

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 HARBACEK Inspector: JIM HUMBERT

Before Welding:

Type of weld: (butt) X (other) _____
(1) Pipe #1 Size, Schedule and material: 1" Sch 10 Pipe 37" AND 14 1/2
(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: NA 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: pass 4/2015

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: LEONARDO HARBALEN 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 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: 4-2
Pipe Section: TRANSFER LINE Weld Number: 8
Weld location: 4-2
Welder: LEONARD J. HARBACH 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 PER JOINT purge flow rate: 10 CFH
(c) (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]

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: LEONARDO HARBALEN 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 PER IN 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

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: 6-2

Pipe Section: TRANSFER LINE Weld Number: 8

Weld location: 6-2

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 53 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: Jim Humbert

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: 6-2
Pipe Section: TRANSFER LINE Weld Number: 8
Weld location: 6-2
Welder: LEONARD HARBALEK 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 PER PASS 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: from Humbert

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: 6-2
Pipe Section: TRANSFER LINE Weld Number: 8
Weld location: 6-2
Welder: LEONARD J. HARBACUK Inspector: JIM HUMBERT

Before Welding:

Type of weld: (butt) X (other) _____
(1) Pipe #1 Size, Schedule and material: 3" 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

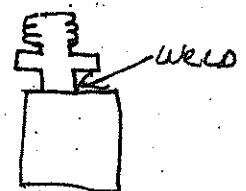
AD Cryogenics Department In-Process Weld Inspection Form

(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)

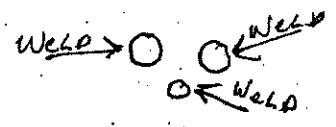
Date 3-13-2015 Project: G-2
Pipe Section: _____ Weld Number: 8
Weld location: G-2
Welder: LEONARD J. HARBACEK Inspector: JIM HUMBERT

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 LINE

(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, 0.35

(5) Purge Gas

(a) type of purge gas : ARGON
(b) time length of purge: 5 MINUTE PASS purge flow rate: 20 CFH
(c) (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 ON EACH

(9) Final Inspection: Jim Humbert

1 WELD

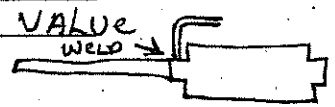
AD Cryogenics Department In-Process Weld Inspection Form

(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: 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? 304 L
(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. HARGREAVES 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
(c) (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)

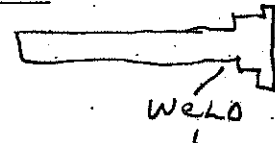
Date 3-13-2015 Project: G-2
Pipe Section: _____ Weld Number: 8
Weld location: 6-2
Welder: LEONARD J. HARBACEK Inspector: JIM HUMBERT

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: PIPE 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)

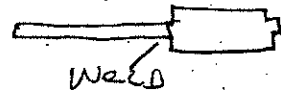
Date 3-13-2015 Project: G-2
Pipe Section: _____ Weld Number: 8
Weld location: G-2
Welder: LEONARD J. HARBALAK Inspector: JIM HUMBERT

Before Welding:

Type of weld: (butt) X (other) _____
(1) Pipe #1 Size, Schedule and material: 3/4 SCH 10 18" LONG
(2) Pipe #2 Size, Schedule and material: TO PRE FABRICATED CHECK VALUE

(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
(c) (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]

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

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? 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: 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: 6-2
Pipe Section: TRANSFER LINE Weld Number: 8
Weld location: 6-2
Welder: LEONARD T. HARBACEK 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 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. HARBALOW 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? 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
(c) (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]

D WehOS

AD Cryogenics Department In-Process Weld Inspection Form

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

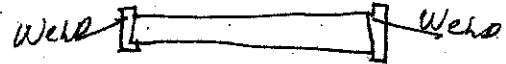
Date 3-13-2015 Project: G-2
Pipe Section: _____ Weld Number: 8
Weld location: G-2
Welder: LEONARD J. HARBALOW Inspector: JIM HUMBERT

Before Welding:

Type of weld: (butt) _____ (other) Fuse
(1) Pipe #1 Size, Schedule and material: 6" DIA TUBE 3 1/2 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
(c) (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 WELDS

AD Cryogenics Department In-Process Weld Inspection Form

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

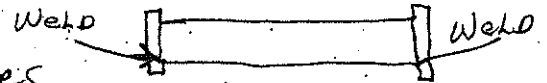
Date 3-13-2015 Project: G-2
Pipe Section: _____ Weld Number: 8
Weld location: G-2
Welder: LEONARD J. HARBACEK Inspector: JIM HUMBERT

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 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 NA

(5) Purge Gas

(a) type of purge gas : N/A
(b) time length of purge: N/A purge flow rate: N/A
(c) (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)

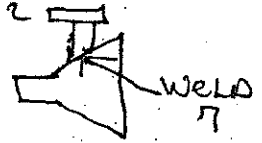
Date 3-13-2015 Project: G-2
Pipe Section: _____ Weld Number: 8
Weld location: G-2
Welder: LEONARD J. HARBACEK Inspector: SIN HUMBERT

Before Welding:

Type of weld: (butt) _____ (other) FUSE
(1) Pipe #1 Size, Schedule and material: 1/2" 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
(c) (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]

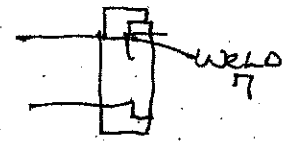
AD Cryogenics Department In-Process Weld Inspection Form

(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. HARBALOW 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
~~TRANSFER LINE~~
Helium #2

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. HARBALAK Inspector: JIM HUMBERT

Before Welding:

Type of weld: (butt) (other) _____
(1) Pipe #1 Size, Schedule and material: 2-1" SCH 10 45° ELBOW'S
(2) Pipe #2 Size, Schedule and material: 1-1" SCH 10 PIPE 3/4 LONG

(1) Joint Preparation and Cleanliness

Joint Preparation and Cleanliness acceptable? yes



(2) Welding Machine

(a) Remote foot pedal?
(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 PER OK purge flow rate: 10 CFH
(c) (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]