0	0
108.6	4.398	0	0	0
108.6333	4.398	0	0	0
108.6667	4.397	0	0	0
108.7	4.4029	0.0101	0	0.0101
108.7333	4.402	0	0	0
108.7667	4.4016	0.0101	0	0.0101
108.8	4.402	0	0	0
108.8333	4.4029	0	0	0
108.8667	4.402	0.0101	0	0.0101
108.9	4.402	0.0232	0.001	0.0242

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
108.9333	4.402	0.0232	0	0.0232
108.9667	4.3997	0	0	0
109	4.4013	0	0	0
109.0333	4.4006	0	0.001	0.001
109.0667	4.3993	0	0	0
109.1	4.398	0.0101	0	0.0101
109.1333	4.3987	0	0.001	0.001
109.1667	4.3927	0	0	0
109.2	4.3901	0	0	0
109.2333	4.3901	0	0.0023	0.0023
109.2667	4.3865	0.0101	0.001	0.0111
109.3	4.3868	0	0	0
109.3333	4.3842	0	0.001	0.001
109.3667	4.3829	0.0101	0.001	0.0111
109.4	4.3786	0.0101	0	0.0101
109.4333	4.3763	0.0101	0	0.0101
109.4667	4.3796	0.0101	0	0.0101
109.5	4.3737	0	0.001	0.001
109.5333	4.3707	0.0101	0	0.0101
109.5667	4.369	0.0101	0	0.0101
109.6	4.3664	0.0232	0	0.0232
109.6333	4.3707	0	0	0
109.6667	4.3687	0	0.001	0.001
109.7	4.3677	0.0101	0	0.0101
109.7333	4.3658	0.0101	0	0.0101
109.7667	4.3677	0.0101	0	0.0101
109.8	4.3677	0.0232	0.001	0.0242
109.8333	4.3681	0.0232	0	0.0232
109.8667	4.3694	0.0101	0.001	0.0111
109.9	4.3684	0.0101	0	0.0101
109.9333	4.373	0	0.001	0.001
109.9667	4.3746	0	0	0
110	4.3779	0	0	0
110.0333	4.3786	0.0101	0	0.0101
110.0667	4.3829	0	0	0
110.1	4.3875	0.0101	0	0.0101
110.1333	4.3904	0	0.001	0.001
110.1667	4.3967	0	0	0
110.2	4.4	0.0101	0	0.0101
110.2333	4.4046	0	0.001	0.001
110.2667	4.4095	0.0232	0.001	0.0242
110.3	4.4135	0	0	0
110.3333	4.4141	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
110.3667	4.4158	0.0232	0	0.0232
110.4	4.4181	0.0232	0	0.0232
110.4333	4.4197	0	0	0
110.4667	4.4181	0.0101	0	0.0101
110.5	4.4207	0.0232	0	0.0232
110.5333	4.4072	0.0101	0	0.0101
110.5667	4.2397	0.0232	0.001	0.0242
110.6	4.0557	0	0	0
110.6333	3.8767	0.0232	0	0.0232
110.6667	3.7203	0.0101	0	0.0101
110.7	3.5864	0.0101	0	0.0101
110.7333	3.4494	0.0101	0.001	0.0111
110.7667	3.3231	0.0101	0.001	0.0111
110.8	3.2016	0	0.001	0.001
110.8333	2.9933	0	0	0
110.8667	2.8363	0.0232	0	0.0232
110.9	2.6576	0	0.001	0.001
110.9333	2.4156	0	0	0
110.9667	2.1444	0.0101	0.001	0.0111
111	1.9005	0.0101	0	0.0101
111.0333	1.68	0.0101	0	0.0101
111.0667	1.4799	0	0	0
111.1	1.2982	0	0.0023	0.0023
111.1333	1.1317	0	0	0
111.1667	0.9852	0.0101	0.001	0.0111
111.2	0.8516	0.0232	0	0.0232
111.2333	0.7262	0.0101	0.001	0.0111
111.2667	0.6182	0	0.001	0.001
111.3	0.5218	0	0.001	0.001
111.3333	0.4329	0	0.001	0.001
111.3667	0.353	0	0.0023	0.0023
111.4	0.2848	0.0101	0.0023	0.0124
111.4333	0.2226	0	0	0
111.4667	0.1726	0	0	0
111.5	0.1285	0.0101	0	0.0101
111.5333	0.0959	0	0	0
111.5667	0.0646	0	0.001	0.001
111.6	0.0419	0.0101	0.001	0.0111
111.6333	0.0248	0.0101	0	0.0101
111.6667	0.0113	0.0101	0	0.0101
111.7	0.0011	0.0101	0	0.0101
111.7333	-0.0071	0	0.0023	0.0023
111.7667	-0.0068	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
111.8	-0.0144	0.0232	0	0.0232
111.8333	-0.0144	0.0101	0.001	0.0111
111.8667	-0.015	0	0.001	0.001
111.9	-0.0209	0	0.0023	0.0023
111.9333	-0.02	0	0	0
111.9667	-0.0209	0	0	0
112	-0.02	0.0232	0	0.0232
112.0333	-0.0223	0	0.001	0.001
112.0667	-0.0223	0	0	0
112.1	-0.0239	0	0.0023	0.0023
112.1333	-0.0216	0.0101	0	0.0101
112.1667	-0.0242	0	0	0
112.2	-0.0269	0.0232	0.0023	0.0255
112.2333	-0.0272	0.0101	0.001	0.0111
112.2667	-0.0236	0	0	0
112.3	-0.0239	0.0101	0	0.0101
112.3333	-0.0239	0.0101	0.0023	0.0124
112.3667	-0.0255	0	0	0
112.4	-0.0252	0.0101	0.001	0.0111
112.4333	-0.0246	0.0101	0	0.0101
112.4667	-0.0246	0.0101	0.001	0.0111
112.5	-0.0288	0.0101	0.001	0.0111
112.5333	-0.0272	0.0101	0	0.0101
112.5667	-0.0249	0	0.001	0.001
112.6	-0.0311	0	0.001	0.001
112.6333	-0.0308	0	0.001	0.001
112.6667	-0.0255	0.0101	0	0.0101
112.7	-0.0302	0	0.001	0.001
112.7333	0.0722	0	0	0
112.7667	-0.0354	0	0	0
112.8	-0.039	0.0101	0	0.0101
112.8333	-0.0413	0	0.005	0.005
112.8667	-0.0453	0.0101	0.001	0.0111
112.9	-0.0413	0	0	0
112.9333	-0.042	0.0101	0	0.0101
112.9667	0.0037	0	0.001	0.001
113	0.1354	0.0232	0	0.0232
113.0333	0.2644	0.0232	0.001	0.0242
113.0667	0.3925	0	0	0
113.1	0.5139	0.0101	0.001	0.0111
113.1333	0.6268	0.0232	0.001	0.0242
113.1667	0.7466	0	0	0
113.2	0.8631	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
113.2333	0.975	0	0	0
113.2667	1.083	0	0.001	0.001
113.3	1.1899	0.0232	0	0.0232
113.3333	1.2956	0.0101	0.0023	0.0124
113.3667	1.3996	0.0232	0	0.0232
113.4	1.5016	0.0101	0	0.0101
113.4333	1.606	0	0	0
113.4667	1.7087	0.0101	0	0.0101
113.5	1.8041	0	0.001	0.001
113.5333	1.9055	0.0101	0.0023	0.0124
113.5667	2.0032	0	0	0
113.6	2.101	0.0101	0	0.0101
113.6333	2.1961	0	0	0
113.6667	2.2892	0.0101	0	0.0101
113.7	2.3824	0.0232	0	0.0232
113.7333	2.4769	0	0.0023	0.0023
113.7667	2.567	0	0	0
113.8	2.6566	0	0	0
113.8333	2.7464	0	0	0
113.8667	2.8363	0.0232	0	0.0232
113.9	2.9255	0.0101	0.001	0.0111
113.9333	3.0117	0.0101	0	0.0101
113.9667	3.0969	0	0.001	0.001
114	3.1868	0.0101	0.001	0.0111
114.0333	3.2734	0.0232	0	0.0232
114.0667	3.356	0.0232	0	0.0232
114.1	3.4415	0.0101	0	0.0101
114.1333	3.5265	0	0	0
114.1667	3.6068	0	0.001	0.001
114.2	3.691	0.0101	0	0.0101
114.2333	3.7763	0	0	0
114.2667	3.8586	0	0	0
114.3	3.9349	0	0	0
114.3333	4.0142	0.0101	0.001	0.0111
114.3667	4.0922	0.0101	0	0.0101
114.4	4.1752	0.0101	0	0.0101
114.4333	4.2532	0.0232	0	0.0232
114.4667	4.3342	0.0101	0.001	0.0111
114.5	4.4076	0.0232	0	0.0232
114.5333	4.4849	0.0232	0	0.0232
114.5667	4.5567	0	0	0
114.6	4.611	0	0.001	0.001
114.6333	4.6613	0.0232	0.001	0.0242

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
114.6667	4.7074	0.0101	0	0.0101
114.7	4.6982	0	0	0
114.7333	4.6389	0.0101	0	0.0101
114.7667	4.6106	0	0	0
114.8	4.5962	0.0101	0	0.0101
114.8333	4.5741	0.0101	0.001	0.0111
114.8667	4.5606	0.0101	0	0.0101
114.9	4.5455	0	0.001	0.001
114.9333	4.5323	0.0232	0	0.0232
114.9667	4.5195	0.0101	0	0.0101
115	4.506	0	0	0
115.0333	4.4954	0	0.001	0.001
115.0667	4.4829	0.0232	0	0.0232
115.1	4.4724	0	0.001	0.001
115.1333	4.4655	0.0101	0	0.0101
115.1667	4.4497	0.0101	0	0.0101
115.2	4.4454	0	0	0
115.2333	4.4306	0	0	0
115.2667	4.4283	0.0101	0.001	0.0111
115.3	4.4158	0.0101	0	0.0101
115.3333	4.4089	0.0101	0	0.0101
115.3667	4.4036	0	0	0
115.4	4.3957	0	0.001	0.001
115.4333	4.4293	0.0232	0.0023	0.0255
115.4667	4.4915	0.0101	0	0.0101
115.5	4.5405	0	0	0
115.5333	4.5573	0	0	0
115.5667	4.5214	0.0101	0.001	0.0111
115.6	4.4889	0.0101	0.001	0.0111
115.6333	4.4507	0	0.001	0.001
115.6667	4.4523	0	0.001	0.001
115.7	4.4668	0.0232	0	0.0232
115.7333	4.4839	0.0101	0	0.0101
115.7667	4.5027	0	0.001	0.001
115.8	4.5145	0.0101	0	0.0101
115.8333	4.5303	0	0	0
115.8667	4.5458	0.0101	0	0.0101
115.9	4.5188	0.0232	0	0.0232
115.9333	4.4635	0.0101	0	0.0101
115.9667	4.4563	0.0101	0	0.0101
116	4.4523	0.0101	0.001	0.0111
116.0333	4.4464	0	0	0
116.0667	4.4395	0.0232	0	0.0232

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
116.1	4.4375	0	0	0
116.1333	4.4329	0	0	0
116.1667	4.4247	0	0	0
116.2	4.4224	0.0232	0	0.0232
116.2333	4.4181	0	0	0
116.2667	4.4138	0.0101	0.001	0.0111
116.3	4.4102	0.0101	0.001	0.0111
116.3333	4.4026	0.0101	0.0023	0.0124
116.3667	4.4006	0.0101	0	0.0101
116.4	4.3944	0.0101	0	0.0101
116.4333	4.3927	0.0101	0	0.0101
116.4667	4.3868	0	0.001	0.001
116.5	4.3848	0.0232	0.001	0.0242
116.5333	4.3799	0.0101	0	0.0101
116.5667	4.3766	0.0101	0.001	0.0111
116.6	4.37	0	0.001	0.001
116.6333	4.3664	0	0	0
116.6667	4.3651	0	0	0
116.7	4.3628	0	0	0
116.7333	4.3575	0.0101	0	0.0101
116.7667	4.3569	0.0232	0	0.0232
116.8	4.3539	0	0	0
116.8333	4.3493	0	0	0
116.8667	4.3434	0	0	0
116.9	4.344	0.0101	0	0.0101
116.9333	4.3565	0	0.001	0.001
116.9667	4.3684	0	0	0
117	4.3842	0.0101	0	0.0101
117.0333	4.4039	0	0	0
117.0667	4.4227	0.0101	0	0.0101
117.1	4.4276	0	0	0
117.1333	4.422	0.0232	0.001	0.0242
117.1667	4.4197	0.0101	0	0.0101
117.2	4.4187	0.0232	0.001	0.0242
117.2333	4.426	0	0	0
117.2667	4.4276	0.0101	0	0.0101
117.3	4.4355	0	0.001	0.001
117.3333	4.4401	0.0101	0	0.0101
117.3667	4.4447	0	0	0
117.4	4.4444	0.0232	0	0.0232
117.4333	4.4546	0	0	0
117.4667	4.4546	0	0.001	0.001
117.5	4.4615	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
117.5333	4.4638	0	0	0
117.5667	4.4665	0.0101	0	0.0101
117.6	4.4731	0	0.001	0.001
117.6333	4.4763	0.0101	0	0.0101
117.6667	4.4757	0	0	0
117.7	4.4796	0.0101	0.001	0.0111
117.7333	4.4879	0.0101	0	0.0101
117.7667	4.4898	0	0.0023	0.0023
117.8	4.4892	0.0232	0	0.0232
117.8333	4.4964	0.0101	0	0.0101
117.8667	4.4948	0.0101	0.001	0.0111
117.9	4.4968	0	0	0
117.9333	4.4984	0.0232	0	0.0232
117.9667	4.4968	0.0232	0.001	0.0242
118	4.4954	0.0232	0	0.0232
118.0333	4.4935	0	0	0
118.0667	4.4852	0.0232	0	0.0232
118.1	4.4849	0	0	0
118.1333	4.4819	0.0232	0	0.0232
118.1667	4.4793	0	0	0
118.2	4.4757	0.0101	0	0.0101
118.2333	4.4734	0.0232	0	0.0232
118.2667	4.4698	0	0.001	0.001
118.3	4.4668	0.0101	0.001	0.0111
118.3333	4.4596	0.0101	0	0.0101
118.3667	4.4563	0.0101	0	0.0101
118.4	4.455	0.0101	0	0.0101
118.4333	4.4526	0	0	0
118.4667	4.4507	0	0	0
118.5	4.4477	0	0	0
118.5333	4.4441	0	0.001	0.001
118.5667	4.4424	0.0232	0	0.0232
118.6	4.4405	0	0	0
118.6333	4.4382	0.0101	0	0.0101
118.6667	4.4336	0	0	0
118.7	4.4296	0	0.0023	0.0023
118.7333	4.4322	0	0.001	0.001
118.7667	4.4336	0.0101	0.001	0.0111
118.8	4.4342	0.0101	0.001	0.0111
118.8333	4.4375	0.0232	0.001	0.0242
118.8667	4.4395	0.0232	0.001	0.0242
118.9	4.4401	0	0	0
118.9333	4.4431	0.0101	0	0.0101

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
118.9667	4.4444	0	0	0
119	4.4484	0	0	0
119.0333	4.448	0.0101	0.001	0.0111
119.0667	4.4513	0	0	0
119.1	4.454	0.0101	0	0.0101
119.1333	4.4543	0	0	0
119.1667	4.4586	0	0.001	0.001
119.2	4.4615	0.0101	0	0.0101
119.2333	4.4629	0.0101	0.001	0.0111
119.2667	4.4691	0.0101	0	0.0101
119.3	4.4691	0	0.0023	0.0023
119.3333	4.4684	0.0101	0	0.0101
119.3667	4.4698	0	0	0
119.4	4.4731	0	0	0
119.4333	4.4744	0.0101	0	0.0101
119.4667	4.476	0.0101	0	0.0101
119.5	4.475	0.0101	0	0.0101
119.5333	4.481	0.0101	0	0.0101
119.5667	4.4783	0	0	0
119.6	4.4833	0.0232	0	0.0232
119.6333	4.4846	0.0101	0	0.0101
119.6667	4.4852	0.0364	0.001	0.0374
119.7	4.4875	0.0101	0	0.0101
119.7333	4.4862	0.0232	0	0.0232
119.7667	4.4885	0	0	0
119.8	4.4908	0.0232	0	0.0232
119.8333	4.4948	0.0101	0	0.0101
119.8667	4.4935	0.0101	0	0.0101
119.9	4.4944	0	0.001	0.001
119.9333	4.4184	0.0232	0.0023	0.0255
119.9667	4.3325	0.0101	0.001	0.0111
120	4.2486	0	0	0
120.0333	4.1709	0.0232	0	0.0232
120.0667	4.0969	0.0232	0.0023	0.0255
120.1	4.0238	0	0	0
120.1333	3.954	0	0.001	0.001
120.1667	3.8796	0.0101	0	0.0101
120.2	3.8125	0.0101	0	0.0101
120.2333	3.743	0.0232	0	0.0232
120.2667	3.6756	0	0.001	0.001
120.3	3.6094	0	0	0
120.3333	3.5479	0.0101	0	0.0101
120.3667	3.4814	0.0232	0	0.0232

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
120.4	3.4169	0	0	0
120.4333	3.3573	0	0	0
120.4667	3.2934	0.0232	0	0.0232
120.5	3.2372	0.0101	0	0.0101
120.5333	3.1756	0.0232	0.001	0.0242
120.5667	3.12	0	0	0
120.6	3.0611	0.0101	0.001	0.0111
120.6333	3.0061	0.0232	0	0.0232
120.6667	2.9485	0	0	0
120.7	2.8945	0.0101	0.001	0.0111
120.7333	2.8422	0	0.001	0.001
120.7667	2.7918	0.0101	0	0.0101
120.8	2.7362	0	0.001	0.001
120.8333	2.6875	0	0.001	0.001
120.8667	2.6342	0	0	0
120.9	2.5878	0	0.0023	0.0023
120.9333	2.5394	0.0101	0.001	0.0111
120.9667	2.488	0.0232	0.001	0.0242
121	2.442	0.0101	0	0.0101
121.0333	2.3982	0	0	0
121.0667	2.3475	0	0.001	0.001
121.1	2.3034	0	0.001	0.001
121.1333	2.258	0.0101	0	0.0101
121.1667	2.2168	0.0232	0	0.0232
121.2	2.1737	0	0	0
121.2333	2.1309	0.0101	0.001	0.0111
121.2667	2.0865	0.0101	0	0.0101
121.3	2.045	0	0.001	0.001
121.3333	2.0036	0.0232	0.001	0.0242
121.3667	1.9627	0.0232	0	0.0232
121.4	1.9206	0.0101	0	0.0101
121.4333	1.8811	0	0	0
121.4667	1.8416	0.0101	0	0.0101
121.5	1.8005	0	0	0
121.5333	1.7636	0.0101	0	0.0101
121.5667	1.7287	0	0	0
121.6	1.6925	0.0101	0.001	0.0111
121.6333	1.6149	0	0.001	0.001
121.6667	1.4635	0	0	0
121.7	1.3292	0.0101	0	0.0101
121.7333	1.2005	0	0	0
121.7667	1.0817	0	0.001	0.001
121.8	0.9661	0	0	0

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Time (min)	Ch 1 dP (psi)	Ch 2 High Flow (LPM)	Ch 3 Low Flow (LPM)	Total Flow (LPM)
121.8333	0.8615	0.0101	0	0.0101
121.8667	0.7621	0	0	0
121.9	0.6725	0	0.001	0.001
121.9333	0.5857	0	0	0
121.9667	0.5109	0.0101	0.001	0.0111
122	0.4369	0	0	0
122.0333	0.3747	0.0101	0.001	0.0111
122.0667	0.3118	0.0101	0	0.0101
122.1	0.2611	0.0101	0	0.0101
122.1333	0.2157	0	0	0
122.1667	0.1696	0	0.0023	0.0023
122.2	0.1321	0	0.001	0.001
122.2333	0.1061	0	0	0
122.2667	0.0794	0	0	0
122.3	0.0577	0.0101	0.001	0.0111
122.3333	0.038	0.0101	0.001	0.0111
122.3667	0.0218	0	0	0
122.4	0.009	0.0101	0	0.0101
122.4333	0.0037	0	0	0
122.4667	-0.0028	0	0	0
122.5	-0.0107	0	0	0
122.5333	-0.0137	0.0101	0	0.0101
122.5667	-0.0163	0	0	0
122.6	-0.016	0.0101	0.001	0.0111
122.6333	-0.017	0.0101	0.001	0.0111
122.6667	-0.0183	0.0101	0	0.0101
122.7	-0.0203	0.0101	0	0.0101
122.7333	-0.0206	0	0	0
122.7667	-0.0216	0.0101	0	0.0101
122.8	-0.0223	0	0.001	0.001
122.8333	-0.0203	0	0	0
122.8667	-0.0223	0.0101	0	0.0101
122.9	-0.0229	0	0.0023	0.0023
122.9333	-0.0219	0	0	0
122.9667	-0.0242	0.0101	0.001	0.0111
123	-0.0259	0	0	0
123.0333	-0.0239	0.0101	0	0.0101

APPENDIX C
Photographs


9209334-P2
SEISMIC PRESSURE 7
2014/01/16


9209334-P1
9209334-P2
2014/01/16


9209334-P1
2014/01/16


PCI
PROMATEC
Part B
SF-150NH™
PCI
PROMATEC
Part A
SF-150NH™
2014/01/16

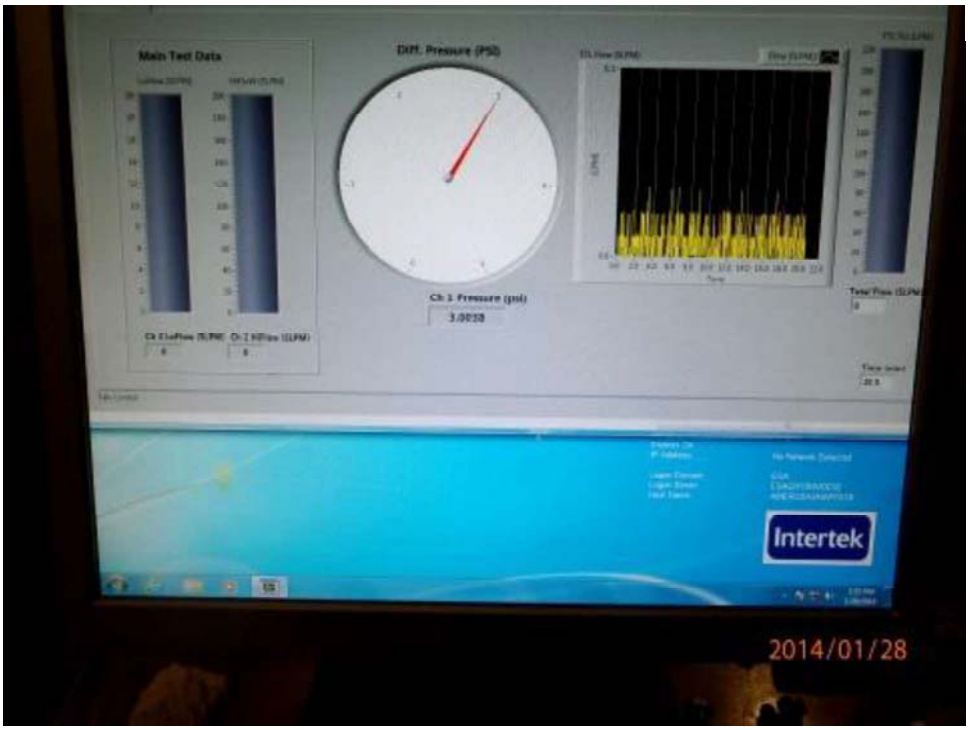

9209334-P1
9209334-P2
2014/01/16

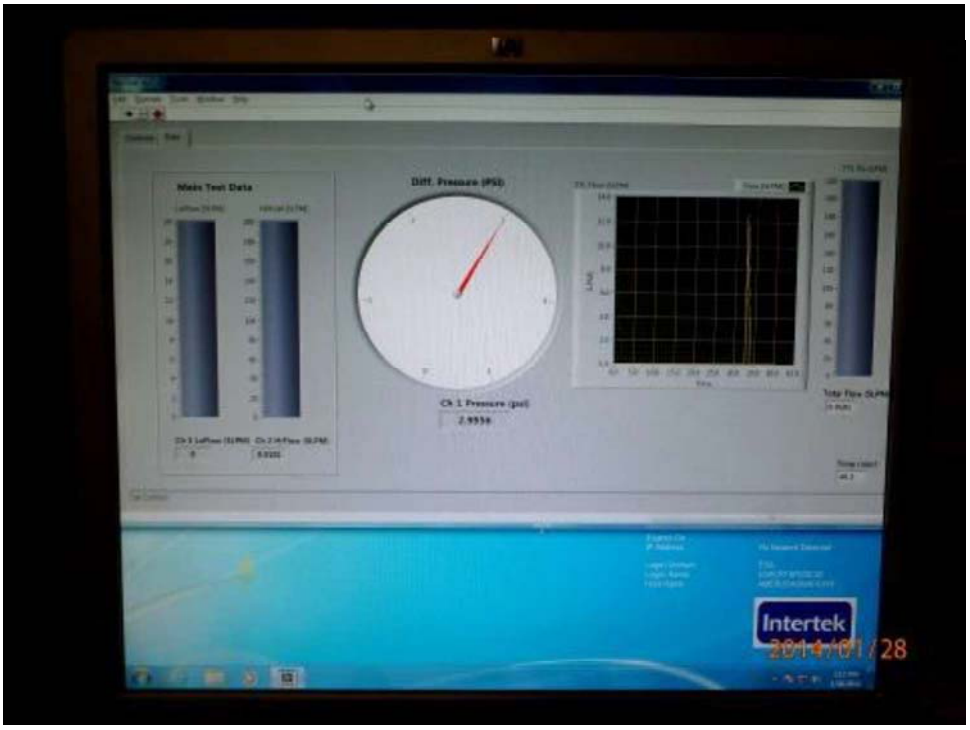

9209334-P2
SEISMIC PRESSURE 7
2014/01/22

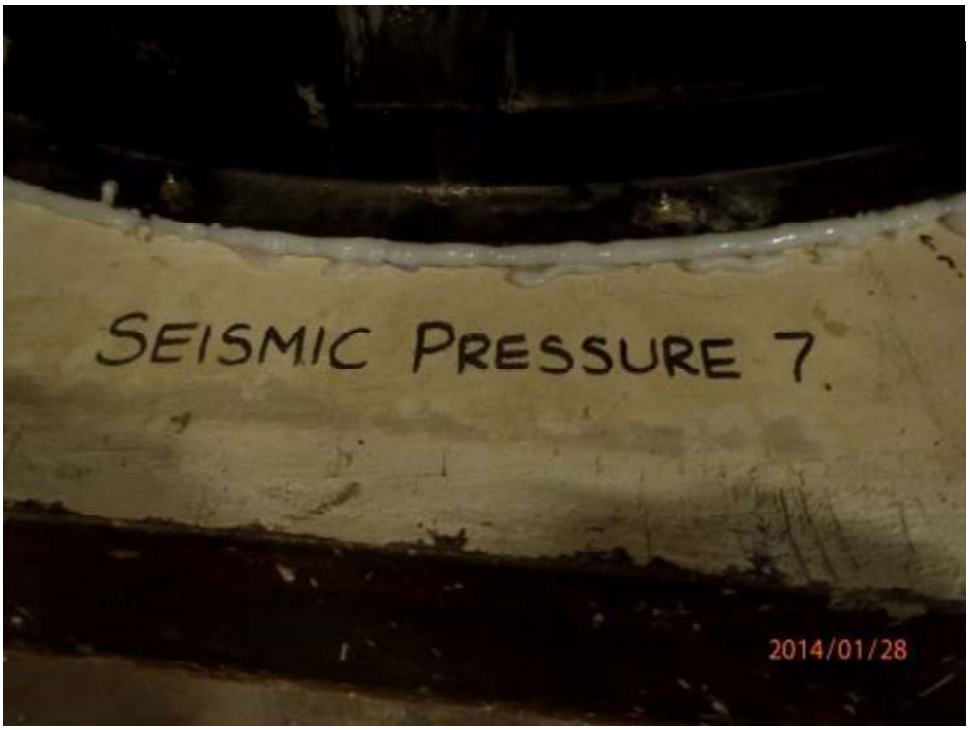

9209334-P2
2014/01/22

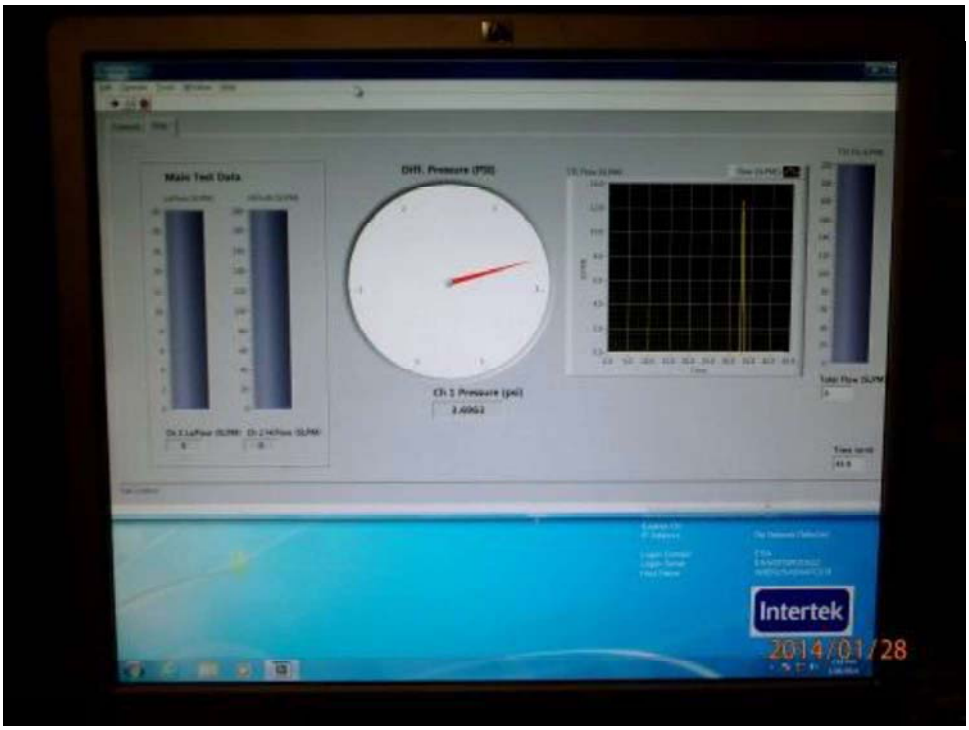

9209334-P1
2014/01/22

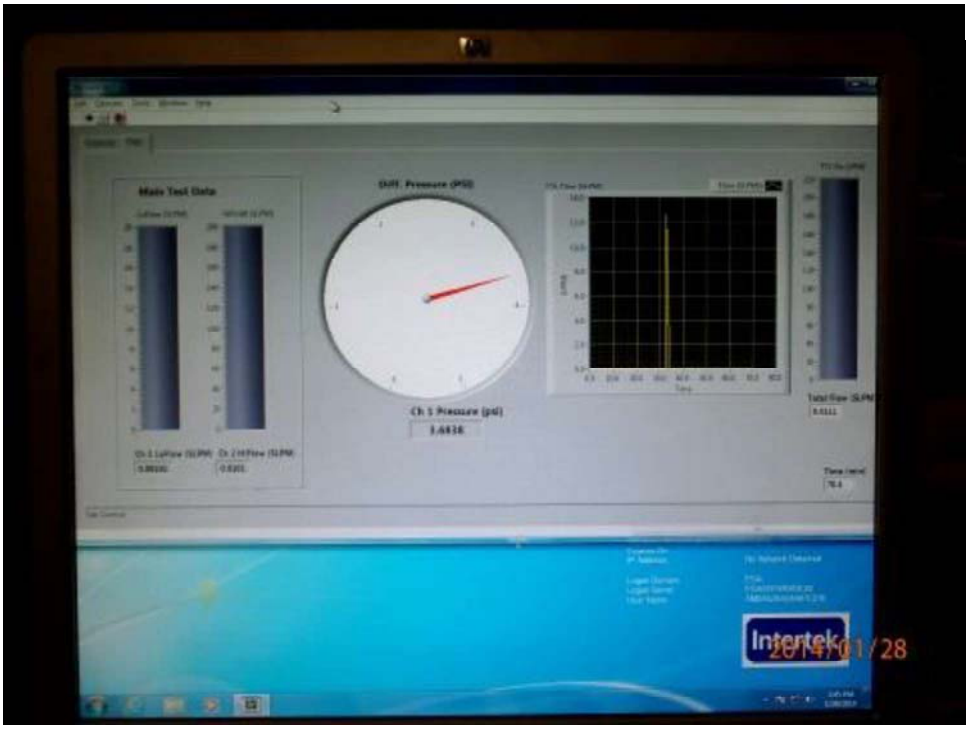

9209334-P1
2014/01/22

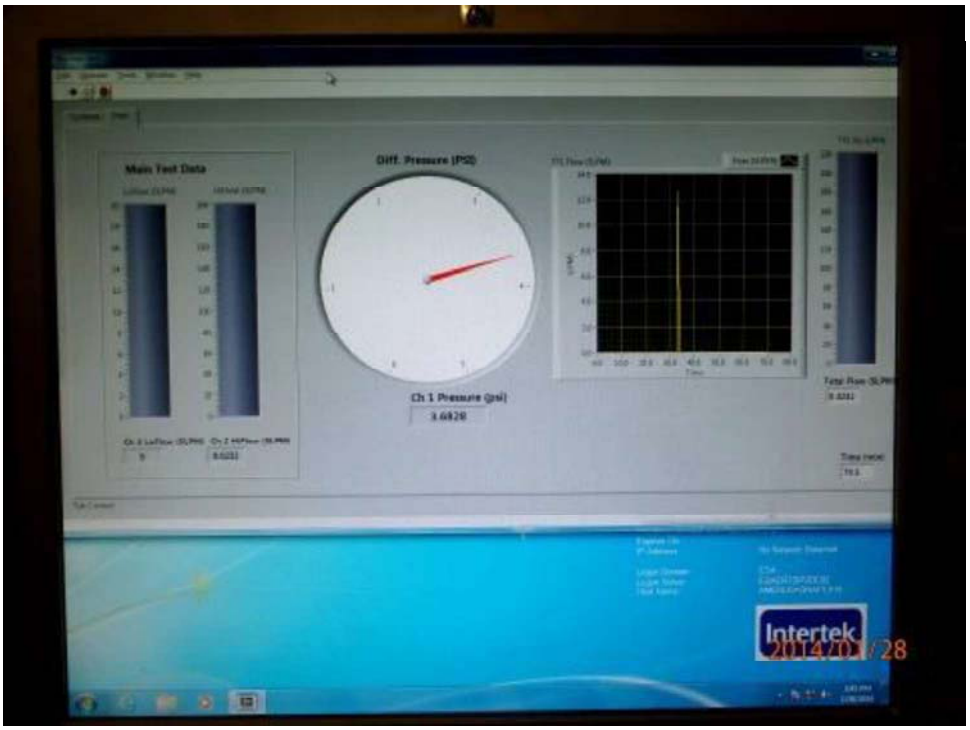

Main Test Data
Diff. Pressure (PSI)
Intertek
2014/01/28

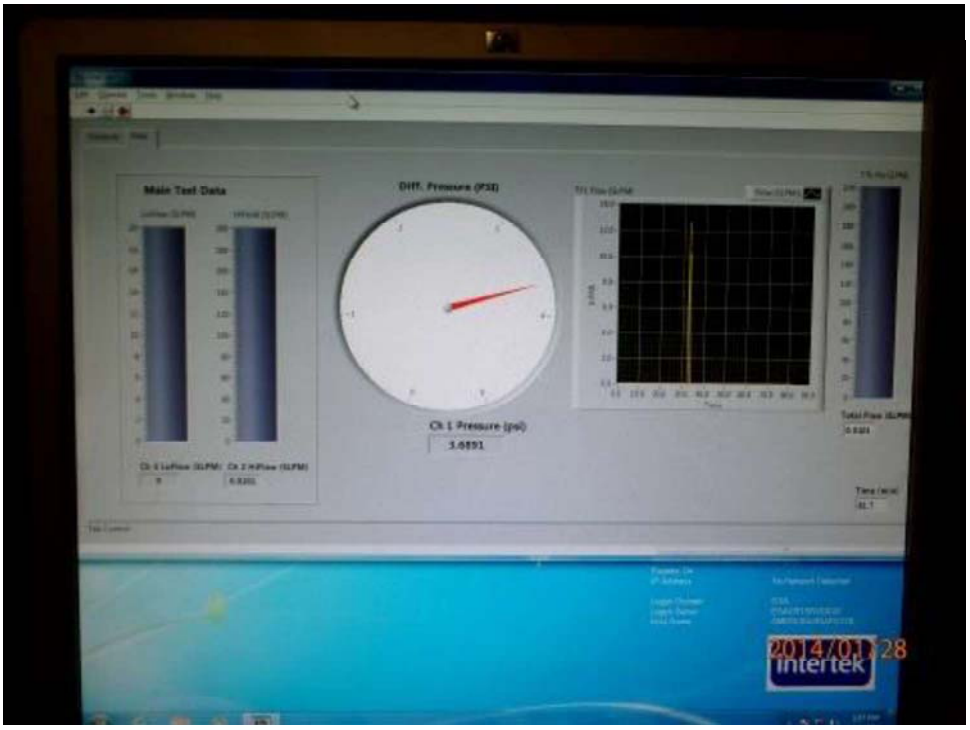

Main Test Data
Diff. Pressure (PSI)
Intertek
2014/01/28

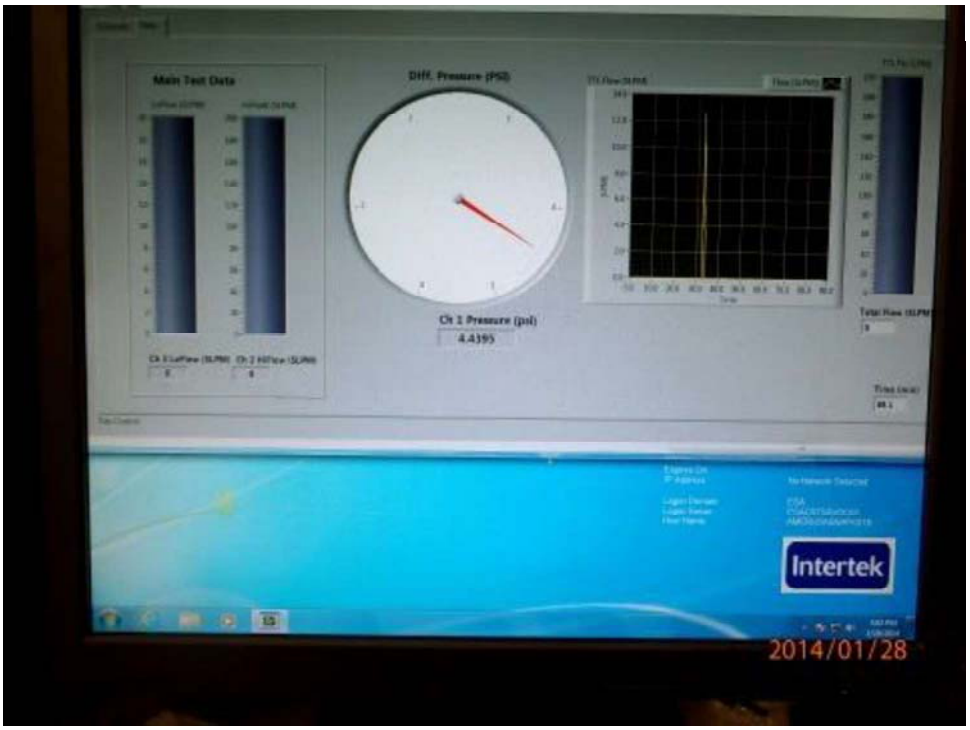

SEISMIC PRESSURE 7
2014/01/28

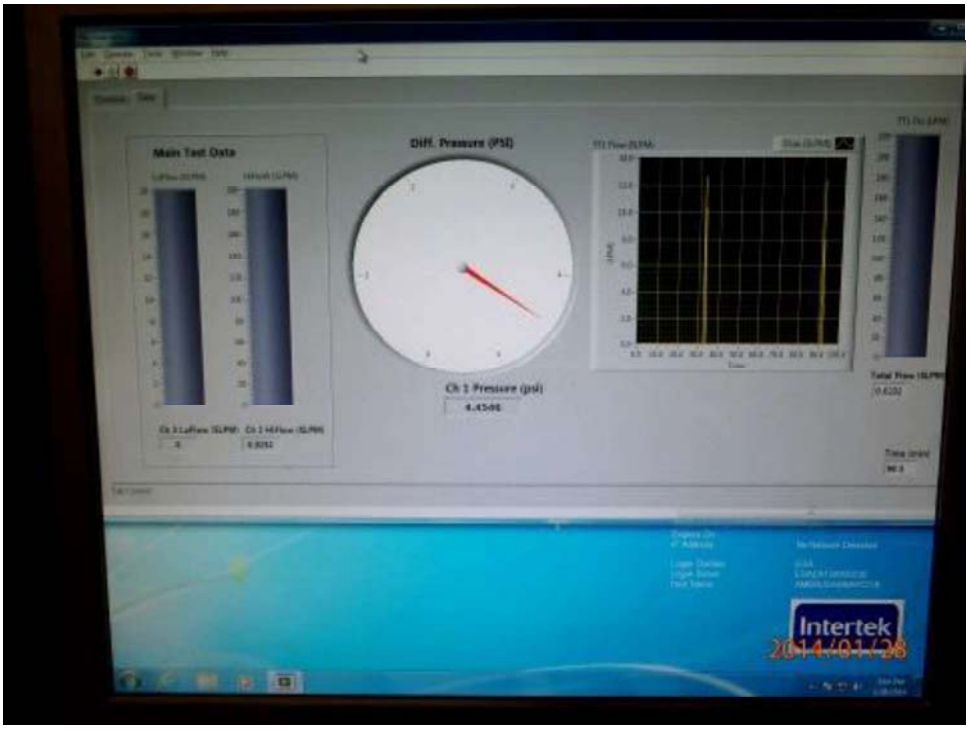

Main Test Data
Diff. Pressure (PSI)
Intertek
2014/01/28

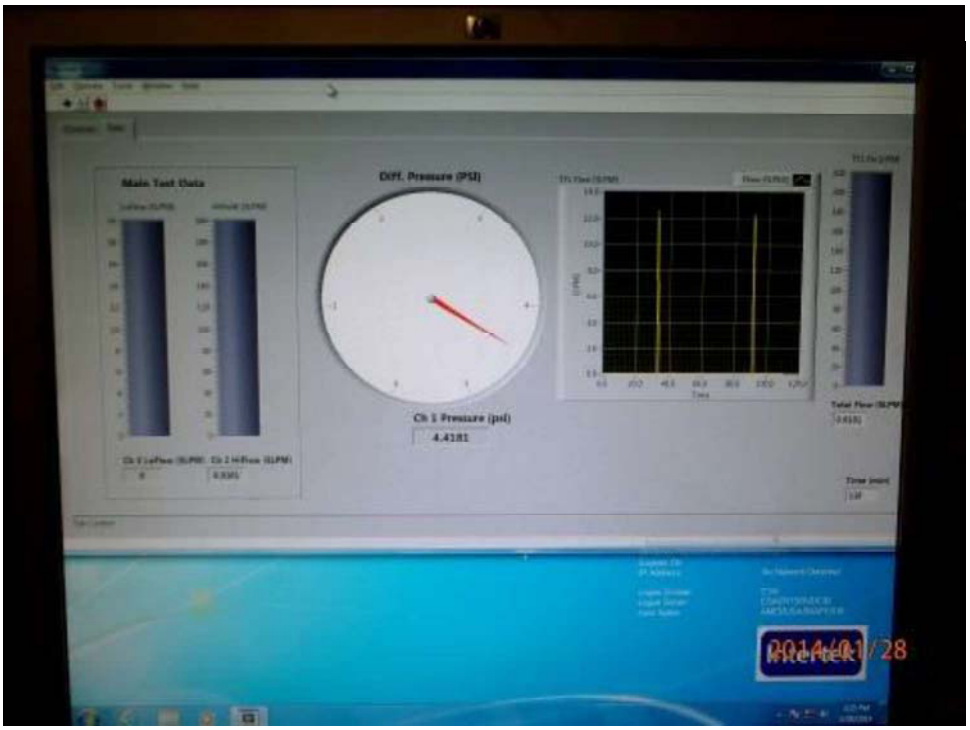

Main Test Data
Diff. Pressure (PSI)
Ch 1 Pressure (psi)
Intertek


Main Test Data
Diff. Pressure (PSI)
Ch 1 Pressure (psi)
Intertek


Main Test Data
Diff. Pressure (PSI)
Ch 1 Pressure (psi)
3.6891
2014/01/28
Intertek


Main Test Data
Diff. Pressure (PSI)
Ch 1 Pressure (psi)
4.4395
Intertek
2014/01/28


Main Test Data
Diff. Pressure (PSI)
Ch 1 Pressure (psi)
Intertek
2014/01/28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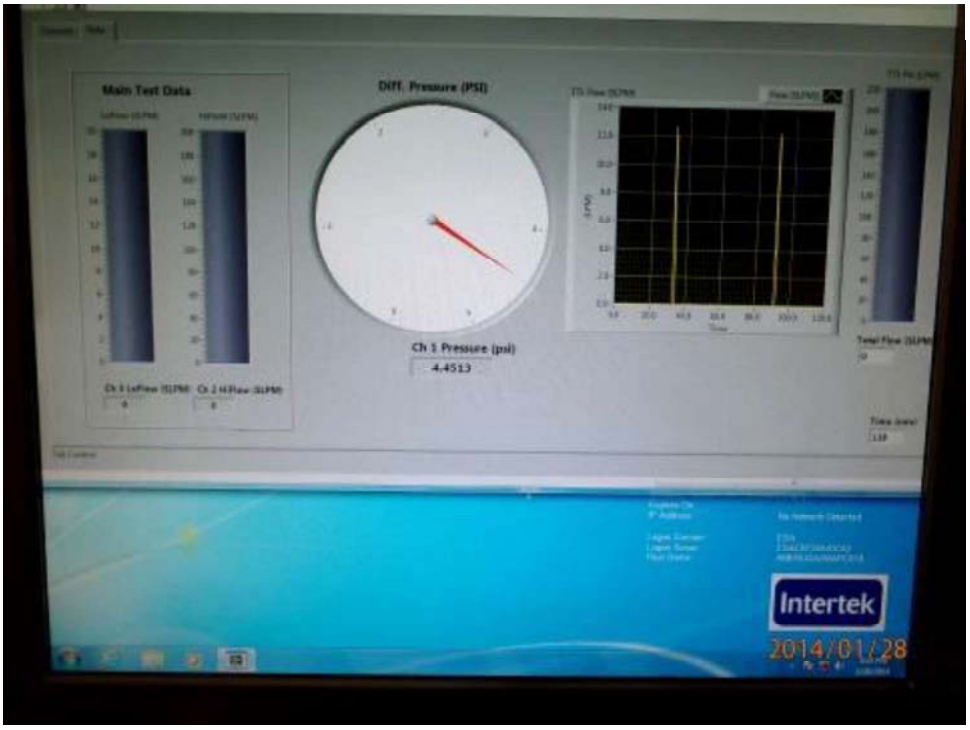
Intertek
2014/01/28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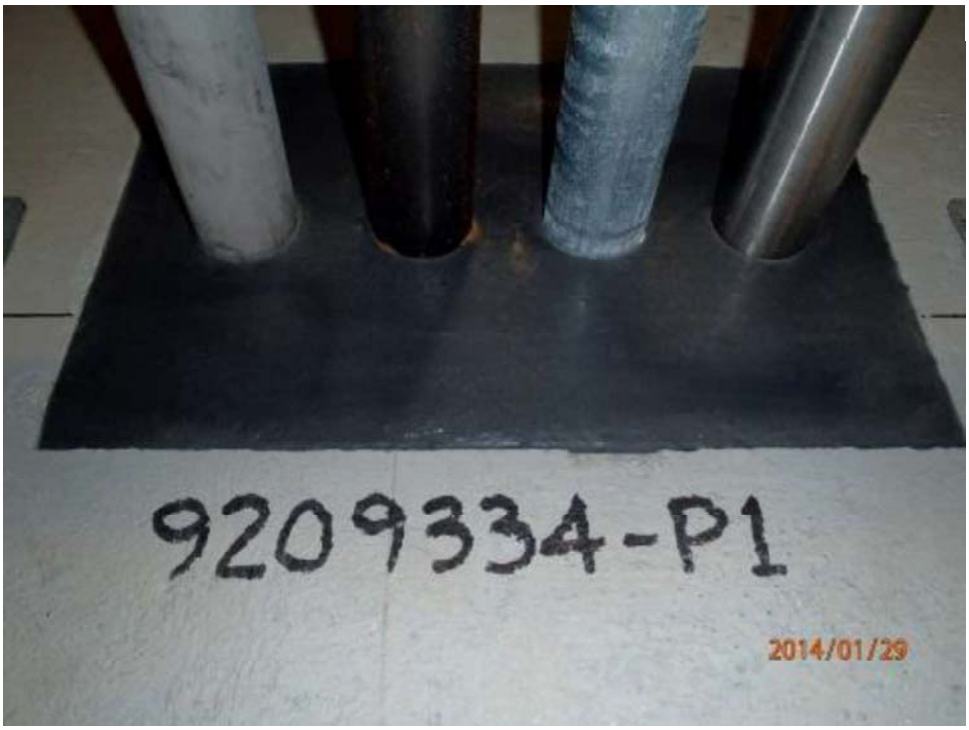
Intertek
2014/01/28


2014/01/29


2014/01/29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APPENDIX D
Test Plan

20004-020 (10/21/2013)

AREVA

AREVA NP Inc.

Engineering Information Record

Document No.: 51 - 9209334 - 000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

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Staff Engineer

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Michael A. Brown
Quality Supervisor

AREVA

20004-020 (10/21/2013)
Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

Safety Related? ☒ YES ☐ NO

Does this document establish design or technical requirements? ☐ YES ☒ NO

Does this document contain assumptions requiring verification? ☐ YES ☒ NO

Does this document contain Customer Required Format? ☐ YES ☒ NO

Signature Block

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R/LR designates Reviewer (R), Lead Reviewer (LR)
A-CRF designates Project Manager Approver of Customer Required Format (A-CRF)
A designates Approver/RTM – Verification of Reviewer Independence

Project Manager Approval of Customer References (N/A if not applicable)

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MOX Services concurrence: [redacted] Engineer 14Jan14
Name / Title Date

AREVA

20004-020 (10/21/2013)
Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

Record of Revision

Revision No.	Pages/Sections/ Paragraphs Changed	Brief Description / Change Authorization
000	All	Initial Issue. This document contains the main body of the report (pages 1-18), Appendix A (5 page), Appendix B (4 pages), and Appendix C (2 pages) for a total of 29 pages.

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ACRONYMS

CGD	Commercial Grade Dedication
CGI	Commercial Grade Item
CS	Carbon Steel
IROFS	Items Relied On For Safety
MOX	Mixed Oxide
MFFF	Mixed Oxide Fuel Fabrication Facility
QL	Quality Level
pcf	pounds per cubic foot
psf	pounds per square foot
RGS	Rigid Galvanized Steel
SS	Stainless Steel
SSC	Structures, Systems and Components
w.g.	Water Gauge

Penetration Seal Materials

SF-150NH	Promatec SF-150NH High-Density Silicone Elastomer

AREVA

Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

BACKGROUND

AREVA NP (AREVA) is assisting Shaw AREVA MOX Services (MOX Services) in the development and implementation of a penetration seal program for the Mixed Oxide Fuel Fabrication Facility (MFFF). One aspect of the MOX penetration seal program includes conducting various types of qualification tests of penetration seal assemblies to substantiate the performance capabilities of specific penetration seal designs. Seismic pressure testing is one type of qualification testing that needs to be performed in order to demonstrate the capability of MOX penetration seal designs to survive a seismic event. Other types of qualification testing, such as fire testing and pressure testing of penetration seal assemblies, are addressed by other test plans.

1.0 PURPOSE

The purpose of this test plan is to define the test assembly, test methods and acceptance criteria for conducting seismic pressure tests in support of the MOX penetration seal program.

This test plan defines the test methods, acceptance criteria and test report documentation requirements for penetration seal Seismic Pressure Test 7. Additionally, this detailed test plan defines the roles and responsibilities of MOX Services, AREVA, the selected testing laboratory, and any other subcontracted entity engaged in support of seismic pressure testing efforts.

This detailed test plan also describes the procurement plan for materials associated with penetration seal Seismic Pressure Test 7 and identifies the entities responsible for procuring the various components of the test assembly based on the quality level assigned to each component. This test plan also establishes minimum quality requirements for the penetration seal materials used in the test assembly and links quality requirements in the AREVA QA program to customer/project quality requirements.

The configuration being tested by Seismic Pressure Test 7 is a pair of rectangular openings (one without penetrants, the other penetrated by pipes and conduits) sealed with Promatec SF-150NH High-Density Silicone Elastomer (SF-150NH) as described in Section 2.2.

2.0 OBJECTIVE

The primary objective of this test plan is to evaluate the seismic resistance capabilities of the test assemblies using alternating pressures at the air pressure increments above atmospheric pressure provided in Section 9.2.

The specific configurations to be tested are described below. Critical characteristics and the associated limiting parameters that will be substantiated by a successful test are also provided.

2.1 Test Deck Description

The test deck will consist of a 12" thick concrete slab measuring approximately 96" x 96" (8' x 8') [Note: Final test slab size to be determined by Intertek and documented in the final test report]. Within this slab will be a pair of 12" x 18" openings. The test deck will be horizontally oriented with a hemispherical 72" diameter steel pressure vessel mounted above and below the precast openings in the slab.

Additionally, most of the openings (penetrations) in the MOX facility have been cast with a ¾" bevel on both sides of the opening. For testing and qualification purposes, this feature is considered aesthetic, and it has no adverse effect on the functional performance of the penetration seal installation. In fact for some applications, such as in the case of pressure resistant penetrations seals, the bevel provides a benefit over non-beveled openings. Therefore, for the purposes of the penetration seal test program, the bevel feature will not be included for the seismic pressure test covered in this test plan.

Drawings showing the general layout of the test deck (test slab) for this seismic pressure test can be found in Appendix A.

2.2 Test Description

Seismic Pressure Test 7 consists of a pair of 12" x 18" openings, one without penetrants, and the other penetrated by two (2) conduits and two (2) pipes. All sides of the openings will be unlined, bare concrete (i.e., no liners, coatings or sleeve materials).

Using alternating pressure, this test will evaluate seismic resistance capabilities of the following configurations:

Penetration P1 - Test Penetration P1 is a 12" x 18" opening penetrated by two (2) conduits and two (2) pipes, sealed with an 8" depth of Promatec SF-150NH High-Density Silicone Elastomer (SF-150NH) with no permanent damming, installed as described in AREVA NP Inc. Document 01-9198306 (latest revision), *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5]. The tested conduits will include one (1) 2" diameter Rigid Galvanized Steel (RGS) and one (1) 2" diameter Stainless Steel (SS) conduit. The tested pipes will include one (1) 2" diameter Schedule 40 Carbon Steel (CS) and one Schedule 10 Stainless Steel (SS) pipe. The conduits and pipes will be capped on at least one side or fitted with a welded cover plate (Note: caps and/or cover plates are construction aids only and are not being qualified by this pressure test). The cap/welded cover plate shall be made air tight, so that any leakage during the test must pass though the seal assembly and not internal to the pipe (this may be assisted by the installation of an internal elastomer seal inside the conduit/pipe.

Penetration P2 - Test Penetration P2 is a 12" x 18" opening free of penetrating items, sealed with an 8" depth of Promatec SF-150NH High-Density Silicone Elastomer (SF-150NH) with no permanent damming.

2.3 Critical Characteristics and Limiting Parameters Being Tested

The Promatec SF-150NH High-Density Silicone Elastomer (SF-150NH) material will be tested against an unlined opening and against a variety of piping and conduit materials to ensure its bonding characteristics along the "bond area".

The specific critical characteristics and associated limiting parameters being tested for Seismic Pressure Test 7 are as follows:

- Promatec SF-150NH High-Density Silicone Elastomer (SF-150NH) installed in unlined openings.
- Penetration seal to concrete surface interface of 60 lineal inches, which equates to a total bond area of 480 sq. in. for the 8" thick seal.
- Penetration seal to penetrating commodity interface of 29.8 lineal inches (4 pipe/conduit commodities of 2.375" outside diameter), which equates to a total bond area of approximately 239 sq. in. for the 8" thick seal. The penetrating commodities will include one (1) 2" diameter RGS conduit, one (1) 2" diameter Stainless Steel (SS) conduit, one (1) 2" diameter CS pipe, and one SS pipe, each with a circumference of 7.5 inches and a bond area of approximately 60 sq. in. for the 8" thick seal
- A relationship of "pressurized area" to "bond area" of 216:480 (or 0.45:1) for concrete adhesion only.

- A relationship of "pressurized area" to "bond area" of 198.3:718.8 (or 0.28:1) for concrete and penetrating item adhesion.

3.0 ACCEPTANCE CRITERIA

Seismically qualified penetration seals at the MOX facility are required to remain in the opening (penetration) during and after a Design Earthquake seismic event. In order demonstrate that a penetration seal will remain in place, the seal will have to be evaluated for two conditions: 1) The seismic inertia of the self-weight of the seal will have to be evaluated; and 2) The seismic deflection of the commodities penetrating the seal will have to be considered.

Seismic pressure testing will be used to evaluate the seismic inertia of the self-weight of the seal assembly. This will be accomplished by applying a pressure to alternating sides of the penetration seal to demonstrate that the seal will not become dislodged from the opening due to the seismic inertia of the self-weight of the seal. The seismic deflection of commodities that penetrate the seal will be addressed by a separate analysis.

Ultimately, the overall seismic qualification of MOX penetration seal assemblies will be captured in a penetration seal seismic qualification report that will tie together the results of seismic pressure testing with other analyses performed to address seismic deflection of commodities that penetrate the seal.

The acceptance criterion for evaluating the seismic inertia of the seal self-weight is calculated in MOX Services Calculation "Penetration Seal Seismic Requirements" [Reference 12.1] and expressed as an equivalent pressure. Testing at this equivalent pressure will qualify that a penetration seal assembly will remain in place (i.e., the penetration seal cannot become dislodged from the opening or otherwise catastrophically fail such that a substantial leakage path is created) during the design earthquake seismic event.

The relative movement of the items penetrating a seal and the movement of the wall / seal during a seismic event are not considered as a part of this test. A separate engineering evaluation is required to evaluate the effect of movement on a seal with penetrating items during a seismic event.

No pressure inducing events are required to be considered concurrently with a seismic event.

Table 9-1 identifies the differential pressure levels (stages) for conducting seismic pressures tests, as well as, the acceptance criteria in order for the penetration seal assemblies to meet the seismic pressure testing requirements.

4.0 RESPONSIBILITIES

The following roles and responsibilities apply to this seismic pressure test plan.

4.1 MOX Services

4.1.1 Provide review and concurrence of detailed seismic pressure test plans.

4.1.2 Provide concurrence for any revisions made to detailed seismic pressure test plans during test specimen construction activities.

4.1.3 Provide some of the materials for test assembly construction from MOX Services surplus or scrap (if available).

4.1.4 Reserves the right to witness seismic pressure tests.

4.2 AREVA

4.2.1 Develop detailed seismic pressure test plans.

4.2.2 Provide management and oversight of all aspects of the MOX penetration seal test program.

4.2.3 Select the seismic pressure testing facility and establish sub-contract agreements.

4.2.4 Provide engineering instructions to the testing laboratory for performance of the test including test parameters, acceptance criteria, requirements for documenting the test results in a final test report, etc.

4.2.5 Procure any penetration seal materials, devices or components required to be Safety Related (QL-1) as designated in the procurement plan section of the test plan.

4.2.6 Notify MOX Services at least 10 days prior to test date to facilitate MOX Services decision to witness the seismic pressure test.

4.2.7 Witness seismic pressure tests.

4.2.8 Perform post-test examinations.

4.2.9 Review, approve and issue final test reports.

4.3 Testing Laboratory

4.3.1 Notify AREVA at least 5 days prior to the start of test assembly construction activities.

4.3.2 Construct test deck in accordance with the detailed test plan and AREVA direction.

4.3.3 Procure test deck materials and any other test assembly components identified under the Testing Laboratory scope in the procurement plan section of the detailed test plan.

4.3.4 Procure testing equipment necessary for seismic pressure testing services in accordance with the detailed seismic pressure test plans and verify that the testing equipment is properly calibrated.

4.3.5 Provide seismic pressure testing services in accordance with the approved detailed seismic pressure test plan.

4.3.6 Assist AREVA, as necessary, in conducting detailed post-test destructive examinations of the test assemblies.

4.3.7 Dispose of test assemblies upon completion of the seismic pressure test.

4.3.8 Generate final test reports in accordance with test plan requirements.

4.4 Other Subcontracted Entities

There are no other Subcontractors for this seismic pressure test plan.

5.0 PROCUREMENT PLAN

Penetration seal seismic pressure testing involves many elements beyond the penetration seal material being qualified. Some of these elements include the test deck or test slab, several different types of penetrating items, supports for penetrating items, various fasteners for securing test articles and laboratory instrumentation to the test assembly, etc. Not all elements of the test program are required to be procured to the same quality level as the penetration seal material to satisfy the quality requirements of the end product (e.g., QL-1 qualified penetration seals). The following procurement plan takes into consideration the required quality level of the various materials envisioned to be required for a typical penetration seal seismic pressure test and prescribes an approach for material procurement which considers cost, schedule and quality requirements.

5.1 Penetration Seal Materials

The vast majority of penetration seals that will be installed throughout the MFFF are designated QL-1. MOX Services defines QL-1 in PP9-1, "SSC Quality Levels & Marking Design Documents" [Reference 12.2] as follows:

> *QL-1 SSCs are typically IROFS (all IROFS are QL-1 and may be either SSCs or Administrative Controls) credited in the Integrated Safety Analysis with a required function to prevent or mitigate design basis events such that high-consequence events are made highly unlikely; intermediate-consequence events are made unlikely; or to prevent criticality. For example, the failure of an IROFS item could cause:*
>
> 1. *Loss of a primary confinement feature leading to release of material resulting in exceeding 10CFR70.61 performance requirements;*
> 2. *Failure to satisfy the double contingency principle for the prevention of a criticality accident; or*
> 3. *Loss of other safety function required to meet 10CFR70.61 performance requirements.*

This definition correlates with the following definition of "Nuclear Safety Related" in AREVA Administrative Procedure (AP) 1702-25, "Assignment of Nuclear Safety Classification to Products and Services" [Reference 12.3]:

> *Definition of "Nuclear Safety Related"*
>
> *Company products and services are considered to be nuclear safety related if they involve the evaluation, specification, design or change in design, operation, or performance of structures, systems, and components which must function directly, or must support other systems which function, to ensure any of the following:*
>
> - *The integrity of the reactor coolant pressure boundary*
> - *The capability to shut down the reactor and maintain it in a safe shutdown condition*
> - *The capability to prevent or mitigate the consequences of accidents which could result in potential offsite radiation exposures greater than accepted limits.*

On this basis, permanent penetration seal materials used in this test program shall be procured by AREVA or supplied by MOX Services and suitably base-lined so that future procurements of the same commercial materials can undergo the commercial grade dedication process in support Nuclear Safety Related (i.e., MOX QL-1) plant installations. Only the primary seal material specified as a part of the final

seal design and which are left in place during testing become an integral part of the seal assembly and need to be base-lined for future dedication of similarly procured materials.

The quality level of the penetration seal materials procured for this test plan is **Non-Safety**.

Note: Commercial Grade Dedication (CGD) must be performed for Commercial Grade Items (CGIs) used in Safety Related applications when procured from suppliers where specific quality controls for nuclear applications cannot be imposed in a practical manner in accordance with 56-9141754-001, "AREVA NP Inc. Quality Assurance Program" [Reference 12.4]. However, none of the seal materials to be procured and used in the test program are intended or approved for installation in the MOX facility. Therefore, CGD of penetration seal materials used for test purposes is not required.

For these seismic pressure tests, the following materials shall be procured by AREVA and base-lined for future dedication activities.

1. Promatec SF-150NH High-Density Silicone Elastomer

5.2 Test Deck/Test Slab

The test deck/test slab will be used to simulate a boundary in which the penetration seal assemblies may be installed. The test deck/test slab is not considered an integral part of the penetration seal assembly being tested and therefore is not intended to replicate MOX-specific plant conditions and not considered integral in bounding the performance of the penetration seal assemblies (e.g., concrete blend, compressive strength, rebar size and spacing). The test deck/test slab will be comprised of normal weight reinforced concrete.

Openings cast into the test deck/test slab will simulate certain features consistent with MOX penetrations (e.g., painted or coated interior finishes, etc.) as defined by detailed test plan drawings contained in Appendix A.

The testing laboratory shall be responsible for procuring all materials and components associated with the construction of the test deck/test slab, unless otherwise specified in the detailed test plan. The test deck shall comply with the requirements of the approved detailed test plan drawings contained in Appendix A, and shall be constructed in accordance with the testing facility's Quality Assurance Program.

The quality level of the test deck is **Non-safety**.

5.3 Penetrating Items

Penetrating items (e.g., conduits, pipes, etc.) will be used in this seismic pressure test to simulate MOX-specific plant commodities during the seismic pressure test but are not considered an integral part of the penetration seal assembly being tested. Therefore, the quality level of the penetrating items is Non-safety.

Penetrating items for this seismic pressure test will come from one of two sources: MOX Services or the testing laboratory. MOX Services supplied items are identified on the MOX Services Bill of Materials in Section B.2 of Appendix B. Items provided by the testing laboratory are identified on the Testing Laboratory Bill of Materials in Section B.3 of Appendix B.

6.0 SPECIAL PRECAUTIONS

6.1 Precautions for Construction of Test Assemblies

Observe testing facilities safe work practices for construction, lifting, and moving of test assemblies.

6.2 Precautions for Installation of Seal Assemblies

Observe specific precautions recommended by seal material manufacturer as noted on product literature and material safety data sheets contained in AREVA NP Inc. Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

6.3 Precautions for Conducting Seismic Pressure Tests

Proper safety precautions shall be exercised to preclude personnel from direct exposure to loss of pressure events, unexpected disengaging of testing equipment from the test deck, and all other related hazards.

7.0 PREREQUISITES

7.1 General Test Configuration Requirements

The test assembly, including slab layout and penetration seal configurations shall be as specified by AREVA and in accordance with the drawings and information contained in Appendix A of this test plan, and AREVA NP Inc. Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

7.2 Safety Related Materials

Penetration seal materials that are purchased **Non-Safety** for this test program but are to be base-lined for future Nuclear Safety Related via the Commercial Grade Dedication process are indicated on the AREVA Bill of Materials (Appendix B.1).

7.3 Dimensioned Drawings

All test articles shall conform to the dimensioned drawings supplied by AREVA and contained in Appendix A of this test plan. Any differences between designed and constructed/tested assemblies shall be noted in final drawings contained within the test report.

7.4 Test Configuration

All test articles shall be securely fastened to the test apparatus by the laboratory. All openings shall be sealed in accordance with test plan instructions, drawings (Appendix A) and AREVA Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

8.0 TEST ASSEMBLY CONSTRUCTION

8.1 Test Slab Construction

The Testing Laboratory shall construct the test slab, including location and size of openings and placement of penetrating items, in accordance with the drawings contained in Appendix A of this Test Plan.

AREVA QC (or approved designee) shall conduct an inspection of the test slab for compliance with the approved Test Plan drawings prior to installation of individual penetration seal test assemblies. Any differences between the approved Test Plan drawings and the as-built test slab configuration shall be corrected (if deemed necessary by the ARVEA Test Engineer) or noted by the QC Inspector (if correction is not required). Completion of this verification shall be documented as required by AREVA Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

8.2 Penetration Seal Installation

AREVA (or approved designee) shall install the penetration seal test assemblies in accordance with the drawings contained in Appendix A of this detailed test plan and in accordance with AREVA Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

QA/QC verification of penetration seal installations shall be documented as required by AREVA Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

8.3 Pre-Test Verifications

Prior to conducting the seismic pressure test for each test assembly, the AREVA Test Engineer shall sign-off indicating that the test article (test penetration) is complete and ready for testing as required by AREVA Document 01-9198306, *Installation Instruction Manual for MOX Penetration Seal Test Program* [Reference 12.5].

9.0 PROCEDURE

9.1 Seismic Pressure Test Apparatus

The seismic pressure test apparatus to be used for this seismic pressure test shall be constructed and maintained by the testing laboratory. Two hemispherical 72" diameter steel pressure vessels shall be used to construct the assembly. One side shall be used to induce the testing pressures above atmospheric pressure based on Table 9-1, while the other side shall measure the pressure increase or "leakage" through the penetration. The test apparatus shall be "leak-tight" and substantial enough to withstand the pressures created for test purposes. Attachment shall be sufficient to withstand the forces imposed on the pressure vessels during the test.

9.2 Process

The differential pressures calculated for seismic pressure testing purposes, as they apply to MFFF penetration seal designs, are discussed in Calculation DCS01-ZEQ-EQ-CAL-M-10118-0 [Reference 12.1]. The seismic pressure testing will be performed using the requirements for the seal material being tested based upon the seal weight per square foot found in Calculation DCS01-ZEQ-EQ-CAL-M-10118-0 [Reference 12.1].

The pressure used in each seismic pressure test is intended to bound a calculated differential pressure based on the penetration seal material's weight per square foot as detailed in the referenced calculation, with additional margin. The penetration seal seismic requirements in the referenced calculation are based upon the seal system type and the seal material. The bounding differential pressure to be used for each penetration seal seismic pressure test, the test hold time at each pressure, the acceptance criteria to meet the seismic pressure testing requirements, and the basis for each pressure are identified in Table 9-1.

A hold time of 5 minutes has been established for each test stage to ensure that sufficient time at pressure is maintained to confirm that the penetration seal will not catastrophically fail (i.e., will not become dislodged from the opening. This hold time provides reasonable assurance that the penetration seal meets the requirements stated in Calculation DCS01-ZEQ-EQ-CAL-M-10118-0 [Reference 12.1].

Table 9-1: Differential Seismic Pressure Test Levels

Test Stage	Differential Pressure (inch w.g.)	Required Hold Time (minutes)	Acceptance Criteria	Basis for the Selected Differential Pressure
1-4	82 (Note 1)	5	Penetration Seal Remains in Opening (Does not become dislodged)	Testing at this differential pressure meets the seismic demand expressed as a pressure [Reference 12.1]

Note 1: For Seismic Pressure Test 7, a nominal density of 155 pcf was used for Promatec SF-150NH High-Density Silicone Elastomer seal material installed for the purposes of determining the test penetration seal's weight per square foot. 155 pcf bounds the installed seal material density, with margin. 155 pcf times a seal depth of 8", yields a seal weight of approximately 103.3 psf. Based on Figure B-3.1 of Reference 12.1, the corresponding seismic pressure for a seal weight of 103.3 psf is approximately 81.5 inches w.g. Therefore, for Seismic Pressure Test 7 an equivalent seismic pressure of 82 inches w.g. shall be used.

The test assembly shall be attached to the seismic pressure test apparatus and subjected to the pressures identified in Table 9-1 as described below.

9.2.1 For Stage 1, the test assembly shall be attached to the pressure test apparatus and subjected to air pressure test at the select pressure level identified in Table 9-1. Once this pressure has been obtained, the pressure shall be maintained for the hold time specified in Table 9-1. If the penetration seal catastrophically fails during this time, the time of failure shall be noted and the test shall be stopped.

9.2.2 Once the designated hold time for Stage 1 has been achieved, the pressure shall be vented from the test chamber. Next, the pressure identified in Table 9-1 for Stage 2 shall be applied to the opposite side of the penetration seal and held for the designated hold time. If the penetration seal catastrophically fails during this time, the time of failure shall be noted and the test shall be stopped.

9.2.3 Once the designated hold time for Stage 2 has been achieved, the pressure shall be vented from the test chamber. Next, the pressure identified in Table 9-1 for Stage 3 shall be applied to the original side of the penetration seal and held for the designated hold time. If the penetration seal catastrophically fails during this time, the time of failure shall be noted and the test shall be stopped.

9.2.4 Once the designated hold time for Stage 3 has been achieved, the pressure shall be

vented from the test chamber. Finally, the pressure identified in Table 9-1 for Stage 4 shall be applied to the opposite side of the penetration seal and held for the designated hold time. If the penetration seal catastrophically fails during this time, the time of failure shall be noted and the test shall be stopped.

9.2.5 Following completion of Stage 4 pressure testing, the pressure shall be vented from the test chamber. At this point, the test may continue at the discretion of the AREVA test engineer and the testing laboratory manager in charge. Subsequent pressures, and hold times shall be recorded as directed by the AREVA test engineer.

NOTE:	The pressure used for the testing performed above is based on a seal material depth of 8" inch. Should the test be successful, a recommended subsequent testing pressure of 102 inches w.g. should be attempted. Success at the 102 inch w.g. pressure seismically qualifies 1.25 times the installed seal depths (i.e., up to a 10" thick seal). Should the test be successful, a recommended subsequent testing pressure of 123 inches w.g. should be attempted. Success at the 123 inch w.g. pressure seismically qualifies 1.5 times the installed seal depths (i.e., up to a 12" thick seal).

9.2.6 If at any pressure level (or test stage) the penetration seal becomes dislodged from the opening or otherwise catastrophically fails, the seismic pressure test shall be terminated and the time to failure and pressure at which the failure occurred shall be recorded.

9.3 Post Test Examination

Following completion of the seismic pressure test, visual and destructive (if deemed necessary) post-test examinations shall be performed. These examinations shall include, but not necessarily be limited to, the following:

Visual observations of penetration seal condition including:

- Integrity of seal and conditions on both sides of the penetration
- Location of greatest degradation
- Condition of seal to barrier interface
- Condition of any permanent damming materials (if visible)

10.0 DATA SYSTEMS

During the seismic pressure test, the various data systems connected to the test apparatus (blowers, anemometers, manometers, etc.) shall be controlled and monitored by the testing laboratory. Data recorded for these components shall be compiled and contained in the seismic pressure test report.

11.0 TEST REPORT

The testing laboratory shall submit a report on the results of the test. The test report shall contain the collected data and required quality control documentation. The final test report shall be prepared in sufficient detail to summarize the total testing activity. The final report shall include as a minimum:

- Date of test
- Location of test
- Description of test apparatus and test articles
- Calibration documentation for all data systems connected to the test apparatus
- Test procedures used
- Acceptance criteria
- Provide quality control records
- Color digital photographs of the test project

12.0 REFERENCES

References identified with an (*) are maintained within the MOX Records System and are not retrievable from AREVA Records Management. These are acceptable references per AREVA Administrative Procedure 0402-01, Attachment 8. See page 2 for Project Manager Approval of customer references.

12.1 *Shaw AREVA MOX Services Calculation DCS01-ZEQ-EQ-CAL-M-10118-0, *"Penetration Seal Seismic Requirements"*

12.2 *Shaw AREVA MOX Services Procedure PP9-1, Revision 14, *"SSC Quality Levels & Marking Design Documents"*

12.3 AREVA NP Inc. Procedure 1702-25, Revision 018, *"Assignment of Nuclear Safety Classification to Products and Services"*

12.4 AREVA NP Inc. Document 56-9141754-001, *"AREVA NP Inc. Quality Assurance Program"*

12.5 AREVA NP Inc. Document 01-9198306, latest revision, *"Installation Instruction Manual for MOX Penetration Seal Test Program"*

12.6 *Shaw AREVA MOX Services Document DCS01-BRA-DS-TRD-B-01365-0, *"Technical Requirements Document for MFFF Penetration Seals"*

12.7 *Shaw AREVA MOX Services Specification DCS01-ZMJ-DS-SPE-M-21402-2, *"Equipment Seismic Qualification Specification"*

AREVA

Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

APPENDIX A: TEST DECK/TEST SLAB DRAWINGS

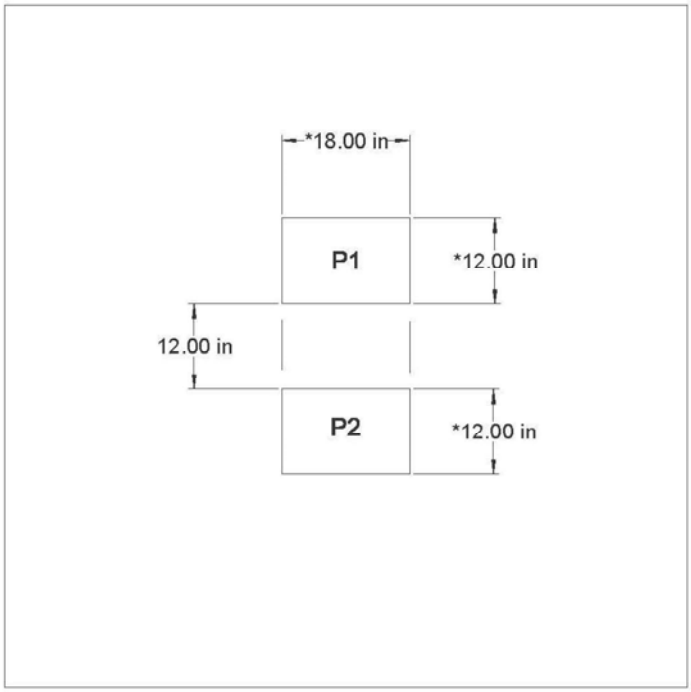
The test deck (test slab) for Seismic Pressure Test 7 is depicted on page A-2.

AREVA

Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

Seismic Pressure Test 7



NOTES:

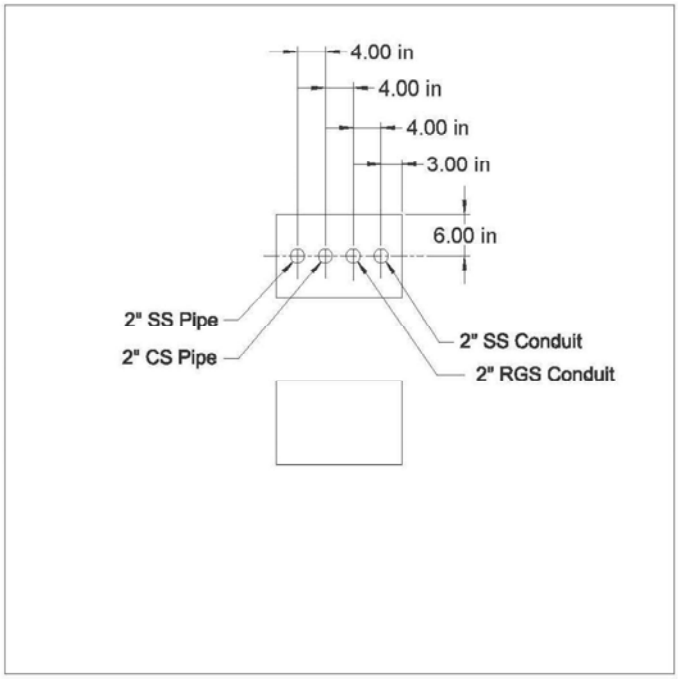
1. TOLERANCE ON ALL SLAB DIMENSIONS IS +/- 1/4"
2. * INDICATES DIMENSIONS TO BE VERIFIED BY AREVA QC.
3. SEE PAGE A-3 FOR PENETRATING COMMODITIES.
4. SEE PAGES A-4 AND A-5 FOR SECTION A - A AND SECTION B - B.

AREVA

Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

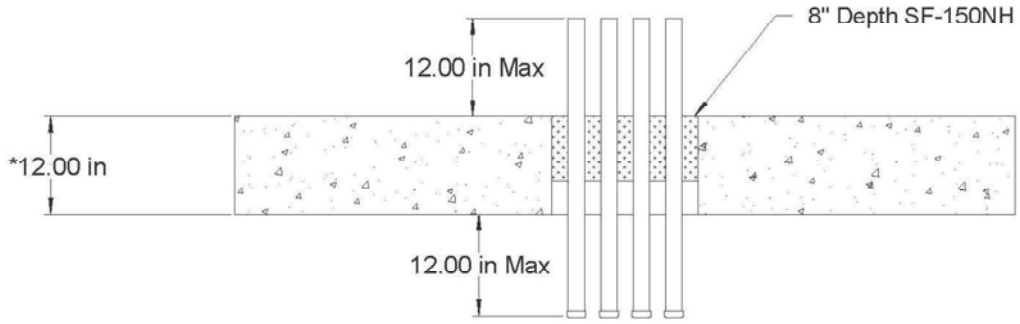
Seismic Pressure Test 7



NOTES:

1. TOLERANCE ON ALL DIMENSIONS IS +/- 1/4"
2. * INDICATES DIMENSIONS TO BE VERIFIED BY AREVA QC.

P1

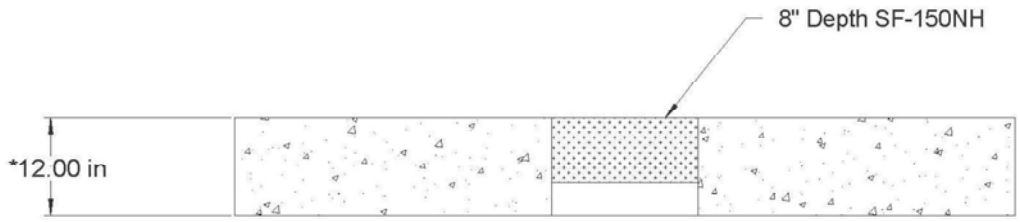


Section A-A

NOTES:

1. TOLERANCE ON ALL SLAB DIMENSIONS IS +/- 1/4"
2. * INDICATES DIMENSIONS TO BE VERIFIED BY AREVA QC.

P2



Section B-B

NOTES:

1. TOLERANCE ON ALL SLAB DIMENSIONS IS +/- 1/4"
2. * INDICATES DIMENSIONS TO BE VERIFIED BY AREVA QC.

AREVA

Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

APPENDIX B: BILL OF MATERIALS

This appendix contains the Bill of Materials for this seismic pressure test. The Bill of Materials in Section B.1 identifies materials to be provided by AREVA. The Bill of Materials in Section B.2 identifies materials to be provided by MOX Services. The Bill of Materials in Section B.3 identifies materials to be provided by Intertek.

AREVA

Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

B.1 Table Bill of Materials for AREVA Supplied Items

Bill of Material for AREVA Supplied Items					
Item	**Description**	**Part Number**	**Quantity**	**Units**	**Total**
1	Promatec SF-150NH High-Density Silicone Elastomer	N/A	4	Sets	4 Sets

B.2 Bill of Materials for MOX Services Supplied Items

Bill of Material for MOX Services Supplied Items					
Item	**Description**	**Part Number**	**Quantity**	**Units**	**Total**
	None				

AREVA

Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

B.3 Bill of Materials for Intertek Supplied Items

Bill of Material for Intertek Supplied Items*					
Item	**Description**	**Part Number**	**Quantity**	**Units**	**Total**
1	2" diameter Rigid Galvanized Steel (RGS) conduit (3 feet long w/Cap).	N/A	1	Piece	1 Piece **
2	2" diameter Stainless Steel (SS) conduit (3 feet long w/Cap).	N/A	1	Piece	1 Piece **
3	2" diameter Schedule 10 Stainless Steel (SS) pipe (3 feet long w/Cap).	N/A	1	Piece	1 Piece **
4	2" diameter Schedule 40 Carbon Steel (CS) pipe (3 feet long w/Cap).	N/A	1	Piece	1 Piece **

* *This BOM applies to Intertek Supplied Items other than materials required to construct the test slab. Construction of the test slab, including procurement of any materials required for the test slab, is the responsibility of Intertek.*

** *Pipe and conduits may be taken from surplus MOX material at Intertek site or reclaimed from Pressure Test 8/8A.*

Page B-4

AREVA

Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

APPENDIX C: DESIGN VERIFICATION CHECKLIST

22410-8 (02/25/2013) *Page 1 of 2*

AREVA

DESIGN VERIFICATION CHECKLIST

Document Identifier 51 - 9209334 - 000

Title Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

1.	Were the inputs correctly selected and incorporated into design or analysis?	☒ Y	☐ N	☐ N/A
2.	Are assumptions necessary to perform the design or analysis activity adequately described and reasonable? Where necessary, are the assumptions identified for subsequent re-verifications when the detailed design activities are completed? Note: If there are no assumptions (of any type), then N/A shall be checked.	☐ Y	☐ N	☒ N/A
3.	Are the appropriate quality and quality assurance requirements specified? Or, for documents prepared per AREVA NP Inc. procedures, have the procedural requirements been met?	☒ Y	☐ N	☐ N/A
4.	If the design or analysis cites or is required to cite requirements or criteria based upon applicable codes, standards, specific regulatory requirements, including issue and addenda, are these properly identified, and are the requirements/criteria for design or analysis met?	☒ Y	☐ N	☐ N/A
5.	Have applicable construction and operating experience been considered?	☒ Y	☐ N	☐ N/A
6.	Have the design interface requirements been satisfied?	☒ Y	☐ N	☐ N/A
7.	Was an appropriate design or analytical method used?	☒ Y	☐ N	☐ N/A
8.	Is the output reasonable compared to inputs?	☒ Y	☐ N	☐ N/A
9.	Are the specified parts, equipment and processes suitable for the required application?	☒ Y	☐ N	☐ N/A
10.	Are the specified materials compatible with each other and the design environmental conditions to which the material will be exposed?	☒ Y	☐ N	☐ N/A
11.	Have adequate maintenance features and requirements been specified?	☐ Y	☐ N	☒ N/A
12.	Are accessibility and other design provisions adequate for performance of needed maintenance and repair?	☐ Y	☐ N	☒ N/A
13.	Has adequate accessibility been provided to perform the in-service inspection expected to be required during the plant life?	☐ Y	☐ N	☒ N/A
14.	Has the design properly considered radiation exposure to the public and plant personnel?	☐ Y	☐ N	☒ N/A
15.	Are the acceptance criteria incorporated in the design documents sufficient to allow verification that design requirements have been satisfactorily accomplished?	☒ Y	☐ N	☐ N/A
16.	Have adequate preoperational and subsequent periodic test requirements been appropriately specified?	☐ Y	☐ N	☒ N/A
17.	Are adequate handling, storage, cleaning and shipping requirements specified?	☒ Y	☐ N	☐ N/A
18.	Are adequate identification requirements specified?	☒ Y	☐ N	☐ N/A
19.	Is the document prepared and being released under the AREVA NP Inc. Quality Assurance Program? If not, are requirements for record preparation review, approval, retention, etc., adequately specified?	☒ Y	☐ N	☐ N/A

AREVA

Document No.: 51-9209334-000

Detailed Test Plan for Conducting MOX Seismic Pressure Test 7

22410-8 (02/25/2013) *Page 2 of 2*

AREVA

DESIGN VERIFICATION CHECKLIST

Document Identifier 51 - 9209334 - 000

Comments on the preceding responses:
N/A

Verified By: (First, MI, Last)	Victor E. Kaldenbach Printed / Typed Name	[redacted] Signature	11/26/2013 Date

APPENDIX E
Commercial Grade Dedication-Related Documents

The vast majority of penetration seals that will be installed throughout the MFFF will be designated as quality level QL-1. For this reason, permanent penetration seal materials used in this test program were procured by AREVA or supplied by MOX Services and suitably base-lined so that future procurements of the same commercial materials can undergo the Commercial Grade Dedication process in support Nuclear Safety Related (i.e., MOX QL-1) plant installations.

Only the primary seal material(s) that were specified as a part of the final penetration seal design and left in place during the test needed to be base-lined for future dedication of similarly procured materials. For this test, the following AREVA documents contain information associated with materials that underwent the base-lining process. These documents establish material critical characteristics as a baseline for future Commercial Grade Dedication.

- None

The SF-150NH High density Silicone elastomer seal material used in this test was not base-lined to establish critical characteristics because this material is proprietary to PCI Promatec; is only available from PCI Promatec; and can be procured Nuclear Safety Related (i.e., MOX QL-1) from PCI Promatec. Therefore, future procurements of this product can be handled such that no Commercial Grade Dedication is required.

APPENDIX F
Quality Documents

AREVA

Document No.: 01-9198306-004

Installation Instruction Manual for MOX Penetration Seal Test Program

A.1 Quality Verification for Installation of Silicone Elastomer Penetration Seals

Page 1 of 2

01-9198306-F01 (QC-F01)

Attribute	Requirement	Initial / Date
7.1.2	Test Penetration Number 9209334-P1	[redacted] 1-16-14
QC	Verify critical attributes of the test slab and the applicable penetration are correct. Critical attributes are identified in the test plan (i.e., dimensions marked with an asterisk).	[redacted] 1-16-2014
QC	Verify the dam depth is as specified in the test plan and confirm that the penetration is clean and free of dirt, oil, and any other foreign materials.	[redacted] 1-16-2014
7.2.1.1	Record material type, lot number and shelf life for batch on Form QC-F01, Table A-1	Attached
7.2.1.3	Record the batch number on Form QC-F01, Table A-1	Attached
7.2.12	Record sample weight and sample density on Form QC-F01, Table A-1	Attached
QC	Verify the total sample weight recorded on the cup label, the sample weight recorded on the cup label and Form QC-F01, Table A-1, and sample density recorded on the cup label and Form QC-F01, Table A-1. Record acceptance on Form QC-F01, Table A-1.	Attached
7.3.2	Remove all temporary damming per Section 6.3	[redacted] 1-21-2014
QC	Verify that the completed seal assembly is in accordance with the test plan design (i.e., temporary damming has been removed, and the installed seal configuration(s) and depth(s) are per the test plan. **Any approved deviations from the test plan shall be clearly noted below.**	[redacted] 1-22-14

Comments (can be continued on back):

Penetration Seal Assembly Complete: [redacted] 1/22/14 Date

Penetration Ready for Testing: [redacted] 1/22/14 Date

AREVA Test Engineer

AREVA

Document No. 01-9198306-004

Installation Instruction Manual for MOX Penetration Seal Test Program

Test Penetration Number 9209334-P1

Page 2 of 2

Form QC-F01, Table A-1: Silicone Elastomer Batch Sample Quality Control

Product Name	Lot Number	Shelf Life (Expiration)	Batch Number	Sample Weight (g)	Sample Density (lbs/ft^3)	QC Initial / Date
SF-150 NH	NH014B01	7/31/2014	NH014B01-DVR-150	261.3	147.4	[redacted] 1-22-14
"	"	"	NH014B01-DVR-151	257.5	145.2	[redacted] 1-22-14
"	"	"	NH014B01-DVR-152	266.6	150.4	[redacted] 1-22-14

AREVA

Document No.: 01-9198306-004

Installation Instruction Manual for MOX Penetration Seal Test Program

A.1 Quality Verification for Installation of Silicone Elastomer Penetration Seals

Page 1 of 2

01-9198306-F01 (QC-F01)

Attribute	Requirement	Initial / Date
7.1.2	Test Penetration Number 9209334 - P2	[redacted] 1-16-14
QC	Verify critical attributes of the test slab and the applicable penetration are correct. Critical attributes are identified in the test plan (i.e., dimensions marked with an asterisk).	[redacted] 1-16-2014
QC	Verify the dam depth is as specified in the test plan and confirm that the penetration is clean and free of dirt, oil, and any other foreign materials.	[redacted] 1-16-2014
7.2.1.1	Record material type, lot number and shelf life for batch on Form QC-F01, Table A-1	Attached
7.2.1.3	Record the batch number on Form QC-F01, Table A-1	Attached
7.2.12	Record sample weight and sample density on Form QC-F01, Table A-1	Attached
QC	Verify the total sample weight recorded on the cup label, the sample weight recorded on the cup label and Form QC-F01, Table A-1, and sample density recorded on the cup label and Form QC-F01, Table A-1. Record acceptance on Form QC-F01, Table A-1.	Attached
7.3.2	Remove all temporary damming per Section 6.3	[redacted] 1-21-2014
QC	Verify that the completed seal assembly is in accordance with the test plan design (i.e., temporary damming has been removed, and the installed seal configuration(s) and depth(s) are per the test plan. **Any approved deviations from the test plan shall be clearly noted below.**	[redacted] 1-22-2014

Comments (can be continued on back):

Penetration Seal Assembly Complete: [redacted] 1/22/2014
Date

Penetration Ready for Testing: [redacted] 1/22/14
AREVA Test Engineer — Date

Page A-2

AREVA

Document No.: 01-9198306-004

Installation Instruction Manual for MOX Penetration Seal Test Program

Test Penetration Number 9209334-P2

Form QC-F01, Table A-1: Silicone Elastomer Batch Sample Quality Control

Product Name	Lot Number	Shelf Life (Expiration)	Batch Number	Sample Weight (g)	Sample Density (lbs/ft^3)	QC Initial / Date
SF150NH	NHC14B01	7/31/2014	NH014B01-DVR-149	262.3	147.9	[redacted] / 1-22-14
"	"	"	NH014B01-DVR-150	261.3	147.4	[redacted] / 1-22-14

PC PROMATEC

PO Box 710290, Houston, TX 77271-0290
11707 S Sam Houston Parkway W, Ste K, Houston, TX 77031
Phone: 281-933-7222 Fax: 281-933-7774
info@promatec.com
www.promatec.com

CERTIFICATE OF CONFORMANCE

CERTIFICATION NUMBER:	45550/14-245	CERT DATE:	JANUARY 6, 2014
JOB NUMBER:	2933	SHIP DATE:	JANUARY 6, 2014
CUSTOMER:	AREVA NP INC. c/o INTERTEK TESTING SERVICES NA, INC. 16015 SHADY FALLS ROAD ELMENDORF, TX 78112-9784	PRODUCT:	SF-150NH™ Promatec® SF-150NH™ High Density Elastomer Part A and Part B
CUSTOMER ORDER NUMBER:	P.O. No. 1013037393, REV. 7 ITEM 80 [MAT'L #D027563]	VENDOR:	PCI PROMATEC
CUSTOMER SPECIFICATION NUMBER:	N/A	QUANTITY:	9 SETS @ 100 LBS PER SET (Consisting of 2 Each 6 Gallon Pail Per Set)
IDENTIFICATION NUMBER:	NH014B01 A&B	EXPIRATION DATE:	31 JULY 2014

CERTIFICATION REQUIREMENTS:

We hereby certify that all items furnished herein meet the requirements of the applicable product specifications, the above referenced customer order number, and supporting specifications. Vendor material certification on file and available upon written request.

Shelf Life – Six (6) months from date of certification, last day of the month.

This material is provided in accordance with Promatec Quality Assurance Program QAM20188, Issue F, dated 06/20/03.

[redacted]

QUALITY ASSURANCE MANAGER

Form QC-8
Rev 5 – 11/01/88

WORLD-CLASS CONSTRUCTION®

Q/A RECEIVING REPORT

Intertek

Client/Project Name: AREVA NP
Client or Project No.: G101276459SAT-021 (Seismic 7)
Received From: Areva VP c/o PCI Promatec
Project Location: INTERTEK –Elmendorf, TX

Report No: 01-G101276459SAT-021
Date Received: 1/9/2014
Date Inspected: 1/10/2014
Inspected By: MABrown [redacted]

ITEM DESCRIPTION	P.O. NO.	QUANTITY Order	QUANTITY Rec'd	QUANTITY B/O	I.D. NO.	Cont Matl Y/N	Cert. Rec'd Y/N	Safety Ref'd Y/N	Gen. Integrity	ACCEPTANCE Accpt.	ACCEPTANCE Rej.	ACCEPTANCE Hold	REMARKS
5 gallon pails - Item 80) SF-150NH™ High Density Silicone Elastomer Part "A" (Mat'l #D027563); Lot # NHO-14B01 A; expires 7/31/2014	Client	9	9		SAT1401091433-001	Y	Y	Y	G	✓			Receiving Only: Material stored in conditioning room
5 gallon pails - Item 80) SF-150NH™ High Density Silicone Elastomer Part "B" (Mat'l #D027563) Lot # NHO-14B01 B; expires 7/31/2014	Client	9	9		SAT1401091433-002	Y	Y	Y	G	✓			
~~1 gallon pails - Item 1) Promatec® PROMA-GEL (MC IR) Silicone Gel, Medium Cure, Inhibitor Resistant Part "A"; Lot # 131002L A; expires 10/30/2014~~	Client	2	2		SAT1401091433-003	Y	Y	Y	G	✓			
~~1 gallon pails - Item 1) Promatec® PROMA-GEL (MC IR) Silicone Gel, Medium Cure, Inhibitor Resistant Part "B" ; Lot # 131002L B; expires 10/30/2014~~	Client	2	2		SAT1401091433-004	Y	Y	Y	G	✓			

Bottom 2 materials will not be used in these projects; will be returned to client

9/12-NQAP-005.7.1

Intertek

LIST OF CALIBRATED EQUIPMENT

Description	Serial No.	Calibration Due Date
Thermo-Hygrometer	130548237	9/19/2015
Data Acquisition System	18041FE	7/20/2014*
Pressure Transducer	406707	3/26/2014*
Mass Flowmeter	4270050001001	2/1/2014*
Mass Flowmeter	4270050003001	2/7/2014*
Stop watch	130176393	3/29/2015

*See Intertek Corrective Action Request (CAR) 51-AMER-SAT-2014-INT and AREVA Contract Variation Approval Request (CVAR) 87-9224669-000

Build B
Horizontal

ilac-MRA ACCREDITED Calibration Certificate No. 1750.01

Calibration complies with ISO/IEC 17025, ANSI/NCSL Z540-1, and 9001

Cert. No.: 4096-5373559

Traceable® Certificate of Calibration for Digital Humidity/Temp. Meter

Manufactured for and distributed by: Fisher Scientific, 300 Industry Drive, Pittsburgh, PA 15275-1001

Instrument Identification:

Model Numbers: 11-661-13, FB61254, 245C5 S/N: 130548237 Manufacturer: Control Company

Standards/Equipment:

Description	Serial Number	Due Date	NIST Traceable Reference
Chilled Mirror Hygrometer	31874/H2048MCR	6/14/15	11081
Digital Thermometer	41334977/41335007	9/26/13	4000-4643062

Certificate Information:

Technician: 104 Procedure: CAL-17 Cal Date: 9/19/13 **Cal Due: 9/19/15**

Test Conditions: 23.0°C 51.0 %RH 1013 mBar

Calibration Data: (New Instrument)

Unit(s)	Nominal	As Found	In Tol	Nominal	As Left	In Tol	Min	Max	±U	TUR
%RH		N.A.		42.95	42	Y	39	47	1.30	3.1:1
°C		N.A.		24.218	24	Y	23	25	0.590	1.7:1

This instrument was calibrated in compliance with ISO/IEC 17025:2005 and ANSI/NCSL Z540-1-1994 Part 1.

A Test Uncertainty Ratio of at least 4:1 is maintained unless otherwise stated and is calculated using the expanded measurement uncertainty. Uncertainty evaluation includes the instrument under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level. In tolerance conditions are based on test results falling within specified limits with no reduction by the uncertainty of the measurement. The results contained herein relate only to the item calibrated. This certificate shall not be reproduced except in full, without written approval of Control Company.

The calibration results published in this certificate were obtained using equipment capable of producing results that are traceable to NIST and through NIST to the International System of Units (SI).

Nominal=Standard's Reading; As Left=Instrument's Reading; In Tol=In Tolerance; Min/Max=Acceptance Range; ±U=Expanded Measurement Uncertainty; TUR=Test Uncertainty Ratio; Accuracy=±(Max-Min)/2; Min = As Left Nominal(Rounded) - Tolerance; Max = As Left Nominal(Rounded) + Tolerance; Date=MM/DD/YY

[redacted]

[redacted]

Maintaining Accuracy:

In our opinion once calibrated your Digital Humidity/Temp. Meter should maintain its accuracy. There is no exact way to determine how long calibration will be maintained. Digital Humidity/Temp. Meters change little, if any at all, but can be affected by aging, temperature, shock, and contamination.

Recalibration:

This device was calibrated using a single test point. Should additional test points be required, please contact Control Company for factory calibration and re-certification traceable to National Institute of Standards and Technology.

CONTROL COMPANY 4455 Rex Road Friendswood, TX 77546 USA
Phone 281 482-1714 Fax 281 482-9448 service@control3.com www.control3.com

Intertek

16015 Shady Falls Road
Elmendorf, TX 78112
210-635-8100 210-635-8101 fax

Certificate of Verification

Verification Date:	01/20/2014
Re-verification Date:	07/20/2014
Manufacturer:	National Insturments
Model No.:	USB-6210 (Only use 3 channels)
Serial No.:	18041FE
Equipment Description:	Data Acquisition System
Calibration Sources:	Ronan SN: 11380 due 4/6/2014
Performance:	See the attached sheet

Verification Performed By:

[redacted]
Staff Engineer

Verification Approved By:

[redacted]
Test Engineer

This Data Acquisition System was verified following the Draft "Work Instruction for Verifying Yokogawa Darwin Data Acquisition Systems" dated 8/28/2013

OMEGADYNE INC.
CERTIFICATE OF CALIBRATION

Model Number: PX409-005DWUV
Serial Number: 406707
Date: 7/15/2011
Job: R3274

Capacity: 5.00 PSID
Excitation: 10.00 Vdc
Technician: KAPOME

Pressure Connection: 1/4-18 NPT Male

WIRING CODE

Electrical Connection: Integral Cable 4-Cond
BLACK = - EXCITATION
WHITE = + SIGNAL
GREEN = - SIGNAL
RED = + EXCITATION

CALIBRATION WORKSHEET

NOTES

Pressure PSID	OUTPUT mVdc
0.00	0.007
2.50	50.008
5.00	100.016
2.50	50.007
0.00	0.007

NIST Traceable Number(s): C-1954, C-1289

Omegadyne Inc. certifies that the above instrumentation has been calibrated and tested to meet or to exceed the published specifications. This calibration was performed using instrumentation and standards that are traceable to the National Institute of Standards and Technology. This document also ensures that all testing performed complies with MIL-STD 45662-A, ISO 10012-1, and ANSI/NCSL Z540-1-1994 requirements. After Final Calibration our products are stored in an environmentally controlled stock room and are considered in bonded storage. Depending on environmental conditions and severity of use, factory calibration is recommended every one to three years after the initial service installation date.

[redacted]
Accepted and Certified By

7/15/2011
Date

OMEGA ENGINEERING, INC.
An OMEGA Technologies Company
ONE OMEGA DRIVE, BOX 4047, STAMFORD, CT, U.S.A. 06907-0047
(203) 359-1660 TELEX: 996404 CABLE: OMEGA FAX: (203) 359-7700
http://www.omega.com e-mail: info@omega.com

CERTIFICATE OF ACCURACY

This is to certify that meter serial number 4270050001001 is certified to an accuracy of +/- 1 % of 20 SCFM of N2 and has been calibrated using standards whose accuracies are traceable to the National Institute of Standards and Technology (N.I.S.T.) according to our procedures.

All traceable certifications and related procedures for the equipment used are on file.

Barometer Number:	N/A
Vol-U-Meter Number:	Base Cell 1920 1898
Type of Gas:	N2
Gas Used for Calibration:	N2
Pressure Gauge Number:	1122
Timer Number:	N/A
Thermometer Number:	N/A
Voltmeter:	NA
Calibrated By:	[redacted]
Date Calibrated:	2-1-13

Uncertainty of measurements: +/- 0.3 % of reading

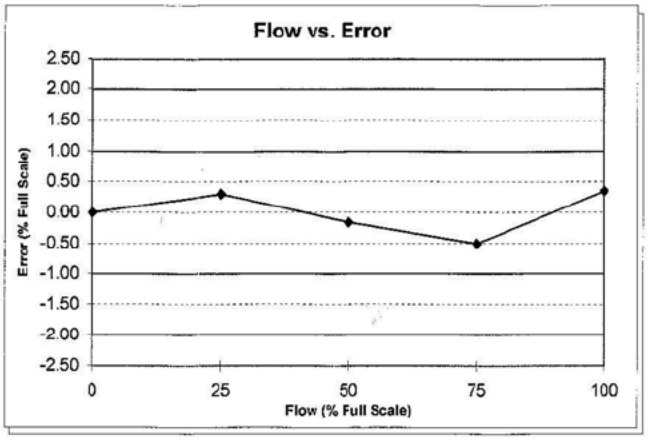
Calibrations were performed under a controlled Quality System Manual, which incorporates the requirements of ISO Guide 25, ISO 10012-1, ISO 9001 (1994) and ISO 13485. The released ISO 13485 registration (Medical Devices – Quality Management Systems – System Requirements for Regulatory Purposes) includes Design Controls and Metrology Systems.

0122220B

FM-1011 REV B

OMEGA ENGINEERING, INC.
An OMEGA Technologies Company
ONE OMEGA DRIVE, BOX 4047, STAMFORD, CT, U.S.A. 06907-0047
(203)359-1660 TELEX: 996404 CABLE: OMEGA FAX: (203) 359-7700
http://www.omega.com e-mail: info@omega.com

Mass Flowmeter/Flow Controller Calibration Data Sheet



Calibration Data

Setpoint (SLPM)	Flow Signal (Volts)	Device Flow (SLPM)	Actual Flow (SLPM)	% FS Error * (%)
00.00	0.000	00.00	00.00	0.00
05.00	1.253	05.01	05.07	0.30
10.00	2.502	10.01	09.98	-0.16
15.00	3.752	15.01	14.91	-0.50
20.00	5.000	20.00	20.07	0.35

* % Full Scale (FS) Error = (100)(Actual Flow - Device Flow) / Full Scale Flow

DATE	2/1/2013
TIME	7:59:59 AM
Shop Order No.	427005
Serial No.	4270050001001

GAS

Nameplate (Actual)	Nitrogen
Surrogate (Calibration)	Nitrogen (N2)

STANDARD CONDITIONS

Std. Pressure	101.32 kPa (760 Torr)
Std. Temperature	21.1 °C

PRESSURE

Inlet (P_1)	20 PSIG
Outlet (P_2)	N/A

TEMPERATURE

Calib. Temperature	21.9 °C
Oper. Temperature	70 °F

Max. Flow Rate	20 SLPM
Gas Factor	1

Calibrator	MT
Flow Standard	PICO 1898-1
Unit Accuracy	1.0 FS & 0.0 Rate
Calib. Attitude	Horizontal (base down)

LEAK TEST DATA

Inboard (Externally Pressurized) Helium Leak Rate: < 1 x 10^{-8} atm cc/sec
Vacuum Pressure: < 5 milliTorr

Tested By: [redacted] **Date:** 2-1-13

FM-1119 Rev. K

OMEGA ENGINEERING, INC.
An OMEGA Technologies Company
ONE OMEGA DRIVE, BOX 4047, STAMFORD, CT, U.S.A. 06907-0047
(203) 359-1660 TELEX: 996404 CABLE: OMEGA FAX: (203) 359-7700
http://www.omega.com e-mail: info@omega.com

CERTIFICATE OF ACCURACY

This is to certify that meter serial number 427005003001 is certified to an accuracy of +/- 1 % of 200 sccm of N2 and has been calibrated using standards whose accuracies are traceable to the National Institute of Standards and Technology (N.I.S.T.) according to our procedures.

All traceable certifications and related procedures for the equipment used are on file.

Barometer Number:	1667
Vol-U-Meter Number:	613
Type of Gas:	N2
Gas Used for Calibration:	N2
Pressure Gauge Number:	1950
Timer Number:	1876
Thermometer Number:	985
Voltmeter:	NA
Calibrated By:	[redacted]
Date Calibrated:	2-7-13

Uncertainty of measurements: +/- 0.3 % of reading

Calibrations were performed under a controlled Quality System Manual, which incorporates the requirements of ISO Guide 25, ISO 10012-1, ISO 9001 (1994) and ISO 13485. The released ISO 13485 registration (Medical Devices – Quality Management Systems – System Requirements for Regulatory Purposes) includes Design Controls and Metrology Systems.

0122220B FM-1011 REV B

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MASS FLOWMETER/FLOW CONTROLLER CALIBRATION DATA SHEET

SPECIFICATIONS

MODEL #: FMA-875A-V-NIST

SERIAL #: 4270050003001

FLOW RANGE: 200 SLPM

OPERATING TEMPERATURE: 70 F

NAMEPLATE (PROCESS) GAS: N2

SURROGATE (CALIBRATION) GAS: N2

STANDARD TEMPERATURE: 21.1 C

STANDARD PRESSURE: 101.32 kPa (760 Torr)

P1 (INLET PRESSURE): 20 PSIG

P2 (OUTLET PRESSURE): N/A

CALIBRATION TEMPERATURE: 18.7 C

CALIBRATION ATTITUDE (calibration attitude checked):

- ☒ Horizontal (base down)
- ☐ Horizontal (upside down)
- ☐ Horizontal (front down)
- ☐ Horizontal (back down)
- ☐ Vertical (inlet up)
- ☐ Vertical (inlet down)

CALIBRATION ACCURACY: ± 1 % OF FULL SCALE FLOW

CALIBRATION DATA

% FULL SCALE (Nominal)	FLOW SIGNAL OUTPUT (signal type checked) ☒ Vdc ☐ mAdc	STANDARD VOLUMETRIC FLOW (Units: SLPM)		ERROR * (% Full Scale)
		DEVICE	MEASURED	
100	5.000	200.000	200.079	.5395
75	3.750	150.000	149.317	-.3415
50	2.500	100.000	100.488	.2440
25	1.250	50.000	50.852	.4260
0	0.00	0.000	0.000	------

* % FULL SCALE ERROR = (100) (MEASURED FLOW - DEVICE FLOW) ÷ FULL SCALE FLOW

CALIBRATED BY: [redacted] DATE: 2-7-13

LEAK TEST DATA

INBOARD (EXTERNALLY-PRESSURIZED) HELIUM LEAK RATE: <1x 10^{-8} atm cc/sec

VACUUM PRESSURE: <5 millitorr

TESTED BY: [redacted] DATE: 2-1-13

FM-355-OE Rev. 0

[redacted]

ilac-MRA ACCREDITED Calibration Certificate No. 1750.01

Calibration complies with ISO 9001 ISO/IEC 17025 AND ANSI/NCSL Z540-1

Cert. No.: 1045-5005294

Traceable® Certificate of Calibration for Watr/Shock Res Stpwch

Manufactured for and distributed by: Fisher Scientific, P.O. Box 1768, Pittsburgh, PA 15230

Instrument Identification:

Model: S40799-7 S/N: 130176939 Manufacturer: Control Company

Standards/Equipment:

Description	Serial Number	Due Date	NIST Traceable Reference
Non-Contact Frequency Counter	26.66879	7/02/13	1000320243

Certificate Information:

Technician: 150 Procedure: CAL-01 Cal Date: 3/29/13 **Cal Due: 3/29/15**

Test Conditions: 22.5°C 42.0 %RH 1020 mBar

Calibration Data: (New Instrument)

Unit(s)	Nominal	As Found	In Tol	Nominal	As Left	In Tol	Min	Max	±U	TUR
Sec/24hr		N.A.		0.000	-0.300	Y	-8.640	8.640	0.130	>4:1

This Instrument was calibrated using Instruments Traceable to National Institute of Standards and Technology.

A Test Uncertainty Ratio of at least 4:1 is maintained unless otherwise stated and is calculated using the expanded measurement uncertainty. Uncertainty evaluation includes the instrument under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level. In tolerance conditions are based on test results falling within specified limits with no reduction by the uncertainty of the measurement. The results contained herein relate only to the item calibrated. This certificate shall not be reproduced except in full, without written approval of Control Company.

Nominal=Standard's Reading; As Left=Instrument's Reading; In Tol=In Tolerance; Min/Max=Acceptance Range; ±U=Expanded Measurement Uncertainty; TUR=Test Uncertainty Ratio; Accuracy=±(Max-Min)/2; Min = Nominal(Rounded) - Tolerance; Max = Nominal(Rounded) + Tolerance; Date=MM/DD/YY

[redacted] [redacted]

Maintaining Accuracy:

In our opinion once calibrated your Watr/Shock Res Stpwch should maintain its accuracy. There is no exact way to determine how long calibration will be maintained. Watr/Shock Res Stpwchs change little, if any at all, but can be affected by aging, temperature, shock, and contamination.

Recalibration:

For factory calibration and re-certification traceable to National Institute of Standards and Technology contact Control Company.

CONTROL COMPANY 4455 Rex Road Friendswood, TX 77546 USA
Phone 281 482-1714 Fax 281 482-9448 service@control3.com www.control3.com

TEST ARTICLE ATTRIBUTE CHECKLIST

PROJECT NO: G101276459SAT-021 **CLIENT :** AREVA

Project Description SEISMIC #7 RE-DO

	SAT	UNSAT

I. ASSEMBLY

Proper materials used .....
Material documentation complete.....
Configuration/dimensions in accordance w/ approved drawings....
Description of assembly: SEISMIC #7

[redacted]

II. ELECTRICAL CABLE

Correct material used .....
Material documentation complete .....
Correct cable lay-in and fill requirements .....
Description of electrical cable:

N/A

III. THERMOCOUPLES

Correct thermocouple type, certs received .....
Thermocouples positioned in accordance with test plan .....
Adequately labeled and secured.....
Quality Assurance verification done .....
Description of thermocouples:

N/A

IV. FIRE BARRIER

Name or type of material SF150NH
INTERTEK received material documentation provided by Client.....
Materials provided by INTERTEK properly documented .....
Materials installed by INTERTEK in accordance with test plan .....
INTERTEK Quality Assurance responsibilities determined .....
QA responsibilities of Client installation determined .....
Moisture check required ..... Yes ___ No X
Special requirements

[redacted]

V. FINAL PREBURN VERIFICATION

Final visual inspection & approval (initials) INTERTEK [redacted] Client [redacted]

CALIBRATION DOCUMENTATION (S/N and calibration due date)
Data Acquisition Equipment:
Other Measurement Devices: ~~SEE TEST DATA PACKAGE~~

Temperature 45 Humidity 32 Date 1-28-14 Time of Test start 1:35 P

INTERTEK pre-burn checklist performed by [redacted]

Client representative present to witness test [redacted]

Note: Verification to be made using initials by INTERTEK Quality Assurance or test personnel.

09-013-12/30/03

Intertek

TEST ACTIVITIES EVENT LOG

Note:
This Log is used to document the date and note the significant events during the completion of Test Project #G101276459SAT-021 for AREVA NP, Inc.

Page 1 of 1

ITEM	DATE	INIT'L
Concrete poured by Alamo Concrete	1/10/14	MD
Concrete conditioned	1/13/14	MD
Critical attributes of test slab verified	1/16/14	MD
Completed seal assemblies verified against the test plan	1/22/14	MD
Seismic Pressure Test #7 conducted	1/23/14	MD
Due to gasket leakage test terminated. Silicone gasket reapplied.	1/23/14	MD
Seismic Pressure Test #7 conducted	1/28/14	MD

9/12 NQAP-007.7.3

Certificate of Conformance

Client Name: Areva NP Inc. Date: September 4, 2014

Project No: G101276459SAT-021

Intertek Testing Services NA (Intertek) has conducted testing for AREVA NP Inc., on the pressure resistance capabilities of PCI-Promatec SF-150NH High Density Silicone Elastomer (SF-150NH) through a 12" thick concrete deck for compliance with the applicable requirements of and in accordance with AREVA NP Inc. Document No. 51-9209334-000, *Detailed Test Plan for Conducting MOX Seismic Pressure Test 7*. This evaluation took place on January 28, 2014.

The materials, processes), and deliverable(s) in this project were managed under and conform to the test laboratory's 10CFR50 Appendix B Quality Assurance Program.

[redacted]

Michael A Brown
Quality Supervisor

September 4, 2014
Date

Intertek Testing Laboratory
16015 Shady Falls Road, Elmendorf TX 78112
210-635-8100

Quality Assurance Statement

Intertek is devoted to engineering, inspection, quality assurance and testing of building materials, products and assemblies. Intertek has developed and implemented a Quality Assurance Program designed to provide its clients with a planned procedure of order and document processing for inspection and testing services it provides to assure conformity to requirements, codes, standards and specifications. The Program is designed to meet the intent of ANSI 45.2 Quality Assurance Program Requirements for Nuclear Power Plants, and complies with the requirements of the ASME Code, SPPE, Military Standards and other less stringent programs. It is the Laboratory's intention to adhere strictly to this Program, to assure that the services offered to its clients remains of the highest quality and accuracy possible.

All QA Surveillance documents remain on file at the Laboratory, and are available for inspection by authorized personnel in the performance of an on-site QA Audit. All materials, services and supplies used herein were obtained with appropriate QA Certifications of Compliance.

REVISION SUMMARY

DATE	SUMMARY
September 4, 2014	Original Issue Date