AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 5/4/15 **Project:** G-2
Pipe Section: _____ **Weld Number:** 3
Weld location: LHC PIPE
Welder: MIKE JEFMUGA **Inspector:** KELLY HARDIN

Before Welding:

Type of weld: (butt) ✓ (other) ____
(1) Pipe #1 Size, Schedule and material: 3/4" SCH 10
(2) Pipe #2 Size, Schedule and material: 3/4" SCH 10

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? ✓

(2) Welding Machine

(a) Remote foot pedal? ✓
(b) DC straight machine? ✓

(3) Joint Fit-up, and Internal Alignment

(a) Internal alignment acceptable? ✓
(b) Joint Clearance acceptable? ✓
(c) End Preparation acceptable? ✓

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? ✓
(b) Filler rod: Class 308L Diameter .045"

(5) Purge Gas.

(a) type of purge gas : ARGON
(b) time length of purge: 20 MIN purge flow rate: 20 CFH
(b) (if done) O2 reading: NA O2 Monitor manf/model : ____

(6) Inspection After Root Pass

(a) No visible cracks. ✓
(b) No suck holes, which are small holes in middle of weld. ✓
(c) No porosity or obvious imperfections. ✓
(d) Filler material fused along edges of weld ✓

(8) Repeat inspection after every pass: ✓

(9) Final Inspection: Kelly Hardin

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 5/4/15 **Project:** G-2
Pipe Section: _____ **Weld Number:** 3
Weld location: LHC 0 IPE
Welder: MIKE JEFFRIES **Inspector:** KELLY HARDIN

Before Welding:

Type of weld: (butt) ✓ (other) _____
(1) Pipe #1 Size, Schedule and material: 3/4" SCH 10
(2) Pipe #2 Size, Schedule and material: 3/4" SCH 10

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? ✓

(2) Welding Machine

(a) Remote foot pedal? ✓
(b) DC straight machine? ✓

(3) Joint Fit-up, and Internal Alignment

(a) Internal alignment acceptable? ✓
(b) Joint Clearance acceptable? ✓
(c) End Preparation acceptable? ✓

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? ✓
(b) Filler rod: Class 308L Diameter .045"

(5) Purge Gas.

(a) type of purge gas : ARGON
(b) time length of purge: 20 MIN purge flow rate: 20 CFH
(b) (if done) O2 reading: NA O2 Monitor manf/model : _____

(6) Inspection After Root Pass

(a) No visible cracks. ✓
(b) No suck holes, which are small holes in middle of weld. ✓
(c) No porosity or obvious imperfections. ✓
(d) Filler material fused along edges of weld. ✓

(8) Repeat inspection after every pass: ✓

(9) Final Inspection: Kelly Hardin

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 4/13/15 **Project:** G-2
Pipe Section: _____ **Weld Number:** 3
Weld location: LHC PIPE
Welder: MIKE JEFFRIES **Inspector:** KELLY HARDIN

Before Welding:

Type of weld: (butt) ✓ (other) _____
(1) Pipe #1 Size, Schedule and material: 3/4" SCH 10
(2) Pipe #2 Size, Schedule and material: 3/4" SCH 10

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? ✓

(2) Welding Machine

(a) Remote foot pedal? ✓
(b) DC straight machine? ✓

(3) Joint Fit-up, and Internal Alignment

(a) Internal alignment acceptable? ✓
(b) Joint Clearance acceptable? ✓
(c) End Preparation acceptable? ✓

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? ✓
(b) Filler rod: Class 308L Diameter .045"

(5) Purge Gas.

(a) type of purge gas : ARGON
(b) time length of purge: 20 MIN purge flow rate: 20 CFH
(b) (if done) O2 reading: NA O2 Monitor manf/model : _____

(6) Inspection After Root Pass

(a) No visible cracks. ✓
(b) No suck holes, which are small holes in middle of weld. ✓
(c) No porosity or obvious imperfections. ✓
(d) Filler material fused along edges of weld. ✓

(8) Repeat inspection after every pass: ✓

(9) Final Inspection: Kelly Hardin

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 4/16/15 **Project:** G-2
Pipe Section: _____ **Weld Number:** 3
Weld location: LHP PIPE
Welder: MIKE JEFFRIES **Inspector:** KELLY HARDIN

Before Welding:

Type of weld: (butt) ✓ (other) _____
(1) Pipe #1 Size, Schedule and material: 3/4" SCH 10
(2) Pipe #2 Size, Schedule and material: 3/4" SCH 10

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? ✓

(2) Welding Machine

(a) Remote foot pedal? ✓
(b) DC straight machine? ✓

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? ✓
(b) Joint Clearance acceptable? ✓
(c) End Preparation acceptable? ✓

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? ✓
(b) Filler rod: Class 308L Diameter .045"

(5) Purge Gas.

(a) type of purge gas : ARGON
(b) time length of purge: 20 MIN purge flow rate: 20 CFH
(b) (if done) O2 reading: NA O2 Monitor manf/model : _____

(6) Inspection After Root Pass

(a) No visible cracks. ✓
(b) No suck holes, which are small holes in middle of weld. ✓
(c) No porosity or obvious imperfections. ✓
(d) Filler material fused along edges of weld. ✓

(8) Repeat inspection after every pass: ✓

(9) Final Inspection: Kelly Hardin

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 5/13/15 **Project:** G-2
Pipe Section: _____ **Weld Number:** 3
Weld location: LHC JACKET
Welder: MIKE JEFFRIES **Inspector:** KELLY HARDIN

Before Welding:

Type of weld: (butt) ✓ (other) ____
(1) Pipe #1 Size, Schedule and material: 6" TUBE .109" w
(2) Pipe #2 Size, Schedule and material: 6" TUBE .109 w

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? ✓

(2) Welding Machine

(a) Remote foot pedal? ✓
(b) DC straight machine? ✓

(3) Joint Fit-up, and Internal Alignment

(a) Internal alignment acceptable? ✓
(b) Joint Clearance acceptable? ✓
(c) End Preparation acceptable? ✓

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? ✓
(b) Filler rod: Class 308L Diameter .045"

(5) Purge Gas.

(a) type of purge gas : ARGON
(b) time length of purge: 20 MIN purge flow rate: 20 CFH
(b) (if done) O2 reading: NA O2 Monitor manf/model : ____

(6) Inspection After Root Pass

(a) No visible cracks. ✓
(b) No suck holes, which are small holes in middle of weld. ✓
(c) No porosity or obvious imperfections. ✓
(d) Filler material fused along edges of weld. ✓

(8) Repeat inspection after every pass: ✓

(9) Final Inspection: Kelly Hardin

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 5/13/15 **Project:** G-2
Pipe Section: _____ **Weld Number:** 3
Weld location: LHe JACKET
Welder: MIKE JEFFRIES **Inspector:** KELLY HARDIN

Before Welding:
Type of weld: (butt) ✓ (other) ____
(1) Pipe #1 Size, Schedule and material: 6" TUBE, .109" w
(2) Pipe #2 Size, Schedule and material: 6" TUBE, .109" w

(1) Joint Preparation and Cleanliness
Joint Preparation and Cleanliness acceptable? ✓

(2) Welding Machine
(a) Remote foot pedal? ✓
(b) DC straight machine? ✓

(3) Joint Fit-up, and Internal Alignment
(a) Internal alignment acceptable? ✓
(b) Joint Clearance acceptable? ✓
(c) End Preparation acceptable? ✓

(4) Filler Rod
(a) AWS A5.9 stainless steel filler rod? ✓
(b) Filler rod: Class 308L Diameter .045"

(5) Purge Gas.
(a) type of purge gas : ARGON
(b) time length of purge: 20 MIN purge flow rate: 20 CFH
(b) (if done) O2 reading: NA O2 Monitor manf/model : ____

(6) Inspection After Root Pass
(a) No visible cracks. ✓
(b) No suck holes, which are small holes in middle of weld. ✓
(c) No porosity or obvious imperfections. ✓
(d) Filler material fused along edges of weld. ✓

(8) Repeat inspection after every pass: ✓

(9) Final Inspection: Kelly Hardin

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 5/15/15 **Project:** G-2
Pipe Section: _____ **Weld Number:** 3
Weld location: LHC PIPE
Welder: MIKE JEFFRIES **Inspector:** KELLY HARDIN

Before Welding:

Type of weld: (butt) ✓ (other) ____
(1) Pipe #1 Size, Schedule and material: 3/4" SCH 10
(2) Pipe #2 Size, Schedule and material: 3/4" CERAMIC

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? ✓

(2) Welding Machine

(a) Remote foot pedal? ✓
(b) DC straight machine? ✓

(3) Joint Fit-up, and Internal Alignment

(a) Internal alignment acceptable? ✓
(b) Joint Clearance acceptable? ✓
(c) End Preparation acceptable? ✓

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? ✓
(b) Filler rod: Class 308L Diameter .045"

(5) Purge Gas.

(a) type of purge gas : ARGON
(b) time length of purge: 20 MIN purge flow rate: 20 CFH
(b) (if done) O2 reading: NA O2 Monitor manf/model : ____

(6) Inspection After Root Pass

(a) No visible cracks. ✓
(b) No suck holes, which are small holes in middle of weld. ✓
(c) No porosity or obvious imperfections. ✓
(d) Filler material fused along edges of weld . ✓

(8) Repeat inspection after every pass: ✓

(9) Final Inspection: Kelly Hardin

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 5/15/15 **Project:** G-2
Pipe Section: _____ **Weld Number:** 3
Weld location: LHC PIPE
Welder: MIKE JEFMUGA **Inspector:** KELLY HARDIN

Before Welding:

Type of weld: (butt) ✓ (other) ____
(1) Pipe #1 Size, Schedule and material: 3/4" SCH 10
(2) Pipe #2 Size, Schedule and material: 3/4" CERAMIC

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? ✓

(2) Welding Machine

(a) Remote foot pedal? ✓
(b) DC straight machine? ✓

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? ✓
(b) Joint Clearance acceptable? ✓
(c) End Preparation acceptable? ✓

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? ✓
(b) Filler rod: Class 308L Diameter .045"

(5) Purge Gas.

(a) type of purge gas : ARGON
(b) time length of purge: 20 MIN purge flow rate: 20 CFH
(b) (if done) O2 reading: NA O2 Monitor manf/model : ____

(6) Inspection After Root Pass

(a) No visible cracks. ✓
(b) No suck holes, which are small holes in middle of weld. ✓
(c) No porosity or obvious imperfections. ✓
(d) Filler material fused along edges of weld. ✓

(8) Repeat inspection after every pass: ✓

(9) Final Inspection: Kelly Hardin

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 5/18/15 **Project:** G-2
Pipe Section: _____ **Weld Number:** 3
Weld location: 2N2 VENT
Welder: MIKE JEENICA **Inspector:** KELLY HARDIN

Before Welding:
Type of weld: (butt)_____ (other) ✓
(1) Pipe #1 Size, Schedule and material: 1 1/2" COPPER
(2) Pipe #2 Size, Schedule and material: 1 1/2" COPPER

(1) Joint Preparation and Cleanliness
Joint Preparation and Cleanliness acceptable? ✓

(2) Welding Machine
(a) Remote foot pedal? _____ TORCH BRAZE
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.
(a) Internal alignment acceptable? ✓
(b) Joint Clearance acceptable? ✓
(c) End Preparation acceptable? ✓

(4) Filler Rod
(a) AWS A5.9 stainless steel filler rod? NA
(b) Filler rod: Class 5 SILPHOS Diameter 1/16 FLAT

(5) Purge Gas.
(a) type of purge gas : NA
(b) time length of purge: _____ purge flow rate: _____
(b) (if done) O2 reading: _____ O2 Monitor manf/model : _____

(6) Inspection After Root Pass
(a) No visible cracks. ~~NA~~ ✓
(b) No suck holes, which are small holes in middle of weld. ✓
(c) No porosity or obvious imperfections. ✓
(d) Filler material fused along edges of weld . ✓

(8) Repeat inspection after every pass: NA

(9) Final Inspection: Kelly Hardin

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 5/18/15 **Project:** G-2
Pipe Section: _____ **Weld Number:** 3
Weld location: LN2 VENT
Welder: MIKE JEENINGA **Inspector:** KELLY HARRIS

Before Welding:
Type of weld: (butt)_____ (other) ✓
(1) Pipe #1 Size, Schedule and material: 1½" COPPER
(2) Pipe #2 Size, Schedule and material: 1½" COPPER

(1) Joint Preparation and Cleanliness
Joint Preparation and Cleanliness acceptable? ✓

(2) Welding Machine
(a) Remote foot pedal? _____ TORCH BRAZE
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.
(a) Internal alignment acceptable? ✓
(b) Joint Clearance acceptable? ✓
(c) End Preparation acceptable? ✓

(4) Filler Rod
(a) AWS A5.9 stainless steel filler rod? N/A
(b) Filler rod: Class 5 SILPHOS Diameter 1/8' FLAT

(5) Purge Gas.
(a) type of purge gas : N/A
(b) time length of purge: _____ purge flow rate: _____
(b) (if done) O2 reading: _____ O2 Monitor manf/model : _____

(6) Inspection After Root Pass
(a) No visible cracks. ✓
(b) No suck holes, which are small holes in middle of weld. ✓
(c) No porosity or obvious imperfections. ✓
(d) Filler material fused along edges of weld . ✓

(8) Repeat inspection after every pass: ✓

(9) Final Inspection: Kelly Harris

2 WELDS
HELIUM LINE #1

X

PPD Vacuum and Instrumentation Group
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 2-27-2015 **Project:** G-2
Pipe Section: TRANSFER LINE **Weld Number:** 8
Weld location: G-2
Welder: LEONARD HANBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt) X (other)_____
(1) Pipe #1 Size, Schedule and material: 1" SCH 10 PIPE 37" AND 14½
(2) Pipe #2 Size, Schedule and material: 1" SCH 10 TEE - 2 WELDS

(1) Joint Preparation and Cleanliness
Joint Preparation and Cleanliness acceptable? YES

(2) Welding Machine
(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.
(a) Internal alignment acceptable? YES
(b) Joint Clearance acceptable? YES
(c) End Preparation acceptable? YES

(4) Filler Rod
(a) AWS A5.9 stainless steel filler rod? 304L
(b) Filler rod: Class _____ Diameter 0.45

(5) Purge Gas.
(a) type of purge gas : ARGON
(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 10 CFH SCFH___
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass
(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

2.9.09

1 WELD
HELIUM #1

PPD Vacuum and Instrumentation Group
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 2-27-2015 **Project:** G-2
Pipe Section: TRANSFER LINE **Weld Number:** 8
Weld location: G-2
Welder: LEONARD HARBAUGH **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt) X (other) _____
(1) Pipe #1 Size, Schedule and material: 1" SCH 10 45° ELBOW
(2) Pipe #2 Size, Schedule and material: 1" SCH 10 45° ELBOW

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? YES

(2) Welding Machine

(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? YES
(b) Joint Clearance acceptable? YES
(c) End Preparation acceptable? YES

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? 304L
(b) Filler rod: Class _____ Diameter .045

(5) Purge Gas.

(a) type of purge gas : ARGON
(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 10 CFH SCFH

(b) (if done) O2 reading: _____ O2 Monitor manf/model : _____

(6) Inspection After Root Pass

(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: JIM HUMBERT

2.9.09

2 WELDS
HELIUM #1

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-6-2015 **Project:** G-2
Pipe Section: TRANSFER LINE **Weld Number:** 8
Weld location: G-2
Welder: LEONARD J. HACKBARTH **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt) X (other)____
(1) Pipe #1 Size, Schedule and material: 2-45° ELBOWS + 34" LONG PIPE
(2) Pipe #2 Size, Schedule and material: 1 SCH-10 TEE

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? YES

(2) Welding Machine

(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? YES
(b) Joint Clearance acceptable? YES
(c) End Preparation acceptable? YES

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? 304L
(b) Filler rod: Class _____ Diameter .045

(5) Purge Gas.

(a) type of purge gas : ARGON
(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 10 CFH
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass

(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

1 Weld
NITRO Line

B

PPD Vacuum and Instrumentation Group
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 2-27-2015 **Project:** A-2
Pipe Section: TRANSFER LINE **Weld Number:** 8
Weld location: A-2
Welder: LEONARD HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt) X (other) _____
(1) Pipe #1 Size, Schedule and material: 3/4 Sch 10 45° ELBOW } 1 WELD
(2) Pipe #2 Size, Schedule and material: 3/4 Sch 10 45° ELBOW

(1) Joint Preparation and Cleanliness
Joint Preparation and Cleanliness acceptable? Yes

(2) Welding Machine
(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.
(a) Internal alignment acceptable? Yes
(b) Joint Clearance acceptable? Yes
(c) End Preparation acceptable? Yes.

(4) Filler Rod
(a) AWS A5.9 stainless steel filler rod? 304L
(b) Filler rod: Class _____ Diameter .045

(5) Purge Gas.
(a) type of purge gas : ARGON
(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 10 CFL SCFH
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass
(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . Yes

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

2.9.09

1 WELD

A

PPD Vacuum and Instrumentation Group
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-4-2015 **Project:** GL-2

Pipe Section: TRANSFER LINE **Weld Number:** 8

Weld location: GL-2

Welder: LEONARD T. HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt) X (other) _____

(1) Pipe #1 Size, Schedule and material: 1" SCH 10 S3 3/4 LONG 1 WELD

(2) Pipe #2 Size, Schedule and material: 2 - 45° ELBOWS

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? Yes

(2) Welding Machine

(a) Remote foot pedal? X

(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? Yes

(b) Joint Clearance acceptable? Yes

(c) End Preparation acceptable? Yes

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? 304L

(b) Filler rod: Class _____ Diameter .045

(5) Purge Gas.

(a) type of purge gas : ARGON

(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 10 CFH SCFH

(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass

(a) No visible cracks. NONE

(b) No suck holes, which are small holes in middle of weld. NONE

(c) No porosity or obvious imperfections. NONE

(d) Filler material fused along edges of weld . Yes

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: [signature]

2.9.09

2 WELDS
#2 HELIUM

PPD Vacuum and Instrumentation Group
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 2-27-2015 **Project:** G-2
Pipe Section: TRANSFER LINE **Weld Number:** 8
Weld location: G-2
Welder: LEONARD HARBAUGH **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt) X (other)_____
(1) Pipe #1 Size, Schedule and material: 1 3/8 SCH 10 TUBE 57" LONG
(2) Pipe #2 Size, Schedule and material: 2-1 3/8 SCH 10 45° ELBOWS

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? Yes

(2) Welding Machine

(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? Yes
(b) Joint Clearance acceptable? Yes
(c) End Preparation acceptable? Yes

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? 304L
(b) Filler rod: Class _____ Diameter .045

(5) Purge Gas.

(a) type of purge gas : ARGON
(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 10 CFH SCFH___
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass

(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . Yes

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

2.9.09

1 WELD
#2 HELIUM

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-6-2015 **Project:** G-2
Pipe Section: TRANSFER LINE **Weld Number:** 8
Weld location: G-2
Welder: LEONARD T. HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt) X (other) ____
(1) Pipe #1 Size, Schedule and material: 1 3/8" TO 1" Reducer
(2) Pipe #2 Size, Schedule and material: 1 3/8" PIPE 49" LONG

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? YES

(2) Welding Machine

(a) Remote foot pedal? X
(b) DC straight machine? ____

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? YES
(b) Joint Clearance acceptable? YES
(c) End Preparation acceptable? YES

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? 304
(b) Filler rod: Class ____ Diameter .045

(5) Purge Gas.

(a) type of purge gas : ARGON
(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 10 CFH
(b) (if done) O2 reading: ____ O2 Monitor manf/model : ____

(6) Inspection After Root Pass

(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

1 WELD

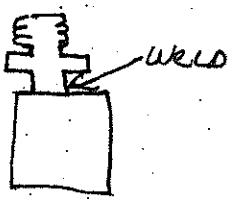
AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-13-2015 **Project:** G-2
Pipe Section: _____ **Weld Number:** 8
Weld location: G-2
Welder: LEONARD T. HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt)_____ (other) FILLET
(1) Pipe #1 Size, Schedule and material: #10 VCR
(2) Pipe #2 Size, Schedule and material: FABRICATED PIPE THREAD



(1) Joint Preparation and Cleanliness
Joint Preparation and Cleanliness acceptable? YES

(2) Welding Machine
(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.
(a) Internal alignment acceptable? YES
(b) Joint Clearance acceptable? YES
(c) End Preparation acceptable? YES

(4) Filler Rod
(a) AWS A5.9 stainless steel filler rod? 304L
(b) Filler rod: Class _____ Diameter .045

(5) Purge Gas.
(a) type of purge gas : N/A
(b) time length of purge: N/A purge flow rate: N/A
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass
(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

3 WELD

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

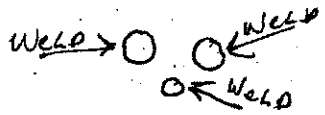
Date 3-13-2015 **Project:** G-2
Pipe Section: _____ **Weld Number:** 8
Weld location: G-2
Welder: LEONARD T. HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt)_____ (other) FILLET
(1) Pipe #1 Size, Schedule and material: 3 FIELD WELD ON EXISTING PIPES
(2) Pipe #2 Size, Schedule and material: 2 HELIUM - 1 1/2 NITROGEN LEVE

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? YES



(2) Welding Machine

(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? YES
(b) Joint Clearance acceptable? YES
(c) End Preparation acceptable? YES

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? 304 L
(b) Filler rod: Class _____ Diameter .035

(5) Purge Gas.

(a) type of purge gas : ARGON
(b) time length of purge: 5 MINUTE PRIOR purge flow rate: 20 CFH
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass

(a) No visible cracks. NON
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS O NEACH

(9) Final Inspection: Jim Humbert

1 WELD

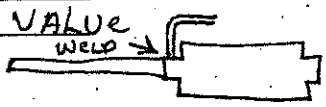
AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-13-2015 **Project:** G-2
Pipe Section: _____ **Weld Number:** 8
Weld location: G-2
Welder: LEONARD T. HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt)_____ (other) FILLET
(1) Pipe #1 Size, Schedule and material: 1/4 .035 TUBE
(2) Pipe #2 Size, Schedule and material: TO CHECK VALVE



(1) Joint Preparation and Cleanliness
Joint Preparation and Cleanliness acceptable? YES

(2) Welding Machine
(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.
(a) Internal alignment acceptable? YES
(b) Joint Clearance acceptable? YES
(c) End Preparation acceptable? YES

(4) Filler Rod
(a) AWS A5.9 stainless steel filler rod? 304L
(b) Filler rod: Class _____ Diameter .035

(5) Purge Gas.
(a) type of purge gas : ARGON
(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 5 CFH
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass
(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

1 WELD

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-13-2015 **Project:** G-2
Pipe Section: _____ **Weld Number:** 8
Weld location: G-2
Welder: LEONARD J. HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt)_____ (other) FILLET

(1) Pipe #1 Size, Schedule and material: 3/4 SCH 10 ELBOW

(2) Pipe #2 Size, Schedule and material: CHECK VALVE

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? YES

(2) Welding Machine

(a) Remote foot pedal? X

(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? YES

(b) Joint Clearance acceptable? YES

(c) End Preparation acceptable? YES

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? 304L

(b) Filler rod: Class _____ Diameter .035

(5) Purge Gas.

(a) type of purge gas : ARGON

(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 5-CFH

(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass

(a) No visible cracks. NONE

(b) No suck holes, which are small holes in middle of weld. NONE

(c) No porosity or obvious imperfections. NONE

(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

1 WELD

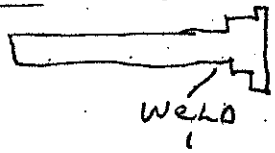
AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-13-2015 **Project:** G-2
Pipe Section: _____ **Weld Number:** 8
Weld location: G-2
Welder: LEONARD T. HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt)_____ (other) FILLET
(1) Pipe #1 Size, Schedule and material: 6" DIA TUBE 42 1/2 LONG
(2) Pipe #2 Size, Schedule and material: PRE FABRICATED FLANGE



(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? YES

(2) Welding Machine

(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? YES
(b) Joint Clearance acceptable? YES
(c) End Preparation acceptable? YES

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? 304
(b) Filler rod: Class _____ Diameter .045

(5) Purge Gas.

(a) type of purge gas : N/A
(b) time length of purge: N/A purge flow rate: N/A
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass

(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

1 WELD

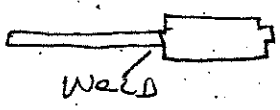
AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-13-2015 **Project:** G-2
Pipe Section: _____ **Weld Number:** 8
Weld location: G-2
Welder: LEONARD T. HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt) X (other) _____
(1) Pipe #1 Size, Schedule and material: 3/4 SCH10 18" LONG
(2) Pipe #2 Size, Schedule and material: TO BE FABRICATED CHECK VALVE



(1) Joint Preparation and Cleanliness
Joint Preparation and Cleanliness acceptable? YES

(2) Welding Machine
(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.
(a) Internal alignment acceptable? YES
(b) Joint Clearance acceptable? YES
(c) End Preparation acceptable? YES

(4) Filler Rod
(a) AWS A5.9 stainless steel filler rod? 304L
(b) Filler rod: Class _____ Diameter .035

(5) Purge Gas.
(a) type of purge gas : ARGON
(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 5-CFH
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass
(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

1 WELD
NITRO LINE

B

PPD Vacuum and Instrumentation Group
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-4-2015 **Project:** G-2
Pipe Section: TRANSFER LINE **Weld Number:** 8
Weld location: G-2
Welder: LEONARD T. HALDEMAN **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt)_____ (other) FUSION

(1) Pipe #1 Size, Schedule and material: 1/8 .035 TUBE TO FABRICATED WASHER 1 WELD

(2) Pipe #2 Size, Schedule and material: _____

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? Yes

(2) Welding Machine

(a) Remote foot pedal? X

(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? Yes

(b) Joint Clearance acceptable? Yes

(c) End Preparation acceptable? Yes

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? N/A

(b) Filler rod: Class _____ Diameter N/A

(5) Purge Gas.

(a) type of purge gas : N/A

(b) time length of purge: N/A purge flow rate: N/A SCFH

(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass

(a) No visible cracks. NONE

(b) No suck holes, which are small holes in middle of weld. NONE

(c) No porosity or obvious imperfections. NONE

(d) Filler material fused along edges of weld . Yes

(8) Repeat inspection after every pass: FUSION

(9) Final Inspection: [signature]

2.9.09

1 WELD
NITRO LINE

B

PPD Vacuum and Instrumentation Group
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-4-2015 **Project:** 6-2
Pipe Section: TRANSFER LINE **Weld Number:** 8
Weld location: 6-2
Welder: LEONARD T. HABDACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt) X (other)_____

(1) Pipe #1 Size, Schedule and material: FABRICATED WASHER

(2) Pipe #2 Size, Schedule and material: 2- 3/4 SCH 10 ELBOWS

1 WELD

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? Yes

(2) Welding Machine

(a) Remote foot pedal? X

(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? Yes

(b) Joint Clearance acceptable? Yes

(c) End Preparation acceptable? Yes

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? 304L

(b) Filler rod: Class _____ Diameter .035

(5) Purge Gas.

(a) type of purge gas : ARGON

(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 10 CFH SCFH___

(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass

(a) No visible cracks. NONE

(b) No suck holes, which are small holes in middle of weld. NONE

(c) No porosity or obvious imperfections. NONE

(d) Filler material fused along edges of weld . Yes

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Hubert

2.9.09

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-13-2015 **Project:** G-2
Pipe Section: _____ **Weld Number:** 8
Weld location: G-2
Welder: LEONARD J. HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt)_____ (other) SOCKET WELD
(1) Pipe #1 Size, Schedule and material: 2 WELDS
(2) Pipe #2 Size, Schedule and material: _____

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? YES

(2) Welding Machine

(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? N/A
(b) Joint Clearance acceptable? N/A
(c) End Preparation acceptable? YES

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? 304.L
(b) Filler rod: Class _____ Diameter 045

(5) Purge Gas.

(a) type of purge gas : ARGON
(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 10 CFH
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass

(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Hubert

2 Welds

AD Cryogenics Department
In-Process Weld Inspection Form

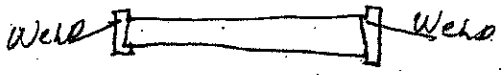
(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-13-2015 **Project:** G-2
Pipe Section: _____ **Weld Number:** 8
Weld location: G-2
Welder: LEONARD T. HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt)_____ (other) FUSE
(1) Pipe #1 Size, Schedule and material: 6" DIA TUBE 3½ LONG
(2) Pipe #2 Size, Schedule and material: TWO ISO FLANGES

(1) Joint Preparation and Cleanliness



Joint Preparation and Cleanliness acceptable? YES

(2) Welding Machine
(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.
(a) Internal alignment acceptable? YES
(b) Joint Clearance acceptable? YES
(c) End Preparation acceptable? YES

(4) Filler Rod
(a) AWS A5.9 stainless steel filler rod? FUSE
(b) Filler rod: Class _____ Diameter N/A

(5) Purge Gas.
(a) type of purge gas : N/A
(b) time length of purge: N/A purge flow rate: N/A
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass
(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jm Humbert

2 WELDS

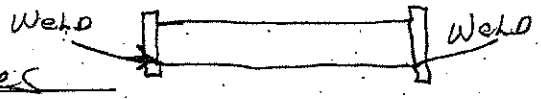
AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-13-2015 **Project:** G-2
Pipe Section: _____ **Weld Number:** 8
Weld location: G-2
Welder: LEONARDO T. HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt)_____ (other) FUSE
(1) Pipe #1 Size, Schedule and material: 6" DIA TUBE 38 3/4 LONG
(2) Pipe #2 Size, Schedule and material: 2 150 FLANGES



(1) Joint Preparation and Cleanliness
Joint Preparation and Cleanliness acceptable? Yes

(2) Welding Machine
(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.
(a) Internal alignment acceptable? YES
(b) Joint Clearance acceptable? YES
(c) End Preparation acceptable? YES

(4) Filler Rod
(a) AWS A5.9 stainless steel filler rod? FUSE
(b) Filler rod: Class _____ Diameter N A

(5) Purge Gas.
(a) type of purge gas : N/A
(b) time length of purge: N/A purge flow rate: N/A
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass
(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

57 WELDS

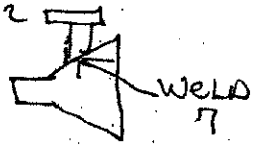
AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-13-2015 **Project:** G-2
Pipe Section: _____ **Weld Number:** 8
Weld location: G-2
Welder: LEONARD T. HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt)_____ (other) FUSE
(1) Pipe #1 Size, Schedule and material: 1½ TUBE
(2) Pipe #2 Size, Schedule and material: CONICAL REDUCER



(1) Joint Preparation and Cleanliness
Joint Preparation and Cleanliness acceptable? YES

(2) Welding Machine
(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.
(a) Internal alignment acceptable? YES
(b) Joint Clearance acceptable? YES
(c) End Preparation acceptable? YES

(4) Filler Rod
(a) AWS A5.9 stainless steel filler rod? NONE
(b) Filler rod: Class _____ Diameter N/A

(5) Purge Gas.
(a) type of purge gas : N/A
(b) time length of purge: N/A purge flow rate: N/A
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass
(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

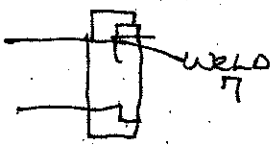
AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-13-2015 **Project:** G-2
Pipe Section: _____ **Weld Number:** 8
Weld location: G-2
Welder: LEONARD T. HARBACEK **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt)_____ (other) FUSE WELDS
(1) Pipe #1 Size, Schedule and material: 7 2 3/4 ROTATABLE CONFLAT FLANGES
(2) Pipe #2 Size, Schedule and material: 1 1/2 PIPE



(1) Joint Preparation and Cleanliness
Joint Preparation and Cleanliness acceptable? Yes

(2) Welding Machine
(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.
(a) Internal alignment acceptable? Yes
(b) Joint Clearance acceptable? Yes
(c) End Preparation acceptable? Yes

(4) Filler Rod
(a) AWS A5.9 stainless steel filler rod? NA
(b) Filler rod: Class _____ Diameter N/A

(5) Purge Gas.
(a) type of purge gas : N/A
(b) time length of purge: N/A purge flow rate: NA
(b) (if done) O2 reading: N/A O2 Monitor manf/model : NA

(6) Inspection After Root Pass
(a) No visible cracks. None
(b) No suck holes, which are small holes in middle of weld. None
(c) No porosity or obvious imperfections. None
(d) Filler material fused along edges of weld . Yes

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

2 WELDS
~~NITRO LINE~~
HELIUM #2

AD Cryogenics Department
In-Process Weld Inspection Form X

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-6-2015 **Project:** G-2
Pipe Section: TRANSFER LINE **Weld Number:** 8
Weld location: G-2
Welder: LEONARD T. HARBAUGH **Inspector:** JIM HUMBERT

Before Welding:

Type of weld: (butt) X (other) ____
(1) Pipe #1 Size, Schedule and material: 2-1" SCH10 45° ELBOWS
(2) Pipe #2 Size, Schedule and material: 1- 1" SCH10 PIPE 3/4 LONG

(1) Joint Preparation and Cleanliness
Joint Preparation and Cleanliness acceptable? Yes

(2) Welding Machine
(a) Remote foot pedal? X
(b) DC straight machine? ____

(3) Joint Fit-up, and Internal Alignment.
(a) Internal alignment acceptable? Yes
(b) Joint Clearance acceptable? Yes
(c) End Preparation acceptable? Yes

(4) Filler Rod
(a) AWS A5.9 stainless steel filler rod? 304L
(b) Filler rod: Class ____ Diameter .045

(5) Purge Gas.
(a) type of purge gas : ARGON
(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 10 CFH
(b) (if done) O2 reading: N/A O2 Monitor manf/model : N/A

(6) Inspection After Root Pass
(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . Yes

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Jim Humbert

AD Cryogenics Department
In-Process Weld Inspection Form

(as per In-Process Weld Inspection Guidelines, AD Cryogenics, Nov 3, 2006)

Date 3-25-2015 **Project:** G-2
Pipe Section: _____ **Weld Number:** 8
Weld location: G-2
Welder: LEONARD T. HARBACEK **Inspector:** KELLY HARDIN

Before Welding:

Type of weld: (butt)_____ (other) FUSE WELD
(1) Pipe #1 Size, Schedule and material: 7 1/4 VCR'S ONTOP OF HELIUM TANK
(2) Pipe #2 Size, Schedule and material: _____ DONE WITH ORBITAL WELDER

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? YES

(2) Welding Machine

(a) Remote foot pedal? X
(b) DC straight machine? _____

(3) Joint Fit-up, and Internal Alignment.

(a) Internal alignment acceptable? YES
(b) Joint Clearance acceptable? YES
(c) End Preparation acceptable? YES

(4) Filler Rod

(a) AWS A5.9 stainless steel filler rod? N/A
(b) Filler rod: Class _____ Diameter N/A

(5) Purge Gas.

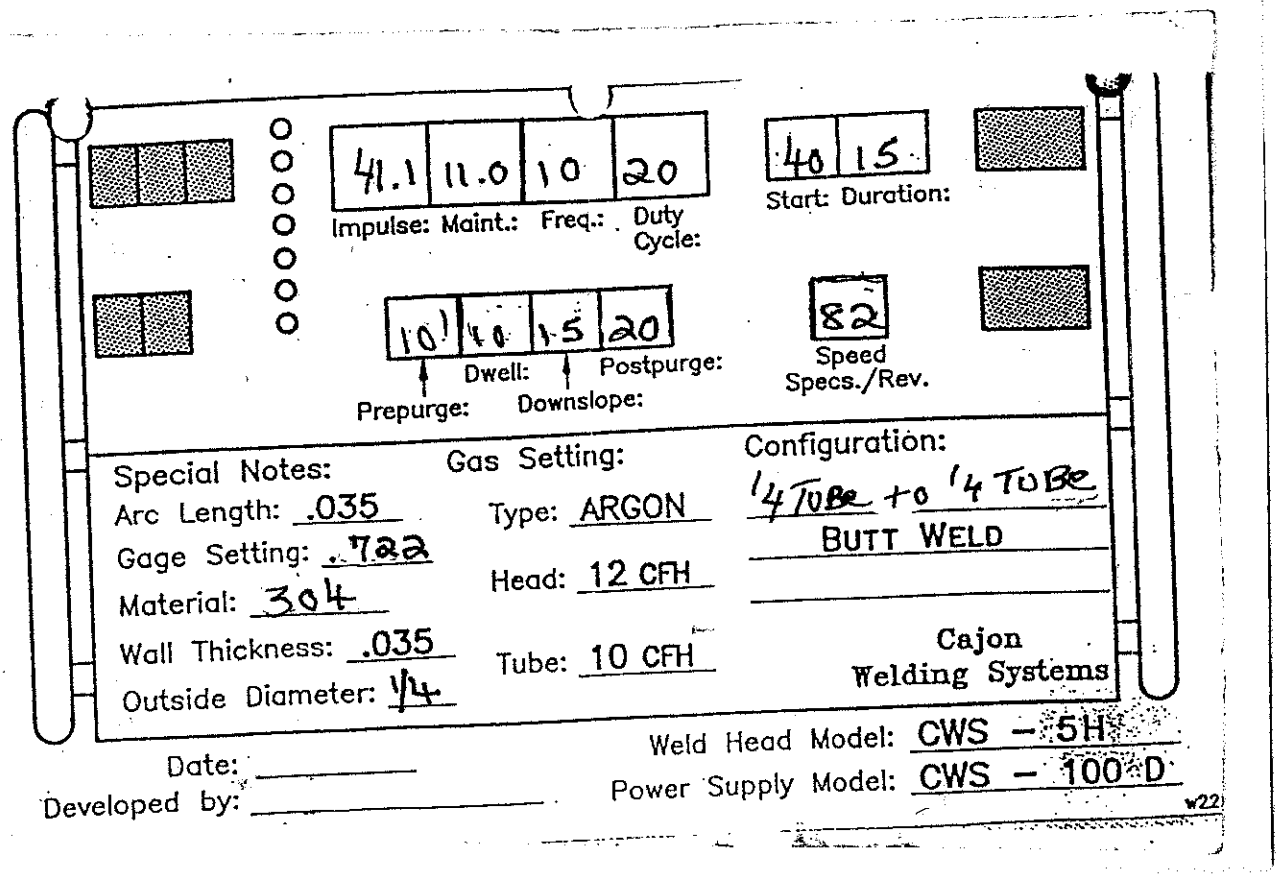
(a) type of purge gas : ARGON
(b) time length of purge: 1 MINUTE PRIOR purge flow rate: 5 CFL
(b) (if done) O2 reading: _____ O2 Monitor manf/model : _____

(6) Inspection After Root Pass

(a) No visible cracks. NONE
(b) No suck holes, which are small holes in middle of weld. NONE
(c) No porosity or obvious imperfections. NONE
(d) Filler material fused along edges of weld . YES

(8) Repeat inspection after every pass: 1 PASS

(9) Final Inspection: Kelly Hardin


41.1
11.0
10
20
Impulse: Maint.: Freq.: Duty Cycle:
40
15
Start: Duration:
10
10
1.5
20
Prepurge: Dwell: Downslope: Postpurge:
82
Speed Specs./Rev.
Special Notes:
Arc Length: .035
Gage Setting: .722
Material: 304
Wall Thickness: .035
Outside Diameter: 1/4
Gas Setting:
Type: ARGON
Head: 12 CFH
Tube: 10 CFH
Configuration:
1/4 To Be to 1/4 To Be
BUTT WELD
Cajon Welding Systems
Date:
Developed by:
Weld Head Model: CWS - 5H
Power Supply Model: CWS - 100 D
w22