



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NSE-B2114-MW01

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NAVSTA Everett

SITE: Building 2114

LOGGER: Caitlin Dronfield, Carlin Coleman, Laura Tochko

DRILLING CONTRACTOR: Cascade Drilling

DRILLER NAME: Aaron Bradley

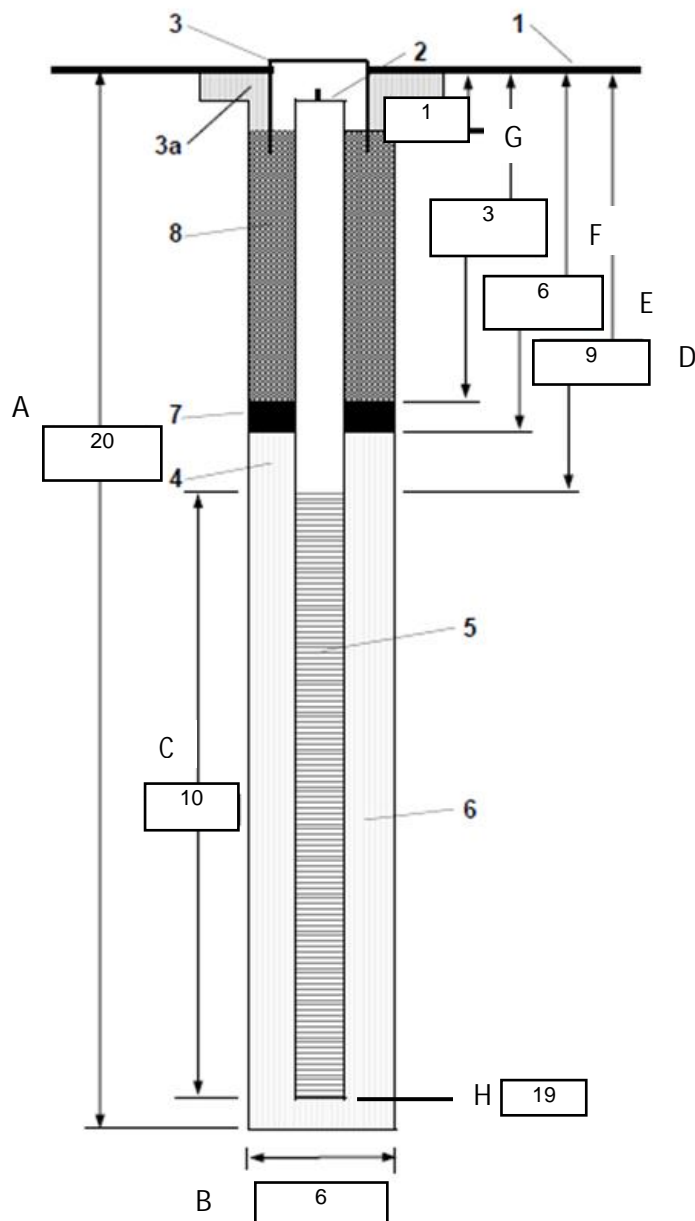
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 10 (ft bgs)

TOTAL WELL DEPTH: 19 (ft bgs)

START: July 27, 2022 END: July 27, 2022



1 – Ground elevation at well (ft asml): 15.75

2 – Top of casing elevation (ft asml): 15.46

3 – Wellhead Cover: 0 (ft), Steel, Flush Mounted

- a) Concrete Pad Length (ft): 2
- b) Concrete Pad Width (ft): 2
- c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 9 - 19

6 – Type screen filter: 2/12 silica sand

- a) Quantity (lbs): 200

7 – Type of seal (in): 3/8" Bentonite chips

- a) Quantity (lbs): 50

8 – Grout Mixture: Neat Cement

Amount of Cement Used:

- a) Amount of bentonite used:
- b) Amount of water used (gal):
- c) Method of placement:
- d) Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NSE-B2114-MW02

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NAVSTA Everett

SITE: Building 2114

LOGGER: Caitlin Dronfield, Carlin Coleman, Laura Tochko

DRILLING CONTRACTOR: Cascade Drilling

DRILLER NAME: Aaron Bradley

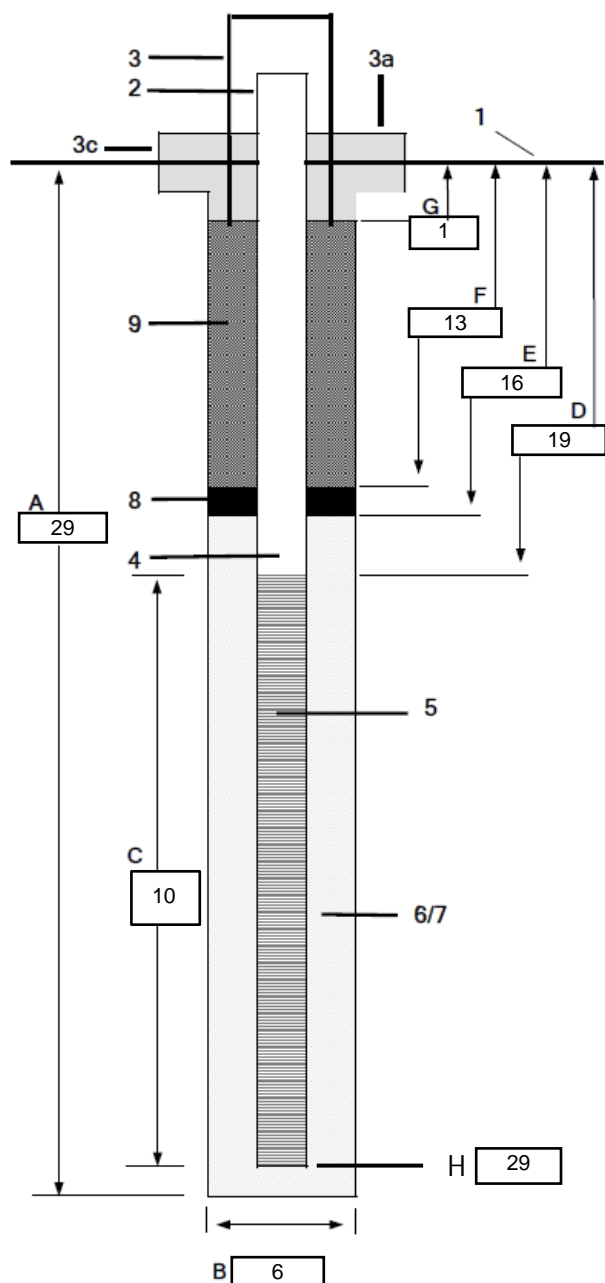
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 20 (ft bgs)

TOTAL WELL DEPTH: 29 (ft bgs)

START: July 28, 2022 END: July 28, 2022



1 – Ground elevation at well (ft asml): 16.34

2 – Top of casing elevation (ft asml): 15.99

3 – Wellhead Cover: 0 (ft), Steel, Flush Mounted

a) Concrete Pad Length (ft): 2

b) Concrete Pad Width (ft): 2

c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 19 - 29

6/7 – Type screen filter: 2/12 silica sand

a) Quantity (lbs): 375

8 – Type of seal (in): 3/8" bentonite chips
Quantity (lbs): 150

9 – Grout Mixture: Neat Cement

Amount of Cement Used:

a) Amount of bentonite used:

b) Amount of water used (gal):

c) Method of placement:

d) Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NAVSTA Everett

SITE: Building 2114

LOGGER: Caitlin Dronfield, Carlin Coleman, Laura Tochko

DRILLING CONTRACTOR: Cascade Drilling

DRILLER NAME: Aaron Bradley

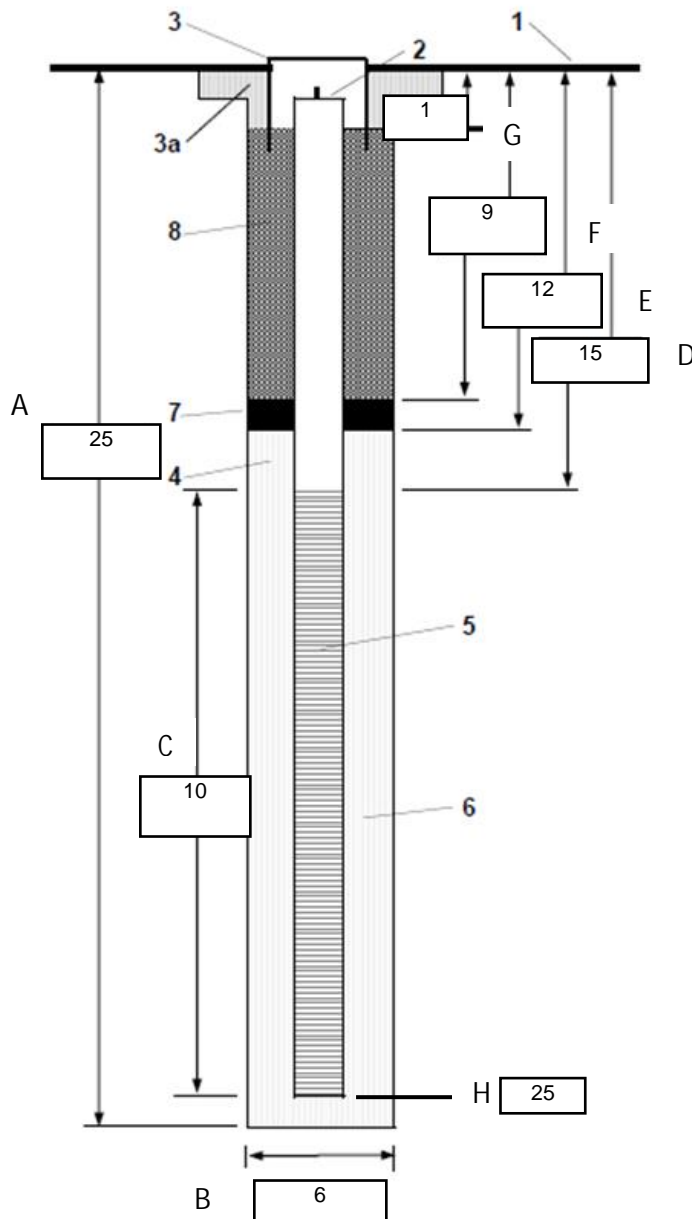
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 20 (ft bgs)

TOTAL WELL DEPTH: 25 (ft bgs)

START: July 28, 2022 **END:** July 28, 2022



- 1 – **Ground elevation at well (ft asml):** 15.79
 - 2 – **Top of casing elevation (ft asml):** 15.57
 - 3 – **Wellhead Cover:** 0 (ft), Steel, Flush Mounted
 - a) **Concrete Pad Length (ft):** 2
 - b) **Concrete Pad Width (ft):** 2
 - c) **Concrete Pad Depth (ft):** 0.5
 - 4 – **Well Casing (in):** 2" / Schedule 40 PVC
 - 5 – **Well Screen (in):** 0.02" / Factory slotted
Screen Interval (ft): 15 - 25
 - 6 – **Type screen filter:** 2/12 silica sand
 - a) **Quantity (lbs):** 300
 - 7 – **Type of seal (in):** 3/8" bentonite chips
 - a) **Quantity (lbs):** 112.5
 - 8 – **Grout Mixture:** Neat Cement
- Amount of Cement Used:**
- a) **Amount of bentonite used:**
 - b) **Amount of water used (gal):**
 - c) **Method of placement:**
 - d) **Vol. of well casing grout (gal):**

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)
B= Borehole Diameter (inches)
C= Length of Screen (feet)
D= Depth to Top of Screen (feet)
E= Top of Sand Pack (feet)
F= Top of Annular Seal (feet)
G= Top of Grout Seal (feet)
H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRSJC-B6-MW01

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Building 6

LOGGER: Jordan Peery Lemon, Greg Warren

DRILLING CONTRACTOR: Cascade Drilling

DRILLER NAME: Joe Staloch

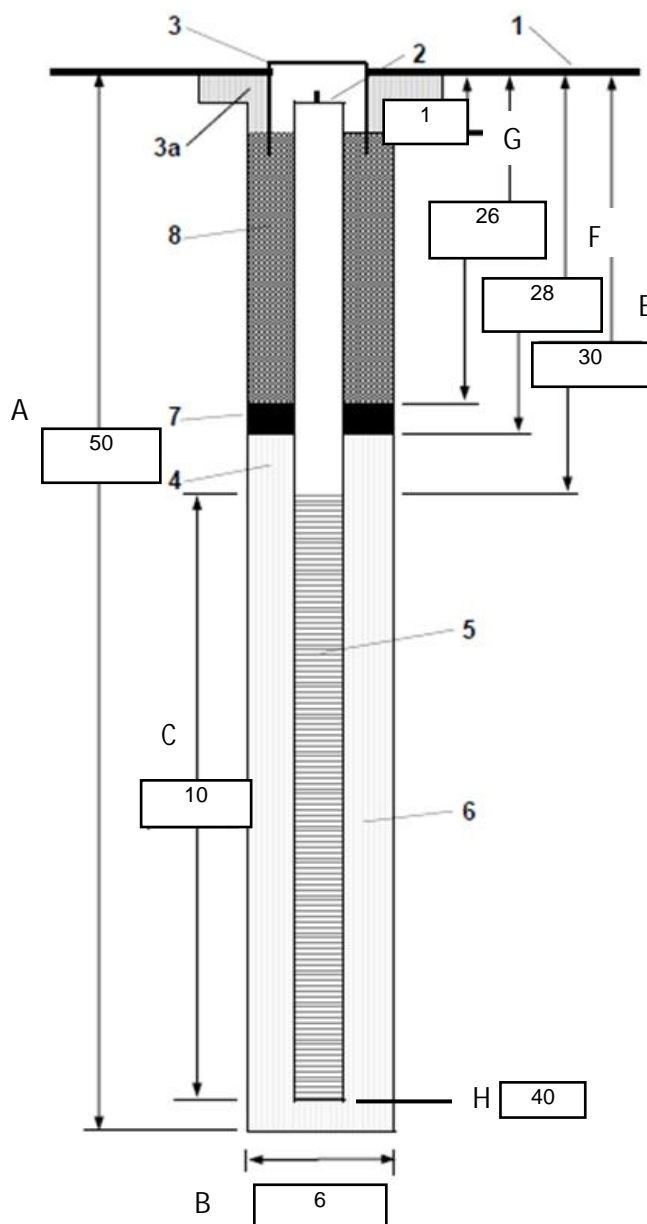
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 31.5 (ft bgs)

TOTAL WELL DEPTH: 40 (ft bgs)

START: June 2, 2022 END: June 2, 2022



1 – Ground elevation at well (ft asml): 535.22

2 – Top of casing elevation (ft asml): 534.81

3 – Wellhead Cover: 0 (ft), Steel, Flush Mounted

- a) Concrete Pad Length (ft): 2
- b) Concrete Pad Width (ft): 2
- c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 30 - 40

6 – Type screen filter: 2/12 silica sand

a) Quantity:

7 – Type of seal (in): 3/8" bentonite chips

a) Quantity: 100

8 – Grout Mixture: Neat Cement

Amount of Cement Used:

- a) Amount of bentonite used:
- b) Amount of water used (gal):
- c) Method of placement:
- d) Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRSJC-B6-MW02

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Building 6

LOGGER: Jordan Peery Lemon, Greg Warren,
Aaron Vogt, Ilka Dinkelman

DRILLING CONTRACTOR: Cascade Drilling

DRILLER NAME: Joe Staloch

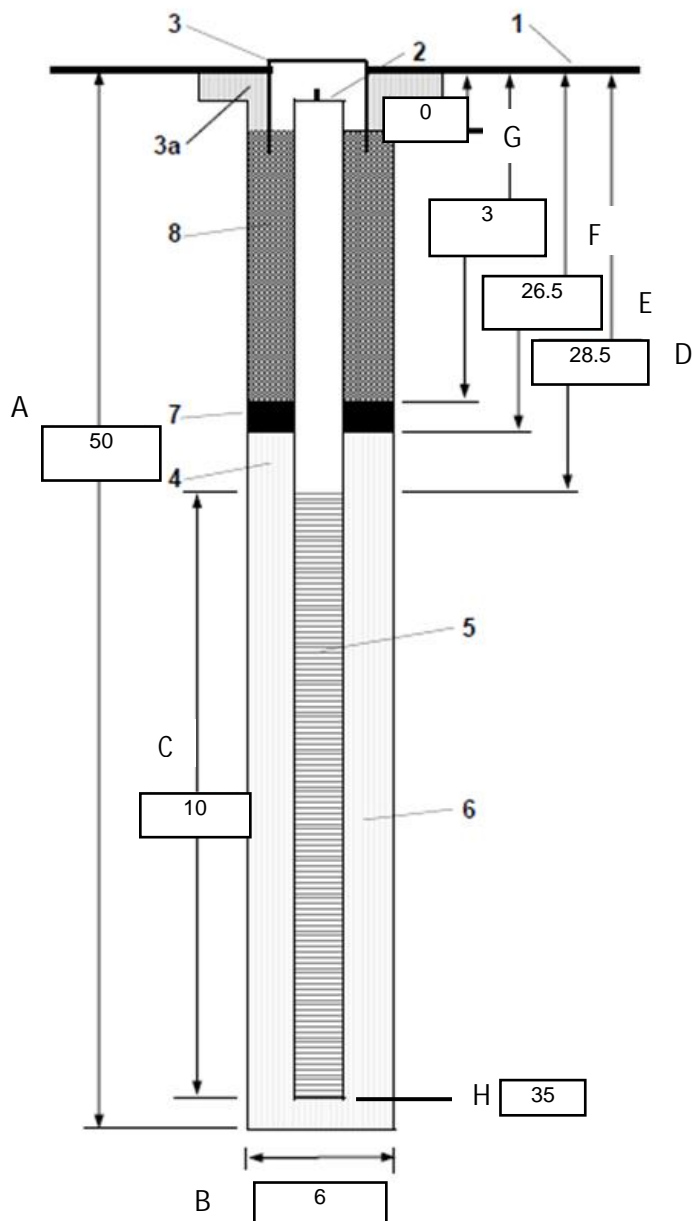
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart
Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 26.5 (ft bgs)

TOTAL WELL DEPTH: 35 (ft bgs)

START: June 3, 2022 END: June 6, 2022



1 – Ground elevation at well (ft asml): 532.90

2 – Top of casing elevation (ft asml): 532.58

3 – Wellhead Cover: 0 (ft), Steel, Flush Mounted

- a) Concrete Pad Length (ft): 2
- b) Concrete Pad Width (ft): 2
- c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft bgs): 25 - 35

6 – Type screen filter: 2/12 silica sand

- a) Quantity (lbs):

7 – Type of seal (in): 3/8" bentonite chips

- a) Quantity (lbs):

8 – Grout Mixture: Neat cement

Amount of Cement Used:

- a) Amount of bentonite used:
- b) Amount of water used (gal):
- c) Method of placement:
- d) Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRSJC-B6-MW03

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Building 6

LOGGER: Ilka Dinkelman, Aaron Vogt

DRILLING CONTRACTOR: Cascade Drilling

DRILLER NAME: Joe Staloch

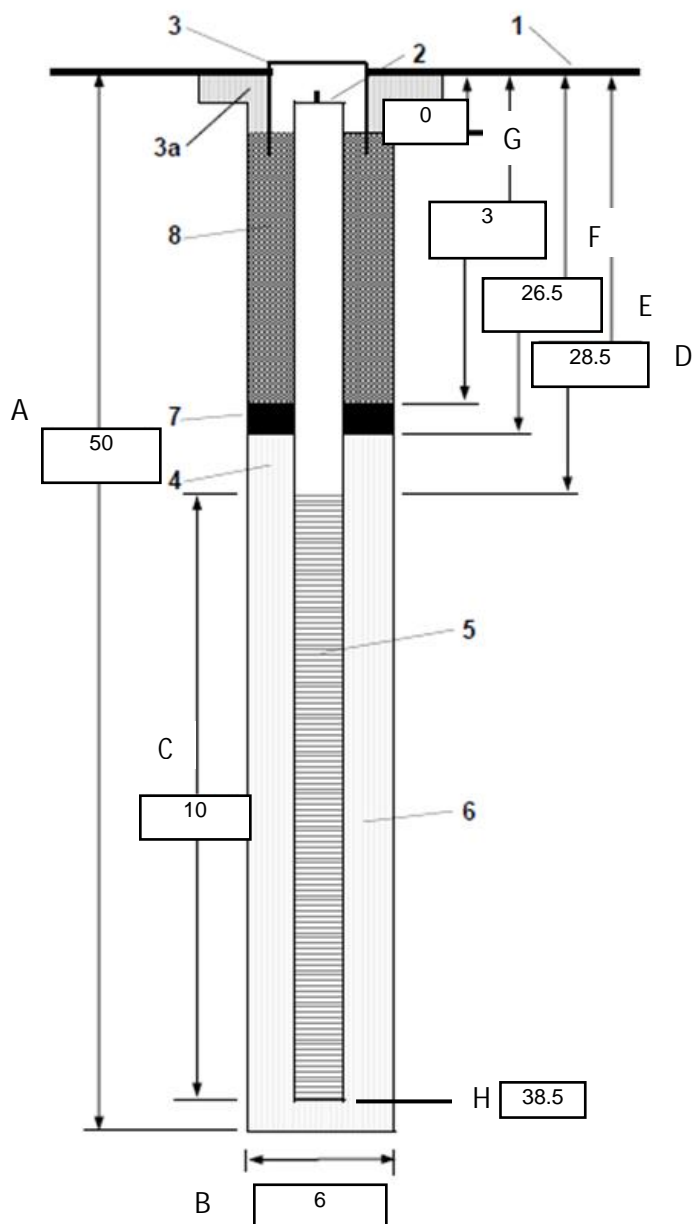
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 31.25 (ft bgs)

TOTAL WELL DEPTH: 38.5 (ft bgs)

START: June 8, 2022 END: June 8, 2022



1 – Ground elevation at well (ft asml): 534.13

2 – Top of casing elevation (ft asml): 534.18

3 – Wellhead Cover: 0 (ft), Steel, Flush Mounted

a) Concrete Pad Length (ft): 2

b) Concrete Pad Width (ft): 2

c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft bgs): 28.5 - 38.5

6 – Type screen filter: 2/12 silica sand

a) Quantity (lbs): 250

7 – Type of seal (in): 3/8" bentonite chips

a) Quantity (lbs): 400

8 – Grout Mixture: Neat cement

Amount of Cement Used:

a) Amount of bentonite used:

b) Amount of water used (gal):

c) Method of placement:

d) Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRSJC-B6-MW04

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Building 6

LOGGER: Ilka Dinkelman, Aaron Vogt

DRILLING CONTRACTOR: Cascade Drilling

DRILLER NAME: Joe Staloch

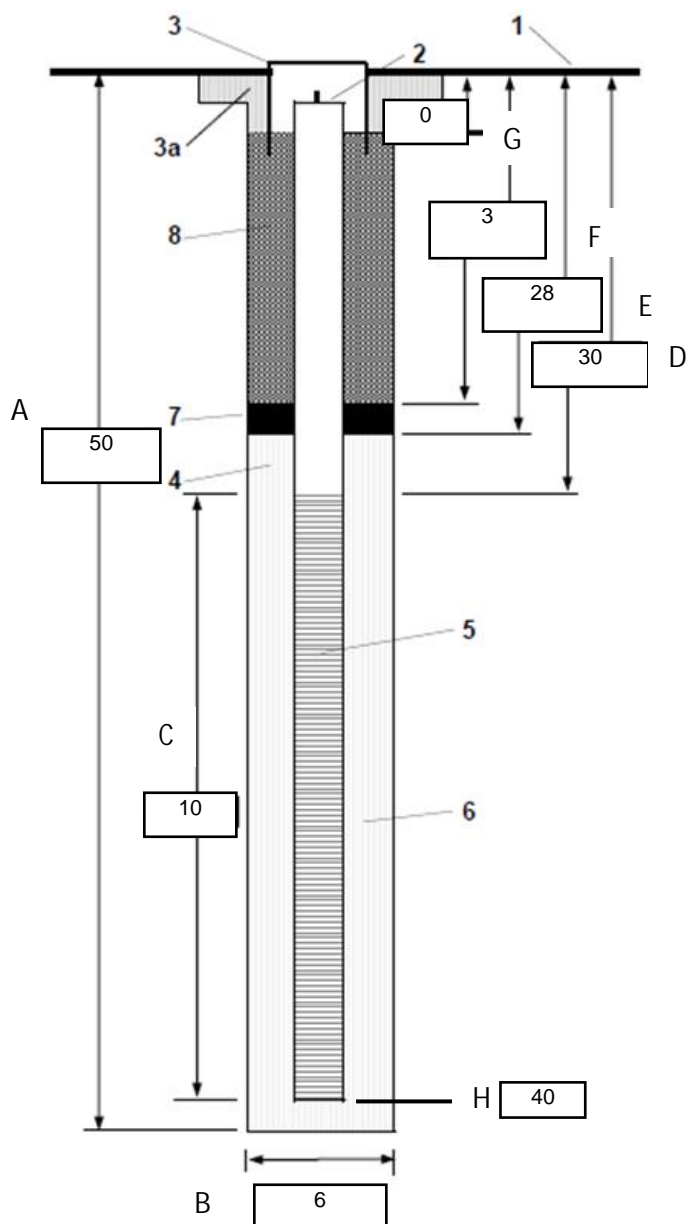
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 31.2 (ft bgs)

TOTAL WELL DEPTH: 40 (ft bgs)

START: June 13, 2022 END: June 13, 2022



1 – Ground elevation at well (ft asml): 534.13

2 – Top of casing elevation (ft asml): 534.81

3 – Wellhead Cover: 0 (ft), Steel, Flush Mounted

a) Concrete Pad Length (ft): 2

b) Concrete Pad Width (ft): 2

c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 30 - 40

6 – Type screen filter: 2/12 silica sand

a) Quantity (lbs): 300

7 – Type of seal (in): 3/8" Bentonite

a) Quantity (lbs): 450

8 – Grout Mixture: Neat Cement

Amount of Cement Used:

a) Amount of bentonite used:

b) Amount of water used (gal):

c) Method of placement:

d) Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRSJC-S1-MW05

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Site 1

LOGGER: Jordan Peery Lemon, Ilka Dinkelman

DRILLING CONTRACTOR: Cascade drilling

DRILLER NAME: Joe Staloch

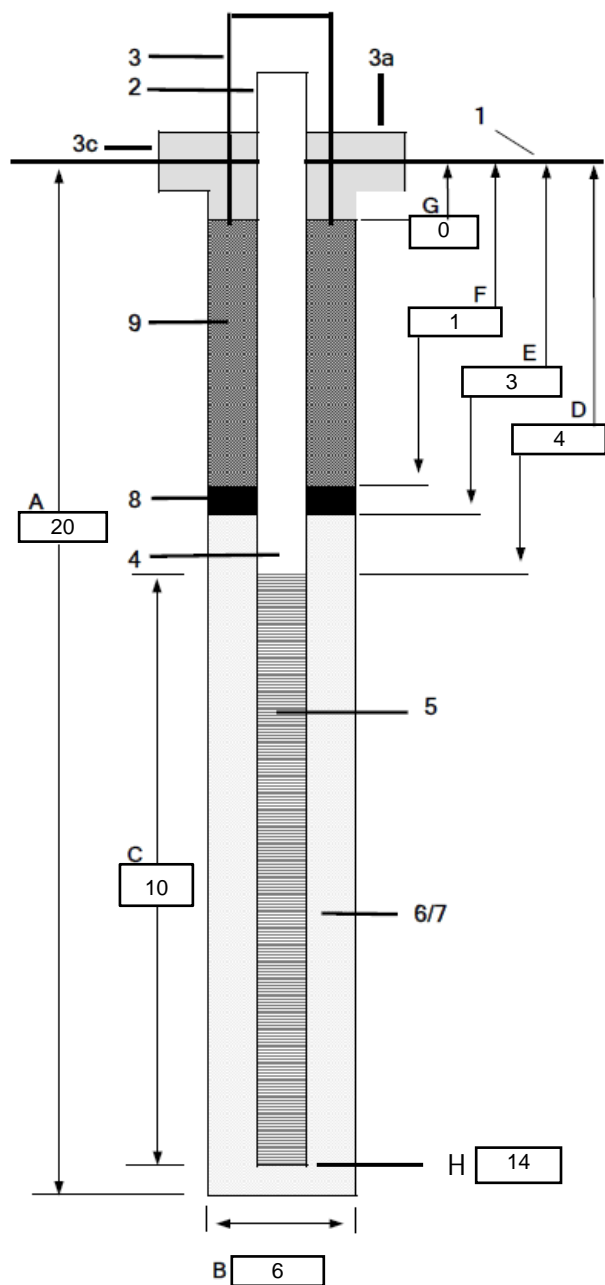
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS259

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 4.33 (ft bgs)

TOTAL WELL DEPTH: 14 (ft bgs)

START: June 19, 2022 END: June 19, 2022



1 – Ground elevation at well (ft asml): 476.15

2 – Top of casing elevation (ft asml): 476.26

3 – Wellhead Cover: 0 (ft), Steel, Flush Mounted

- a) Concrete Pad Length (ft): 2
- b) Concrete Pad Width (ft): 2
- c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 4 - 146/7 – Type screen filter: 2/12 silica sand
a) Quantity (lbs): 4008 – Type of seal (in): 3/8" bentonite chips
a) Quantity (lbs): 50

9 – Grout Mixture: Neat Cement

Amount of Cement Used:

- a) Amount of bentonite used:
- b) Amount of water used (gal):
- c) Method of placement:
- d) Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)
B= Borehole Diameter (inches)
C= Length of Screen (feet)
D= Depth to Top of Screen (feet)
E= Top of Sand Pack (feet)
F= Top of Annular Seal (feet)
G= Top of Grout Seal (feet)
H= Bottom of Screen (feet)

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Site 1

LOGGER: Jordan Peery Lemon, Ilka Dinkelman

DRILLING CONTRACTOR: Cascade drilling

DRILLER NAME: Joe Staloch

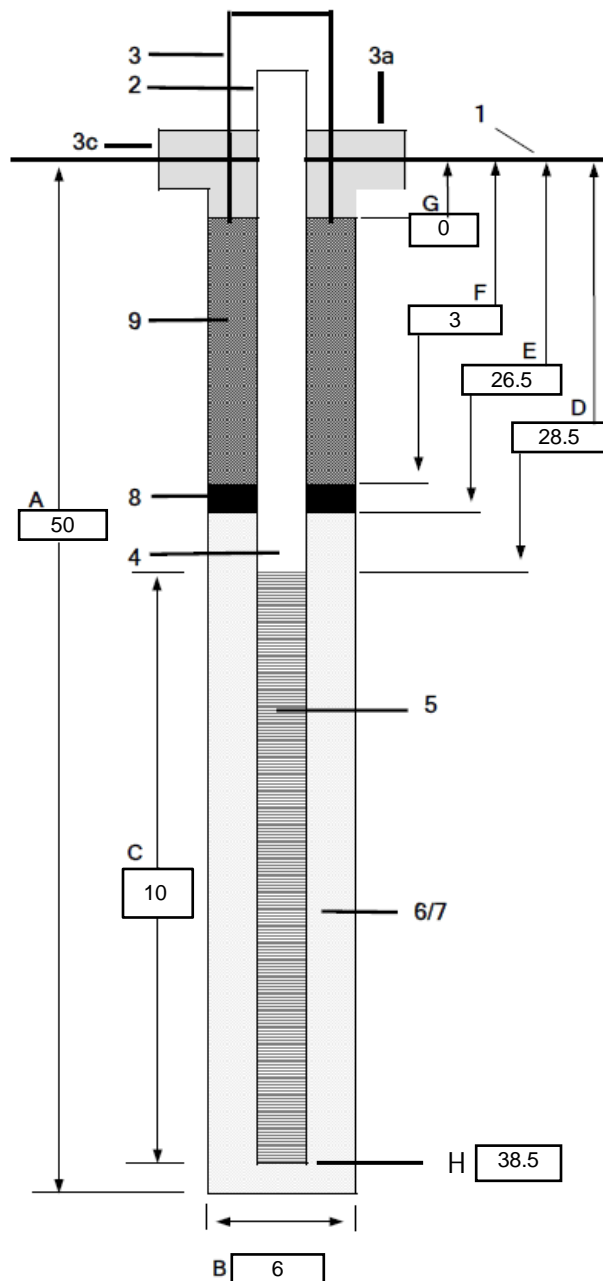
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 28.7 (ft bgs)

TOTAL WELL DEPTH: 38.5 (ft bgs)

START: June 21, 2022 **END:** June 21, 2022



1 – Ground elevation at well (ft asml): 504.53

2 – Top of casing elevation (ft asml): 507.31

3 – Wellhead Cover: 3 (ft), Steel, Riser - casing that is above the ground surface

- a) **Concrete Pad Length (ft): 2**
b) **Concrete Pad Width (ft): 2**
c) **Concrete Pad Depth (ft): 0.5**

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 28.5 - 38.5

6/7 – Type screen filter: 2/12 silica sand

- a) **Quantity (lbs):** 300

8 – Type of seal (in): 3/8"

- a) **Quantity (lbs):** 300

9 – Grout Mixture: Neat Cement

Amount of Cement Used:

- Amount of bentonite used:
- Amount of water used (gal):
- Method of placement:
- Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRSJC-S1-MW07

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Site 1

LOGGER: Jordan Peery Lemon, Ilka Dinkelman

DRILLING CONTRACTOR: Cascade,

DRILLER NAME: Joe Staloch

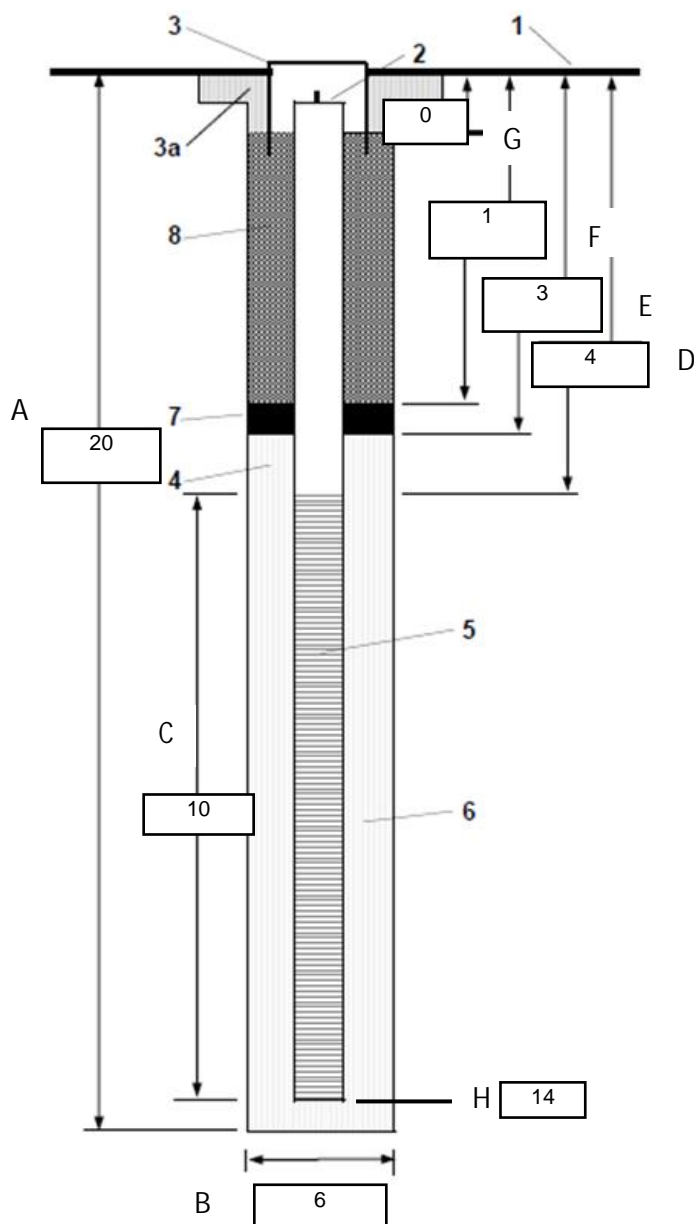
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 4.13 (ft bgs)

TOTAL WELL DEPTH: 14 (ft bgs)

START: June 20, 2022 END: June 20, 2022



1 – Ground elevation at well: 477.16

2 – Top of casing elevation: 476.97

3 – Wellhead Cover: 0 (ft), Steel, Flush Mounted

a) Concrete Pad Length (ft): 2

b) Concrete Pad Width (ft): 2

c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 4 - 14

6 – Type screen filter: 2/12

a) Quantity (lbs): 300

7 – Type of seal (in): 3/8" bentonite chips

a) Quantity (lbs): 100

8 – Grout Mixture: Neat Cement

Amount of Cement Used:

a) Amount of bentonite used:

b) Amount of water used (gal):

c) Method of placement:

d) Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRSJC-S4-MW14

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Site 4

LOGGER: Jordan Peery Lemon, Ilka Dinkelman

DRILLING CONTRACTOR: Cascade,

DRILLER NAME: Joe Staloch

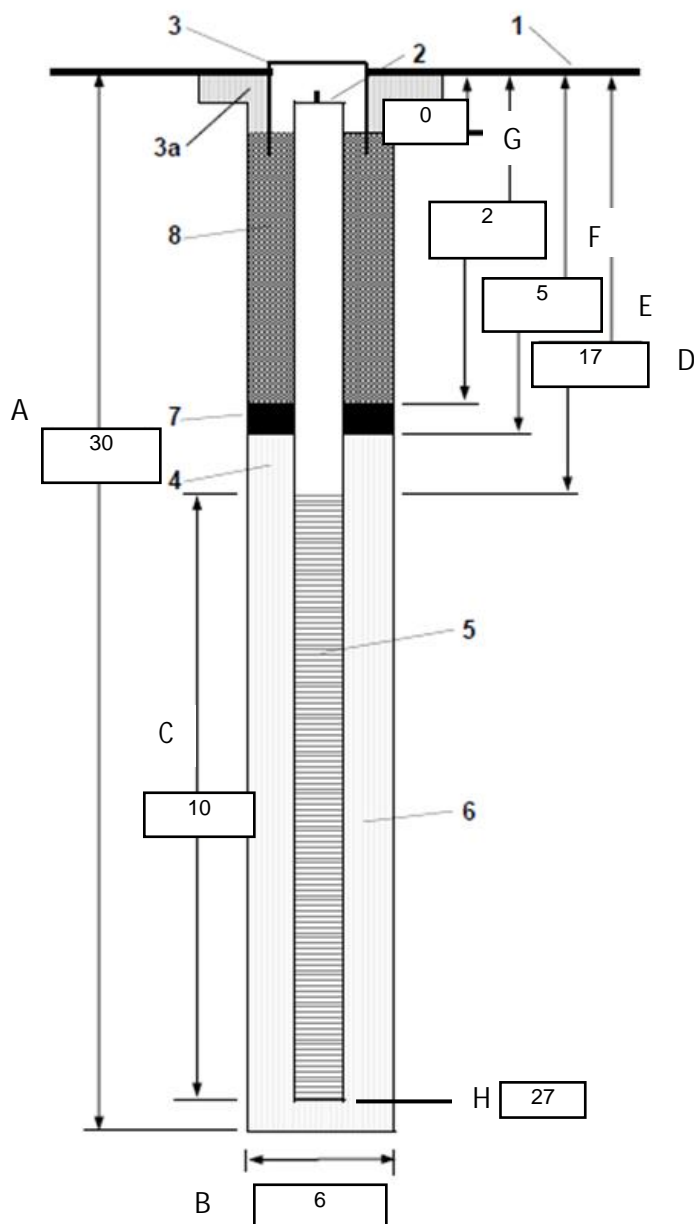
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart
Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 18.1 (ft bgs)

TOTAL WELL DEPTH: 27 (ft bgs)

START: July 8, 2022 END: July 8, 2022



1 – Ground elevation at well (ft asml): 609.90

2 – Top of casing elevation (ft asml): 611.11

3 – Wellhead Cover: 3 (ft), Steel, Flush Mounted

a) Concrete Pad Length (ft): 2

b) Concrete Pad Width (ft): 2

c) Concrete Pad Depth (ft): .5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 17 - 27

6 – Type screen filter: 2/12 silica sand

a) Quantity (lbs): 250

7 – Type of seal (in): 3/8" bentonite chips

a) Quantity (lbs): 350

8 – Grout Mixture: Neat Cement

Amount of Cement Used:

a) Amount of bentonite used:

b) Amount of water used (gal):

c) Method of placement:

d) Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI
INSTALLATION: NRS Jim Creek
SITE: Site 4
LOGGER: Jordan Peery Lemon, Ilka Dinkelman
DRILLING CONTRACTOR: Cascade drilling
DRILLER NAME: Joe Staloch

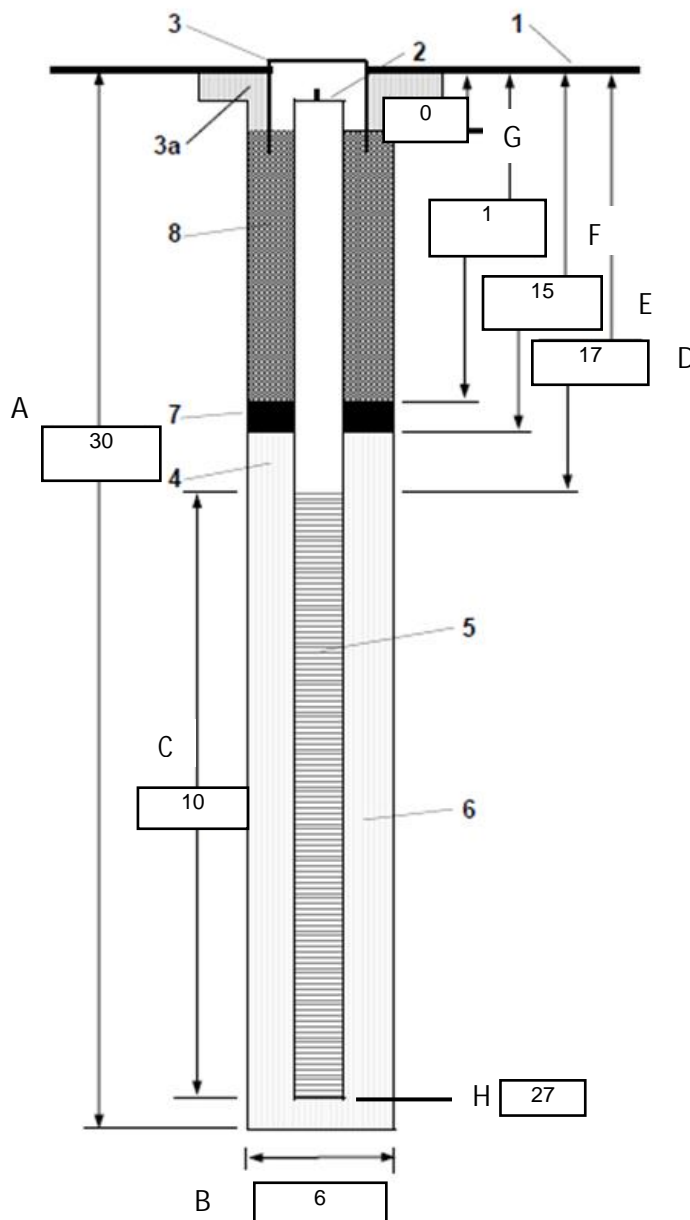
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 18.4 (ft bgs)

TOTAL WELL DEPTH: 27 (ft bgs)

START: July 8, 2022 **END:** July 8, 2022



- 1 – **Ground elevation at well:** 611.42
- 2 – **Top of casing elevation:** 611.11
- 3 – **Wellhead Cover:** 0 (ft), Steel, Flush Mounted
 - a) **Concrete Pad Length (ft):** 2
 - b) **Concrete Pad Width (ft):** 2
 - c) **Concrete Pad Depth (ft):** 0.5
- 4 – **Well Casing (in):** 2" / Schedule 40 PVC
- 5 – **Well Screen (in):** 0.02" / Factory slotted
Screen Interval (ft): 17 - 27
- 6 – **Type screen filter:** 2/12 silica sand
 - a) **Quantity (lbs):** 300
- 7 – **Type of seal (in):** 3/8" bentonite chips
 - a) **Quantity (lbs):** 350
- 8 – **Grout Mixture:** Neat Cement
Amount of Cement Used:
 - a) **Amount of bentonite used:**
 - b) **Amount of water used (gal):**
 - c) **Method of placement:**
 - d) **Vol. of well casing grout (gal):**

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

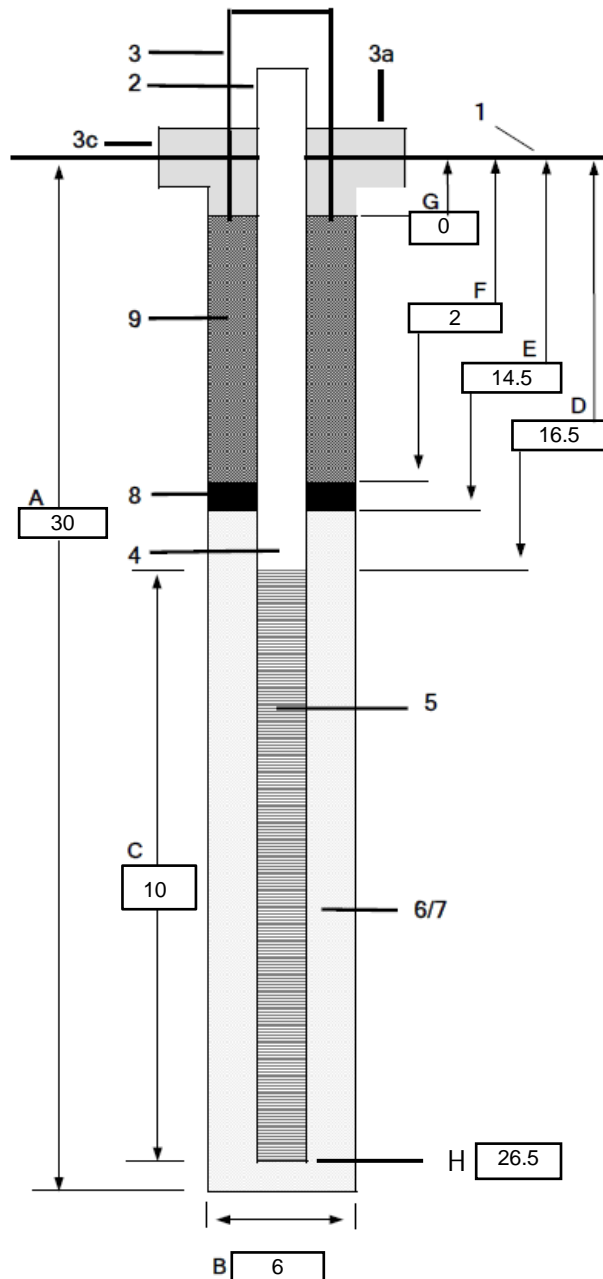
Comments:

A= Boring Depth (feet)
B= Borehole Diameter (inches)
C= Length of Screen (feet)
D= Depth to Top of Screen (feet)
E= Top of Sand Pack (feet)
F= Top of Annular Seal (feet)
G= Top of Grout Seal (feet)
H= Bottom of Screen (feet)

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI
INSTALLATION: NRS Jim Creek
SITE: Site 5
LOGGER: Jordan Peery Lemon, Ilka Dinkelman
DRILLING CONTRACTOR: Cascade drilling
DRILLER NAME: Joe Staloch

DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart
Longyear LS250
OUTER DIA : 6 (in) **INNER DIA:** 4 (in)
WATER LEVEL: 17.5 (ft bgs)
TOTAL WELL DEPTH: 26.5 (ft bgs)
START: July 8, 2022 **END:** July 8, 2022



- 1 – **Ground elevation at well:** 612.52
- 2 – **Top of casing elevation:** 615.32
- 3 – **Wellhead Cover:** 3 (ft), Steel, Riser - casing that is above the ground surface
 - a) **Concrete Pad Length (ft):** 2
 - b) **Concrete Pad Width (ft):** 2
 - c) **Concrete Pad Depth (ft):** 0.5
- 4 – **Well Casing (in):** 2" / Schedule 40 PVC
- 5 – **Well Screen (in):** 0.02" / Factory slotted
Screen Interval (ft): 16.5 - 26.5
- 6/7 – **Type screen filter:** 2/12 silica sand
 - a) **Quantity (lbs):** 350
- 8 – **Type of seal (in):** 3/8" bentonite
 - a) **Quantity (lbs):** 250
- 9 – **Grout Mixture:** Neat Cement
Amount of Cement Used:
 - a) **Amount of bentonite used:**
 - b) **Amount of water used (gal):**
 - c) **Method of placement:**
 - d) **Vol. of well casing grout (gal):**

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)
B= Borehole Diameter (inches)
C= Length of Screen (feet)
D= Depth to Top of Screen (feet)
E= Top of Sand Pack (feet)
F= Top of Annular Seal (feet)
G= Top of Grout Seal (feet)
H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRSJC-S5-MW18

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Site 5

LOGGER: Ilka Dinkelman, Jordan Couture

DRILLING CONTRACTOR: Cascade,

DRILLER NAME: Joe Staloch

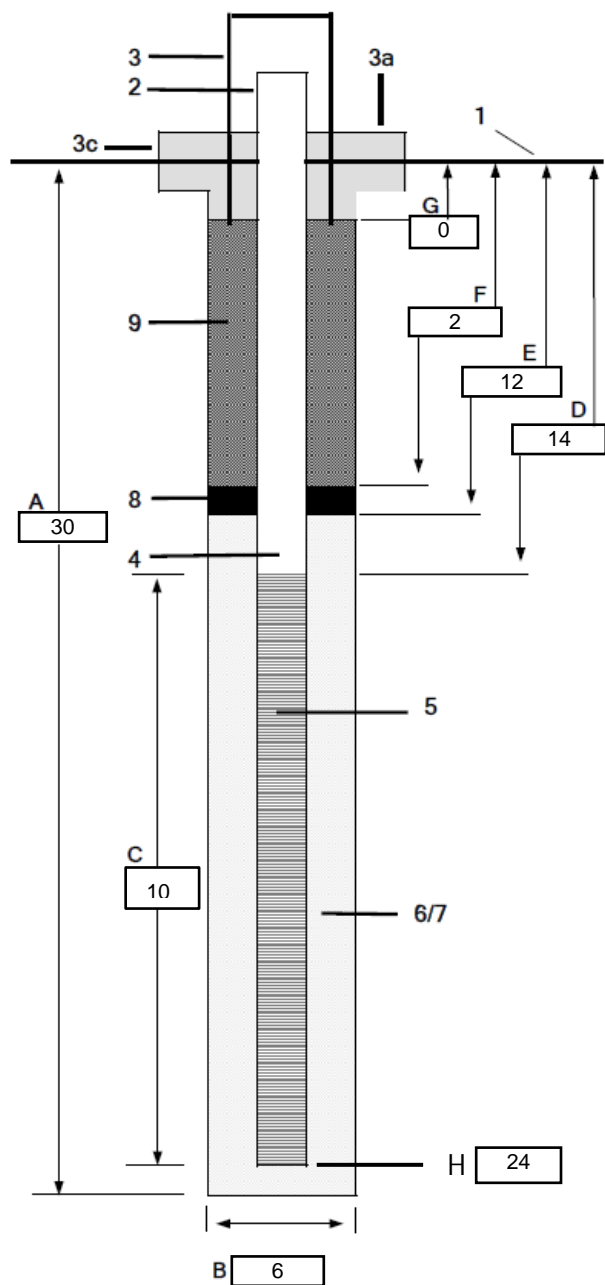
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 15.4 (ft bgs)

TOTAL WELL DEPTH: 24 (ft bgs)

START: July 8, 2022 END: July 8, 2022



1 – Ground elevation at well: 618.27

2 – Top of casing elevation: 621.10

3 – Wellhead Cover: 3 (ft), Steel, Riser - casing that is above the ground surface

- a) Concrete Pad Length (ft): 2
- b) Concrete Pad Width (ft): 2
- c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 14 - 24

6/7 – Type screen filter: 2/12 silica sand

- a) Quantity (lbs): 300

8 – Type of seal (in): 3/8" bentonite chips

- a) Quantity (lbs): 300

9 – Grout Mixture: Neat Cement

Amount of Cement Used:

- a) Amount of bentonite used:
- b) Amount of water used (gal):
- c) Method of placement:
- d) Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)
B= Borehole Diameter (inches)
C= Length of Screen (feet)
D= Depth to Top of Screen (feet)
E= Top of Sand Pack (feet)
F= Top of Annular Seal (feet)
G= Top of Grout Seal (feet)
H= Bottom of Screen (feet)

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Site 5

LOGGER: Jordan Peery Lemon, Ilka Dinkelman

DRILLING CONTRACTOR: Cascade drilling

DRILLER NAME: Joe Staloch

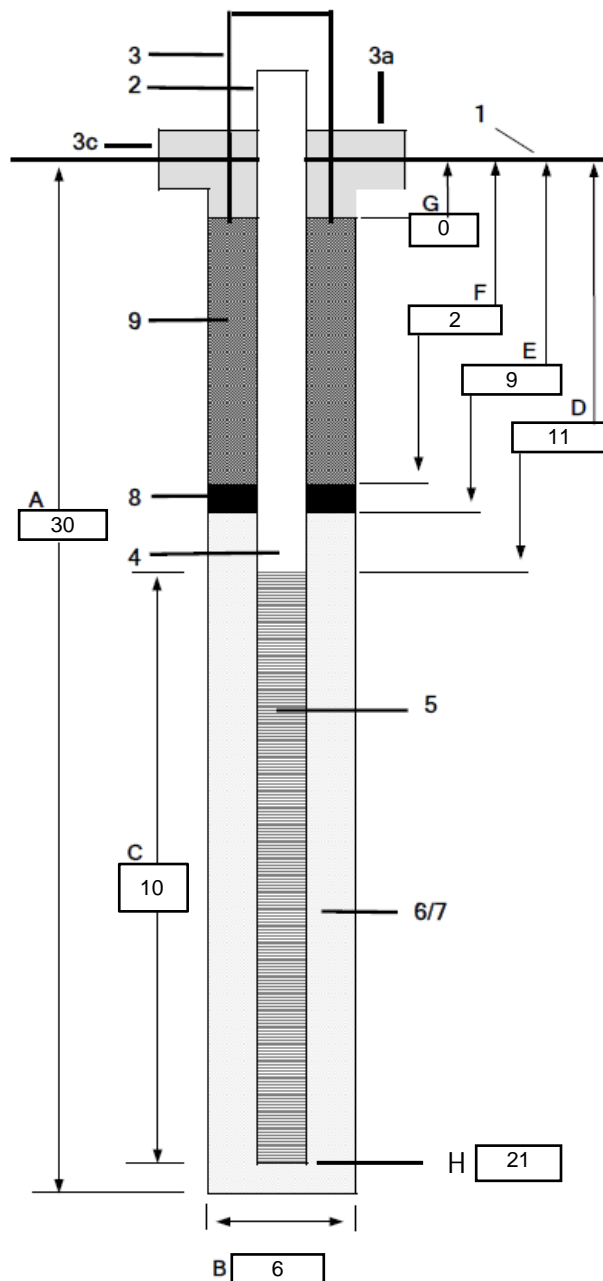
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 11.55 (ft bgs)

TOTAL WELL DEPTH: 21 (ft bgs)

START: July 8, 2022 **END:** July 8, 2022



1 – Ground elevation at well: 612.59

2 – Top of casing elevation: 615.45

3 – Wellhead Cover: 3 (ft), Steel, Riser - casing that is above the ground surface

- a) **Concrete Pad Length (ft): 2**
- b) **Concrete Pad Width (ft): 2**
- c) **Concrete Pad Depth (ft): 0.5**

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 11 - 21

6/7 – **Type screen filter:** 2/12 silica sand
a) **Quantity (lbs):** 400

8 – **Type of seal (in):** 3/8" bentonite chips
a) **Quantity (lbs):** 200

9 – Grout Mixture: Neat Cement
Amount of Cement Used:

- Amount of bentonite used:**
- Amount of water used (gal):**
- Method of placement:**
- Vol. of well casing grout (gal):**

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRSJC-S6-MW08

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Site 6

LOGGER: Jordan Peery Lemon, Ilka Dinkelman

DRILLING CONTRACTOR: Cascade drilling

DRILLER NAME: Joe Staloch

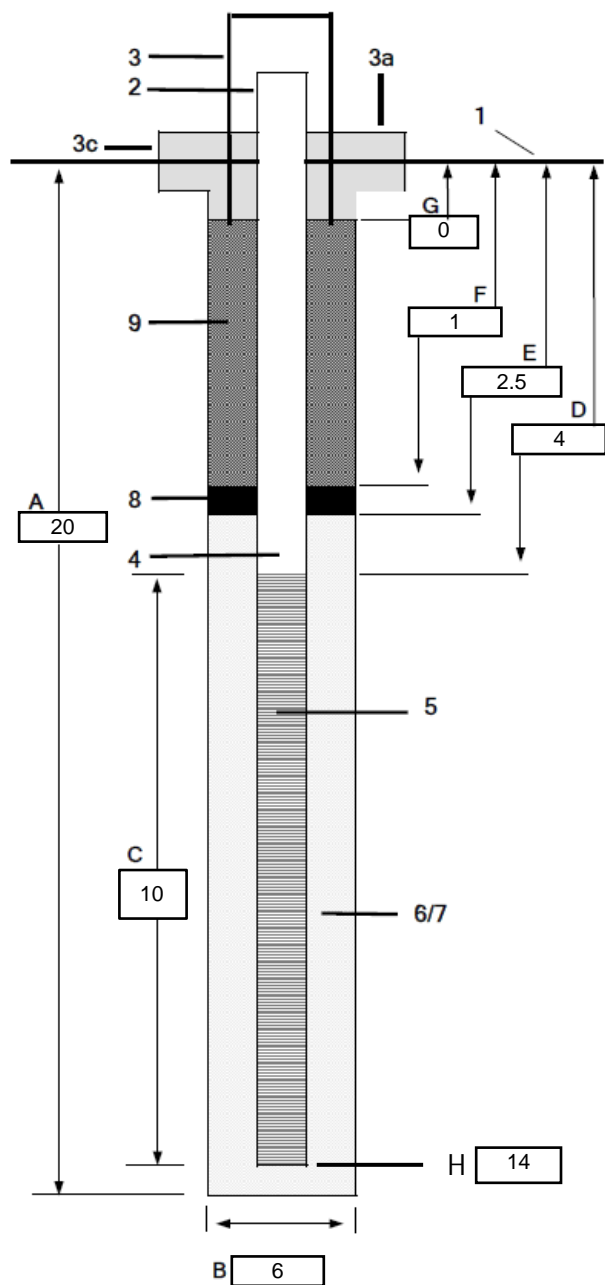
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 5.2 (ft bgs)

TOTAL WELL DEPTH: 14 (ft bgs)

START: June 15, 2022 END: June 15, 2022



1 – Ground elevation at well: 536.16

2 – Top of casing elevation: 538.82

3 – Wellhead Cover: 3 (ft), Steel, Riser - casing that is above the ground surface

- a) Concrete Pad Length (ft): 2
- b) Concrete Pad Width (ft): 2
- c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 4 - 14

6/7 – Type screen filter: 2/12 silica sand

- a) Quantity (lbs): 300

8 – Type of seal (in): 3/8" bentonite chips

- a) Quantity (lbs): 350

9 – Grout Mixture: Neat Cement

Amount of Cement Used:

- a) Amount of bentonite used:
- b) Amount of water used (gal):
- c) Method of placement:
- d) Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Site 6

LOGGER: Jordan Peery Lemon, Ilka Dinkelman

DRILLING CONTRACTOR: Cascade Drilling

DRILLER NAME: Joe Staloch

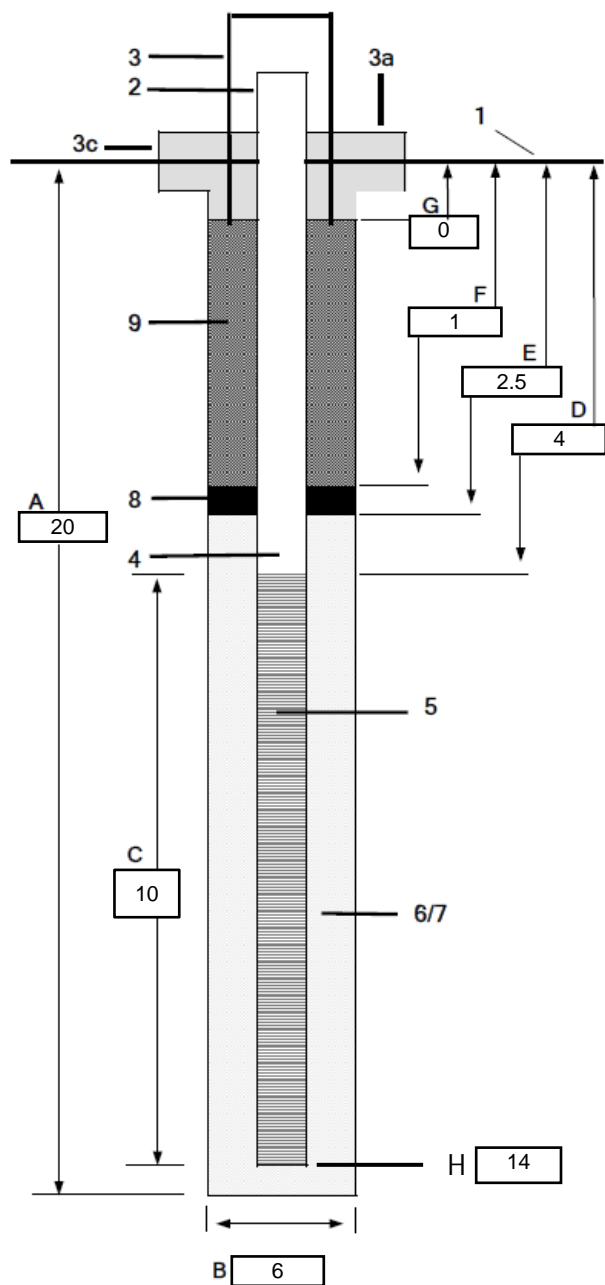
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 5.2 (ft bgs)

TOTAL WELL DEPTH: 14 (ft bgs)

START: June 19, 2022 **END:** June 19, 2022



1 – Ground elevation at well (ft asml): 538.58

2 – Top of casing elevation (ft asml): 541.34

3 – Wellhead Cover: 3 (ft), Steel, Riser - casing that is above the ground surface

- a) **Concrete Pad Length (ft):** 2
b) **Concrete Pad Width (ft):** 2
c) **Concrete Pad Depth (ft):** 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 4 - 14

6/7 – Type screen filter: 2/12 silica sand

- a) **Quantity:** 350

8 – **Type of seal (in):** 3/8" bentonite chips

- a) **Quantity:** 100

9 – Grout Mixture: Neat Cement

Amount of Cement Used:

- Amount of bentonite used:**
- Amount of water used (gal):**
- Method of placement:**
- Vol. of well casing grout (gal):**

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Site 6

LOGGER: Jordan Peery Lemon, Ilka Dinkelman,
Aaron Vogt

DRILLING CONTRACTOR: Cascade Drilling

DRILLER NAME: Joe Staloch

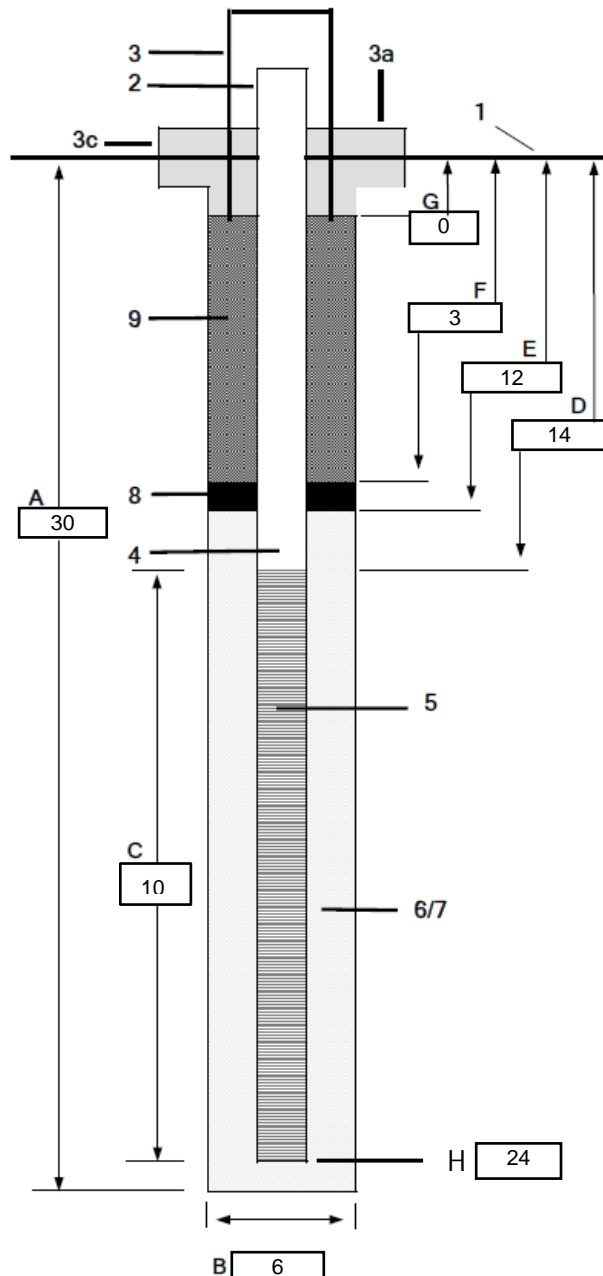
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 14.95 (ft bgs)

TOTAL WELL DEPTH: 24 (ft bgs)

START: June 13, 2022 **END:** June 13, 2022



1 – Ground elevation at well (ft asml): 543.73

2 – Top of casing elevation (ft asml): 546.28

3 – Wellhead Cover: 3 (ft), Steel, Riser - casing that is above the ground surface

- a) **Concrete Pad Length (ft):** 2
b) **Concrete Pad Width (ft):** 2
c) **Concrete Pad Depth (ft):** 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft bgs): 14 - 24

6/7 – **Type screen filter:** 2/12 silica sand
a) **Quantity (lbs):** 300

8 – **Type of seal (in):** 3/8" bentonite chips
a) **Quantity (lbs):** 200

9 – Grout Mixture: Neat Cement
Amount of Cement Used:

- Amount of bentonite used:**
- Amount of water used (gal):**
- Method of placement:**
- Vol. of well casing grout (gal):**

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)
B= Borehole Diameter (inches)
C= Length of Screen (feet)
D= Depth to Top of Screen (feet)
E= Top of Sand Pack (feet)
F= Top of Annular Seal (feet)
G= Top of Grout Seal (feet)
H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRSJC-S7-MW11

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Site 7

LOGGER: David Lubell

DRILLING CONTRACTOR: Cascade Drilling

DRILLER NAME: Carlos Anguiano

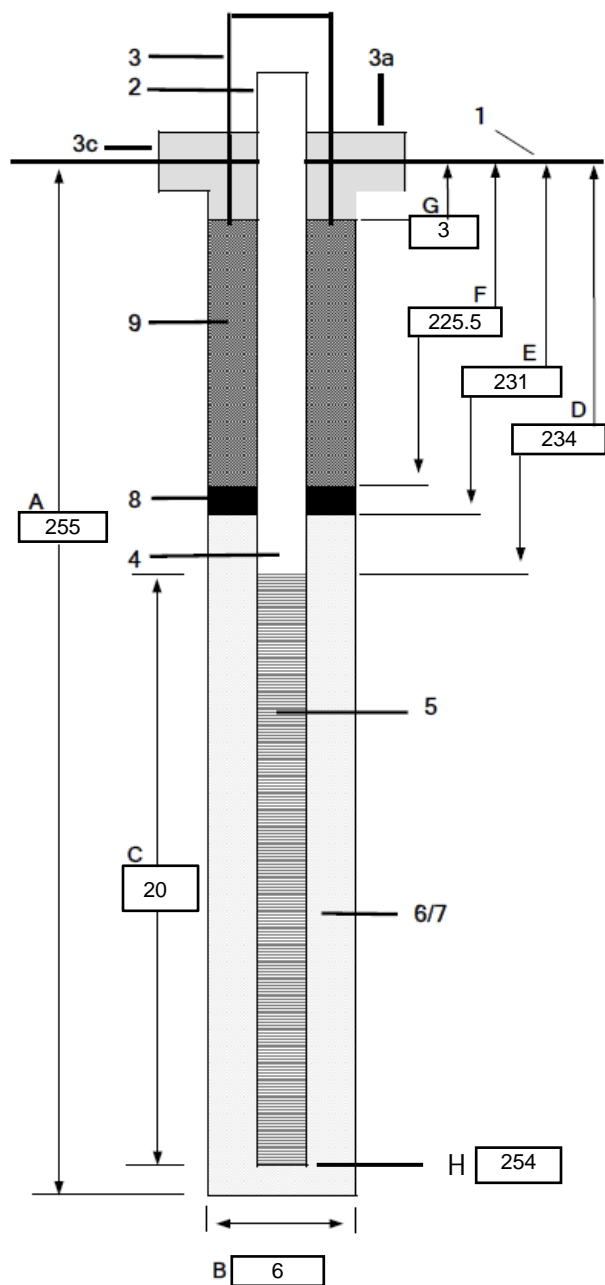
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic),
Terrasonic T150cc

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 235 (ft bgs)

TOTAL WELL DEPTH: 254 (ft bgs)

START: November 7, 2022 END: November 7, 2022



1 – Ground elevation at well (ft asml): 686.10

2 – Top of casing elevation (ft asml): 688.52

3 – Wellhead Cover: 3 (ft), Steel, Riser - casing that is
above the ground surface

a) Concrete Pad Length (ft): 2

b) Concrete Pad Width (ft): 2

c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 234 - 254

6/7 – Type screen filter: 2/12 silica sand

a) Quantity (lbs): 450

8 – Type of seal (in): 3/8 bentonite chips

a) Quantity (lbs): 62.5

9 – Grout Mixture: 20% bentonite slurry

Amount of Cement Used:

a) Amount of bentonite used: 750

b) Amount of water used (gal): 360

c) Method of placement: Bottom feed tremie pipe

d) Vol. of well casing grout (gal): 390

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments: Centralizers placed at 25, 55, 85, 115, 145,
175, 205, 233, 253 ft bgs

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRSJC-S7-MW12

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Site 7

LOGGER: Carlin Coleman, David Lubell

DRILLING CONTRACTOR: Cascade Drilling

DRILLER NAME: Carlos Anguiano

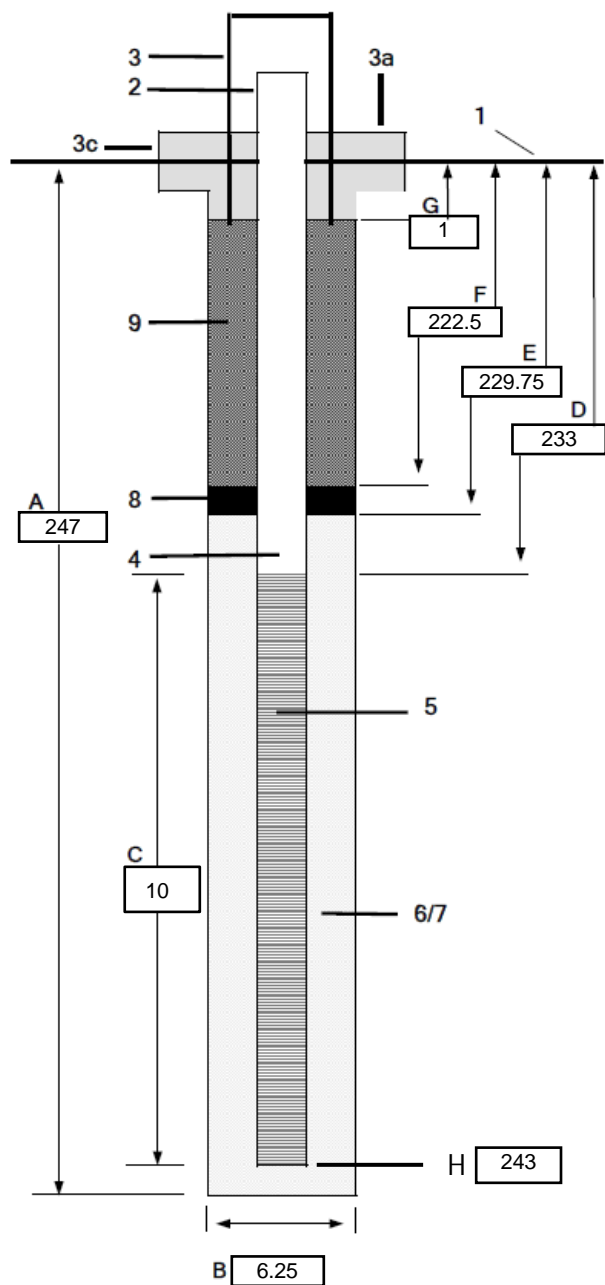
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic),
Terrasonic 150cc

OUTER DIA : 6.25 (in) INNER DIA: 4 (in)

WATER LEVEL: 234 (ft bgs)

TOTAL WELL DEPTH: 243 (ft bgs)

START: October 12, 2022 END: October 12, 2022



1 – Ground elevation at well (ft asml): 686.55

2 – Top of casing elevation (ft asml): 689.20

3 – Wellhead Cover: 3 (ft), Steel, Riser - casing that is
above the ground surface

a) Concrete Pad Length (ft): 2

b) Concrete Pad Width (ft): 2

c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 233 - 243

6/7 – Type screen filter: 2/12 silica sand

a) Quantity (lbs): 250

8 – Type of seal (in): 3/8" bentonite chips

a) Quantity (lbs): 75

9 – Grout Mixture: 20% bentonite slurry

Amount of Cement Used:

a) Amount of bentonite used:

b) Amount of water used (gal):

c) Method of placement: Bottom feed tremie pipe

d) Vol. of well casing grout (gal): 676

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

Comments:

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRSJC-S7-MW13

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI

INSTALLATION: NRS Jim Creek

SITE: Site 7

LOGGER: Gerrit Gardner, Tommy Ta, Isa Valdez

DRILLING CONTRACTOR: Cascade Drilling

DRILLER NAME: Carlos Anguiano

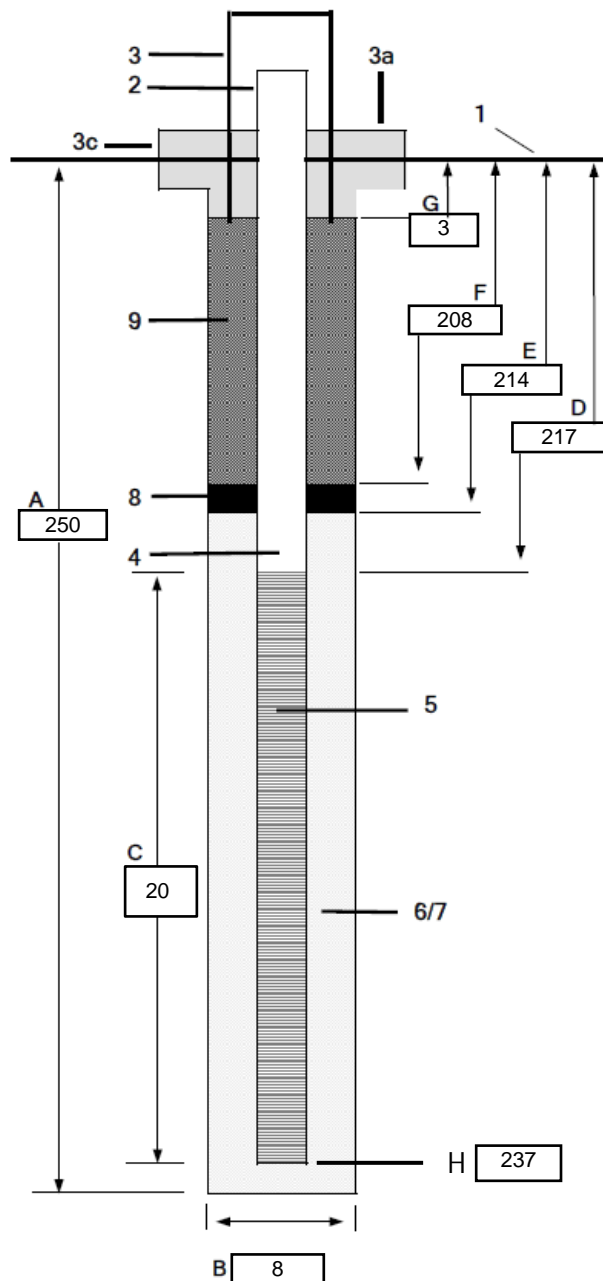
DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic), Boart Longyear LS250

OUTER DIA : 6 (in) INNER DIA: 4 (in)

WATER LEVEL: 235 (ft bgs)

TOTAL WELL DEPTH: 237 (ft bgs)

START: October 27, 2022 END: October 27, 2022



1 – Ground elevation at well: 612.52

2 – Top of casing elevation: 615.32

3 – Wellhead Cover: 3 (ft), Steel, Riser - casing that is above the ground surface

- a) Concrete Pad Length (ft): 2
- b) Concrete Pad Width (ft): 2
- c) Concrete Pad Depth (ft): 6

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted Screen Interval (ft): 217 - 237

6/7 – Type screen filter: 2/12 silica sand

- a) Quantity (lbs): 450

8 – Type of seal (in): 3/8" bentonite chips

- a) Quantity (lbs): 200

9 – Grout Mixture: Quik Grout

Amount of Cement Used: 0

- a) Amount of bentonite used: 1000
- b) Amount of water used (gal): 512
- c) Method of placement: Bottom feed tremie pipe
- d) Vol. of well casing grout (gal): 720

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

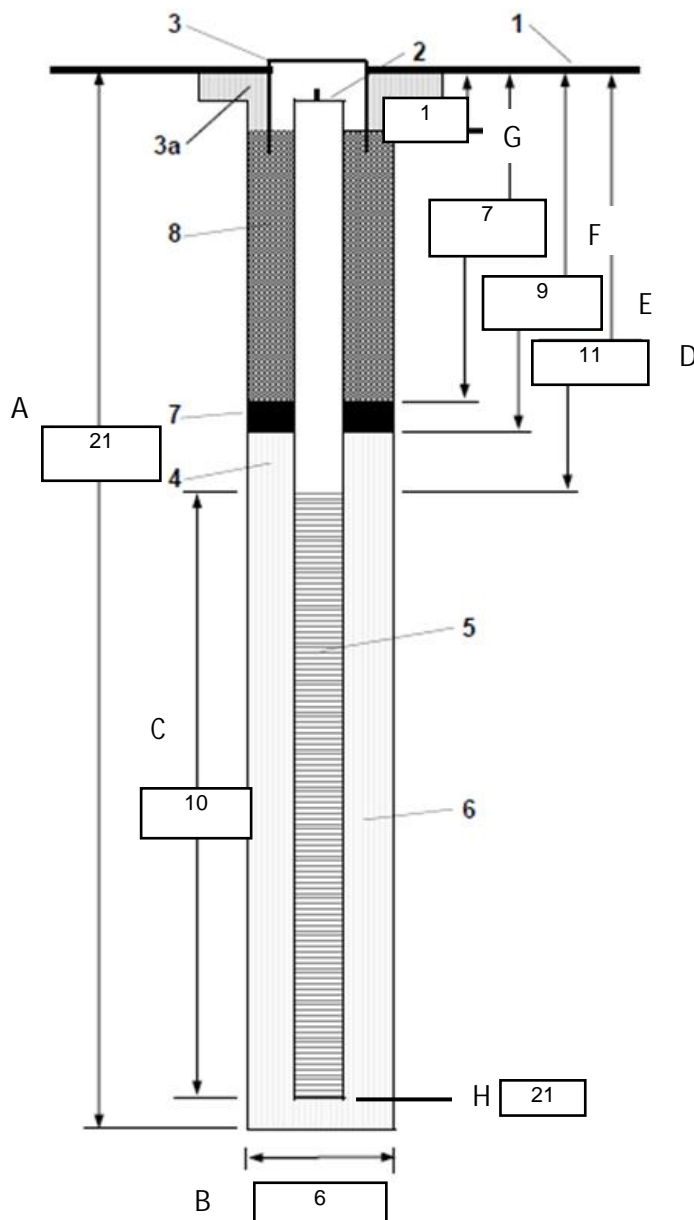
Comments:

A= Boring Depth (feet)
B= Borehole Diameter (inches)
C= Length of Screen (feet)
D= Depth to Top of Screen (feet)
E= Top of Sand Pack (feet)
F= Top of Annular Seal (feet)
G= Top of Grout Seal (feet)
H= Bottom of Screen (feet)

WELL COMPLETION DIAGRAM

PROJECT: NAVSTA Everett PFAS SI
INSTALLATION: NRC Pacific Beach
SITE: Building 106
LOGGER: Caitlin Dronfield, Charles Royko
DRILLING CONTRACTOR: Cascade,
DRILLER NAME: Joe Staloch

DRILLING METHOD AND EQUIPMENT USED: Sonication (Sonic) Boart
Longyear LS250 Minisonic rig
OUTER DIA : 4 (in) **INNER DIA:** 6 (in)
WATER LEVEL: 14 (ft bgs)
TOTAL WELL DEPTH: 21 (ft bgs)
START: August 4, 2022 **END:** August 4, 2022



- 1 – **Ground elevation at well (ft asml):** 119.79
- 2 – **Top of casing elevation (ft asml):** 119.41
- 3 – **Wellhead Cover:** 0 (ft), Steel, Flush Mounted
 - a) **Concrete Pad Length (ft):** 2
 - b) **Concrete Pad Width (ft):** 2
 - c) **Concrete Pad Depth (ft):** 0.5
- 4 – **Well Casing (in):** 2" / Schedule 40 PVC
- 5 – **Well Screen (in):** 0.02" / Factory slotted
Screen Interval (ft): 11 - 21
- 6 – **Type screen filter:** 2/12 silica sand
 - a) **Quantity (lbs):** 400
- 7 – **Type of seal (in):** 3/8" bentonite chips
 - a) **Quantity (lbs):** 100
- 8 – **Grout Mixture:** Neat Cement
Amount of Cement Used:
 - a) **Amount of bentonite used:**
 - b) **Amount of water used (gal):**
 - c) **Method of placement:**
 - d) **Vol. of well casing grout (gal):**

End Cap: Schedule 40 PVC, 2" Dia x 4" Long

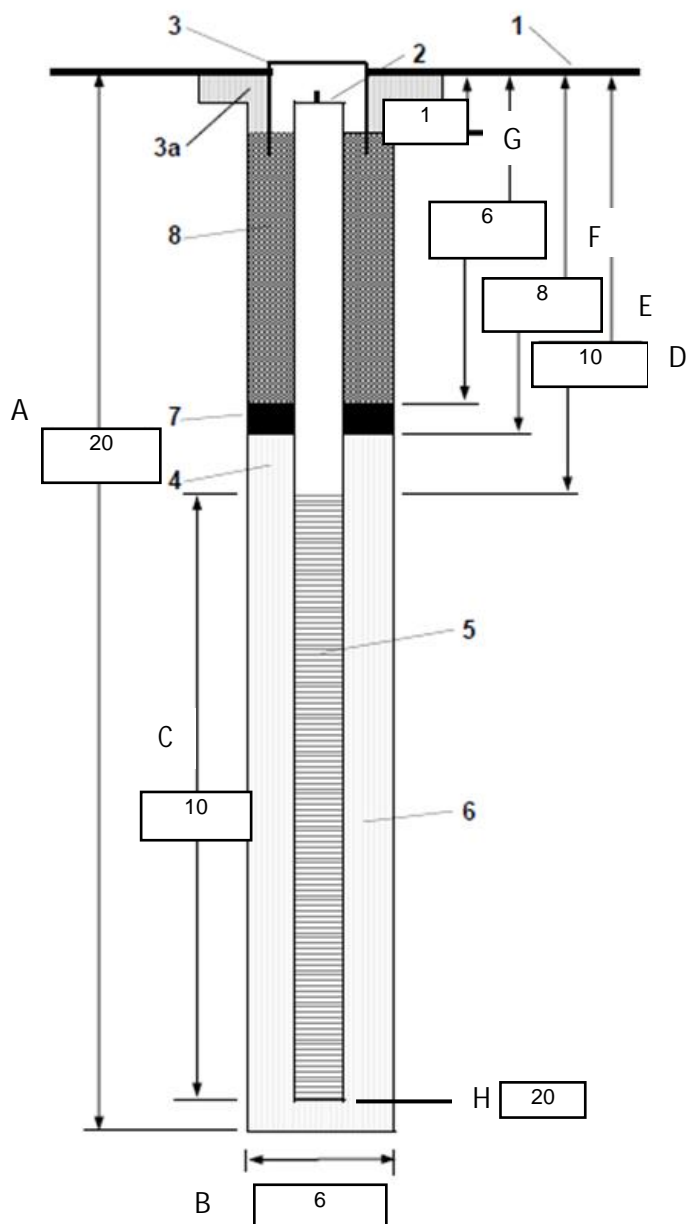
Comments:

A= Boring Depth (feet)
B= Borehole Diameter (inches)
C= Length of Screen (feet)
D= Depth to Top of Screen (feet)
E= Top of Sand Pack (feet)
F= Top of Annular Seal (feet)
G= Top of Grout Seal (feet)
H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRCPB-B106-MW02

WELL COMPLETION DIAGRAM**PROJECT:** NAVSTA Everett PFAS SI**INSTALLATION:** NRC Pacific Beach**SITE:** Building 106**LOGGER:** Caitlin Dronfield, Charles Royko**DRILLING CONTRACTOR:** Cascade drilling**DRILLER NAME:** Joe Staloch**DRILLING METHOD AND EQUIPMENT USED:** Sonication (Sonic), Boart Longyear LS250**OUTER DIA :** 6 (in) **INNER DIA:** 4 (in)**WATER LEVEL:** 10 (ft bgs)**TOTAL WELL DEPTH:** 20 (ft bgs)**START:** August 4, 2022 **END:** August 4, 2022

1 – Ground elevation at well (ft asml): 118.52

2 – Top of casing elevation (ft asml): 116.89

3 – Wellhead Cover: 0 (ft), Steel, Flush Mounted

a) Concrete Pad Length (ft): 2

b) Concrete Pad Width (ft): 2

c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2" / Schedule 40 PVC

5 – Well Screen (in): 0.02" / Factory slotted
Screen Interval (ft): 10 - 20

6 – Type screen filter: 2/12 silica sand

a) Quantity (lbs): 350

7 – Type of seal (in): 3/8" bentonite chips

a) Quantity (lbs): 100

8 – Grout Mixture: Neat Cement

Amount of Cement Used:

a) Amount of bentonite used:

b) Amount of water used (gal):

c) Method of placement:

d) Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long**Comments:**

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

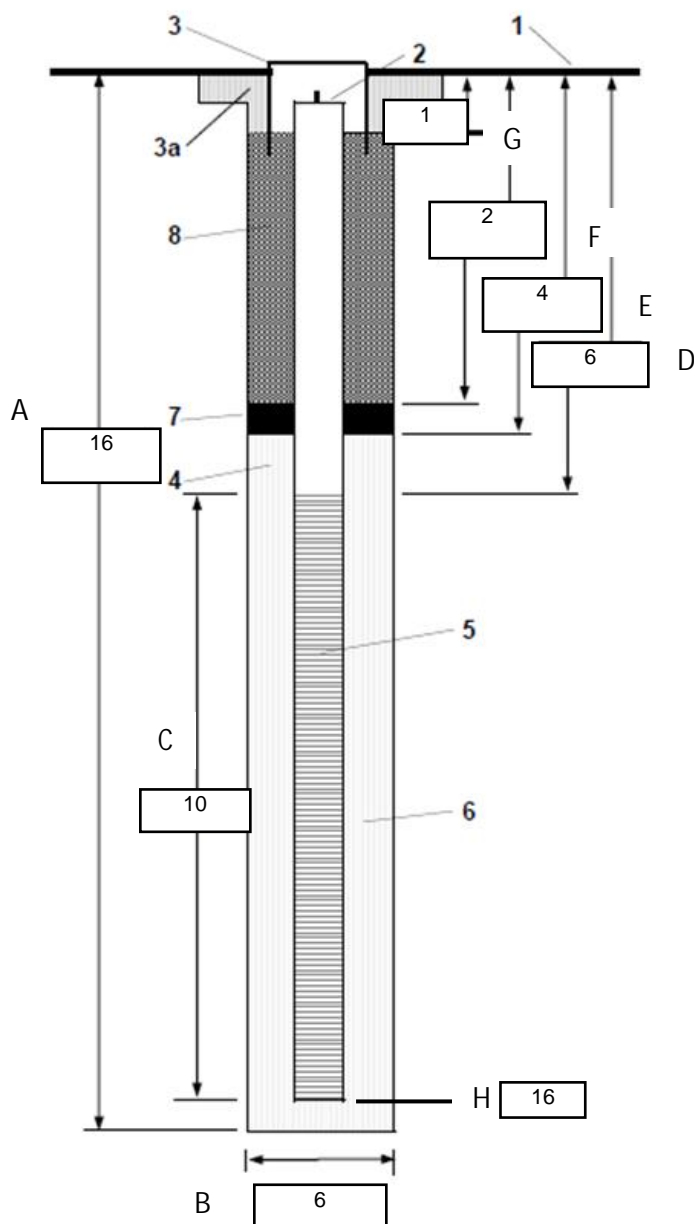
G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)



PROJECT NUMBER: 704758CH.10.08.FI

WELL NUMBER: NRCPB-B106-MW03

WELL COMPLETION DIAGRAM**PROJECT:** NAVSTA Everett PFAS SI**INSTALLATION:** NRC Pacific Beach**SITE:** Building 6**LOGGER:** Caitlin Dronfield, Carlin Coleman**DRILLING CONTRACTOR:** Cascade drilling**DRILLER NAME:** Joe Staloch**DRILLING METHOD AND EQUIPMENT USED:** Sonication (Sonic), Boart Longyear LS250**OUTER DIA :** 6 (in) **INNER DIA:** 4 (in)**WATER LEVEL:** 6.3 (ft bgs)**TOTAL WELL DEPTH:** 16 (ft bgs)**START:** August 8, 2022 **END:** August 8, 2022

1 – Ground elevation at well (ft asml): 117.16

2 – Top of casing elevation (ft asml): 116.89

3 – Wellhead Cover: 0 (ft), Steel, Flush Mounted

a) Concrete Pad Length (ft): 2

b) Concrete Pad Width (ft): 2

c) Concrete Pad Depth (ft): 0.5

4 – Well Casing (in): 2 / Schedule 40 PVC

5 – Well Screen (in): 0.02 / Factory slotted
Screen Interval (ft): 6 - 16

6 – Type screen filter: Cemex lapis lustre sand #2/12

a) Quantity (lbs): 300

7 – Type of seal (in): 3/8" bentonite chips

a) Quantity (lbs): 100

8 – Grout Mixture: Neat Cement

Amount of Cement Used:

a) Amount of bentonite used:

b) Amount of water used (gal):

c) Method of placement:

d) Vol. of well casing grout (gal):

End Cap: Schedule 40 PVC, 2" Dia x 4" Long**Comments:**

A= Boring Depth (feet)

B= Borehole Diameter (inches)

C= Length of Screen (feet)

D= Depth to Top of Screen (feet)

E= Top of Sand Pack (feet)

F= Top of Annular Seal (feet)

G= Top of Grout Seal (feet)

H= Bottom of Screen (feet)