Appendix A

Field Forms

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Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 IW-002

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 123.00 Screened Interval:

Well Casing: Diameter: 6" Material: PVC

Well Screen: Diameter: 6"

Deployment

Date and Time of Deployment: 2-8-17 @ 11:05

Weather Conditions: SUNNY 50°

Depth to GW @ Time of Deployment: 35.30

Total Well Depth at Time of Deployment: 123.00

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2"

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 27'

Retrieval

Date and Time of Retrieval: Date: 3/1/17 Time: 1035

Total # of Days Deployed: 21

Weather Conditions: 60s rain

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 34.01

Total Well Depth at Time of Retrieval (measured before retrieval): 123.00

Downhole Firld Parameters Upon Retrieval:

Temp:	13.37	ORP:	307	Cond:	0.954
pH:	5.52	DO:	4.62	Turb:	58.0

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 58.0 Meter Type: U-52 Serial #: V84KONTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign

DUP-MW1 171IW-002 MS/MSD

Sovereign Consulting inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 IW-005

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 123.10 Screened Interval:

Well Casing: Diameter: 6 Material: PVC

Well Screen: Diameter: 6

Deployment

Date and Time of Deployment: 2-8-17 @ 11:35

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 40.20

Total Well Depth at Time of Deployment: 123.10

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2"

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 115

Retrieval

Date and Time of Retrieval: Date: 3/1/17 Time: 1235

Total # of Days Deployed: 21

Weather Conditions: 60s rain

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 39.04

Total Well Depth at Time of Retrieval (measured before retrieval): 123.10

Downhole Firld Parameters Upon Retrieval:

Temp: 12.17 ORP: -56 Cond: 0.542

pH: 7.46 DO: 1.26 Turb: 494

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 494 Meter Type: U-52 Serial #: V8YKONTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign

DUP-MW2 VOC + DOC

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 IW-010S

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 92.0 Screened Interval:

Well Casing: Diameter: 6 Material:

Well Screen: Diameter: 6

Deployment

Date and Time of Deployment: 2-8-17 @ 0945

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 14.58

Total Well Depth at Time of Deployment: 92.0

Dimensions of HydraSleeve: Length (in.) 36' Diameter (in.) 4'

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 88'

Retrieval

Date and Time of Retrieval: Date: 3/2/17 Time: 0735

Total # of Days Deployed: 22

Weather Conditions: 40s wind

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 12.32

Total Well Depth at Time of Retrieval (measured before retrieval): 92.0

Downhole Firld Parameters Upon Retrieval:

Temp: 10.85 ORP: 69 Cond: 0.997

pH: 5.14 DO: 1.19 Turb: 54.9

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 54.9 Meter Type: U-52 Serial #: VBYKONTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign

~~[illegible]~~

AR

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 IW-010D

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): — Screened Interval:

Well Casing: Diameter: 6 Material: PVC

Well Screen: Diameter: 6

Deployment

Date and Time of Deployment ✓

Weather Conditions

Depth to GW @ Time of Deployment

Total Well Depth at Time of Deployment

Dimensions of HydraSleeve Length (in.) Diameter (in.)

Deployment Method/Position of Weight:

- [ ] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs):

Retrieval

Date and Time of Retrieval: Date: Time:

Total # of Days Deployed:

Weather Conditions:

Retrieval Method:

- [ ] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval):

Total Well Depth at Time of Retrieval (measured before retrieval):

Downhole Firld Parameters Upon Retrieval:

Temp: ORP: Cond:

pH: DO: Turb:

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: Meter Type: Serial #:

Notes/Observations: Blockage @ 15'

Field Sampling Tech: Company:

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW-2

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 39.22 Screened Interval:

Well Casing: Diameter: 2 Material:

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: 2-8-17 @ 12:25

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 17.45

Total Well Depth at Time of Deployment: 39.22

Dimensions of HydraSleeve: Length (in.) 30" Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 32'

Retrieval

Date and Time of Retrieval: Date: 3/1/17 Time: 1310

Total # of Days Deployed: 21

Weather Conditions: 50s rain

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 16.58

Total Well Depth at Time of Retrieval (measured before retrieval): 39.22

Downhole Firld Parameters Upon Retrieval:

Temp: 11.97 ORP: -48 Cond: 0.685

pH: 7.00 DO: 7.40 Turb: 16.6

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 16.6 Meter Type: U-52 Serial #: 18YK0417A

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW-6

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 60.35 Screened Interval:

Well Casing: Diameter: 2" Material: PVC

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: 2-8-17 @ 10:40

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 34.11

Total Well Depth at Time of Deployment: 60.35

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2"

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 52'

Retrieval

Date and Time of Retrieval: Date: 3/1/17 Time: 1100

Total # of Days Deployed: 21

Weather Conditions: 60s rain

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 32.73

Total Well Depth at Time of Retrieval (measured before retrieval): 60.35

Downhole Firld Parameters Upon Retrieval:

Temp: 12.49 ORP: 300 Cond: 0.712

pH: 5.86 DO: 4.79 Turb: 124

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 124 Meter Type: U-52 Serial #: V8YKOMKA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW-6B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 92.70 Screened Interval:

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: 2-8-17 @ 10:45

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 56.75

Total Well Depth at Time of Deployment: 92.70

Dimensions of HydraSleeve: Length (in.) 30' Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 86'

Retrieval

Date and Time of Retrieval: Date: 3/1/17 Time: 1110

Total # of Days Deployed: 21

Weather Conditions: 60s rain

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 55.04

Total Well Depth at Time of Retrieval (measured before retrieval): 92.70

Downhole Firld Parameters Upon Retrieval:

Temp: 12.24 ORP: -29 Cond: 0.621

pH: 5.30 DO: 1.11 Turb: 40.6

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 40.6 Meter Type: U-52 Serial #: 18YK0MTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW 6-C

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 212.60 Screened Interval:

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: 2-8-17 @ 10:50

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 86.25

Total Well Depth at Time of Deployment: 212.60

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 204'

Retrieval

Date and Time of Retrieval: Date: 3/1/17 Time: 1120

Total # of Days Deployed: 21

Weather Conditions: 60s rain

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 84.37

Total Well Depth at Time of Retrieval (measured before retrieval): 212.60

Downhole Firld Parameters Upon Retrieval:

Temp: 11.94 ORP: -239 Cond: 8.16

pH: 8.69 DO: 4.69 Turb: 63.3

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 63.3 Meter Type: U-52 Serial #: V8YK0NTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW-8

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 89.57 Screened Interval:

Well Casing: Diameter: 2" Material: PVC

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: 2-8-17 11:40

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 41.85

Total Well Depth at Time of Deployment: 89.57

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2"

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 81'

Retrieval

Date and Time of Retrieval: Date: 3/1/17 Time: 1225

Total # of Days Deployed: 21

Weather Conditions: 60s rain

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 40.47

Total Well Depth at Time of Retrieval (measured before retrieval): 89.57

Downhole Firld Parameters Upon Retrieval:

Temp: 12.14 ORP: -66 Cond: 0.488

pH: 8.94 DO: 1.94 Turb: 62.6

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 62.6 Meter Type: V-52 Serial #: V8Y/KONITA

Notes/Observations:

Field Sampling Tech: Doug Thompson Company: Sovcon

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW-8B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 124.0 Screened Interval:

Well Casing: Diameter: 2" Material: PVC

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: 2-8-17 @ 11:45

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 66.45

Total Well Depth at Time of Deployment: 124.0

Dimensions of HydraSleeve: Length (in.) 30" Diameter (in.) 2"

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 116'

Retrieval

Date and Time of Retrieval: Date: 3/1/17 Time: ~~1205~~ 1205

Total # of Days Deployed: 21

Weather Conditions: 60s rain

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 64.66

Total Well Depth at Time of Retrieval (measured before retrieval): 124.0

Downhole Firld Parameters Upon Retrieval:

Temp: 12.45 ORP: 7 Cond: 0.594

pH: 10.02 DO: 3.40 Turb: 140

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 140 Meter Type: U-52 Serial #: V84KONITA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign

~~[illegible]~~ DUP - MV2 Iron + dgasses

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: MID Valley

Well ID: 171 MW 10

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 53.30 Screened Interval:

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: 2-8-17 @ 12:15

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 26.37

Total Well Depth at Time of Deployment: 53.30

Dimensions of HydraSleeve: Length (in.) 30" Diameter (in.) 2"

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 46'

Retrieval

Date and Time of Retrieval: Date: 3/1/17 Time: 1325

Total # of Days Deployed: 21

Weather Conditions: 60s rain

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 25.42

Total Well Depth at Time of Retrieval (measured before retrieval): 53.30

Downhole Firld Parameters Upon Retrieval:

Temp: 12.01 ORP: 24 Cond: 0.350

pH: 7.18 DO: 6.03 Turb: 15.0

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 15.0 Meter Type: U-52 Serial #: V84/KONITA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW 10B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 165.30 Screened Interval:

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: 2-8-17 12:20

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 130.04

Total Well Depth at Time of Deployment: 165.30

Dimensions of HydraSleeve: Length (in.) 30' Diameter (in.) 2'

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 158'

Retrieval

Date and Time of Retrieval: Date: 3/1/17 Time: 1335

Total # of Days Deployed: 21

Weather Conditions: 60s rain

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 29.66

Total Well Depth at Time of Retrieval (measured before retrieval): 165.30

Downhole Firld Parameters Upon Retrieval:

Temp: 11.73 ORP: 25 Cond: 0.510

pH: 7.08 DO: 1.94 Turb: 171

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 171 Meter Type: U-52 Serial #: 18Y/KONTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW13

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 92.60 Screened Interval:

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment 2-8-17 @ 10:10

Weather Conditions Sunny 50°

Depth to GW @ Time of Deployment 14.45

Total Well Depth at Time of Deployment 92.60

Dimensions of HydraSleeve Length (in.) 30" Diameter (in.) 2"

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 84

Retrieval

Date and Time of Retrieval: Date: 3/2/17 Time: 0910

Total # of Days Deployed: 22

Weather Conditions: 40s wind

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 13.64

Total Well Depth at Time of Retrieval (measured before retrieval): 92.60

Downhole Firld Parameters Upon Retrieval:

Temp: 8.12 ORP: -3 Cond: 0.430

pH: 6.30 DO: 2.18 Turb: 299

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 299 Meter Type: U-52 Serial #: V8Y/CONTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Soveon

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal
Location: Mid Valley
Well ID: 171 MW 13B
Well Type: [X] Monitoring [ ] Other:
Well Finish: [X] Stick-up [ ] Flush Mount
Measuring Pt: [X] Top of Casing [ ] Other:
Total Depth as Constructed (ft bgs): 169.90 Screened Interval:
Well Casing: Diameter: 2" Material: PVC
Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: 2-8-17 @ 10:15
Weather Conditions: Sunny 50°
Depth to GW @ Time of Deployment: 15.35
Total Well Depth at Time of Deployment: 169.90
Dimensions of HydraSleeve: Length (in.) 30' Diameter (in.) 2
Deployment Method/Position of Weight:
[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.
Deployment Depth (Top of HydraSleeve)(ft bgs): 161'

Retrieval

Date and Time of Retrieval: Date: 3/2/17 Time: 0920
Total # of Days Deployed: 22
Weather Conditions: 40s windy
Retrieval Method:
[X] Continuous Pull (preferred)
[ ] Short Strokes
Depth to GW at Time of Retrieval (measured before retrieval): 13.73
Total Well Depth at Time of Retrieval (measured before retrieval): 169.90
Downhole Firld Parameters Upon Retrieval:
Temp: 8.50 ORP: 2.07 Cond: 8.92
pH: 6.23 DO: 1.97 Turb: 800
Turbidity of GW Sample (dispensed from HydraSleeve):
Turbidity: 800 Meter Type: U-52 Serial #: V8Y/KOMTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovcon

Appears to be some EVO from last injection in well / sample

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW 14

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 74.00 Screened Interval:

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: 2-8-17 @ 10:55

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 55.72

Total Well Depth at Time of Deployment: 74.00

Dimensions of HydraSleeve: Length (in.) 30' Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 66'

Retrieval

Date and Time of Retrieval: Date: 3/1/17 Time: 1135

Total # of Days Deployed: 21

Weather Conditions: 60s mix

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 54.31

Total Well Depth at Time of Retrieval (measured before retrieval): 74.00

Downhole Firld Parameters Upon Retrieval:

Temp: 12.06 ORP: -39 Cond: 0.625

pH: 6.68 DO: 5.28 Turb: 180

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 180 Meter Type: U-52 Serial #: V8YK0NTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW 14B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 103.15 Screened Interval:

Well Casing: Diameter: 2" Material: PVC

Well Screen: Diameter: 2"

Deployment

Date and Time of Deployment: 2-8-17 @ 11:00

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 56.25

Total Well Depth at Time of Deployment: 103.15

Dimensions of HydraSleeve: Length (in.) 30" Diameter (in.) 2"

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 95'

Retrieval

Date and Time of Retrieval: Date: 3/1/17 Time: 1145

Total # of Days Deployed: 21

Weather Conditions: 60s Rain

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 54.73

Total Well Depth at Time of Retrieval (measured before retrieval): 103.15

Downhole Firld Parameters Upon Retrieval:

Temp: 11.93 ORP: -168 Cond: 0.598

pH: 10.20 DO: 0.598 Turb: 27.2

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 27.2 Meter Type: U-52 Serial #: V8YKONTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign

wet labels on DOC

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW 15

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 83.35 Screened Interval:

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: 2-8-17 @ 11:30

Weather Conditions: SUNNY 50°

Depth to GW @ Time of Deployment: 40.86

Total Well Depth at Time of Deployment: 83.35

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2"

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 75'

Retrieval

Date and Time of Retrieval: Date: 3/1/17 Time: 1250

Total # of Days Deployed: 21

Weather Conditions: 60s rain

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 38.97

Total Well Depth at Time of Retrieval (measured before retrieval): 83.35

Downhole Firld Parameters Upon Retrieval:

Temp: 11.90 ORP: -58 Cond: 0.584

pH: 7.04 DO: 2.11 Turb: 78.7

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 78.7 Meter Type: U-52 Serial #: V8Y1KONTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW 16

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 70.90 Screened Interval:

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: 2-8-17 @ 10:00

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 13.40

Total Well Depth at Time of Deployment: 70.90

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2"

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 62'

Retrieval

Date and Time of Retrieval: Date: 3/2/17 Time: 0840

Total # of Days Deployed: 22

Weather Conditions: 40s windy

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 15.43

Total Well Depth at Time of Retrieval (measured before retrieval): 70.90

Downhole Firld Parameters Upon Retrieval:

Temp: 9.47 ORP: 23 Cond: 0.502

pH: 6.02 DO: 4.21 Turb: 28.5

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 28.5 Meter Type: U-52 Serial #: V8YKONTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovcon

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW 16B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 161.40 Screened Interval:

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: 2-8-17 @ 10.05

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 16.00

Total Well Depth at Time of Deployment: 161.40

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 153'

Retrieval

Date and Time of Retrieval: Date: 3/2/17 Time: 0855

Total # of Days Deployed: 22

Weather Conditions: 40s wind

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 17.02

Total Well Depth at Time of Retrieval (measured before retrieval): 161.40

Downhole Firld Parameters Upon Retrieval:

Temp: 8.79 ORP: -36 Cond: 0.581

pH: 6.22 DO: 1.41 Turb: 15.7

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 15.7 Meter Type: U-52 Serial #: VSYKONTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovcon

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW-17

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 72.40 Screened Interval:

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: 2-8-17 @ 0950

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 72.40

Total Well Depth at Time of Deployment: 72.40

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 64'

Retrieval

Date and Time of Retrieval: Date: 3/2/17 Time: 0800

Total # of Days Deployed: 22

Weather Conditions: 40s wind

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 17.13

Total Well Depth at Time of Retrieval (measured before retrieval): 72.40

Downhole Firld Parameters Upon Retrieval:

Temp: 8.82 ORP: -1 Cond: 0.497

pH: 5.81 DO: 2.54 Turb: 339

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 339 Meter Type: U-52 Serial #: 13YK0417A

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovcon

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Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Mid Valley

Well ID: 171 MW 17B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 169.39 Screened Interval:

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: 2-8-17 @ 0955

Weather Conditions: Sunny 50°

Depth to GW @ Time of Deployment: 19.43

Total Well Depth at Time of Deployment: 169.39

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2'

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 161

Retrieval

Date and Time of Retrieval: Date: 3/2/17 Time: 0820

Total # of Days Deployed: 22

Weather Conditions: 40s wind

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 17.37

Total Well Depth at Time of Retrieval (measured before retrieval): 169.39

Downhole Firld Parameters Upon Retrieval:

Temp: 8.14 ORP: -30 Cond: 0.482

pH: 6.15 DO: 3.06 Turb: 29.8

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 298 Meter Type: U-52 Serial #: 18YK0MTA

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovcon

DUP-MW3

Well Sampling Summary Sheet

Site Name: PICA FOUND WELLS

Address:

Sov. Project #: RB577 March 2017

Date: 3/2/17

Well ID	DTW (ft)	DTB' (Fld)	Check Appropriate: Gauge-only	GWS	LF	LPH (in.)	Collect Time	Diameter (in.)		
161-MW-7	2.83	43.30	X					2		
114-MW1A	16.13	24.75	X					2		
5-MW-4D	5.44	36.40	X					2		

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 114-MW1A

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation		N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)		N/A
Easting (State Plane)		N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	YES
Datum:	
Accuracy/Precision:	

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well[2]

Well lock\security type:	Good lock	
Elevation (top of inner casing):	839.36	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):		ftbgs
Well Depth (as measured):	24.75	fttoc
Well Stick Up Height (as measured):	—	ftbgs
Screened interval:		ft
Open hole interval:	—	ft
Depth to water:	16.13	ftbtoc

Date: 3/2/17 Time: 0725

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: D. Thompson

Date of Inspection: 3-2-17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 761 MW-7

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition —

Well Installation Date —

	From Log	*From GPS*[1]
Ground Surface Elevation		N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)		N/A
Easting (State Plane)		N/A

Cross streets (if applicable):

GPS Instrument used:[1] yes

Datum:

Accuracy/Precision:

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type: manway cover

Elevation (top of inner casing): 791.21

Surface protective casing material: steel

Surface Casing diameter: 8" *inches*

Well Diameter and Casing Material: 2" PVC *inches*

Well Depth (as installed): *ftbgs*

Well Depth (as measured): 43.30 *fttoc*

Well Stick Up Height (as measured): — *ftbgs*

Screened interval: *ft*

Open hole interval: — *ft*

Depth to water: 2.83 *ftbtoc*

Date: 3/2/17 *Time:* 0710

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments:

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: D. Thompson

Date of Inspection: 3-2-17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 5-MW-4D

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: none

Well Tag ID and Condition none

Well Installation Date N/A

	From Log	*From GPS*[1]
Ground Surface Elevation		N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)		N/A
Easting (State Plane)		N/A

Cross streets (if applicable):

GPS Instrument used:[1] yes

Datum:

Accuracy/Precision:

Well Construction Details

Type of well (Circle one) (Flush Mount) *Stick up* *Multilevel Well*[2]

Well lock\security type: manway cover

Elevation (top of inner casing): 954.88

Surface protective casing material: steel

Surface Casing diameter: 8" *inches*

Well Diameter and Casing Material: 2" PVC *inches*

Well Depth (as installed): *ftbgs*

Well Depth (as measured): 36.40 *fttoc*

Well Stick Up Height (as measured): — *ftbgs*

Screened interval: — *ft*

Open hole interval: *ft*

Depth to water: 5.44 *ftbtoc*

Date: 3/2/17 *Time:* 0715

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments:

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: D. Thompson

Date of Inspection: 3-2-17

Reviewed by: Ronald L. Trave (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171IW-002

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition —

Well Installation Date —

	From Log	*From GPS*[1]
Ground Surface Elevation	932.37	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable): —

GPS Instrument used:[1] —

Datum: —

Accuracy/Precision: —

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	Good lock	
Elevation (top of inner casing):	932.37	
Surface protective casing material:	steel	
Surface Casing diameter:	12"	inches
Well Diameter and Casing Material:	6" steel	inches
Well Depth (as installed):	120	ftbgs
Well Depth (as measured):	123.0	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	30-120	ft
Open hole interval:	—	ft
Depth to water:	34.01	ftbtoc

Date: 3/2/17 *Time:* 1035

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): ____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppolo

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171IW-005

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition —

Well Installation Date —

	From Log	*From GPS*[1]
Ground Surface Elevation	—	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable): —

GPS Instrument used:[1] —

Datum: —

Accuracy/Precision: —

Well Construction Details

Type of well (Circle one) *Flush Mount* (Stick up) *Multilevel Well*[2]

Well lock\security type:	no lock	
Elevation (top of inner casing):		
Surface protective casing material:	steel	
Surface Casing diameter:	8"	*inches*
Well Diameter and Casing Material:	6" steel	*inches*
Well Depth (as installed):	120.0	*ftbgs*
Well Depth (as measured):	123.10	*fttoc*
Well Stick Up Height (as measured):	32	*ftbgs*
Screened interval:	30-120	*ft*
Open hole interval:	—	*ft*
Depth to water:	39.04	*ftbtoc*

Date: 3/1/17 *Time:* 1235

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments: _____

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: A. Roppolo

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171IW-010S

Facility Information

Site Name:	Picatinny Arsenal *Area:* *Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	—
Well Installation Date	—

	From Log	*From GPS*[1]
Ground Surface Elevation	861.32	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	manhole cover	
Elevation (top of inner casing):	861.32	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	*inches*
Well Diameter and Casing Material:	4" PVC	*inches*
Well Depth (as installed):	90.0	*ftbgs*
Well Depth (as measured):	92.0	*fttoc*
Well Stick Up Height (as measured):	—	*ftbgs*
Screened interval:	20-90	*ft*
Open hole interval:	—	*ft*
Depth to water:	12.32	*ftbtoc*

Date: 3/2/17 *Time:* 0735

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): ✓ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments:

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: Aaron Roppoli

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-2

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: /

Well Tag ID and Condition OK

Well Installation Date /

	From Log	*From GPS*[1]
Ground Surface Elevation	879.86	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	/	N/A
Easting (State Plane)	/	N/A

Cross streets (if applicable): /

GPS Instrument used:[1] /

Datum: /

Accuracy/Precision: /

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	Good lock	
Elevation (top of inner casing):	879.86	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	37	ftbgs
Well Depth (as measured):	39.22	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	27-37	ft
Open hole interval:	/	ft
Depth to water:	16.58	ftbtoc

Date: 3/1/17 *Time:* 1310

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): ____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 3/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW-6

Facility Information

Site Name:	Picatinny Arsenal Area: Site: Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	OK
Well Installation Date	—

	From Log	From GPS[1]
Ground Surface Elevation	932.67	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well[2]

Well lock\security type:	Replaced lock	
Elevation (top of inner casing):	932.67	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	58	ftbgs
Well Depth (as measured):	60.35	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	38-58	ft
Open hole interval:	—	ft
Depth to water:	32.73	ftbtoc

Date: 3/2/17 Time: 1100

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): — *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments:

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Tramer (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW-613

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition OK

Well Installation Date —

	From Log	From GPS[1]
Ground Surface Elevation	932.46	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable): —

GPS Instrument used:[1] —

Datum: —

Accuracy/Precision: —

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	Replaced lock	
Elevation (top of inner casing):	932.46	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	*inches*
Well Diameter and Casing Material:	2" steel	*inches*
Well Depth (as installed):	90	*ftbgs*
Well Depth (as measured):	92.70	*fttoc*
Well Stick Up Height (as measured):		*ftbgs*
Screened interval:	70-90	*ft*
Open hole interval:	—	*ft*
Depth to water:	55.04	*ftbtoc*

Date: 3/2/17 *Time:* 1110

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments: _____

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW6C

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: /

Well Tag ID and Condition OK

Well Installation Date /

	From Log	*From GPS*[1]
Ground Surface Elevation	932.68	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	/	N/A
Easting (State Plane)	/	N/A

Cross streets (if applicable): /

GPS Instrument used:[1] /

Datum: /

Accuracy/Precision: /

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	no lock	
Elevation (top of inner casing):	932.68	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	210	ftbgs
Well Depth (as measured):	212.60	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	190-210	ft
Open hole interval:	/	ft
Depth to water:	84.37	ftbtoc

Date: 3/2/17 *Time:* 1120

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): — ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 3/2/17

Reviewed by: Ronald C. Trace (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 71 MW-8

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition —

Well Installation Date —

	From Log	*From GPS*[1]
Ground Surface Elevation	914.05	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable): —

GPS Instrument used:[1] —

Datum: —

Accuracy/Precision: —

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	Good lock	
Elevation (top of inner casing):	914.05	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	*inches*
Well Diameter and Casing Material:	2" PVC	*inches*
Well Depth (as installed):	85	*ftbgs*
Well Depth (as measured):	87.57	*fttoc*
Well Stick Up Height (as measured):		*ftbgs*
Screened interval:	65-85	*ft*
Open hole interval:	—	*ft*
Depth to water:	40.47	*ftbtoc*

Date: 3/1/17 *Time:* 1225

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): ____ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments:

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-8B

Facility Information

Site Name:	Picatinny Arsenal — *Area:* — *Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	—
Well Installation Date	—

	From Log	*From GPS*[1]
Ground Surface Elevation	913.29	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	Replaced lock	
Elevation (top of inner casing):	913.29	
Surface protective casing material:	steel	
Surface Casing diameter:	6	*inches*
Well Diameter and Casing Material:	2" PVC	*inches*
Well Depth (as installed):	120	*ftbgs*
Well Depth (as measured):	124.0	*fttoc*
Well Stick Up Height (as measured):		*ftbgs*
Screened interval:	100-120	*ft*
Open hole interval:	—	*ft*
Depth to water:	64.66	*ftbtoc*

Date: 3/2/17 *Time:* 1205

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments: _____

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: A. Ruppolo

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 17MW-10

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition none

Well Installation Date —

	From Log	*From GPS*[1]
Ground Surface Elevation	873.47	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable): —

GPS Instrument used:[1] —

Datum: —

Accuracy/Precision: —

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	Good lock	
Elevation (top of inner casing):	873.47	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	*inches*
Well Diameter and Casing Material:	2" PVC	*inches*
Well Depth (as installed):	50	*ftbgs*
Well Depth (as measured):	53.30	*fttoc*
Well Stick Up Height (as measured):		*ftbgs*
Screened interval:	30-50	*ft*
Open hole interval:	—	*ft*
Depth to water:	25.42	*ftbtoc*

Date: 3/1/17 *Time:* 1325

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): ___/___ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments: _____

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-10B

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition OK

Well Installation Date —

	From Log	*From GPS*[1]
Ground Surface Elevation	873.34	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable): —

GPS Instrument used:[1] —

Datum: —

Accuracy/Precision: —

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	873.34	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	*inches*
Well Diameter and Casing Material:	2" PVC	*inches*
Well Depth (as installed):	160	*ftbgs*
Well Depth (as measured):	163.30	*fttoc*
Well Stick Up Height (as measured):		*ftbgs*
Screened interval:	140-160	*ft*
Open hole interval:	—	*ft*
Depth to water:	29.66	*ftbtoc*

Date: 3/2/17 *Time:* 1335

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): ——— *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments:

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-13B

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition —

Well Installation Date —

	From Log	*From GPS*[1]
Ground Surface Elevation	847.71	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable): —

GPS Instrument used:[1] —

Datum: —

Accuracy/Precision: —

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	lock good	
Elevation (top of inner casing):	847.71	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	170	ftbgs
Well Depth (as measured):	169.90	fttoc
Well Stick Up Height (as measured):	—	ftbgs
Screened interval:	150-170	ft
Open hole interval:	—	ft
Depth to water:	13.73	ftbtoc

Date: 3/2/17 *Time:* 0920

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments: _____

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-14

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition OK

Well Installation Date —

	From Log	*From GPS*[1]
Ground Surface Elevation	931.95	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable): —

GPS Instrument used:[1] —

Datum: —

Accuracy/Precision: —

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	Replaced lock	
Elevation (top of inner casing):	931.95	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	70	ftbgs
Well Depth (as measured):	74.0	fttoc
Well Stick Up Height (as measured):	—	ftbgs
Screened interval:	50-70	ft
Open hole interval:	—	ft
Depth to water:	54.31	ftbtoc

Date: 3/2/17 *Time:* 1135

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-14B

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition OK

Well Installation Date —

	From Log	*From GPS*[1]
Ground Surface Elevation	932.04	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable): —

GPS Instrument used:[1] —

Datum: —

Accuracy/Precision: —

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	Replaced lock	
Elevation (top of inner casing):	932.04	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	*inches*
Well Diameter and Casing Material:	2" PVC	*inches*
Well Depth (as installed):	100	*ftbgs*
Well Depth (as measured):	103.15	*fttoc*
Well Stick Up Height (as measured):		*ftbgs*
Screened interval:	80-100	*ft*
Open hole interval:	—	*ft*
Depth to water:	54.73	*ftbtoc*

Date: 3/2/17 *Time:* 1145

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good *Fair* *Poor*

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW-15

Facility Information

Site Name:	Picatinny Arsenal — *Area:* — *Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	—
Well Installation Date	—

	From Log	*From GPS*[1]
Ground Surface Elevation	—	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) — *Flush Mount* — *Stick up* — *Multilevel Well*[2]

Well lock\security type:	bolt lock	
Elevation (top of inner casing):	—	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	80.0	ftbgs
Well Depth (as measured):	83.35	fttoc
Well Stick Up Height (as measured):	3.2	ftbgs
Screened interval:	60-80	ft
Open hole interval:	—	ft
Depth to water:	38.97	ftbtoc

Date: 3/1/17 *Time:* 1250

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: J. Reppoli

Date of Inspection: 3/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-16

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition —

Well Installation Date —

	From Log	*From GPS*[1]
Ground Surface Elevation	859.92	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable): —

GPS Instrument used:[1] —

Datum: —

Accuracy/Precision: —

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	good lock	
Elevation (top of inner casing):	859.92	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	70.0	ftbgs
Well Depth (as measured):	70.90	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	50-70	ft
Open hole interval:	—	ft
Depth to water:	15.43	ftbtoc

Date: 3/2/17 *Time:* 0840

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): ____ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments: ____

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

____

Signatures

Inspected by: Aaron Roppoli

Date of Inspection: 3/2/17

Reviewed by: Ronald L Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW-16B

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition —

Well Installation Date —

	From Log	*From GPS*[1]
Ground Surface Elevation	860.03	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable): —

GPS Instrument used:[1] —

Datum: —

Accuracy/Precision: —

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	lock good	
Elevation (top of inner casing):	860.03	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	*inches*
Well Diameter and Casing Material:	2" PVC	*inches*
Well Depth (as installed):	160	*ftbgs*
Well Depth (as measured):	161.40	*fttoc*
Well Stick Up Height (as measured):		*ftbgs*
Screened interval:	140-160	*ft*
Open hole interval:	—	*ft*
Depth to water:	17.02	*ftbtoc*

Date: 3/2/17 *Time:* 0855

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments: _____

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-17

Facility Information

Site Name:	Picatinny Arsenal — *Area:* — *Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	—
Well Installation Date	—

	From Log	*From GPS*[1]
Ground Surface Elevation	864.36	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	
Datum:	
Accuracy/Precision:	

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	good lock	
Elevation (top of inner casing):	864.36	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	*inches*
Well Diameter and Casing Material:	2" PVC	*inches*
Well Depth (as installed):	70.0	*ftbgs*
Well Depth (as measured):	72.40	*fttoc*
Well Stick Up Height (as measured):		*ftbgs*
Screened interval:	50-70	*ft*
Open hole interval:	—	*ft*
Depth to water:	17.13	*ftbtoc*

Date: 3/2/17 *Time:* 0800

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments: _____

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-17B

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Midvalley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition —

Well Installation Date —

	From Log	*From GPS*[1]
Ground Surface Elevation	863.41	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable): —

GPS Instrument used:[1] —

Datum: —

Accuracy/Precision: —

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	Good lock	
Elevation (top of inner casing):	863.41	
Surface protective casing material:	steel	
Surface Casing diameter:	6	*inches*
Well Diameter and Casing Material:	2" PVC	*inches*
Well Depth (as installed):	160	*ftbgs*
Well Depth (as measured):	162.39	*fttoc*
Well Stick Up Height (as measured):		*ftbgs*
Screened interval:	140-160	*ft*
Open hole interval:	—	*ft*
Depth to water:	17.32	*ftbtoc*

Date: 3/2/17 *Time:* 0820

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): — ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 3/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 17MW-2

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 35.0 Screened Interval: 25-35

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment 8/1/17 Time: 1040

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 25.30

Total Well Depth at Time of Deployment 37.60

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 28

Retrieval

Date and Time of Retrieval: Date: 8/30/17 Time: 1115

Total # of Days Deployed: 29 days

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 26.12

Total Well Depth at Time of Retrieval (measured before retrieval):

Downhole Field Parameters Upon Retrieval:

Temp: 15.29 ORP: 262 Turb: 147

pH: 7.30 Cond: 0.661 DO: 6.53

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 147 Meter Type: U-52 Serial #: 66S0L3W0

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

DUP MW8 Total Metals, Diss Metals

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: G_31-MW-002

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 20 Screened Interval: 10-20

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/2/17 Time: 1125

Weather Conditions: 80s sunny

Depth to GW @ Time of Deployment: 1.22

Total Well Depth at Time of Deployment: 19.30

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 15

Retrieval

Date and Time of Retrieval: Date: 9/13/17 Time: 0810

Total # of Days Deployed: 42

Weather Conditions: 60s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 1.62

Downhole Field Parameters Upon Retrieval:

Temp: 18.85 ORP: 301 Turb: 416

pH: 5.60 Cond: 0.133 DO: 1.77

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 416 Meter Type: U-52 Serial #: 66S0L3W0

Notes/Observations:

Field Sampling Tech: A. Rappoli Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: PW-302D

Well Type: ☐ Monitoring ☒ Other: Potable

Well Finish: ☐ Stick-up ☐ Flush Mount

Measuring Pt: ☐ Top of Casing ☐ Other:

Total Depth as Constructed (ft bgs): Screened Interval: /

Well Casing: Diameter: / Material: PVC

Well Screen: Diameter: /

Deployment

Date and Time of Deployment Time:

Weather Conditions

Depth to GW @ Time of Deployment

Total Well Depth at Time of Deployment

Dimensions of HydraSleeve Length (in.) Diameter (in.)

Deployment Method/Position of Weight:

☐ Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

☐ Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

☐ Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs):

Retrieval

Date and Time of Retrieval: Date: 8/30/17 Time: 1310

Total # of Days Deployed: —

Weather Conditions: 80s sunny

Retrieval Method: ☐ Continuous Pull (preferred) ☐ Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): —

Total Well Depth at Time of Retrieval (measured before retrieval): —

Downhole Field Parameters Upon Retrieval:

Temp: 17.84 ORP: 300 Turb: 1.6

pH: 7.92 Cond: 0.906 DO: 16.33

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 1.6 Meter Type: U-S2 Serial #: 66S0L3WD

Notes/Observations: Potable well sample taken from sampling port

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 161 MW-7

Well Type: ☒ Monitoring ☐ Other:

Well Finish: ☐ Stick-up ☒ Flush Mount

Measuring Pt: ☒ Top of Casing ☐ Other:

Total Depth as Constructed (ft bgs): 43.30 Screened Interval:

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 0815

Weather Conditions: 80s sunny

Depth to GW @ Time of Deployment: 3.58

Total Well Depth at Time of Deployment: 43.30

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- ☒ Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- ☐ Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- ☐ Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 35

Retrieval

Date and Time of Retrieval: Date: ~~8/21/17~~ 8/22/17 Time: ~~1155~~ AR 1235

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method:

- ☒ Continuous Pull (preferred)
- ☐ Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 3.68

Downhole Field Parameters Upon Retrieval:

Temp: 20.40 ORP: 242 Turb: 84.2

pH: 9.70 Cond: 0.269 DO: 1.55

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 84.2 Meter Type: U-52 Serial #: 98299780V

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 161MW-413

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 25 Screened Interval: 15-25

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 0825

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 4.01

Total Well Depth at Time of Deployment 26.50

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 22

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 1250

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method:

[X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 4.19

Downhole Field Parameters Upon Retrieval:

Temp: 19.23 ORP: 276 Turb: 120

pH: 9.18 Cond: 0.407 DO: 1.48

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 1.48 Meter Type: U-52 Serial #: 38294 7XV

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 35MW-5R

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 38 Screened Interval: 28 - 38

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 0855

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 0.08

Total Well Depth at Time of Deployment 37.27

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 30

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 1200

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 0.00

Downhole Field Parameters Upon Retrieval:

Temp: 20.09 ORP: 246 Turb: 395

pH: 9.80 Cond: 0.806 DO: 3.37

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 395 Meter Type: U-52 Serial #: 58294 7KV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 1711W-01DS

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 90 Screened Interval: 20 – 90

Well Casing: Diameter: 4 Material: PVC

Well Screen: Diameter: 4

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1050

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 15.50 ft

Total Well Depth at Time of Deployment 92.0

Dimensions of HydraSleeve Length (in.) 36 Diameter (in.) 4

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 88

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 0830

Total # of Days Deployed:

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 16.71

Downhole Field Parameters Upon Retrieval:

Temp:	16.40	ORP:	362	Turb:	62.8
pH:	5.56	Cond:	0.562	DO:	2.67

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 62.8 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: D. Thompson Company: Sovereign Consulting Inc.

MS/MSD DUP-MV1 (DOC)

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171MW-17

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 70 Screened Interval: 50 - 70

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1055

Weather Conditions: 80s sunny

Depth to GW @ Time of Deployment: 19.17

Total Well Depth at Time of Deployment: 72.40

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 68

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 0845

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 20.07

Downhole Field Parameters Upon Retrieval:

Temp: 16.71 ORP: 361 Turb: 15.2

pH: 5.88 Cond: 0.458 DO: 1.91

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 15.2 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171MW-17R

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 160.80 Screened Interval: 140 - 160

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1100

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 19.22

Total Well Depth at Time of Deployment 162.39

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 158

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 0855

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 20.52

Downhole Field Parameters Upon Retrieval:

Temp: 16.66 ORP: 326 Turb: 12.7

pH: 6.27 Cond: 0.479 DO: 7.37

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 12.7 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT / AR Company: Sovereign Consulting Inc.

MS / MSD WC, DOC, DG, Diss Fe

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171MW-16

Well Type: [x] Monitoring [ ] Other:

Well Finish: [x] Stick-up [ ] Flush Mount

Measuring Pt: [x] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 70 Screened Interval: 50 - 70

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1110

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 14.50

Total Well Depth at Time of Deployment 70.90

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[x] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 66

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 0925

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method: [x] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 15.29

Downhole Field Parameters Upon Retrieval:

Temp: 16.49 ORP: 357 Turb: 63.9

pH: 6.10 Cond: 0.657 DO: 8.67

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 63.9 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal
Location: Midvalley
Well ID: 171MW-163
Well Type: [X] Monitoring [ ] Other:
Well Finish: [ ] Stick-up [ ] Flush Mount
Measuring Pt: [X] Top of Casing [ ] Other:
Total Depth as Constructed (ft bgs): 160 Screened Interval: 140-160
Well Casing: Diameter: 2 Material: PVC
Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 14.96
Weather Conditions 80s sunny
Depth to GW @ Time of Deployment 14.96
Total Well Depth at Time of Deployment 161.40
Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2
Deployment Method/Position of Weight:
[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.
Deployment Depth (Top of HydraSleeve)(ft bgs): 156

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 0940
Total # of Days Deployed: 20
Weather Conditions: 80s sunny
Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes
Depth to GW at Time of Retrieval (measured before retrieval): 15.47

Downhole Field Parameters Upon Retrieval:
Temp: 15.90 ORP: 303 Turb: 15.3
pH: 6.62 Cond: 0.673 DO: 1.43
Turbidity of GW Sample (dispensed from HydraSleeve):
Turbidity: 15.3 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT / AR Company: Sovereign Consulting Inc.

DUP-MW1 VOC, DG, Diss Fe

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171 MW-13

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 90 Screened Interval: 70-90

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1130

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 14.47

Total Well Depth at Time of Deployment 92.60

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 87

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 1025

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 14.90

Downhole Field Parameters Upon Retrieval:

Temp: 20.31 ORP: 313 Turb: 65.3

pH: 6.38 Cond: 0.503 DO: 0.82

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 65.3 Meter Type: U-S2 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171MW-13B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 170 Screened Interval: 150-170

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1135

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 15.68

Total Well Depth at Time of Deployment 169.90

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 165

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 1040

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 14.98

Downhole Field Parameters Upon Retrieval:

Temp: 17.44 ORP: 171 Turb: 433

pH: 8.39 Cond: 7.64 DO: 1.29

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 433 Meter Type: U-52 Serial #: 88294XV

Notes/Observations: Evidence of EVO from last injection visible in samples as small white pieces. Light sheen

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

MS/MSD DUP-MW1 TOC, SO4, XNO3

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: B1038 MW-2

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 32 Screened Interval: 22-32

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1145

Weather Conditions: 80s sunny

Depth to GW @ Time of Deployment: 5.99

Total Well Depth at Time of Deployment: 34.04

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 30

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 1115

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 6.73

Downhole Field Parameters Upon Retrieval:

Temp: 17.98 ORP: 104 Turb: 58.6

pH: 11.81 Cond: 0.607 DO: 3.46

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 58.6 Meter Type: U-52 Serial #: S82947XV

Notes/Observations:

Field Sampling Tech: DT / AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: B1038MW-3

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 52 Screened Interval: 47-52

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1155

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 6.47

Total Well Depth at Time of Deployment 51.58

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 48

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 1125

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method:

[X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 6.86

Downhole Field Parameters Upon Retrieval:

Temp: 18.85 ORP: 157 Turb: 46.5

pH: 11.18 Cond: 0.351 DO: 1.84

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 46.5 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 161MW-2

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 55 Screened Interval: 45-55

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1205

Weather Conditions: 80s sunny

Depth to GW @ Time of Deployment: 4.13

Total Well Depth at Time of Deployment: 56.85

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 50

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 1155

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 4.66

Downhole Field Parameters Upon Retrieval:

Temp: 18.30 ORP: 195 Turb: 36.2

pH: 10.56 Cond: 0.571 DO: 5.83

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 36.2 Meter Type: U-52 Serial #: 382947XV

Notes/Observations:

Field Sampling Tech: DT/AP Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 161MW-1B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 122 Screened Interval: 107-122

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1220

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 1.30

Total Well Depth at Time of Deployment 121.06

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 110

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 1210

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 1.31

Downhole Field Parameters Upon Retrieval:

Temp: 21.39 ORP: 218 Turb: 76.0

pH: 10.33 Cond: 0.582 DO: 1.65

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 76.0 Meter Type: U-52 Serial #: 82947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 64MW-2

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 24.05 Screened Interval: 14.05 - 24.04

Well Casing: Diameter: 4 Material: PVC

Well Screen: Diameter: 4

Deployment

Date and Time of Deployment: Date: 8/2/17 Time: 1140

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 3.43

Total Well Depth at Time of Deployment 24.05

Dimensions of HydraSleeve Length (in.) 36 Diameter (in.) 4

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 19

Retrieval

Date and Time of Retrieval: Date: 8/21/17 Time: 1310

Total # of Days Deployed: 19

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 3.52

Downhole Field Parameters Upon Retrieval:

Temp: 20.55 ORP: 271 Turb: 20.8

pH: 9.23 Cond: 0.227 DO: 4.63

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 20.8 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DJ/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 161 MW-5B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 60 Screened Interval: 40 - 60

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 0900

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 29.00

Total Well Depth at Time of Deployment 61.40

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 45

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 0945

Total # of Days Deployed: 21

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 29.12

Downhole Field Parameters Upon Retrieval:

Temp: 16.67 ORP: 263 Turb: 54.3

pH: 6.57 Cond: 0.770 DO: 4.16

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 54.3 Meter Type: U-52 Serial #: 58294 7XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

DUP - MW2 TOC

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 161 MW-5

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 31 Screened Interval: 21 - 31

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 0905

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 6.46

Total Well Depth at Time of Deployment 31.18

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 25

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 1000

Total # of Days Deployed: 21

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 7.26

Downhole Field Parameters Upon Retrieval:

Temp: 17.50 ORP: 269 Turb: ~~[illegible]~~ AR 79.3

pH: 7.10 Cond: 0.681 DO: 4.34

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 79.3 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 114MW-1A

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 24.75 Screened Interval: —

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1000

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 17.68

Total Well Depth at Time of Deployment 24.75

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 19

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 1015

Total # of Days Deployed: 21

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 18.21

Downhole Field Parameters Upon Retrieval:

Temp: 16.44 ORP: 295 Turb: 690

pH: 7.18 Cond: 0.194 DO: 4.33

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 690 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 17MW-5

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 42 Screened Interval: 22-42

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: 8/1/17 Time: 1015

Weather Conditions: 80s sunny

Depth to GW @ Time of Deployment: 28.54

Total Well Depth at Time of Deployment: 45.40

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 30

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 1130

Total # of Days Deployed: 21

Weather Conditions: 80s sunny

Retrieval Method:

[X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 30.45

Total Well Depth at Time of Retrieval (measured before retrieval): 45.40

Downhole Field Parameters Upon Retrieval:

Temp: 16.38 ORP: 384 Turb: 198

pH: 4.90 Cond: 0.224 DO: 4.89

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 198 Meter Type: U-52 Serial #: 582947XV

Notes/Observations: New lock

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 17MW-5R

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 85 Screened Interval: 75-85

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1020

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 29.29

Total Well Depth at Time of Deployment 87.65

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 78

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 1045

Total # of Days Deployed: 21

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 30.67

Downhole Field Parameters Upon Retrieval:

Temp: 16.70 ORP: 331 Turb: 82.4

pH: 6.29 Cond: 0.322 DO: 6.45

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 82.4 Meter Type: U-52 Serial #: 88294XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 17MW-4

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 49.40 Screened Interval: 39.4 - 49.4

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1030

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 35.31

Total Well Depth at Time of Deployment 51.70

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 40

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 1100

Total # of Days Deployed: 21

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 36.82

Downhole Field Parameters Upon Retrieval:

Temp: 15.81 ORP: 343 Turb: 103

pH: 5.90 Cond: 0.409 DO: 6.34

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 103 Meter Type: U-52 Serial #: 882947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: DM17-3

Well Type: [x] Monitoring [ ] Other:

Well Finish: [x] Stick-up [ ] Flush Mount

Measuring Pt: [x] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 40 Screened Interval: 30-40

Well Casing: Diameter: 4 Material: PVC

Well Screen: Diameter: 4

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1345

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 26.34

Total Well Depth at Time of Deployment 40.45

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[x] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 32

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 1310

Total # of Days Deployed: 21

Weather Conditions: 80s sunny

Retrieval Method: [x] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 27.07

Downhole Field Parameters Upon Retrieval:

Temp: 18.89 ORP: 306 Turb: 125

pH: 4.72 Cond: 0.638 DO: 3.82

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 125 Meter Type: U-52 Serial #: S82947KV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

MS/MSD DVP-MV2-Exp

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 138MW-5B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 32 Screened Interval: 22-32

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1300

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 14.46

Total Well Depth at Time of Deployment 34.02

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 26

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 1250

Total # of Days Deployed: 21

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 14.78

Downhole Field Parameters Upon Retrieval:

Temp: 17.96 ORP: 378 Turb: 1000

pH: 4.80 Cond: 0.571 DO: 6.05

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 1000 Meter Type: U-52 Serial #: 582947XN

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Vout

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 125MW-1A

Well Type: [x] Monitoring [ ] Other:

Well Finish: [x] Stick-up [ ] Flush Mount

Measuring Pt: [x] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 51 Screened Interval: 41-51

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1310

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 0.00

Total Well Depth at Time of Deployment 52.90

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [x] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 45

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 1205

Total # of Days Deployed: 21

Weather Conditions: 80s sunny

Retrieval Method:

- [x] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 0.00

Downhole Field Parameters Upon Retrieval:

Temp: 21.44 ORP: 377 Turb: 10.8

pH: 5.00 Cond: 0.608 DO: 2.18

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 10.8 Meter Type: U-52 Serial #: 88297XV

Notes/Observations:

Field Sampling Tech: DJ/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 125MW-1B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 81 Screened Interval: 66-81

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1315

Weather Conditions 80s Sunny

Depth to GW @ Time of Deployment 1.38

Total Well Depth at Time of Deployment 83.05

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 77

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: ~~1215~~ AR 1215

Total # of Days Deployed: 21

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 1.71

Downhole Field Parameters Upon Retrieval:

Temp: 19.00 ORP: 375 Turb: 16.6

pH: 5.01 Cond: 0.477 DO: 3.94

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 16.6 Meter Type: U-52 Serial #: S829XXV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal
Location: Midvalley
Well ID: 125MW-3
Well Type: [X] Monitoring [ ] Other:
Well Finish: [ ] Stick-up [X] Flush Mount
Measuring Pt: [X] Top of Casing [ ] Other:
Total Depth as Constructed (ft bgs): 95 Screened Interval: 80 - 95
Well Casing: Diameter: 2 Material: PVC
Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1325
Weather Conditions: 80s sunny
Depth to GW @ Time of Deployment: 0.00
Total Well Depth at Time of Deployment: 94.10
Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2
Deployment Method/Position of Weight:
- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 82

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 1150
Total # of Days Deployed: 21
Weather Conditions: 80s sunny
Retrieval Method:
- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 0.00

Downhole Field Parameters Upon Retrieval:

Temp: 18.64 ORP: 363 Turb: 22.6
pH: 5.37 Cond: 0.240 DO: 5.74

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 22.6 Meter Type: U-52 Serial #: 582947XV

Notes/Observations: Replaced 2" gripper

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: GMW-4

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 20 Screened Interval: 10 - 20

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/2/17 Time: 1025

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 8.28

Total Well Depth at Time of Deployment 21.67

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 12

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 0755

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 8.38

Downhole Field Parameters Upon Retrieval:

Temp: 18.23 ORP: 403 Turb: 998

pH: 4.82 Cond: 0.869 DO: 4.73

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 995 Meter Type: U-52 Serial #: 58294/7XL

Notes/Observations:

Field Sampling Tech: DT/AP Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: MWG-2B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 82 Screened Interval: 72-82

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/2/17 Time: 1030

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 2.88

Total Well Depth at Time of Deployment 82.22

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 74

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 0810

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 2.97

Downhole Field Parameters Upon Retrieval:

Temp: 18.94 ORP: 363 Turb: 59.1

pH: 5.61 Cond: 0.414 DO: 0.91

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 59.1 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

MS/MSD DUP-MW2 VOC [redacted] XNO3, SO4, Diss Fe

22 Bottles

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 104MW-3

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 20 Screened Interval: 10-20

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/2/17 Time: 1045

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 8.46

Total Well Depth at Time of Deployment 21.90

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 12

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 0900

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 8.66

Downhole Field Parameters Upon Retrieval:

Temp: 18.94 ORP: 358 Turb: 387

pH: 5.12 Cond: 0.608 DO: 2.83

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 387 Meter Type: U-52 Serial #: 882947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 104 MW-6A

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 20.90 Screened Interval: 12-22

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/2/17 Time: 1055

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 1.20

Total Well Depth at Time of Deployment 20.90

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 13

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 0845

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 1.44

Downhole Field Parameters Upon Retrieval:

Temp: 18.45 ORP: 378 Turb: 367

pH: 5.03 Cond: 0.786 DO: 2.73

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 367 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: GMW-5

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 20 Screened Interval: 10-20

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/2/17 Time: 1110

Weather Conditions: 80s sunny

Depth to GW @ Time of Deployment: 15.70

Total Well Depth at Time of Deployment: 20.10

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 12

Retrieval

Date and Time of Retrieval: Date: 8/22/17 Time: 0745

Total # of Days Deployed: 20

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 13.98

Downhole Field Parameters Upon Retrieval:

Temp:	20.06	ORP:	433	Turb:	800
pH:	4.46	Cond:	1.60	DO:	2.76

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 800 Meter Type: U-52 Serial #: 822947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171 MW-7B

Well Type: [x] Monitoring [ ] Other:

Well Finish: [x] Stick-up [ ] Flush Mount

Measuring Pt: [x] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 100 Screened Interval: 80-100

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0815

Weather Conditions 70s rain

Depth to GW @ Time of Deployment 74.48

Total Well Depth at Time of Deployment 104.25

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[x] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 85

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 1105

Total # of Days Deployed: 16

Weather Conditions: 80s sunny

Retrieval Method: [x] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 77.31

Downhole Field Parameters Upon Retrieval:

Temp: 15.33 ORP: 235 Turb: 652

pH: 10.29 Cond: 0.879 DO: 1.55

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 652 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

DUP-MW4 TOC, XNO3, SO4

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: C71MW-6

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 60.0 Screened Interval: 38-58

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0820

Weather Conditions 70s rain

Depth to GW @ Time of Deployment 36.35

Total Well Depth at Time of Deployment 60.35

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 56

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 0945

Total # of Days Deployed: 16

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 37.43

Downhole Field Parameters Upon Retrieval:

Temp: 15.39 ORP: 409 Turb: 177

pH: 5.99 Cond: 0.328 DO: 4.06

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 177 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171 MW - 6B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 90.0 Screened Interval: 70-90

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0825

Weather Conditions 70s rain

Depth to GW @ Time of Deployment 61.77

Total Well Depth at Time of Deployment 92.70

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 88

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 1000

Total # of Days Deployed: 16

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 63.41

Downhole Field Parameters Upon Retrieval:

Temp: 15.93 ORP: 399 Turb: 34.9

pH: 6.34 Cond: 0.644 DO: 1.67

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 34.9 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

DUP-MW4 DOC, Diss Gas

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171MW-6C

Well Type: [x] Monitoring [ ] Other:

Well Finish: [x] Stick-up [ ] Flush Mount

Measuring Pt: [x] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 210 Screened Interval: 190 - 210

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0830

Weather Conditions 70s rain

Depth to GW @ Time of Deployment 89.87

Total Well Depth at Time of Deployment 212.60

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[x] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 208

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 1020

Total # of Days Deployed: 16

Weather Conditions: 80s sunny

Retrieval Method: [x] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 88.43

Downhole Field Parameters Upon Retrieval:

Temp: 17.06 ORP: 209 Turb: 41.1

pH: 8.95 Cond: 7.21 DO: 5.98

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 41.1 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

DUP - MW4 Diss Fe

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171 MW-14

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 70.0 Screened Interval: 50-70

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0835

Weather Conditions 70s rain

Depth to GW @ Time of Deployment 61.38

Total Well Depth at Time of Deployment 74.0

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 70

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 1035

Total # of Days Deployed: 16

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 62.53

Downhole Field Parameters Upon Retrieval:

Temp: 16.75 ORP: 193 Turb: 300

pH: 11.52 Cond: 0.614 DO: 1.88

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 300 Meter Type: U-52 Serial #: 582947XV

Notes/Observations: New lock

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171MW-14B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 100 Screened Interval: 80-100

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0840

Weather Conditions: 70s rain

Depth to GW @ Time of Deployment: 61.40

Total Well Depth at Time of Deployment: 103.15

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 98

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 1050

Total # of Days Deployed: 16

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 62.47

Downhole Field Parameters Upon Retrieval:

Temp: 16.50 ORP: 190 Turb: 150

pH: 10.83 Cond: 0.676 DO: 0.14

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 150 Meter Type: U-52 Serial #: SB2947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

DUP - MW4 VOC

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171MW-5B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 90 Screened Interval: 70-90

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0845

Weather Conditions: 70s rain

Depth to GW @ Time of Deployment: 52.38

Total Well Depth at Time of Deployment: 92.20

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 72

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 0900

Total # of Days Deployed: 16

Weather Conditions: 70s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 53.37

Downhole Field Parameters Upon Retrieval:

Temp: 15.39 ORP: 404 Turb: 1000

pH: 5.87 Cond: 0.704 DO: 4.51

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 1000 Meter Type: U-52 Serial #: 583947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171IW-002

Well Type: [x] Monitoring [ ] Other:

Well Finish: [x] Stick-up [ ] Flush Mount

Measuring Pt: [x] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 120 Screened Interval: 30-120

Well Casing: Diameter: 8 Material: PVC

Well Screen: Diameter: 8

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0855

Weather Conditions 70s rain

Depth to GW @ Time of Deployment 38.33

Total Well Depth at Time of Deployment 123.0

Dimensions of HydraSleeve Length (in.) 36 Diameter (in.) 4

Deployment Method/Position of Weight:

[x] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 118

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 0930

Total # of Days Deployed: 16

Weather Conditions: 80s sunny

Retrieval Method:

[x] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 38.36

Downhole Field Parameters Upon Retrieval:

Temp: 16.85 ORP: 402 Turb: 28.8

pH: 6.01 Cond: 0.340 DO: 4.43

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 22.8 Meter Type: U-52 Serial #: S82947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

DUP-MW3 DOC

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171MW-8

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 85 Screened Interval: 65-85

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0900

Weather Conditions: 70s rain

Depth to GW @ Time of Deployment: 47.71

Total Well Depth at Time of Deployment: 87.57

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 83

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 1125

Total # of Days Deployed: 16

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 49.04

Downhole Field Parameters Upon Retrieval:

Temp: 15.65 ORP: 257 Turb: 53.5

pH: 9.79 Cond: 0.529 DO: 10.00

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 53.5 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171MW1-15

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 80 Screened Interval: 60-80

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0910

Weather Conditions: 70s rain

Depth to GW @ Time of Deployment: 46.12

Total Well Depth at Time of Deployment: 83.85

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 62

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 1150

Total # of Days Deployed: 16

Weather Conditions: 80s sunny

Retrieval Method:

[X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 47.82

Downhole Field Parameters Upon Retrieval:

Temp: 14.50 ORP: 268 Turb: 33.6

pH: 9.21 Cond: 0.611 DO: 2.50

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 33.6 Meter Type: U-52 Serial #: S82947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 1711W-005

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 120 Screened Interval: 30-120

Well Casing: Diameter: 8 Material: PVC

Well Screen: Diameter: 8

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0915

Weather Conditions: 70s rain

Depth to GW @ Time of Deployment: 46.88

Total Well Depth at Time of Deployment: 123.10

Dimensions of HydraSleeve: Length (in.) 36 Diameter (in.) 4

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 110

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 1135

Total # of Days Deployed: 16

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 48.64

Downhole Field Parameters Upon Retrieval:

Temp: 14.01 ORP: 259 Turb: 30.8

pH: 9.45 Cond: 0.654 DO: 0.74

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 30.8 Meter Type: U-52 Serial #: S829947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 17MW-2

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 37 Screened Interval: 27-37

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1040

Weather Conditions: 80s sunny

Depth to GW @ Time of Deployment: 25.30

Total Well Depth at Time of Deployment: 39.22

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 29

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 1250

Total # of Days Deployed:

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 23.98

Downhole Field Parameters Upon Retrieval:

Temp: 16.04 ORP: 319 Turb: 30.6

pH: 8.23 Cond: 0.625 DO: 4.82

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 30.6 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171MW110

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 50 Screened Interval: 30-50

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0925

Weather Conditions: 70s rain

Depth to GW @ Time of Deployment: 28.12

Total Well Depth at Time of Deployment: 53.30

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 48

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 1310

Total # of Days Deployed: ≈ 16

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 29.33

Downhole Field Parameters Upon Retrieval:

Temp: 14.87 ORP: 295 Turb: 29.9

pH: 8.90 Cond: 0.362 DO: 5.22

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 29.9 Meter Type: U-52 Serial #: S82947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171MW11DR

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 160 Screened Interval: 140-160

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0925

Weather Conditions: 70s rain

Depth to GW @ Time of Deployment: 38.92

Total Well Depth at Time of Deployment: 163.30

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 158

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 1225

Total # of Days Deployed: 16

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 39.90

Downhole Field Parameters Upon Retrieval:

Temp: 15.68 ORP: 298 Turb: 60.5

pH: 8.81 Cond: 0.554 DO: 2.22

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 60.5 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171 MW-11

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 160 Screened Interval: 140-160

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0930

Weather Conditions: 70s rain

Depth to GW @ Time of Deployment: >100

Total Well Depth at Time of Deployment: 159.70

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 142

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 0810

Total # of Days Deployed: 16

Weather Conditions: 70s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): >100

Downhole Field Parameters Upon Retrieval:

Temp: 17.55 ORP: 400 Turb: 102

pH: 5.57 Cond: 0.489 DO: 4.57

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 102 Meter Type: U-52 Serial #: 5S2947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

MS/MSD VOC, TOC, SO_4, XNO_3, Diss Fe

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171MW-11B

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 200 Screened Interval: 180-200

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0935

Weather Conditions: 70s rain

Depth to GW @ Time of Deployment: >100

Total Well Depth at Time of Deployment: 200.00

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 182

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 0825

Total # of Days Deployed: 16

Weather Conditions: 70s sunny

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): >100

Downhole Field Parameters Upon Retrieval:

Temp: 15.37 ORP: 384 Turb: 55.5

pH: 6.09 Cond: 0.389 DO: 2.76

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 55.5 Meter Type: U-52 Serial #: S82947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

DUP-MW3 VOC, TOC, SO_4, NO_3, Diss Fe

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 171MW-9

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 51 Screened Interval: 31-51

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0945

Weather Conditions: 70s rain

Depth to GW @ Time of Deployment: 21.82

Total Well Depth at Time of Deployment: 53.90

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 33

Retrieval

Date and Time of Retrieval: Date: 8/23/17 Time: 1235

Total # of Days Deployed: 16

Weather Conditions: 80s sunny

Retrieval Method:

[X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 23.14

Downhole Field Parameters Upon Retrieval:

Temp: 16.99 ORP: 318 Turb: 45.5

pH: 8.28 Cond: 0.771 DO: 6.19

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 45.9 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 6MW-4

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 20 Screened Interval: —

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1240

Weather Conditions: 80s sunny

Depth to GW @ Time of Deployment: 15.43

Total Well Depth at Time of Deployment: 21.30

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 17.50

Retrieval

Date and Time of Retrieval: Date: 8/24/17 Time: 1230

Total # of Days Deployed: 23

Weather Conditions: 80s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 16.52

Downhole Field Parameters Upon Retrieval:

Temp: 16.77 ORP: 410 Turb: 98.4

pH: 4.97 Cond: 0.635 DO: 6.18

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 98.4 Meter Type: U-52 Serial #: 882947VV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: bMW-4D

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 62 Screened Interval: 52-62

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1230

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 18.61

Total Well Depth at Time of Deployment 63.15

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 54

Retrieval

Date and Time of Retrieval: Date: 8/24/17 Time: 1240

Total # of Days Deployed: 23

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 19.71

Downhole Field Parameters Upon Retrieval:

Temp: 17.07 ORP: 380 Turb: 48.1

pH: 5.58 Cond: 0.057 DO: 2.49

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 48.1 Meter Type: U-52 Serial #: 582947VV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: MWF-2A

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 20 Screened Interval: 10-20

Well Casing: Diameter: 4 Material: PVC

Well Screen: Diameter: 4

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1335

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 2.48

Total Well Depth at Time of Deployment 19.40

Dimensions of HydraSleeve Length (in.) 36 Diameter (in.) 4

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 12

Retrieval

Date and Time of Retrieval: Date: 8/24/17 Time: 1255

Total # of Days Deployed: 23

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 2.85

Downhole Field Parameters Upon Retrieval:

Temp: 17.42 ORP: 428 Turb: 13.7

pH: 4.61 Cond: 0.702 DO: 4.52

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 13.7 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

DUP-MW6 VOC, Diss. Fe

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: MWF-23

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 46 Screened Interval: 36-46

Well Casing: Diameter: 4 Material: PVC

Well Screen: Diameter: 4

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1345

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 1.12

Total Well Depth at Time of Deployment 47.40

Dimensions of HydraSleeve Length (in.) 36 Diameter (in.) 4

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 38

Retrieval

Date and Time of Retrieval: Date: 8/24/17 Time: 1310

Total # of Days Deployed: 23

Weather Conditions: 80s sunny

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 1.62

Downhole Field Parameters Upon Retrieval:

Temp: 15.51 ORP: 428 Turb: 0.0

pH: 4.65 Cond: 0.707 DO: 5.05

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 0.0 Meter Type: U-52 Serial #: 5X2947XL

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: PM6-3

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 22 Screened Interval: 12-22

Well Casing: Diameter: 4 Material: PVC

Well Screen: Diameter: 4

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1355

Weather Conditions: 80s sunny

Depth to GW @ Time of Deployment: 12.13

Total Well Depth at Time of Deployment: 23.73

Dimensions of HydraSleeve: Length (in.) 36 Diameter (in.) 4

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 14

Retrieval

Date and Time of Retrieval: Date: 8/24/17 Time: 1215

Total # of Days Deployed: 23

Weather Conditions: 70s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 14.95

Downhole Field Parameters Upon Retrieval:

Temp: 14.95 ORP: 413 Turb: 745

pH: 4.98 Cond: 0.644 DO: 6.26

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 745 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: JT / AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: SMW-8

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 17 Screened Interval: 7-17

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0735

Weather Conditions 70s rain

Depth to GW @ Time of Deployment 5.97

Total Well Depth at Time of Deployment 20.71

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 10

Retrieval

Date and Time of Retrieval: Date: 8/24/17 Time: 1030

Total # of Days Deployed: 17

Weather Conditions: 70s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 6.29

Downhole Field Parameters Upon Retrieval:

Temp: 16.79 ORP: 411 Turb: 383

pH: 4.90 Cond: 0.445 DO: 5.42

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 383 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT / AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: SMW-4D

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 36.40 Screened Interval: —

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0755

Weather Conditions: 70s rain

Depth to GW @ Time of Deployment: 5.13

Total Well Depth at Time of Deployment: 36.40

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 30

Retrieval

Date and Time of Retrieval: Date: 8/24/17 Time: 1105

Total # of Days Deployed: 17

Weather Conditions: 70s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 5.82

Downhole Field Parameters Upon Retrieval:

Temp: 15.84 ORP: 394 Turb: 346

pH: 5.31 Cond: 0.139 DO: 5.42

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 346 Meter Type: U-52 Serial #: 88294/7XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: DM5-2

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 19.10 Screened Interval: 9.1 - 19.1

Well Casing: Diameter: 4 Material: PVC

Well Screen: Diameter: 4

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0805

Weather Conditions 70s warm

Depth to GW @ Time of Deployment 8.47

Total Well Depth at Time of Deployment 21.35

Dimensions of HydraSleeve Length (in.) 36 Diameter (in.) 4

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 10

Retrieval

Date and Time of Retrieval: Date: 8/24/17 Time: 1125

Total # of Days Deployed: 17

Weather Conditions: 70s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 9.32

Downhole Field Parameters Upon Retrieval:

Temp: 15.71 ORP: 418 Turb: 16.4

pH: 4.76 Cond: 0.615 DO: 5.40

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 16.4 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT / AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 17(MW-12

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 160 Screened Interval: 140-160

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0810

Weather Conditions 70s rain

Depth to GW @ Time of Deployment 60.96

Total Well Depth at Time of Deployment 162.80

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 142

Retrieval

Date and Time of Retrieval: Date: 8/24/17 Time: 1150

Total # of Days Deployed: 17

Weather Conditions: 70s sunny

Retrieval Method: [X] Continuous Pull (preferred)

[ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): ~~60.42~~ AR 62.40

Downhole Field Parameters Upon Retrieval:

Temp: 14.76 ORP: 384 Turb: 24.8

pH: 5.68 Cond: 0.258 DO: 2.03

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 24.8 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT / AR Company: Sovereign Consulting Inc.

DUP-MVS VOC, TOC, XNO_3, SO_4, Diss Fe

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: SMW-4

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 20.50 Screened Interval: 10.5-20.5

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/7/17 Time: 0750

Weather Conditions 70s rain

Depth to GW @ Time of Deployment 3.75

Total Well Depth at Time of Deployment 20.48

Dimensions of HydraSleeve Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 12

Retrieval

Date and Time of Retrieval: Date: 8/24/17 Time: 1045

Total # of Days Deployed: 17

Weather Conditions: 70s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 4.04

Downhole Field Parameters Upon Retrieval:

Temp: 15.74 ORP: 408 Turb: 588

pH: 5.05 Cond: 0.459 DO: 6.35

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 588 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: 101MW-6

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 90 Screened Interval: 80 - 90

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/2/17 Time: 1335

Weather Conditions: 80s sunny

Depth to GW @ Time of Deployment: 10.46

Total Well Depth at Time of Deployment: 89.25

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 85

Retrieval

Date and Time of Retrieval: Date: 8/30/17 Time: 0815

Total # of Days Deployed: 28

Weather Conditions: 60s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 10.53

Downhole Field Parameters Upon Retrieval:

Temp: 15.62 ORP: 329 Turb: 41.0

pH: 6.87 Cond: 0.565 DO: 2.53

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 41.0 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: G-31-MW-001

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 20 Screened Interval: 10 - 20

Well Casing: Diameter: 2 Material: PVC

Well Screen: Diameter: 2

Deployment

Date and Time of Deployment: Date: 8/2/17 Time: 1345

Weather Conditions: 80s sunny

Depth to GW @ Time of Deployment: 5.03

Total Well Depth at Time of Deployment: 19.30

Dimensions of HydraSleeve: Length (in.) 30 Diameter (in.) 2

Deployment Method/Position of Weight:

- [X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 15

Retrieval

Date and Time of Retrieval: Date: 8/30/17 Time: 0855

Total # of Days Deployed: 28

Weather Conditions: 60s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 5.12

Downhole Field Parameters Upon Retrieval:

Temp: 17.54 ORP: 336 Turb: 173

pH: 6.50 Cond: 0.770 DO: 3.79

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: Meter Type: U-52 Serial #: 582947XV

Notes/Observations: Replaced 2" gripper cap

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: MW-1_G

Well Type: [x] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [x] Flush Mount

Measuring Pt: [x] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 15 Screened Interval: 5-15

Well Casing: Diameter: 4 Material: PVC

Well Screen: Diameter: 4

Deployment

Date and Time of Deployment: Date: 8/2/17 Time: 1355

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 7.94

Total Well Depth at Time of Deployment 12.40

Dimensions of HydraSleeve Length (in.) 36 Diameter (in.) 4

Deployment Method/Position of Weight:

- [x] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): ~~10~~ 9

Retrieval

Date and Time of Retrieval: Date: 8/30/17 Time: 0920

Total # of Days Deployed: 28

Weather Conditions: 60s sunny

Retrieval Method:

- [x] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 7.72

Downhole Field Parameters Upon Retrieval:

Temp: 17.17 ORP: 319 Turb: 831

pH: 6.79 Cond: 0.555 DO: 2.61

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 831 Meter Type: U-52 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: MW-3_G

Well Type: [X] Monitoring [ ] Other:

Well Finish: [ ] Stick-up [X] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 12 Screened Interval: 2-12

Well Casing: Diameter: 4 Material: PVC

Well Screen: Diameter: 4

Deployment

Date and Time of Deployment: Date: 8/2/17 Time: 1400

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 8.06

Total Well Depth at Time of Deployment 13.40

Dimensions of HydraSleeve Length (in.) 36 Diameter (in.) 4

Deployment Method/Position of Weight:

- [ ] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom
- [ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.
- [X] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 10

Retrieval

Date and Time of Retrieval: Date: 8/30/17 Time: 0830

Total # of Days Deployed: 28

Weather Conditions: 60s sunny

Retrieval Method:

- [X] Continuous Pull (preferred)
- [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 8.11

Downhole Field Parameters Upon Retrieval:

Temp: 15.76 ORP: 397 Turb: 80.2

pH: 6.16 Cond: 0.752 DO: 2.20

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 80.2 Meter Type: U-52 Serial #: 882947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

Sovereign Consulting Inc

HydraSleeve Field Form

Site: Picatinny Arsenal

Location: Midvalley

Well ID: MW138-1

Well Type: [X] Monitoring [ ] Other:

Well Finish: [X] Stick-up [ ] Flush Mount

Measuring Pt: [X] Top of Casing [ ] Other:

Total Depth as Constructed (ft bgs): 31 Screened Interval: 21-31

Well Casing: Diameter: 4 Material: PVC

Well Screen: Diameter: 4

Deployment

Date and Time of Deployment: Date: 8/1/17 Time: 1420

Weather Conditions 80s sunny

Depth to GW @ Time of Deployment 17.22

Total Well Depth at Time of Deployment 33.90

Dimensions of HydraSleeve Length (in.) 36 Diameter (in.) 4

Deployment Method/Position of Weight:

[X] Bottom Anchor: Weight attached to bottom of HydraSleeve. Weight rests on well bottom

[ ] Top-Down: Weight attached to bottom of HydraSleeve. Weight suspended in well.

[ ] Top-Down: Weight attached to top of HydraSleeve. Weight suspended in well.

Deployment Depth (Top of HydraSleeve)(ft bgs): 30

Retrieval

Date and Time of Retrieval: Date: 8/30/17 Time: 1200

Total # of Days Deployed: 29

Weather Conditions: 60s sunny

Retrieval Method: [X] Continuous Pull (preferred) [ ] Short Strokes

Depth to GW at Time of Retrieval (measured before retrieval): 17.20

Downhole Field Parameters Upon Retrieval:

Temp: 16.66 ORP: 324 Turb: 43.1

pH: 7.14 Cond: 0.827 DO: 4.63

Turbidity of GW Sample (dispensed from HydraSleeve):

Turbidity: 43.1 Meter Type: U-S2 Serial #: 582947XV

Notes/Observations:

Field Sampling Tech: DT/AR Company: Sovereign Consulting Inc.

DUP-MV8 Explosives

SOVEREIGN CONSULTING INC.

LOW FLOW SAMPLING PURGE FORM

SITE: Picatinny Arsenal
CONSULTING FIRM: Sovereign Consulting Inc.
Date: 8/30/17
SOV. PROJECT #: RB577
WEATHER: 60s sunny
SAMPLER(S): DT/AR
MONITOR WELL #: 101MW-5
WELL DEPTH: 14.60 ft
SCREENED/OPEN INTERVAL: ft
WELL PERMIT #:
WELL DIAMETER: 2 inches
PID/FID READINGS (ppm):
PUMP INTAKE DEPTH: 11 ft below TOC
HORIBA U-52 Water Quality Meter SN: S82947XV
DEPTH TO WATER BEFORE PUMP INSTALLATION: 4.64 ft below TOC
Peri pump / Hurricane pump

TIME	PURGING	SAMPLING	TEMPERATURE (degrees C) READING	TEMPERATURE CHANGE*	pH (pH units) READING	pH CHANGE*	ORP (REDOX POTENTIAL) (mv) READING	ORP CHANGE*	SPECIFIC CONDUCTIVITY (mS/cm) READING	SPECIFIC CONDUCTIVITY CHANGE*	TURBIDITY (NTU) READING	TURBIDITY CHANGE*	DISSOLVED OXYGEN (mg/L) READING	DISSOLVED OXYGEN CHANGE*	PUMPING RATE (ml/min)	DEPTH TO WATER (ft below TOC)
0940	X		19.25	NA	6.68	NA	311	NA	0.792	NA	53.8	NA	6.67	NA	200	4.64
0945	X		17.53	1.72	6.75	0.07	305	6	0.811	0.019	46.0	7.8	6.79	0.12		
0950	X		17.33	0.20	6.86	0.11	290	15	0.828	0.017	10.0	36.0	1.62	5.17		
0955	X		17.23	0.10	6.89	0.03	283	7	0.830	0.010	9.71	0.39	1.60	0.02		
1000	X		17.20	0.03	6.93	0.04	251	32	0.865	0.035	9.32	0.41	1.54	0.06		
1005	X		17.26	0.06	6.97	0.04	250	1	0.865	0.003	9.30	0.02	1.50	0.04		
1010	X		17.30	0.04	7.02	0.05	249	1	0.865	0	9.22	0.08	1.41	0.09		
1015	X		17.32	0.02	7.04	0.02	247	2	0.864	0.001	9.20	0.02	1.40	0.01		
1020	X		17.35	0.03	7.07	0.03	247	0	0.864	0	9.17	0.03	1.39	0.01		
1025	X	X	17.37	0.02	7.07	0	246	1	0.864	0	9.15	0.02	1.38	0.01		

COMMENTS:

Sampled @ 1025

DUP-MW7
MS/MSD Exp, Total Metals, Diss Metals

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for Redox Potential; and ± 10% for Dissolved Oxygen and Turbidity; 0.30' Max. Drawdown; 100-500 mL flow rate

*Analysis Methods: SM 2510 B - Specific Conductivity; EPA 180.1 - Turbidity; SM4500-O G - Dissolved Oxygen; SM4500-H B - pH; SM2550 B - Temperature

Sovereign Consulting Inc

SURFACE WATER SAMPLE COLLECTION LOG

Sample ID 104SW-002
Date 8/30/17
Time 1240
Weather 70s sunny

Project Name & No. Picatinny Arsenal RB577
Sampling Personnel DT/AR

DESCRIPTION OF SAMPLE LOCATION:

Name of Water Body —
Depth of Water 2ft
Velocity slow
Other Comments
Substrate Description sand
Sample Location and Depth (ft) 0.75ft

Description of Nearby Vegetation shrubs, bushes, trees

FIELD PARAMETERS:

Sample Method: Bailer
Sample Description: clear

Temp. (°F) 19.93
pH 7.33
ORP 317

Cond 0.881
Turb 9.3
DO 2.87
Salinity 0.04

CONTAINER DESCRIPTION:

Bottle Type	*Analysis*	*Preservative*
40mL vial	VOC	HCl
1L amber	Explosives	—

TOTAL: 15

MS/MSD DUP-SW-MV VOC(SIM), EXP

Sovereign Consulting Inc

SURFACE WATER SAMPLE COLLECTION LOG

Sample ID: 104SW-001
Date: 8/30/17
Time: 1145
Weather: 60s sunny

Project Name & No.: Picatinny Arsenal RB577
Sampling Personnel: DT/AR

DESCRIPTION OF SAMPLE LOCATION:

Name of Water Body: —
Depth of Water: 2 ft
Velocity: slow
Other Comments:
Substrate Description: sand
Sample Location and Depth (ft): 0.75 ft

Description of Nearby Vegetation: shrubs, bushes, trees

FIELD PARAMETERS:

Sample Method: Bailer
Sample Description: clear

Temp. (°F): 17.60
pH: 7.29
ORP: 308
Cond: 0.860
Turb: 16.1
DO: 7.22
Salinity: 0.04

CONTAINER DESCRIPTION:

Bottle Type	*Analysis*	*Preservative*
40mL vial	VOC	HCl
1 L amber	Explosives	—

TOTAL: 5

Sovereign Consulting Inc

SURFACE WATER SAMPLE COLLECTION LOG

Sample ID: 161-SW004
Date: 8/30/17
Time: 0745
Weather: 60s sunny

Project Name & No.: Picatinny Arsenal RB577
Sampling Personnel: DT/AR

DESCRIPTION OF SAMPLE LOCATION:

Name of Water Body: —
Depth of Water: 1.5 ft
Velocity: slow
Other Comments:
Substrate Description: sand
Sample Location and Depth (ft): 1 ft

Description of Nearby Vegetation: trees, shrubs, bushes

FIELD PARAMETERS:

Sample Method: Bailer
Sample Description: clear

Temp. (°F): 15.53
pH: 6.08
ORP: 386

Cond: 0.691
Turb: 3.5
DO: 5.20
Salinity: 0.03

CONTAINER DESCRIPTION:

Bottle Type	Analysis	Preservative
40mL vial	VOC	HCl
1 L amber	Explosives	—

TOTAL: 5

Sovereign Consulting Inc

SURFACE WATER SAMPLE COLLECTION LOG

Sample ID 161SW-10A
Date 8/30/17
Time 0730
Weather 80s sunny

Project Name & No. Picatinny Arsenal RB577
Sampling Personnel DT/AR

DESCRIPTION OF SAMPLE LOCATION:

Name of Water Body —
Depth of Water 1 ft
Velocity slow
Other Comments
Substrate Description sand
Sample Location and Depth (ft) 8"

Description of Nearby Vegetation trees, shrubs, bushes

FIELD PARAMETERS:

Sample Method: Bailer
Sample Description: clear

Temp. (°F) 16.26
pH 5.63
ORP 393

Cond 0.728
Turb 8.9
DO 6.38
Salinity 0.04

CONTAINER DESCRIPTION:

Bottle Type	*Analysis*	*Preservative*
40mL vial		HCL
1L amber		—

TOTAL: 5

Sovereign Consulting Inc

SURFACE WATER SAMPLE COLLECTION LOG

Sample ID 171SW-003

Date 8/30/17

Time —

Weather 70s sunny

Project Name & No. Picatinny Arsenal RB577

Sampling Personnel DT/AR

DESCRIPTION OF SAMPLE LOCATION: [No sample taken. Location and nearby locations were dry.]

Name of Water Body

Depth of Water

Velocity none

Other Comments (DRY)

Substrate Description

Sample Location and Depth (ft)

Description of Nearby Vegetation

FIELD PARAMETERS:

Sample Method: Bailer

Sample Description:

Temp. (°F)

pH

ORP

Cond

Turb

DO

Salinity

CONTAINER DESCRIPTION:

Bottle Type	*Analysis*	*Preservative*

TOTAL:

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: MW-36

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:	n/A
Well Tag ID and Condition	MW-36 / ok
Well Installation Date	n/A

	From Log	From GPS[1]
Ground Surface Elevation	697.51	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)		N/A
Easting (State Plane)		N/A

Cross streets (if applicable):	Former DRMO Area
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) (Flush Mount) Stick up Multilevel Well[2]

Well lock\security type:	manhole cover - locked	
Elevation (top of inner casing):	697.51	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	4" PVC	inches
Well Depth (as installed):	12.0	ftbgs
Well Depth (as measured):	13.40	ftoc
Well Stick Up Height (as measured):	n/A	ftbgs
Screened interval:	2-12'	ft
Open hole interval:		ft
Depth to water:	8.06	ftbtoc

Date: 8/2/17 Time: 1400

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): Ø ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Pappoli

Date of Inspection: 8/2/17

Reviewed by: [illegible] (Print)

[illegible] (Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: MW-6

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	MW-1G/OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	696.58	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	Ø	N/A
Easting (State Plane)	Ø	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well[2]

Well lock\security type:	Manhole cover - lock	
Elevation (top of inner casing):	696.58	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	4" PVC	inches
Well Depth (as installed):	15.0	ftbgs
Well Depth (as measured):	12.40	ftoc
Well Stick Up Height (as measured):	N/A	ftbgs
Screened interval:	5-15'	ft
Open hole interval:		ft
Depth to water:	7.94	ftbtoc

Date: 8/2/17 Time: 1355

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (No)

Well Condition

Is the concrete pad in good condition?	(Yes)	No
Is the well surface casing in good condition?	(Yes)	No
Is the surface casing vertical?	(Yes)	No
Is there an internal well seal?	(Yes)	No
Has there been physical damage to the well?	Yes	(No)
Does sounding depth match completed depth?	(Yes)	No
Is measuring point marked?	(Yes)	No
Is the well clearly labeled?	Yes	(No)
Flush mount - Is it secure from runoff?	(Yes)	No

Overall well condition (circle one): (Good) Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	(No)
Well needs to be re-surveyed.	Yes	(No)
Well needs to be repaired.	Yes	(No)
Well needs to be replaced.	Yes	(No)
Well needs to be properly abandoned.	Yes	(No)
No action necessary.	(Yes)	No

Comments

Signatures

Inspected by: A. Poppoli

Date of Inspection: 8/2/17

Reviewed by: [illegible] (Print)

[illegible] (Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: G3I-MW-001

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	G3i-MW-001 / OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	693.27	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	Former DRMO Area
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one): Flush Mount / Stick up / Multilevel Well[2]

Well lock\security type:	Manhole cover & locked	
Elevation (top of inner casing):	693.27	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	20.0	ftbgs
Well Depth (as measured):	19.30	ftoc
Well Stick Up Height (as measured):	N/A	ftbgs
Screened interval:	10-20'	ft
Open hole interval:	—	ft
Depth to water:	5.03	ftbtoc

Date: 8/2/17 Time: 1345

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Replaced 2" gripper cap

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW 15

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: N/A

Well Tag ID and Condition: 171 MW 15 / OK

Well Installation Date: N/A

	From Log	From GPS[1]
Ground Surface Elevation	N/A	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one): Flush Mount | Stick up | Multilevel Well[2]

Well lock\security type: OK

Elevation (top of inner casing): N/A

Surface protective casing material: Steel

Surface Casing diameter: 6" inches

Well Diameter and Casing Material: 2" PVC inches

Well Depth (as installed): 80.0 ftbgs

Well Depth (as measured): 83.35 fttoc

Well Stick Up Height (as measured): 3.2 ftbgs

Screened interval: 60-80 ft

Open hole interval: N/A ft

Depth to water: 46.12 ftbtoc

Date: 8/7/17 Time: 0910

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 138 MW-4

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	138 MW-4 OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	701.53	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount (locked) Stick up Multilevel Well[2]

Well lock\security type:		
Elevation (top of inner casing):	701.53	
Surface protective casing material:	Steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):		ftbgs
Well Depth (as measured):	21.40	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	10-20'	ft
Open hole interval:	N/A	ft
Depth to water:	10.13	ftbtoc

Date: 8/2/17 Time: 1145

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: D. Thompson

Date of Inspection: 8/2/17

Reviewed by: Ronald L. Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW-4

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: MidValley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	171MW-4/OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	885.17	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount (Stick up) Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	885.17	
Surface protective casing material:	Steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	82.0	ftbgs
Well Depth (as measured):	81.60	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	72-82	ft
Open hole interval:	N/A	ft
Depth to water:	42.53	ftbtoc

Date: 8/1/17 Time: 1053

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Poppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Trawer (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 62MW-2

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	62 MW-2 / OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	712.02	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount (Stick up) Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	712.02	
Surface protective casing material:	Steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	4" PVC	inches
Well Depth (as installed):	31.20	ftbgs
Well Depth (as measured):	31.50	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	21.2-31.2	ft
Open hole interval:	N/A	ft
Depth to water:	8.53	ftbtoc

Date: 8/2/17 Time: 1150

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

No access

Signatures

Inspected by:

Date of Inspection:

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 1711W-002

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	1711W-002/ ok
Well Installation Date	—

	From Log	From GPS[1]
Ground Surface Elevation	932.37	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one): Flush Mount — Stick up — Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	932.37	
Surface protective casing material:	steel	
Surface Casing diameter:		inches
Well Diameter and Casing Material:	6" ss	inches
Well Depth (as installed):	120.0	ftbgs
Well Depth (as measured):	123.0	fttoc
Well Stick Up Height (as measured):	3.2	ftbgs
Screened interval:	30-120	ft
Open hole interval:	—	ft
Depth to water:	38.33	ftbtoc

Date: 8/7/17 Time: 0855

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well HeadSpace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Frain (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-8

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171 MW-8 / OK
Well Installation Date	

	From Log	From GPS[1]
Ground Surface Elevation	914.05	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one): Flush Mount — (Stick up) — Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	914.05	
Surface protective casing material:	steel	
Surface Casing diameter:		inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	85	ftbgs
Well Depth (as measured):	87.57	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	65-85	ft
Open hole interval:	—	ft
Depth to water:	47.71	ftbtoc

Date: 8/7/17 Time: 0900

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (No)

Well Condition

Is the concrete pad in good condition?	(Yes)	No
Is the well surface casing in good condition?	(Yes)	No
Is the surface casing vertical?	(Yes)	No
Is there an internal well seal?	(Yes)	No
Has there been physical damage to the well?	Yes	(No)
Does sounding depth match completed depth?	(Yes)	No
Is measuring point marked?	(Yes)	No
Is the well clearly labeled?	(Yes)	No
Flush mount - Is it secure from runoff?	(Yes)	No

Overall well condition (circle one) (Good) Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	(No)
Well needs to be re-surveyed.	Yes	(No)
Well needs to be repaired.	Yes	(No)
Well needs to be replaced.	Yes	(No)
Well needs to be properly abandoned.	Yes	(No)
No action necessary.	(Yes)	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/7/17

Reviewed by: Ronald C. Travis (Print)

(Sign)

[3]Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-10B

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171MW-10B / ok
Well Installation Date	—

	From Log	From GPS[1]
Ground Surface Elevation	873.34	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) Flush Mount **(Stick up)** Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	873.34	
Surface protective casing material:	steel	
Surface Casing diameter:		inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	160	ftbgs
Well Depth (as measured):	163.30	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	140-160	ft
Open hole interval:	—	ft
Depth to water:	38.92	ftbtoc

Date: 8/7/17 Time: 0925

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (circled) No

Well Condition

Is the concrete pad in good condition?	Yes (circled)	No
Is the well surface casing in good condition?	Yes (circled)	No
Is the surface casing vertical?	Yes (circled)	No
Is there an internal well seal?	Yes (circled)	No
Has there been physical damage to the well?	Yes	No (circled)
Does sounding depth match completed depth?	Yes (circled)	No
Is measuring point marked?	Yes (circled)	No
Is the well clearly labeled?	Yes (circled)	No
Flush mount - Is it secure from runoff?	Yes (circled)	No

Overall well condition (circle one): Good (circled) Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No (circled)
Well needs to be re-surveyed.	Yes	No (circled)
Well needs to be repaired.	Yes	No (circled)
Well needs to be replaced.	Yes	No (circled)
Well needs to be properly abandoned.	Yes	No (circled)
No action necessary.	Yes (circled)	No

Comments

Signatures

Inspected by: A. Pappalli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW-10

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171MW-10/dc
Well Installation Date	

	From Log	From GPS[1]
Ground Surface Elevation	873.47	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	873.47	
Surface protective casing material:	steel	
Surface Casing diameter:		inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	50	ftbgs
Well Depth (as measured):	53.30	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	30 – 50	ft
Open hole interval:	—	ft
Depth to water:	28.12	ftbtoc

Date: 8/7/17 Time: 0920

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Tran (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-13B

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171MW13B/OK
Well Installation Date	—

	From Log	From GPS[1]
Ground Surface Elevation	847.71	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	847.71	
Surface protective casing material:	steel	
Surface Casing diameter:	6	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	170	ftbgs
Well Depth (as measured):	169.90	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	150 - 170	ft
Open hole interval:	—	ft
Depth to water:	14.47	ftbtoc

Date: 8/1/17 Time: 1130

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (circled) No

Well Condition

Is the concrete pad in good condition?	Yes (circled)	No
Is the well surface casing in good condition?	Yes (circled)	No
Is the surface casing vertical?	Yes (circled)	No
Is there an internal well seal?	Yes (circled)	No
Has there been physical damage to the well?	Yes	No (circled)
Does sounding depth match completed depth?	Yes (circled)	No
Is measuring point marked?	Yes (circled)	No
Is the well clearly labeled?	Yes (circled)	No
Flush mount - Is it secure from runoff?	Yes (circled)	No

Overall well condition (circle one): Good (circled) Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No (circled)
Well needs to be re-surveyed.	Yes	No (circled)
Well needs to be repaired.	Yes	No (circled)
Well needs to be replaced.	Yes	No (circled)
Well needs to be properly abandoned.	Yes	No (circled)
No action necessary.	Yes (circled)	No

Comments

_____

Signatures

Inspected by: A. Roppolo

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Tower (Print)

[signature] (Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-17

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171 MW-17 / ok
Well Installation Date	

	From Log	From GPS[1]
Ground Surface Elevation	864.36	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	864.36	
Surface protective casing material:	steel	
Surface Casing diameter:	6	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	70.0	ftbgs
Well Depth (as measured):	72.40	fttoc
Well Stick Up Height (as measured):	3.0	ftbgs
Screened interval:	50-70	ft
Open hole interval:	—	ft
Depth to water:	19.17	ftbtoc

Date: 8/1/17 Time: 1055

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald C. Travo (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: DM6-1

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	DM6-1 / ok
Well Installation Date	

	From Log	From GPS[1]
Ground Surface Elevation	888.99	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) Flush Mount (Stick up) Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	888.99	
Surface protective casing material:	steel	
Surface Casing diameter:	6	inches
Well Diameter and Casing Material:	4" PVC	inches
Well Depth (as installed):	78.0	ftbgs
Well Depth (as measured):	80.60	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	68-78	ft
Open hole interval:	—	ft
Depth to water:	60.28	ftbtoc

Date: 8/1/17 Time: 1235

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 104MW-3

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	n/A
Well Tag ID and Condition	104MW-3/ ok
Well Installation Date	n/A

	From Log	From GPS[1]
Ground Surface Elevation	697.4	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	n/A	N/A
Easting (State Plane)	n/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount (Stick up) Multilevel Well[2]

Well lock\security type:	locked	
Elevation (top of inner casing):	697.14	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	20.0	bgs
Well Depth (as measured):	21.90	ftoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	10-20"	ft
Open hole interval:	n/a	ft
Depth to water:	8.46	ftbtoc

Date: 8/2/17 Time: 1045

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well HeadSpace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 104MW-4

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	104 MW-4 / OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	697.77	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount **(Stick up)** Multilevel Well[2]

Well lock\security type:		
Elevation (top of inner casing):	697.77	
Surface protective casing material:	Steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	91.0	ftbgs
Well Depth (as measured):	93.90	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	81-91	ft
Open hole interval:	N/A	ft
Depth to water:	8.85	ftbtoc

Date: 8/7/17 Time: 1050

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/2/17

Reviewed by: Ronald L. Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: MW138-1

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: N/A

Well Tag ID and Condition: MW138-1/ok

Well Installation Date: N/A

	From Log	From GPS[1]
Ground Surface Elevation	709.37	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)		N/A
Easting (State Plane)		N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one): Flush Mount | Stick up | Multilevel Well[2]

Well lock\security type:	locked	
Elevation (top of inner casing):	709.37	
Surface protective casing material:	Steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	4" PVC	inches
Well Depth (as installed):	31.0	ftbgs
Well Depth (as measured):	33.90	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	21-31	ft
Open hole interval:	N/A	ft
Depth to water:	17.22	ftbtoc

Date: 8/1/17 Time: 1420

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rippoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traxler (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-8B

Facility Information

Site Name:	Picatinny Arsenal — Area: Midvalley Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171 MW-8B/ ok
Well Installation Date	

	From Log	From GPS[1]
Ground Surface Elevation	913.29	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	/
GPS Instrument used:[1]	/
Datum:	/
Accuracy/Precision:	/

Well Construction Details

Type of well (Circle one) Flush Mount (Stick up) Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	913.29	
Surface protective casing material:	steel	
Surface Casing diameter:		inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	120	ftbgs
Well Depth (as measured):	124.0	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	100-120	ft
Open hole interval:	—	ft
Depth to water:		ftbtoc

Date: Time:

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (No)

Well Condition

Is the concrete pad in good condition?	(Yes)	No
Is the well surface casing in good condition?	(Yes)	No
Is the surface casing vertical?	(Yes)	No
Is there an internal well seal?	(Yes)	No
Has there been physical damage to the well?	Yes	(No)
Does sounding depth match completed depth?	(Yes)	No
Is measuring point marked?	(Yes)	No
Is the well clearly labeled?	(Yes)	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair (Poor)

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	(No)
Well needs to be re-surveyed.	Yes	(No)
Well needs to be repaired.	(Yes)	No
Well needs to be replaced.	Yes	(No)
Well needs to be properly abandoned.	Yes	(No)
No action necessary.	Yes	(No)

Comments

Blockage at 64.00 ft. Unable to retrieve deployment line.
Line completely stuck in well.

Signatures

Inspected by: A. Reppoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW-13

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171MW-13/OK
Well Installation Date	

	From Log	From GPS[1]
Ground Surface Elevation	848.22	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) Flush Mount **(Stick up)** Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	848.22	
Surface protective casing material:	steel	
Surface Casing diameter:		inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	90.0	ftbgs
Well Depth (as measured):	92.60	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	70-90	ft
Open hole interval:	—	ft
Depth to water:	14.47	ftbtoc

Date: 8/1/17 Time: 1130

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Frank (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW-14

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171MW-14 / OK
Well Installation Date	—

	From Log	From GPS[1]
Ground Surface Elevation	931.95	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one): Flush Mount — Stick up — Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	931.95	
Surface protective casing material:	steel	
Surface Casing diameter:		inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	70.0	ftbgs
Well Depth (as measured):	74.0	fltoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	50-70	ft
Open hole interval:	—	ft
Depth to water:	61.38	ftbtoc

Date: 8/7/17 Time: 0835

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): — ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	**No**
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Overall well condition (circle one) **Good** Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Trimm (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW14B

Facility Information

Site Name:	Picatinny Arsenal — Area: MW — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171 MW14B / ok
Well Installation Date	—

	From Log	From GPS[1]
Ground Surface Elevation	932.04	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one): Flush Mount — Stick up — Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	932.04	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	100	ftbgs
Well Depth (as measured):	103.15	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	80-100	ft
Open hole interval:	—	ft
Depth to water:	61.40	ftbtoc

Date: 8/7/17 Time: 0840

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (No)

Well Condition

Is the concrete pad in good condition?	(Yes)	No
Is the well surface casing in good condition?	(Yes)	No
Is the surface casing vertical?	(Yes)	No
Is there an internal well seal?	(Yes)	No
Has there been physical damage to the well?	Yes	(No)
Does sounding depth match completed depth?	(Yes)	No
Is measuring point marked?	(Yes)	No
Is the well clearly labeled?	(Yes)	No
Flush mount - Is it secure from runoff?	(Yes)	No

Overall well condition (circle one) (Good) Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	(No)
Well needs to be re-surveyed.	Yes	(No)
Well needs to be repaired.	Yes	(No)
Well needs to be replaced.	Yes	(No)
Well needs to be properly abandoned.	Yes	(No)
No action necessary.	(Yes)	No

Comments

Signatures

Inspected by: A. Rapisardi

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Turner (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW-6C

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171 MW-6C / ok
Well Installation Date	—

	From Log	From GPS[1]
Ground Surface Elevation	932.68	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) Flush Mount **(Stick up)** Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	932.68	
Surface protective casing material:	steel	
Surface Casing diameter:		inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	210	ftbgs
Well Depth (as measured):	212.60	fttoc
Well Stick Up Height (as measured):	2.8	ftbgs
Screened interval:	190-210	ft
Open hole interval:	—	ft
Depth to water:	89.57	ftbtoc

Date: 8/7/17 Time: 0830

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.
[2] If multilevel well please see attached worksheet.
N/A= Not Applicable
- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments: _____

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: _____

Date of Inspection: _____

Reviewed by: Ronald C. Travis (Print)

[signature] (Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW-6B

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171 MW-6B / ok
Well Installation Date	

	From Log	From GPS[1]
Ground Surface Elevation	932.46	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one): Flush Mount — Stick up — Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	932.46	
Surface protective casing material:	steel	
Surface Casing diameter:		inches
Well Diameter and Casing Material:	2" SS	inches
Well Depth (as installed):	90.0	ftbgs
Well Depth (as measured):	92.70	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	70-90	ft
Open hole interval:	—	ft
Depth to water:	61.77	ftbtoc

Date: 8/7/17 Time: 0825

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (circled) No

Well Condition

Is the concrete pad in good condition?	Yes (circled)	No
Is the well surface casing in good condition?	Yes (circled)	No
Is the surface casing vertical?	Yes (circled)	No
Is there an internal well seal?	Yes (circled)	No
Has there been physical damage to the well?	Yes	No (circled)
Does sounding depth match completed depth?	Yes (circled)	No
Is measuring point marked?	Yes (circled)	No
Is the well clearly labeled?	Yes (circled)	No
Flush mount - Is it secure from runoff?	Yes (circled)	No

Overall well condition (circle one) Good (circled) Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No (circled)
Well needs to be re-surveyed.	Yes	No (circled)
Well needs to be repaired.	Yes	No (circled)
Well needs to be replaced.	Yes	No (circled)
Well needs to be properly abandoned.	Yes	No (circled)
No action necessary.	Yes (circled)	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171IW0105

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171 IW-0105/ok
Well Installation Date	—

	From Log	From GPS[1]
Ground Surface Elevation	861.32	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one): (Flush Mount) Stick up Multilevel Well[2]

Well lock\security type:	manhole cover	
Elevation (top of inner casing):	861.32	
Surface protective casing material:	steel	
Surface Casing diameter:	12	inches
Well Diameter and Casing Material:	4" PVC	inches
Well Depth (as installed):	90.0	ftbgs
Well Depth (as measured):	92.0	fttoc
Well Stick Up Height (as measured):	—	ftbgs
Screened interval:	20-90	ft
Open hole interval:	—	ft
Depth to water:	15.50	ftbtoc

Date: 8/1/17 Time: 1050

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (circled) No

Well Condition

Is the concrete pad in good condition?	Yes (circled)	No
Is the well surface casing in good condition?	Yes (circled)	No
Is the surface casing vertical?	Yes (circled)	No
Is there an internal well seal?	Yes (circled)	No
Has there been physical damage to the well?	Yes	No (circled)
Does sounding depth match completed depth?	Yes (circled)	No
Is measuring point marked?	Yes (circled)	No
Is the well clearly labeled?	Yes (circled)	No
Flush mount - Is it secure from runoff?	Yes (circled)	No

Overall well condition (circle one): Good (circled) Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No (circled)
Well needs to be re-surveyed.	Yes	No (circled)
Well needs to be repaired.	Yes	No (circled)
Well needs to be replaced.	Yes	No (circled)
Well needs to be properly abandoned.	Yes	No (circled)
No action necessary.	Yes (circled)	No

Comments

_____

Signatures

Inspected by: A. Poppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-17B

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171 MW-17B / ok
Well Installation Date	

	From Log	From GPS[1]
Ground Surface Elevation	863.41	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) Flush Mount (Stick up) Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	863.41	
Surface protective casing material:	steel	
Surface Casing diameter:		inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	160	ftbgs
Well Depth (as measured):	162.39	fttoc
Well Stick Up Height (as measured):	3.2	ftbgs
Screened interval:	140-160	ft
Open hole interval:	—	ft
Depth to water:	19.22	ftbtoc

Date: 8/1/17 Time: 1100

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (No)

Well Condition

Is the concrete pad in good condition?	(Yes)	No
Is the well surface casing in good condition?	(Yes)	No
Is the surface casing vertical?	(Yes)	No
Is there an internal well seal?	(Yes)	No
Has there been physical damage to the well?	Yes	(No)
Does sounding depth match completed depth?	(Yes)	No
Is measuring point marked?	(Yes)	No
Is the well clearly labeled?	(Yes)	No
Flush mount - Is it secure from runoff?	(Yes)	No

Overall well condition (circle one) (Good) Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	(No)
Well needs to be re-surveyed.	Yes	(No)
Well needs to be repaired.	Yes	(No)
Well needs to be replaced.	Yes	(No)
Well needs to be properly abandoned.	Yes	(No)
No action necessary.	(Yes)	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW-16

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171 MW-16 / OK
Well Installation Date	—

	From Log	From GPS[1]
Ground Surface Elevation	859.92	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one): Flush Mount — Stick up — Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	859.92	
Surface protective casing material:	steel	
Surface Casing diameter:	6	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	70.0	ftbgs
Well Depth (as measured):	70.90	fttoc
Well Stick Up Height (as measured):	3.0	ftbgs
Screened interval:	50-70	ft
Open hole interval:	—	ft
Depth to water:	14.51	ftbtoc

Date: 8/1/17 Time: 1110

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.
[2] If multilevel well please see attached worksheet.
N/A= Not Applicable
- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (circled) No

Well Condition

Is the concrete pad in good condition?	Yes (circled)	No
Is the well surface casing in good condition?	Yes (circled)	No
Is the surface casing vertical?	Yes (circled)	No
Is there an internal well seal?	Yes (circled)	No
Has there been physical damage to the well?	Yes	No (circled)
Does sounding depth match completed depth?	Yes (circled)	No
Is measuring point marked?	Yes (circled)	No
Is the well clearly labeled?	Yes (circled)	No
Flush mount - Is it secure from runoff?	Yes (circled)	No

Overall well condition (circle one): Good (circled) Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No (circled)
Well needs to be re-surveyed.	Yes	No (circled)
Well needs to be repaired.	Yes	No (circled)
Well needs to be replaced.	Yes	No (circled)
Well needs to be properly abandoned.	Yes	No (circled)
No action necessary.	Yes (circled)	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Travor (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW-16B

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171MW-16B / ok
Well Installation Date	

	From Log	From GPS[1]
Ground Surface Elevation	860.03	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one): Flush Mount — Stick up — Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	860.03	
Surface protective casing material:	steel	
Surface Casing diameter:		inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	160	ftbgs
Well Depth (as measured):	161.40	fttoc
Well Stick Up Height (as measured):	3.2	ftbgs
Screened interval:	140-160	ft
Open hole interval:	—	ft
Depth to water:	14.96	ftbtoc

Date: 8/1/17 Time: 1115

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Overall well condition (circle one) **Good** Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Signatures

Inspected by: J. Rippli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Tower (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-6

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171 MW-6 / OK
Well Installation Date	—

	From Log	From GPS[1]
Ground Surface Elevation	932.67	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) Flush Mount (Stick up) Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	932.67	
Surface protective casing material:	steel	
Surface Casing diameter:	6	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	58	ftbgs
Well Depth (as measured):	60.35	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	38-58	ft
Open hole interval:	—	ft
Depth to water:	36.35	ftbtoc

Date: 8/7/17 Time: 0820

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 101 MW-6

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	101-MW-6/OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	699.71	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	Ø	N/A
Easting (State Plane)	Ø	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) (Flush Mount) Stick up Multilevel Well[2]

Well lock\security type:	Manhole cover	
Elevation (top of inner casing):	699.71	
Surface protective casing material:	Steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	90.00	ftbgs
Well Depth (as measured):	89.25	fttoc
Well Stick Up Height (as measured):	N/A	ftbgs
Screened interval:	80 - 90'	ft
Open hole interval:		ft
Depth to water:	10.46	ftbtoc

Date: 8/2/17 Time: 1335

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): n/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/2/17

Reviewed by: Ronald L Traver (Print)

[signature] (Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: SMW-4D

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: NONP

Well Tag ID and Condition: SMW-4D / OK

Well Installation Date: N/A

	From Log	From GPS[1]
Ground Surface Elevation	954.88	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable): N/A

GPS Instrument used:[1] N/A

Datum: N/A

Accuracy/Precision: N/A

Well Construction Details

Type of well (Circle one): Flush Mount / Stick up / Multilevel Well[2]

Well lock\security type: manhole cover + lock

Elevation (top of inner casing): N/A

Surface protective casing material: steel

Surface Casing diameter: 8" inches

Well Diameter and Casing Material: 2" PVC inches

Well Depth (as installed): N/A ftbgs

Well Depth (as measured): 36.40 fttoc

Well Stick Up Height (as measured): N/A ftbgs

Screened interval: ft

Open hole interval: ft

Depth to water: 4.32 ftbtoc

Date: 8-7-17 Time: 7:55

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: D. Thompson

Date of Inspection: 8-7-17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 161mw-7

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	none
Well Tag ID and Condition	161mw-7 / ok
Well Installation Date	n/A

	From Log	From GPS[1]
Ground Surface Elevation	791.21	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	n/A	N/A
Easting (State Plane)	n/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	
Datum:	
Accuracy/Precision:	

Well Construction Details

Type of well (Circle one): Flush Mount (circled) — Stick up — Multilevel Well[2]

Well lock\security type:	manhole cover and lock	
Elevation (top of inner casing):	n/A	
Surface protective casing material:	Steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):		ftbgs
Well Depth (as measured):	43.30	fttoc
Well Stick Up Height (as measured):	n/A	ftbgs
Screened interval:		ft
Open hole interval:	—	ft
Depth to water:	3.50	ftbtoc

Date: 8-1-17 Time: 8:15

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): — *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments:

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: D. Thompson

Date of Inspection: 8-1-17

Reviewed by: Ronald L Trout (Print)

[signature] (Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 114MW-1A

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: N/A

Well Tag ID and Condition 114MW-1A OK

Well Installation Date N/A

	From Log	*From GPS*[1]
Ground Surface Elevation	839.31	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable): N/A

GPS Instrument used:[1] 0

Datum: 0

Accuracy/Precision: 0

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type: locked

Elevation (top of inner casing):

Surface protective casing material: steel

Surface Casing diameter: 6" *inches*

Well Diameter and Casing Material: 2" PVC *inches*

Well Depth (as installed): *ftbgs*

Well Depth (as measured): 24.75 *fttoc*

Well Stick Up Height (as measured): — *ftbgs*

Screened interval: n/A *ft*

Open hole interval: *ft*

Depth to water: 17.68 *ftbtoc*

Date: 8-01-17 *Time:* 1000

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped.	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: D. Thompson

Date of Inspection: 8-1-17

Reviewed by: Ronald L. Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 IWOOS

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mud Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:	n/A
Well Tag ID and Condition	171 IWOOS/ok
Well Installation Date	n/A

	From Log	From GPS[1]
Ground Surface Elevation	n/A	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	n/A	N/A
Easting (State Plane)	n/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	n
Datum:	n
Accuracy/Precision:	n

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well[2]

Well lock\security type:		
Elevation (top of inner casing):		
Surface protective casing material:	Steel	
Surface Casing diameter:	18"	inches
Well Diameter and Casing Material:	6" SS	inches
Well Depth (as installed):	120.0	ftbgs
Well Depth (as measured):	123.10	fttoc
Well Stick Up Height (as measured):	3.2	ftbgs
Screened interval:	30 – 120	ft
Open hole interval:	—	ft
Depth to water:	46.88	ftbtoc

Date: 8/7/17 Time: 0915

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): n/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/7/17

Reviewed by: Ronald C. Travers (Print)

[signature] (Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 104MW6A

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: n/A

Well Tag ID and Condition: 104MW6A/ok

Well Installation Date: n/A

	From Log	From GPS[1]
Ground Surface Elevation	698.98	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	n/A	N/A
Easting (State Plane)	n/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one): (Flush Mount) / Stick up / Multilevel Well[2]

Well lock\security type: manhole cover - locked

Elevation (top of inner casing): 698.98

Surface protective casing material: steel

Surface Casing diameter: 10" inches

Well Diameter and Casing Material: 2" PVC inches

Well Depth (as installed): 22.0 ftbgs

Well Depth (as measured): 20.90 fttoc

Well Stick Up Height (as measured): n/A ftbgs

Screened interval: 12-22 ft

Open hole interval: n/A ft

Depth to water: 1.20 ftbtoc

Date: 8/2/17 Time: 1055

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seat?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/2/17

Reviewed by: Ronald L. Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW 12

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: —

Well Tag ID and Condition 171MW-12 / O/K

Well Installation Date —

	From Log	*From GPS*[1]
Ground Surface Elevation	—	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable): —

GPS Instrument used:[1]

Datum:

Accuracy/Precision:

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:

Elevation (top of inner casing): —

Surface protective casing material: steel

Surface Casing diameter:	6	*inches*
Well Diameter and Casing Material:	2" PVC	*inches*
Well Depth (as installed):	160	*ftbgs*
Well Depth (as measured):	162.80	*fttoc*
Well Stick Up Height (as measured):		*ftbgs*
Screened interval:	140-160	*ft*
Open hole interval:	—	*ft*
Depth to water:	60.96	*ftbtoc*

Date: 8/7/17 *Time:* 0810

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Travers (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 101 MW-5

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	101 MW-5 / ok
Well Installation Date	

	From Log	From GPS[1]
Ground Surface Elevation	693.64	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	Ø	N/A
Easting (State Plane)	Ø	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well[2]

Well lock\security type:	Manhole cover locked	
Elevation (top of inner casing):	693.64	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	15.0	ftbgs
Well Depth (as measured):	14.71	ftoc
Well Stick Up Height (as measured):	N/A	ftbgs
Screened interval:	5-15'	ft
Open hole interval:	N/A	ft
Depth to water:	4.64	ftbtoc

Date: 8/30/17 Time: 0940

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/30/17

Reviewed by: Ronald L. Trout (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 35MW-5C

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	35MW-5C/OK.
Well Installation Date	

	From Log	From GPS[1]
Ground Surface Elevation	797.56	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one): Flush Mount — Stick up — Multilevel Well[2]

Well lock\security type:	manhole cover	
Elevation (top of inner casing):	797.56	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	115.0	ftbgs
Well Depth (as measured):	111.69	fttoc
Well Stick Up Height (as measured):	—	ftbgs
Screened interval:	105-115	ft
Open hole interval:	—	ft
Depth to water:	0.0	ftbtoc

Date: 8/1/17 Time: 0850

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

— = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): — ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (No circled)

Well Condition

Is the concrete pad in good condition?	Yes (circled)	No
Is the well surface casing in good condition?	Yes (circled)	No
Is the surface casing vertical?	Yes (circled)	No
Is there an internal well seal?	Yes (circled)	No
Has there been physical damage to the well?	Yes	No (circled)
Does sounding depth match completed depth?	Yes (circled)	No
Is measuring point marked?	Yes (circled)	No
Is the well clearly labeled?	Yes (circled)	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one): Good (circled) Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No (circled)
Well needs to be re-surveyed.	Yes	No (circled)
Well needs to be repaired.	Yes	No (circled)
Well needs to be replaced.	Yes	No (circled)
Well needs to be properly abandoned.	Yes	No (circled)
No action necessary.	Yes (circled)	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Tower (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 161 MW-2

Facility Information

Site Name:	Picatinny Arsenal — Area: MV — Site:
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	161 MW-2 / ok
Well Installation Date	—

	From Log	From GPS[1]
Ground Surface Elevation	831.78	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one): Flush Mount — (Stick up) — Multilevel Well[2]

Well lock\security type:	lock	
Elevation (top of inner casing):	831.78	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	55.0	ftbgs
Well Depth (as measured):	56.85	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	45-55	ft
Open hole interval:	—	ft
Depth to water:	4.13	ftbtoc

Date: 8/1/17 Time: 1205

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (circled) No

Well Condition

Is the concrete pad in good condition?	Yes (circled)	No
Is the well surface casing in good condition?	Yes (circled)	No
Is the surface casing vertical?	Yes (circled)	No
Is there an internal well seal?	Yes (circled)	No
Has there been physical damage to the well?	Yes	No (circled)
Does sounding depth match completed depth?	Yes (circled)	No
Is measuring point marked?	Yes (circled)	No
Is the well clearly labeled?	Yes	No (circled)
Flush mount - Is it secure from runoff?	Yes (circled)	No

Overall well condition (circle one): Good (circled) Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No (circled)
Well needs to be re-surveyed.	Yes	No (circled)
Well needs to be repaired.	Yes	No (circled)
Well needs to be replaced.	Yes	No (circled)
Well needs to be properly abandoned.	Yes	No (circled)
No action necessary.	Yes (circled)	No

Comments

Signatures

Inspected by: A. Poppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Trauer (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW 11

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:	n/A
Well Tag ID and Condition	171 MW-11 OK
Well Installation Date	n/A

	From Log	*From GPS*[1]
Ground Surface Elevation	988.76	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	n/A	N/A
Easting (State Plane)	n/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	ø
Datum:	ø
Accuracy/Precision:	ø

Well Construction Details

Type of well (Circle one) Flush Mount (Stick up) Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	988.76	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	160.0	ftbgs
Well Depth (as measured):	159.70	fttoc
Well Stick Up Height (as measured):	—	ftbgs
Screened interval:	140-160	ft
Open hole interval:	n/A	ft
Depth to water:	7.00	ftbtoc

Date: 8/7/17 *Time:* 0930

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW11B

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: N/A

Well Tag ID and Condition 171MW11B/OK

Well Installation Date N/A

	From Log	*From GPS*[1]
Ground Surface Elevation	988.88	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	988.88	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	*inches*
Well Diameter and Casing Material:	2" PVC	*inches*
Well Depth (as installed):	200.0	*ftbgs*
Well Depth (as measured):	200.00	*fttoc*
Well Stick Up Height (as measured):		*ftbgs*
Screened interval:	180-200'	*ft*
Open hole interval:	N/A	*ft*
Depth to water:	7.00	*ftbtoc*

Date: 8/7/17 *Time:* 0935

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): n/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 161 MW-1B

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: N/A

Well Tag ID and Condition: 161 MW-1B / OK

Well Installation Date: N/A

	From Log	From GPS[1]
Ground Surface Elevation	820.63	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)		N/A
Easting (State Plane)		N/A

Cross streets (if applicable):

GPS Instrument used:[1]

Datum:

Accuracy/Precision:

Well Construction Details

Type of well (Circle one): Flush Mount (circled) / Stick up / Multilevel Well[2]

Well lock\security type: lid Damaged

Elevation (top of inner casing): 820.63

Surface protective casing material: steel

Surface Casing diameter: Damaged - 8" inches

Well Diameter and Casing Material: 2" PVC inches

Well Depth (as installed): 122 ogs

Well Depth (as measured): 121.06 fttoc

Well Stick Up Height (as measured): ftbgs

Screened interval: 107-122 ft

Open hole interval: ft

Depth to water: 1.30 ftbtoc

Date: 8/1/17 Time: 1220

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: Manhole lid Damaged
Casing Damaged

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Pappali

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 161 MW-5B

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	161 MW-5B / ok
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	803.25	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one): Flush Mount — Stick up — Multilevel Well[2]

Well lock\security type:	manhole cover & lock	
Elevation (top of inner casing):	803.25	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	61.0	ftbgs
Well Depth (as measured):	61.40	fttoc
Well Stick Up Height (as measured):	46-61	ftbgs
Screened interval:	N/A	ft
Open hole interval:		ft
Depth to water:	29.00	ftbtoc

Date: 8/1/17 Time: 0900

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): n/A ppm

Multi-gas/CGI meter Readings taken (if applicable).[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: G31MW002

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	G31MW002 / OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	690.47	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)		N/A
Easting (State Plane)		N/A

Cross streets (if applicable):	Former DRMO Area
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one)	Flush Mount / Stick up / Multilevel Well[2]	
Well lock\security type:	manhole cover & locks	
Elevation (top of inner casing):	690.47	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	20.0	ftbgs
Well Depth (as measured):	19.30	fttoc
Well Stick Up Height (as measured):	N/A	ftbgs
Screened interval:	10 - 20	ft
Open hole interval:	N/A	ft
Depth to water:	1.22	ftbtoc

Date: 8/2/17 Time: 1125

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (No)

Well Condition

Is the concrete pad in good condition?	(Yes)	No
Is the well surface casing in good condition?	(Yes)	No
Is the surface casing vertical?	(Yes)	No
Is there an internal well seal?	(Yes)	No
Has there been physical damage to the well?	Yes	(No)
Does sounding depth match completed depth?	(Yes)	No
Is measuring point marked?	(Yes)	No
Is the well clearly labeled?	Yes	(No)
Flush mount - Is it secure from runoff?	(Yes)	No

Overall well condition (circle one) (Good) Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	(No)
Well needs to be re-surveyed.	Yes	(No)
Well needs to be repaired.	Yes	(No)
Well needs to be replaced.	Yes	(No)
Well needs to be properly abandoned.	Yes	(No)
No action necessary.	(Yes)	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/2/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 125MW-3

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	125 MW-3 / ok
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	741.54	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well[2]

Well lock\security type:	manhole cover & lock	
Elevation (top of inner casing):	741.54	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	95.0	ftbgs
Well Depth (as measured):	94.10	fttoc
Well Stick Up Height (as measured):	—	ftbgs
Screened interval:	80-95'	ft
Open hole interval:	N/A	ft
Depth to water:	0.00	ftbtoc

Date: 8/1/17 Time: 1325

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 125MW-1B

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	n/A
Well Tag ID and Condition	125MW1B / OK
Well Installation Date	n/A

	From Log	From GPS[1]
Ground Surface Elevation	742.31	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	n/A	N/A
Easting (State Plane)	n/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one): Flush Mount — (Stick up) — Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	742.31	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	81.0	ftbgs
Well Depth (as measured):	83.05	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	66-81	ft
Open hole interval:	n/A	ft
Depth to water:	1.38	ftbtoc

Date: 8/1/17 Time: 1315

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Poppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 125MW1A

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	125MW-1A / OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	741.82	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	741.82	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	*inches*
Well Diameter and Casing Material:	2" PVC	*inches*
Well Depth (as installed):	51.0	*ftbgs*
Well Depth (as measured):	52.90	*fttoc*
Well Stick Up Height (as measured):	—	*ftbgs*
Screened interval:	41-51	*ft*
Open hole interval:	N/A	*ft*
Depth to water:	0.00	*ftbtoc*

Date: 8/1/17 *Time:* 1310

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Poppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-2

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	171 MW-2 / OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	879.86	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one): Flush Mount — Stick up — Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	879.86	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	37.0	ftbgs
Well Depth (as measured):	39.22	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	27-37	ft
Open hole interval:	N/A	ft
Depth to water:	25.30	ftbtoc

Date: 8/7/17 Time: 0945

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

---= Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 161 MW 5B

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	161 MW 5 B / ok
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	803.25	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one): (Flush Mount) Stick up Multilevel Well[2]

Well lock\security type:	Manhole cover & lock	
Elevation (top of inner casing):	803.25	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	61.0	ftbgs
Well Depth (as measured):	61.40	fttoc
Well Stick Up Height (as measured):	N/A	ftbgs
Screened interval:	46 - 60'	ft
Open hole interval:	N/A	ft
Depth to water:	6.46	ftbtoc

Date: 8/1/17 Time: 0905

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Poppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 17MW-5

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: N/A

Well Tag ID and Condition: 17MW-5/OK

Well Installation Date: N/A

	From Log	From GPS[1]
Ground Surface Elevation	837.72	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1] ~~0~~

Datum: ~~0~~

Accuracy/Precision: ~~0~~

Well Construction Details

Type of well (Circle one): Flush Mount | Stick up | Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	837.72	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	42.0	ftbgs
Well Depth (as measured):	45.40	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	22-42	ft
Open hole interval:	N/A	ft
Depth to water:	28.57	ftbtoc

Date: 8/1/17 Time: 1015

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): n/a ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Ruppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Travr (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 17MW-5B

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: n/A

Well Tag ID and Condition 17MW-5B Lock

Well Installation Date n/A

	From Log	*From GPS*[1]
Ground Surface Elevation	835.35	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	n/A	N/A
Easting (State Plane)	n/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	835.34	
Surface protective casing material:	Steel	
Surface Casing diameter:	6"	*inches*
Well Diameter and Casing Material:	2" PVC	*inches*
Well Depth (as installed):	85.0	*ftbgs*
Well Depth (as measured):	87.65	*fttoc*
Well Stick Up Height (as measured):		*ftbgs*
Screened interval:	75-85	*ft*
Open hole interval:	n/A	*ft*
Depth to water:	29.29	*ftbtoc*

Date: 8/1/17 *Time:* 1020

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: B1038-MW-2

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: N/A

Well Tag ID and Condition B1038-MW-2/OK

Well Installation Date N/A

	From Log	*From GPS*[1]
Ground Surface Elevation	845.11	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one) *Flush Mount* (Stick Up) *Multilevel Well*[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	845.11	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	32.0	ftbgs
Well Depth (as measured):	34.04	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	22-32	ft
Open hole interval:	N/A	ft
Depth to water:	5.99	ftbtoc

Date: 8/1/17 *Time:* 1145

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): n/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Poppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: B1038MW-3

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: n/A

Well Tag ID and Condition B1038MW-3 / OK

Well Installation Date n/A

	From Log	From GPS[1]
Ground Surface Elevation	840.65	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	n/A	N/A
Easting (State Plane)	n/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1]

Datum:

Accuracy/Precision:

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well[2]

Well lock\security type: manhole cover and lock

Elevation (top of inner casing): 849.65

Surface protective casing material: steel

Surface Casing diameter: 8" inches

Well Diameter and Casing Material: 2" PVC inches

Well Depth (as installed): 52.0 ftbgs

Well Depth (as measured): 51.58 fttoc

Well Stick Up Height (as measured): n/A ftbgs

Screened interval: 47-52 ft

Open hole interval: n/A ft

Depth to water: 6.47 ftbtoc

Date: 8/1/17 *Time:* 1155

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 17 MW-4

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mud Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	17 MW-4 / OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	813.81	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount (Stick up) Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	813.81	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	49.40	ftbgs
Well Depth (as measured):	51.70	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	39.4-49.4	ft
Open hole interval:	N/A	ft
Depth to water:	35.31	ftbtoc

Date: 98/1/17 Time: 1030

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments: _____

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 161 MW-4B

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: N/A

Well Tag ID and Condition: 161 MW-4B

Well Installation Date: N/A

	From Log	From GPS[1]
Ground Surface Elevation	801.15	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one): Flush Mount | Stick up | Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	801.15	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	25.0	ftbgs
Well Depth (as measured):	26.50	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	15-25	ft
Open hole interval:	N/A	ft
Depth to water:	4.01	ftbtoc

Date: 8/1/17 Time: 0825

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Pappoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 35MW-5B

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: N/A

Well Tag ID and Condition 35MW-5B / OK

Well Installation Date N/A

	From Log	*From GPS*[1]
Ground Surface Elevation	766.99	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one) (Flush Mount) *Stick up* *Multilevel Well*[2]

Well lock\security type: manhole cover & lock

Elevation (top of inner casing): 769.99

Surface protective casing material: steel

Surface Casing diameter: 8" *inches*

Well Diameter and Casing Material: 2" PVC *inches*

Well Depth (as installed): 38.0 *ftbgs*

Well Depth (as measured): 37.27 *fttoc*

Well Stick Up Height (as measured): — *ftbgs*

Screened interval: 28-38 *ft*

Open hole interval: — *ft*

Depth to water: 0.00 *ftbtoc*

Date: 8/1/17 *Time:* 0855

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rapporti

Date of Inspection: 8/1/17

Reviewed by: Ronald L Travers (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 161 MW-5

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	161 MW-5 / OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	803.07	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well[2]

Well lock\security type:	manhole cover & lock	
Elevation (top of inner casing):	803.07	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	31.0	ftbgs
Well Depth (as measured):	31.18	fttoc
Well Stick Up Height (as measured):	—	ftbgs
Screened interval:	21-31	ft
Open hole interval:	N/A	ft
Depth to water:	6.46	ftbtoc

Date: 8/1/17 Time: 0905

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 17 MW-2

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: n/A

Well Tag ID and Condition: 17 MW-2/ok

Well Installation Date: n/A

	From Log	From GPS[1]
Ground Surface Elevation	803.51	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	n/A	N/A
Easting (State Plane)	n/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one): Flush Mount | Stick up | Multilevel Well[2]

Well lock\security type: OK

Elevation (top of inner casing): 803.51

Surface protective casing material: steel

Surface Casing diameter: 8" inches

Well Diameter and Casing Material: 2" PVC inches

Well Depth (as installed): 35.0 ftbgs

Well Depth (as measured): 37.60 fttoc

Well Stick Up Height (as measured): ftbgs

Screened interval: 25-35 ft

Open hole interval: n/A ft

Depth to water: 25.30 ftbtoc

Date: 8/1/17 Time: 1040

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): n/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: MWF-2A

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: n/A

Well Tag ID and Condition: MWF-2A / ok

Well Installation Date: n/A

	From Log	From GPS[1]
Ground Surface Elevation	726.16	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	n/A	N/A
Easting (State Plane)	n/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one): Flush Mount / Stick up / Multilevel Well[2]

Well lock\security type: manhole cover & lock

Elevation (top of inner casing): 726.16

Surface protective casing material: Steel

Surface Casing diameter: 8" inches

Well Diameter and Casing Material: 4" PVC inches

Well Depth (as installed): 20.0 ftbgs

Well Depth (as measured): 19.40 fttoc

Well Stick Up Height (as measured): ftbgs

Screened interval: 10-20' ft

Open hole interval: n/A ft

Depth to water: 2.48 ftbtoc

Date: 8/1/17 Time: 1335

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: MWF-2B

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	MWF-2B / ok
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	730.83	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	e
Datum:	e
Accuracy/Precision:	e

Well Construction Details

Type of well (Circle one) Flush Mount — Stick up — Multilevel Well[2]

Well lock\security type:	ok	
Elevation (top of inner casing):	730.83	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	4" PVC	inches
Well Depth (as installed):	46.0	ftbgs
Well Depth (as measured):	47.40	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	36 - 46	ft
Open hole interval:	N/A	ft
Depth to water:	1.12	ftbtoc

Date: 8/1/17 Time: 1345

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Ruppoli

Date of Inspection: 8/4/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: DM17-3

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: n/A

Well Tag ID and Condition: DM17-3/ok

Well Installation Date: n/A

	From Log	From GPS[1]
Ground Surface Elevation	765.06	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	n/A	N/A
Easting (State Plane)	n/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one): Flush Mount | Stick up | Multilevel Well[2]

Well lock\security type:	ok	
Elevation (top of inner casing):	765.06	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	4" PVC	inches
Well Depth (as installed):	40.0	ftbgs
Well Depth (as measured):	40.45	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	30-40'	ft
Open hole interval:	n/A	ft
Depth to water:	26.34	ftbtoc

Date: 8/1/17 Time: 1345

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: SMW-4

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	SMW-4 lock
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	954.33	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) **(Flush Mount)** Stick up Multilevel Well[2]

Well lock\security type:	manhole cover & lock	
Elevation (top of inner casing):	954.33	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	20.5	ftbgs
Well Depth (as measured):	20.48	fttoc
Well Stick Up Height (as measured):	—	ftbgs
Screened interval:	10.5 - 20.5	ft
Open hole interval:	N/A	ft
Depth to water:	3.75	ftbtoc

Date: 8/7/17 Time: 0750

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/7/17

Reviewed by: Ronald C. Travo (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 64MW-2

Facility Information

Site Name:	Picatinny Arsenal Area: Site: Mud Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	64MW-2 / OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	709.79	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)		N/A
Easting (State Plane)		N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	ø
Datum:	ø
Accuracy/Precision:	ø

Well Construction Details

Type of well (Circle one) (Flush Mount) Stick up Multilevel Well[2]

Well lock\security type:	manhole cover & lock	
Elevation (top of inner casing):	709.79	
Surface protective casing material:	Steel	
Surface Casing diameter:	10"	inches
Well Diameter and Casing Material:	4" PVC	inches
Well Depth (as installed):	24.0	ftbgs
Well Depth (as measured):	24.05	ftoc
Well Stick Up Height (as measured):	N/A	ftbgs
Screened interval:	14.05-24.05	ft
Open hole interval:	N/A	ft
Depth to water:	3.43	ftbtoc

Date: 8/2/17 Time: 1140

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppolo

Date of Inspection: 8/2/17

Reviewed by: Ronald L. Trower (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: DMG-2

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	DMG-2 / OK
Well Installation Date	N/A

	From Log	*From GPS*[1]
Ground Surface Elevation	814.38	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) *Flush Mount* (Stick up) *Multilevel Well*[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	814.38	
Surface protective casing material:	Steel	
Surface Casing diameter:	6"	*inches*
Well Diameter and Casing Material:	4"	*inches*
Well Depth (as installed):	30.0	*ftbgs*
Well Depth (as measured):	31.68	*fttoc*
Well Stick Up Height (as measured):		*ftbgs*
Screened interval:	20-30'	*ft*
Open hole interval:	N/A	*ft*
Depth to water:	13.44	*ftbtoc*

Date: 8/1/17 *Time:* 1236

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (No)

Well Condition

Is the concrete pad in good condition?	(Yes)	No
Is the well surface casing in good condition?	(Yes)	No
Is the surface casing vertical?	(Yes)	No
Is there an internal well seal?	(Yes)	No
Has there been physical damage to the well?	Yes	(No)
Does sounding depth match completed depth?	(Yes)	No
Is measuring point marked?	(Yes)	No
Is the well clearly labeled?	(Yes)	No
Flush mount - Is it secure from runoff?	(Yes)	No

Overall well condition (circle one) (Good) Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	(No)
Well needs to be re-surveyed.	Yes	(No)
Well needs to be repaired.	Yes	(No)
Well needs to be replaced.	Yes	(No)
Well needs to be properly abandoned.	Yes	(No)
No action necessary.	(Yes)	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW5B

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	171MW5B / OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	928.80	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	
Datum:	
Accuracy/Precision:	

Well Construction Details

Type of well (Circle one) Flush Mount **(Stick up)** Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	928.80	
Surface protective casing material:	Steel	
Surface Casing diameter:		inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	90.0	ftbgs
Well Depth (as measured):	92.20	ftoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	70-90	ft
Open hole interval:	N/A	ft
Depth to water:	52.38	ftbtoc

Date: 8/7/17 Time: 0855

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Overall well condition (circle one): **Good** Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Signatures

Inspected by: A. Rospoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-5

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	171 MW-5 / ok
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	929.66	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well[2]

Well lock\security type:	ok	
Elevation (top of inner casing):	929.66	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	40.0	ftbgs
Well Depth (as measured):	42.31	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	30-40	ft
Open hole interval:	n/A	ft
Depth to water:	30.20	ftbtoc

Date: 8/7/17 Time: 0845

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW-9

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	171 MW-9 / OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	869.23	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	
Datum:	
Accuracy/Precision:	

Well Construction Details

Type of well (Circle one) Flush Mount (Stick up) Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	869.23	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	51.0	ftbgs
Well Depth (as measured):	53.90	ftoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	31-51	ft
Open hole interval:	N/A	ft
Depth to water:	21.82	ftbtoc

Date: 8/7/17 Time: 0940

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: GMW-5

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	GMW-5 / ok
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	706.19	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one): (Flush Mount) Stick up Multilevel Well[2]

Well lock\security type:	manhole cover - locked	
Elevation (top of inner casing):	706.19	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	20.0	ftbgs
Well Depth (as measured):	20.25	ftoc
Well Stick Up Height (as measured):	N/A	ftbgs
Screened interval:	10-20'	ft
Open hole interval:	N/A	ft
Depth to water:	15.70	ftbtoc

Date: 8/2/17 Time: 1110

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/2/17

Reviewed by: Ronald L. Travo (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: GMW-4

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: n/A

Well Tag ID and Condition: GMW-4 / OK

Well Installation Date: n/A

	From Log	From GPS[1]
Ground Surface Elevation	696.39	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	n/A	N/A
Easting (State Plane)	n/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well[2]

Well lock\security type: locked

Elevation (top of inner casing): 696.39

Surface protective casing material: Steel

Surface Casing diameter: 8" inches

Well Diameter and Casing Material: 2" PVC inches

Well Depth (as installed): 20.0 ftbgs

Well Depth (as measured): 21.67 fttoc

Well Stick Up Height (as measured): ftbgs

Screened interval: 10-20 ft

Open hole interval: n/A ft

Depth to water: 8.28 ftbtoc

Date: 8/2/17 Time: 1025

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	Yes	**No**
Flush mount - Is it secure from runoff?	**Yes**	No

Overall well condition (circle one) **Good** Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/2/17

Reviewed by: Ronald L. Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: MWG-2B

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: N/A

Well Tag ID and Condition: MWG-2B / OK

Well Installation Date: N/A

	From Log	From GPS[1]
Ground Surface Elevation	780.83	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one): Flush Mount | Stick up | Multilevel Well[2]

Well lock\security type:	locked	
Elevation (top of inner casing):	780.83	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	4" PVC	inches
Well Depth (as installed):	80.0	ftbgs
Well Depth (as measured):	82.22	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	72-82	ft
Open hole interval:	N/A	ft
Depth to water:	2.88	ftbtoc

Date: 3/2/17 Time: 1030

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (circled) No

Well Condition

Is the concrete pad in good condition?	Yes (circled)	No
Is the well surface casing in good condition?	Yes (circled)	No
Is the surface casing vertical?	Yes (circled)	No
Is there an internal well seal?	Yes (circled)	No
Has there been physical damage to the well?	Yes	No (circled)
Does sounding depth match completed depth?	Yes (circled)	No
Is measuring point marked?	Yes (circled)	No
Is the well clearly labeled?	Yes	No (circled)
Flush mount - Is it secure from runoff?	Yes (circled)	No

Overall well condition (circle one): Good (circled) Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No (circled)
Well needs to be re-surveyed.	Yes	No (circled)
Well needs to be repaired.	Yes	No (circled)
Well needs to be replaced.	Yes	No (circled)
Well needs to be properly abandoned.	Yes	No (circled)
No action necessary.	Yes (circled)	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/2/17

Reviewed by: Ronald L. Trainor (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 MW 7B

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: N/A

Well Tag ID and Condition: 171MW7B / OK

Well Installation Date: N/A

	From Log	From GPS[1]
Ground Surface Elevation	935.49	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	Ø	N/A
Easting (State Plane)	Ø	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one): Flush Mount | Stick up | Multilevel Well[2]

Well lock\security type:	locked	
Elevation (top of inner casing):	935.49	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	100.00	ftbgs
Well Depth (as measured):	104.25	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	80-100'	ft
Open hole interval:		ft
Depth to water:	74.48	ftbtoc

Date: 8/7/17 Time: 0815

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?.	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171 IW 010 D

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171 IW 010D / OK
Well Installation Date	—

	From Log	From GPS[1]
Ground Surface Elevation	—	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	—	N/A
Easting (State Plane)	—	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	
Datum:	
Accuracy/Precision:	

Well Construction Details

Type of well (Circle one) **Flush Mount** / Stick up / Multilevel Well[2]

Well lock\security type:	Manhole cover	
Elevation (top of inner casing):		
Surface protective casing material:	Steel	
Surface Casing diameter:	12"	inches
Well Diameter and Casing Material:	6" S Steel	inches
Well Depth (as installed):		ftbgs
Well Depth (as measured):		ftoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:		ft
Open hole interval:		ft
Depth to water:	—	ftbtoc

Date: 8/1/17 Time: 1137

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: Blockage in well

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Blockage in well

Signatures

Inspected by: A. Rappoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Tower (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: B1090mw2

Facility Information

Site Name:	Picatinny Arsenal	Area:	Site: MidValley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No: N/A

Well Tag ID and Condition: B1090mw-2/ok

Well Installation Date: N/A

	From Log	From GPS[1]
Ground Surface Elevation	766.57	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	Ø	N/A
Easting (State Plane)	Ø	N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one): Flush Mount | Stick up | Multilevel Well[2]

Well lock\security type:	ok	
Elevation (top of inner casing):	766.51	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	123.0	ftbgs
Well Depth (as measured):	122.90	ftoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	108-123	ft
Open hole interval:		ft
Depth to water:	30.07	ftbtoc

Date: 8/1/17 Time: 1305

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Overall well condition (circle one) **Good** Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Signatures

Inspected by: D. Thompson

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Travers (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 138 MW 5B

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	138 MW 5B / ok
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	767.08	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount **Stick up** Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	767.08	
Surface protective casing material:	Steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	32.0	ftbgs
Well Depth (as measured):	34.02	ftoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	22-32	ft
Open hole interval:	N/A	ft
Depth to water:	14.46	ftbtoc

Date: 8/1/17 Time: 1300

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings:

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes **No**

Well Condition:

Is the concrete pad in good condition?	**Yes**	No
Is the well surface casing in good condition?	**Yes**	No
Is the surface casing vertical?	**Yes**	No
Is there an internal well seal?	**Yes**	No
Has there been physical damage to the well?	Yes	**No**
Does sounding depth match completed depth?	**Yes**	No
Is measuring point marked?	**Yes**	No
Is the well clearly labeled?	**Yes**	No
Flush mount - Is it secure from runoff?	**Yes**	No

Overall well condition (circle one): **Good** Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	**No**
Well needs to be re-surveyed.	Yes	**No**
Well needs to be repaired.	Yes	**No**
Well needs to be replaced.	Yes	**No**
Well needs to be properly abandoned.	Yes	**No**
No action necessary.	**Yes**	No

Comments

Signatures

Inspected by: A. Poppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Tarr (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picalinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 6 MW-4

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	6MW-4/OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	818.95	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount / Stick up / Multilevel Well[2]

Well lock\security type:	manhole cover inplace w/lock	
Elevation (top of inner casing):	818.95	
Surface protective casing material:	Steel	
Surface Casing diameter:	8	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	21.30	ftbgs
Well Depth (as measured):	21.30	fttoc
Well Stick Up Height (as measured):	N/A	ftbgs
Screened interval:	N/A	ft
Open hole interval:	N/A	ft
Depth to water:	15.43	ftbtoc

Date: 8/1/17 Time: 1240

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (circled) No

Well Condition

Is the concrete pad in good condition?	Yes (circled)	No
Is the well surface casing in good condition?	Yes (circled)	No
Is the surface casing vertical?	Yes (circled)	No
Is there an internal well seal?	Yes (circled)	No
Has there been physical damage to the well?	Yes	No (circled)
Does sounding depth match completed depth?	Yes (circled)	No
Is measuring point marked?	Yes (circled)	No
Is the well clearly labeled?	Yes (circled)	No
Flush mount - Is it secure from runoff?	Yes (circled)	No

Overall well condition (circle one): Good (circled) Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No (circled)
Well needs to be re-surveyed.	Yes	No (circled)
Well needs to be repaired.	Yes	No (circled)
Well needs to be replaced.	Yes	No (circled)
Well needs to be properly abandoned.	Yes	No (circled)
No action necessary.	Yes (circled)	No

Comments

Signatures

Inspected by: A. Roppoli

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 6 MW 4D

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	6MW 4D/ok
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	818.95	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	
Datum:	
Accuracy/Precision:	

Well Construction Details

Type of well (Circle one) (Flush Mount) Stick up Multilevel Well[2]

Well lock\security type:	manhole cover & lock	
Elevation (top of inner casing):	818.95	
Surface protective casing material:	steel	
Surface Casing diameter:	8"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	620	ftbgs
Well Depth (as measured):	63.15	ftoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	52-62	ft
Open hole interval:	N/A	ft
Depth to water:	18.61	ftbtoc

Date: 8/1/17 Time: 1230

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): N/A ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments:

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: D. Thompson

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: SMW-8

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	SMW-8/ok
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	949.06	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one) Flush Mount **(Stick up)** Multilevel Well[2]

Well lock\security type:	ok	
Elevation (top of inner casing):	949.06	
Surface protective casing material:	steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	17.0	ftbgs
Well Depth (as measured):	20.71	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	7-17'	ft
Open hole interval:	N/A	ft
Depth to water:	5.97	ftbtoc

Date: 8/7/17 Time: 0735

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (No)

Well Condition

Is the concrete pad in good condition?	(Yes)	No
Is the well surface casing in good condition?	(Yes)	No
Is the surface casing vertical?	(Yes)	No
Is there an internal well seal?	(Yes)	No
Has there been physical damage to the well?	Yes	(No)
Does sounding depth match completed depth?	(Yes)	No
Is measuring point marked?	(Yes)	No
Is the well clearly labeled?	(Yes)	No
Flush mount - Is it secure from runoff?	(Yes)	No

Overall well condition (circle one): (Good) Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	(No)
Well needs to be re-surveyed.	Yes	(No)
Well needs to be repaired.	Yes	(No)
Well needs to be replaced.	Yes	(No)
Well needs to be properly abandoned.	Yes	(No)
No action necessary.	(Yes)	No

Comments

Signatures

Inspected by: A. Poppoli

Date of Inspection: 8/7/17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: DM6-3

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	N/A
Well Tag ID and Condition	DM6-3 / OK
Well Installation Date	N/A

	From Log	From GPS[1]
Ground Surface Elevation	837.17	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	N/A	N/A
Easting (State Plane)	N/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one): Flush Mount — (Stick up) — Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	837.17	
Surface protective casing material:	Steel	
Surface Casing diameter:	6	inches
Well Diameter and Casing Material:	4" PVC	inches
Well Depth (as installed):	22.0	ftbgs
Well Depth (as measured):	23.73	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	12-22	ft
Open hole interval:	N/A	ft
Depth to water:	12.13	ftbtoc

Date: 8/1/17 Time: 1354

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (No)

Well Condition

Is the concrete pad in good condition?	(Yes)	No
Is the well surface casing in good condition?	(Yes)	No
Is the surface casing vertical?	(Yes)	No
Is there an internal well seal?	(Yes)	No
Has there been physical damage to the well?	Yes	(No)
Does sounding depth match completed depth?	(Yes)	No
Is measuring point marked?	(Yes)	No
Is the well clearly labeled?	(Yes)	No
Flush mount - Is it secure from runoff?	(Yes)	No

Overall well condition (circle one): (Good) Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	(No)
Well needs to be re-surveyed.	Yes	(No)
Well needs to be repaired.	Yes	(No)
Well needs to be replaced.	Yes	(No)
Well needs to be properly abandoned.	Yes	(No)
No action necessary.	(Yes)	No

Comments

Signatures

Inspected by: A. Roppolo

Date of Inspection: 8/1/17

Reviewed by: Ronald L. Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: DM5-2

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	n/A
Well Tag ID and Condition	DM5-2/OK
Well Installation Date	n/A

	From Log	From GPS[1]
Ground Surface Elevation	954.63	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)	n/A	N/A
Easting (State Plane)	n/A	N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	ø
Datum:	ø
Accuracy/Precision:	ø

Well Construction Details

Type of well (Circle one) Flush Mount (Stick up) Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):	954.63	
Surface protective casing material:	Steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	19.10	ftbgs
Well Depth (as measured):	21.35	fttoc
Well Stick Up Height (as measured):		ftbgs
Screened interval:	9.1 - 19.1	ft
Open hole interval:	n/A	ft
Depth to water:	8.47	ftbtoc

Date: 8/7/17 Time: 0805

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

--- = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes (circled) No

Well Condition

Is the concrete pad in good condition?	Yes (circled)	No
Is the well surface casing in good condition?	Yes (circled)	No
Is the surface casing vertical?	Yes (circled)	No
Is there an internal well seal?	Yes (circled)	No
Has there been physical damage to the well?	Yes	No (circled)
Does sounding depth match completed depth?	Yes (circled)	No
Is measuring point marked?	Yes (circled)	No
Is the well clearly labeled?	Yes (circled)	No
Flush mount - Is it secure from runoff?	Yes (circled)	No

Overall well condition (circle one): Good (circled) Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No (circled)
Well needs to be re-surveyed.	Yes	No (circled)
Well needs to be repaired.	Yes	No (circled)
Well needs to be replaced.	Yes	No (circled)
Well needs to be properly abandoned.	Yes	No (circled)
No action necessary.	Yes (circled)	No

Comments

Signatures

Inspected by: D. Thompson

Date of Inspection: 8/7/17

Reviewed by: Ronald L Travis (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

--- = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: G-31-MW-002

Facility Information

Site Name:	Picatinny Arsenal Area: Midvalley Site: DRMO
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	G31MW-002 / OK
Well Installation Date	—

	From Log	From GPS[1]
Ground Surface Elevation	690.47	N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)		N/A
Easting (State Plane)		N/A

Cross streets (if applicable):	—
GPS Instrument used:[1]	—
Datum:	—
Accuracy/Precision:	—

Well Construction Details

Type of well (Circle one) Flush Mount Stick up Multilevel Well[2]

Well lock\security type:	manway cover	
Elevation (top of inner casing):	690.47	
Surface protective casing material:	steel	
Surface Casing diameter:	8.5	inches
Well Diameter and Casing Material:	2" PVC	inches
Well Depth (as installed):	20	ftbgs
Well Depth (as measured):	19.30	fttoc
Well Stick Up Height (as measured):	—	ftbgs
Screened interval:	10 - 20	ft
Open hole interval:	—	ft
Depth to water:	1.62	ftbtoc

Date: 9/13/17 Time: 0810

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ *ppm*

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	*% LEL*
O_2:	N/A	*40% Vol.*
CO:	N/A	*ppm*
H_2S:	N/A	*ppm*

Do readings indicate unsafe conditions exist? *Yes* *No*

Well Condition

Is the concrete pad in good condition?	*Yes*	*No*
Is the well surface casing in good condition?	*Yes*	*No*
Is the surface casing vertical?	*Yes*	*No*
Is there an internal well seal?	*Yes*	*No*
Has there been physical damage to the well?	*Yes*	*No*
Does sounding depth match completed depth?	*Yes*	*No*
Is measuring point marked?	*Yes*	*No*
Is the well clearly labeled?	*Yes*	*No*
Flush mount - Is it secure from runoff?	*Yes*	*No*

Overall well condition (circle one) *Good* *Fair* *Poor*

Other Comments: _____

Recommendations

Well needs to be redeveloped	*Yes*	*No*
Well needs to be re-surveyed.	*Yes*	*No*
Well needs to be repaired.	*Yes*	*No*
Well needs to be replaced.	*Yes*	*No*
Well needs to be properly abandoned.	*Yes*	*No*
No action necessary.	*Yes*	*No*

Comments

Signatures

Inspected by: A. Poppoli

Date of Inspection: 9/13/17

Reviewed by: _____ (Print)

_____ (Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: 171MW 4

Facility Information

Site Name:	Picatinny Arsenal — Area: — Site: Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806
Site County:	Morris County
Site State:	New Jersey
EPA Site ID Number:	NJ3210020704
Site Owner:	US Department of Army Picatinny Arsenal
EPA Project Manager:	Mr. William Roach, USEPA Region II

Well Location Information

State Well Permit No:	—
Well Tag ID and Condition	171 MW-1 / OK
Well Installation Date	

	From Log	From GPS[1]
Ground Surface Elevation		N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)		N/A
Easting (State Plane)		N/A

Cross streets (if applicable):	
GPS Instrument used:[1]	Ø
Datum:	Ø
Accuracy/Precision:	Ø

Well Construction Details

Type of well (Circle one): Flush Mount — Stick up — Multilevel Well[2]

Well lock\security type:	OK	
Elevation (top of inner casing):		
Surface protective casing material:	Steel	
Surface Casing diameter:	6"	inches
Well Diameter and Casing Material:	2" SS	inches
Well Depth (as installed):	128.0	ftbgs
Well Depth (as measured):	127.80	fttoc
Well Stick Up Height (as measured):	—	ftbgs
Screened interval:	118 – 128'	ft
Open hole interval:		ft
Depth to water:	93.07	ftbtoc

Date: 8-7-17 Time: 1605

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: D. Thompson

Date of Inspection: 8-7-17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3]Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

EPA Region 2 Superfund Well Assessment Checklist

Owner Well ID: MW52-2

Facility Information

Site Name:	Picatinny Arsenal	*Area:*	*Site:* Mid Valley
Site Address:	North East Office Garrison Bldg. 319, Picatinny, NJ 07806		
Site County:	Morris County		
Site State:	New Jersey		
EPA Site ID Number:	NJ3210020704		
Site Owner:	US Department of Army Picatinny Arsenal		
EPA Project Manager:	Mr. William Roach, USEPA Region II		

Well Location Information

State Well Permit No:

Well Tag ID and Condition MW52-2 / OK

Well Installation Date

	From Log	From GPS[1]
Ground Surface Elevation		N/A
Latitude	N/A	N/A
Longitude	N/A	N/A
Northing (State Plane)		N/A
Easting (State Plane)		N/A

Cross streets (if applicable):

GPS Instrument used:[1] Ø

Datum: Ø

Accuracy/Precision: Ø

Well Construction Details

Type of well (Circle one) *Flush Mount* *Stick up* *Multilevel Well*[2]

Well lock\security type: OK

Elevation (top of inner casing):

Surface protective casing material: steel

Surface Casing diameter: _____ *inches*

Well Diameter and Casing Material: 4" PVC *inches*

Well Depth (as installed): _____ *ftbgs*

Well Depth (as measured): 30.65 *fttoc*

Well Stick Up Height (as measured): _____ *ftbgs*

Screened interval: _____ *ft*

Open hole interval: _____ *ft*

Depth to water: 8.65 *ftbtoc*

Date: 8-1-17 *Time:* 1115

[1] Picatinny wells will not be resurveyed by GPS unless existing Northing and Easting coordinates from prior survey efforts are not available or other conditions warrant resurveying.

[2] If multilevel well please see attached worksheet.

N/A= Not Applicable

- - - = Not Available

Well Headspace Readings

PID/FID Reading taken inside top of casing (if applicable): _____ ppm

Multi-gas/CGI meter Readings taken (if applicable):[3]

LEL:	N/A	% LEL
O_2:	N/A	40% Vol.
CO:	N/A	ppm
H_2S:	N/A	ppm

Do readings indicate unsafe conditions exist? Yes No

Well Condition

Is the concrete pad in good condition?	Yes	No
Is the well surface casing in good condition?	Yes	No
Is the surface casing vertical?	Yes	No
Is there an internal well seal?	Yes	No
Has there been physical damage to the well?	Yes	No
Does sounding depth match completed depth?	Yes	No
Is measuring point marked?	Yes	No
Is the well clearly labeled?	Yes	No
Flush mount - Is it secure from runoff?	Yes	No

Overall well condition (circle one) Good Fair Poor

Other Comments: _____

Recommendations

Well needs to be redeveloped	Yes	No
Well needs to be re-surveyed.	Yes	No
Well needs to be repaired.	Yes	No
Well needs to be replaced.	Yes	No
Well needs to be properly abandoned.	Yes	No
No action necessary.	Yes	No

Comments

Signatures

Inspected by: D. Thompson

Date of Inspection: 8-1-17

Reviewed by: Ronald L. Traver (Print)

(Sign)

[3] Multi-gas readings are considered not applicable for Picatinny wells.

N/A= Not Applicable

- - - = Not Available

Appendix B

Laboratory and Data Validation Reports

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MCGI

USEPA Data Validation

Organic & Inorganic

Data Validation Report

Picatinny Arsenal
Route 15, NJ

Lab SDG's No. FA41779, FA41780 & FA41781

MCGI Project No. EA881606-8292-O

Prepared for:

EA Engineering, Science & Technology, Inc.
Hunt Valley, MD

Prepared by:

"MCGI"
Meridian Consultant Group, Inc.

Environmental Services & Data Validation

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www.meridiancgi.com

April 2017

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- GLOSSARY OF ACRONYMS & TERMS
- COMMUNICATION RECORDS
- GLOSSARY OF DATA VALIDATION QUALIFIERS
- REASON CODES
- DATA VALIDATION REPORT NARRATIVE
- ELECTRONIC DATA DELIVERABLE (EDD) with applicable qualifiers, Refer to the EDD Excel file.
- SUPPORT DOCUMENTATION, Refer to the electronic Data Package PDF file.

GLOSSARY OF ACRONYMS & TERMS

GLOSSARY OF ACRONYMS & TERMS

One or more of the following acronyms and terms may have been used in the descriptive process of the **Organic** Data Validation.

Acronyms:

BFB	Bromofluorobenzene (volatile instrument performance check)
BNA	Base/Neutral/Acid
CCCs	Calibration Check Compounds
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
%D	Percent Difference
DCB	Decachlorobiphenyl (Pesticide/PCB/ surrogate compound)
DFTPP	Decafluorotriphenylphosphine (semivolatile instrument performance check)
DSF	Data Summary Form
ECD	Electron-Capture Detector
EICP	Extended Ion Current Profile
EPA	United States Environmental Protection Agency
GC	Gas Chromatography
GC/EC	Gas Chromatography/Electron Capture
GC/MS	Gas Chromatography/Mass Spectra
GPC	Gel Permeation Chromatography (Clean Up)
ICAL	Initial Calibration
IS	Internal Standard
LCS	Laboratory Control Sample
LCL	Lower Control Limit
MCL	Maximum Contamination Level
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
m/z	The ratio of mass (m) to charge (z) of ions measured by GC/MS
OADS	Organic Analysis Data Sheet (Form 1)
ORDA	Organic Regional Data Assessment
PCB	Poly Chlorinated Biphenyl
PEM	Performance Evaluation Mixture

QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plan
QC	Quality Control
%R	Percent Recovery of spiked amount
RF	Response Factor
RIC	Reconstructed Ion Chromatogram
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
RT	Retention Time
RTW	Retention Time Window
SDG	Sample Delivery Group
SMC	System Monitoring Compound
SOP	Standard Operation Procedures
SOW	Statement of Work
SPCCs	System Performance Check Compounds
SSL	Samples Shipping Log
SVOA	Semivolatile Organic Analyte
TCL	Target Compound List
TCX	Tetrachloro-m-Xylene (Pesticide/PCB surrogate compound)
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
UCL	Upper Control Limit
VOA	Volatile Organic Analyte
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples

Any sample related to a particular QC analysis.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Contractual Holding Time

The time from VTSR (validated time of sample receipt) to laboratory extraction and /or analysis.

Data Validation Qualifier (DVQ)

This refers to the column on the data summary form in which EPA Region III and other qualifiers have been placed by the data validator.

Data Validation Result (DVR)

This refers to the column on the data summary form used to report results that have been modified by the data validator. A result in the DVR column that is qualified "U" indicates a modification of the reporting limit.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate

A duplicate sample generated in the field; not in the laboratory.

Initial Calibration (ICAL)

The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbances and/or emissions versus concentration of the standards. .

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Introduction of a known concentration of a compound into a sample to provide information about the effect of sample matrix on the extraction and/or measurement methodology.

Performance Evaluation Mixture

A standard used to verify that the ICAL sequence is stable throughout the GC or GC/MS analyses.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:
- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

Technical Holding Time

The time from sample collection to laboratory extraction and /or analysis

GLOSSARY OF ACRONYMS & TERMS

One or more of the following acronyms and terms may have been used in the descriptive process of the **Inorganic** Data Validation.

Acronyms:

AA	Atomic Absorption
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRDL	Contract Required Detection Limit
CSF	Complete SDG File
CV	Cold Vapor
%D	Percent Difference
EPA	United States Environmental Protection Agency
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICS	Interference Check Sample
ICV	Initial Calibration Verification
IDL	Instrument Detection Limit
LCS	Laboratory Control Sample
LCL	Lower Control Limit
MCL	Maximum Contamination Level
MDC	Minimum Detectable Concentration
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MSA	Method of Standard Addition
PB	Preparation Blank
PCB	Poly Chlorinated Biphenyl
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plan
QC	Quality Control

%R	Percent Recovery of spiked amount
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SOP	Standard Operation Procedures
SOW	Statement of Work
SSL	Samples Shipping Log
TAL	Target Analyte List
UCL	Upper Control Limit
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples

Any sample related to a particular QC analysis. For Example:
- For ICV, all samples run under the same calibration curve.
- For duplicate RPD, all SDG samples digested/distilled of the same matrix.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Continuing Calibration Blank (CCB)

A deionized water sample run every ten (10) samples designed to detect any carryover contamination.

Continuing Calibration Verification (CCV)

A deionized water sample run every ten (10) samples designed to detect any carryover contamination.

Contract Compliance Screening (CCS)

A process in which the SMO inspects the data for contractual compliance and provides EMSL-LV laboratories and the Regions with their findings.

Contractual Holding Time

The time from VTSR (validated time of sample receipt) to laboratory extraction and /or analysis.

Data Validation Qualifier (DVQ)

This refers to the column on the data summary form in which EPA Region III and other qualifiers have been placed by the data validator.

Data Validation Result (DVR)

This refers to the column on the data summary form used to report results that have been modified by the data validator. A result in the DVR column that is qualified "U" indicates a modification of the reporting limit.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate

A duplicate sample generated in the field; not in the laboratory.

Initial Calibration (ICAL)

The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbancies and/or emissions versus concentration of the standards.

.

Initial Calibration Blank (ICB)

First blank run after the calibration curve .

Initial Calibration Verification (ICV)

First standard run after the calibration curve .

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Introduction of a known concentration of a compound into a sample to provide information about the effect of sample matrix on the extraction and/or measurement methodology.

Post Digestion Spike

The addition of known amount of standard after digestion. (Also identified as analytical spike, or spike, for furnace analyses.)

Preparation Blank (PB)

Blank taken through the digestion process to detect internal laboratory contamination.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:
- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

Serial Dilution

A sample run at a specific dilution to determine whether any significant chemical or physical interferences exist due to sample matrix effect, for ICP only.

Technical Holding Time

The time from sample collection to laboratory extraction and /or analysis.

COMMUNICATION RECORDS

N/A

GLOSSARY OF DATA VALIDATION QUALIFIERS

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATED TO IDENTIFICATION:

(Confidence concerning presence or absence of compounds)

U	=	Not detected above the level of the associated value. The associated value is either the approximate sample quantitation or detection limit.
NO CODE	=	Confirmed identification
U1	=	Not detected substantially above the level reported in laboratory or field blanks.
R	=	Unusable results. Analyte may or may not be present in the sample.
N	=	Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION:

(Can be used for both positive results and sample quantitation limits)

J	=	Analyte present. Reported value may not be accurate or precise (estimated value).
J+	=	Analyte present. Reported value may be biased high. Result is estimated high.
J-	=	Analyte present. Reported value may be biased low. Result is estimated low.
UJ	=	Not detected. Quantitation limit may be inaccurate or imprecise (Estimated).
UJ-	=	Not detected. Quantitation limit is probably higher.

OTHER CODES:

NJ	=	Qualitative identification questionable. Presumptively present at approximate quantity.
Q	=	No analytical result.
X	=	Data not Validated.

DATA VALIDATION REPORT NARRATIVE

MCGI

Meridian Consultant Group, Inc.
Environmental Services & Data Validation
1997 Annapolis Exchange Pkwy., Suite 300
Annapolis, MD 21401

(301)803-9207 Phone
(4 10)972-4701 Fax
www.meridiancgi.com

DATE: April 25, 2017

SUBJECT: USEPA Organic & Inorganic Data Validation Report
Volatile, Dissloved Gases, Iron (Fe) & Dissolved Organic Carbon (DOC)
Accutest Lab SDG's No. FA41779, FA41780 & FA41781
Site: Picatinny Arsenal, Route 15, NJ
MCGI Project No. EA881701-1779

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TO: Mr. Frank DeSantis
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OVERVIEW

This report consists of Three (3) Sample Delivery Groups (SDGs) for a total of sixty (60) samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile, Dissolved Gases, Iron (Fe) & Dissolved Organic Carbon (DOC) analyses according to SW-846 Methods 8260C, RSK-175, 6020 & 5310B, respectively. Details about each SDG are listed in separate sections below. The samples were analyzed in accordance with the Chain-of-Custody (COC).

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review & USEPA National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses.

Deviation from USEPA NFG: The "U" qualifier recommended by USEPA NFG for blank contamination was replaced by the "U1" qualifier to clearly indicate blank contamination on the EDDs.

Calibrations: SW-846 Method 8260C was used for the volatile analysis. For the data validation purpose, a 30% RSD for the initial calibrations & 25% D for the continuing calibrations were used as the QC limits for all compounds of concern, as the basis for qualifying the data.

GENERAL NOTES

- ***Electronic Data Deliverable (EDD):*** Several rows in the electronic data deliverable (EDD) are marked with an "X" and hidden from the EDDs by the validator. These rows may include quality control samples such as Method Blanks, Laboratory Control Samples, Matrix Spikes, or Matrix Spike Duplicates which are not validated. Additionally, some field sample results may not be used since only one (1) result for each compound is reported after validation. The following list indicates some instances in which an "X" may be placed in the DVQ column:
  1. The compounds in an analysis that have exceeded the instrument calibration range.
  2. All compounds in a diluted analysis that were within the calibration range in the initial analysis.
  3. All compounds in either the initial analysis or re-analysis of a sample, depending on which analysis is not reported on the EDD.

  Although QC samples and some field samples results may not be used, all data were reviewed and considered in the overall assessment.

- ***Data Validation Qualifier (DVQ)*:**This refers to the column on the data summary form in which EPA and other qualifiers have been placed by the data validator.

- ***Data Validation Result (DVR):***This refers to the column on the data summary form used to report results that have been modified by the data validator. A result in the DVR column that is qualified "U" indicates a modification of the reporting limit. Results in the DVR column supersede those reported by the laboratory.

- ***Tentatively Identified Compounds (TICs):*** The TICs, if applicable, were reviewed during data validation.

- ***Compound Quantitation:*** Positive results for compounds which are below the CRQL were qualified as estimated "J" on the EDD.

1-SDG: FA41779

This SDG consisted of twenty-three (23) aqueous samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile analysis according to SW-846 Methods 8260C. One (1) trip & two (2) field blanks; and three (3) aqueous field duplicate pairs were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis			
Field ID	**Lab ID**	**SDG**	**Matrix**	**V**	**G**	**F**	**D**
D-PZ-3	FA41779-01	FA41779	Aqueous	x			
D-SW-2	FA41779-02		Aqueous	x			
D-SW-3	FA41779-03		Aqueous	x			
D-SW-4	FA41779-04		Aqueous	x			
D-SW-8	FA41779-05		Aqueous	x			
D-PZ-1	FA41779-06		Aqueous	x			
DUP-2D-GW	FA41779-07		Aqueous	x			
DUP-D-SW	FA41779-08		Aqueous	x			
FB-030217	FA41779-09		Aqueous	x			
FB-SW-030217	FA41779-10		Aqueous	x			
TRIP BLANK	FA41779-11		Aqueous	x			
D-PRB-1	FA41779-12		Aqueous	x			
D-PRB-2	FA41779-13		Aqueous	x			
D-PRB-3	FA41779-14		Aqueous	x			
D-PRB-4	FA41779-15		Aqueous	x			
D-PRB-5	FA41779-16		Aqueous	x			
D-PRB-6	FA41779-17		Aqueous	x			
D-PRB-7	FA41779-18		Aqueous	x			
D-PRB-8	FA41779-19		Aqueous	x			
D-PRB-9	FA41779-20		Aqueous	x			
D-PRB-10	FA41779-21		Aqueous	x			
D-PZ-2	FA41779-23		Aqueous	x			
DUP-1D-GW	FA41779-24		Aqueous	x			

V=Volatile, G=Dissolved Gases, F=Fe, D=DOC

Duplicates: DUP-2D-GW/D-PZ-1
DUP-D-SW/D-SW-8
DUP-1D-GW/D-PRB-5

- ***Sample Receipt:*** The laboratory indicated that sample DUP-1D-GW was not recorded on the COC. The sample was analyzed and reported by the laboratory.

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was

applied based on the RPD when results are less than CRQL. Whenever a positive result for a compound is detected in one sample but not in the other, regardless of the CRQL, "J" & "UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	**DUP-2D-GW**	**D-PZ-1**	**RPD**	**Qualifier**
cis-1,2-Dichloroethylene	98.3	89.5	9	
trans-1,2-Dichloroethylene	0.86	0.91	6	
Trichloroethylene	8.2	7.3	12	
Vinyl Chloride	20.1	19.4	4	
	DUP-D-SW	**D-SW-8**		
Vinyl Chloride	0.23	0.25	8	
	DUP-1D-GW	**D-PRB-5**		
Toluene	0.61	0.91	39	

ORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		V			G		
		q	t	a	q	t	a
*	Data Completeness		23	0		0	0
*	Holding Time		23	0		0	0
*	Instrument Performance (BFB/DFTPP)		23	0		0	0
	Calibrations	x	23	6		0	0
	Laboratory and Field Blanks analyses	x	23	1		0	0
*	Surrogate Recoveries		23	0		0	0
	Matrix Spike/Matrix Spike Duplicate	x	23	4		0	0
*	Laboratory Control Sample(LCS)		23	0		0	0
*	Laboratory and/or Field Duplicates		23	0		0	0
*	Internal Standards		23	0		0	0
*	Compound Identification		23	0		0	0
*	Compound Quantitation		23	0		0	0
*	Sample Preservation		23	0		0	0

* All Criteria were met for that Parameter. V=Volatile, G=Dissolved Gases

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

- ***Calibrations:*** The continuing calibrations CC5566-4, 3/7/2017 (10:10am) & ECC5599-4, failed the %D precision criteria of 25%, for Methylene Chloride. Samples FA41779-2, 3, 4, 5, 8 & 10 are associated with these calibrations. Quantitation limits for this compound in these associated samples were qualified "UJ".

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA41779-6 displayed low recoveries for cis-1,2-Dichloroethylene & Vinyl Chloride. Positive results for these compounds in the parent sample were qualified "J-".

The MS/MSD of sample FA41779-7 displayed high recoveries for cis-1,2-Dichloroethylene. Positive result for this compound in the parent sample was qualified “J+“.

The MS of sample FA41779-5 displayed high recovery for Vinyl Chloride. Positive result for this compound in the parent sample was qualified “J+“.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Volatile	1,2,3-Trichlorobenzene	1.0	ug/L	Method	All
	Hexachlorobutadiene	0.84	ug/L	Method	All
	Toluene	0.80	ug/L	Method	All
	None				

*Common lab contaminant

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA41780-23 displayed an RPD outside the QC limit for Dichlorofluoromethane & Trichlorofluoromethane. Also, displayed high recoveries for Benzene, Ethylbenzene, 1,2,4-Trimethylbenzene & 1,3,5-Trimethylbenzene. No positive results were detected for these compounds in the parent sample. No data were qualified.

2-SDG: FA41780

This SDG consisted of twenty-five (25) aqueous samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile, Dissolved Gases, Iron (Fe) & Dissolved Organic Carbon (DOC) analyses according to SW-846 Methods 8260C, RSK-175, 6020 & 5310B, respectively. One (1) trip & one (1) field blanks; and three (3) aqueous field duplicate pairs were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis			
Field ID	**Lab ID**	**SDG**	**Matrix**	**V**	**G**	**F**	**D**
171MW-2	FA41780-01	FA41780	Aqueous	x	x	x	x
171MW-6	FA41780-02		Aqueous	x	x	x	x
171MW-6B	FA41780-03		Aqueous	x	x	x	x
171MW-6C	FA41780-04		Aqueous	x	x	x	x
171MW-8	FA41780-05		Aqueous	x	x	x	x
171MW-8B	FA41780-06		Aqueous	x	x	x	x
171MW-10	FA41780-07		Aqueous	x	x	x	x
171MW-10B	FA41780-08		Aqueous	x	x	x	x
171MW-14	FA41780-09		Aqueous	x	x	x	x
171MW-14B	FA41780-10		Aqueous	x	x	x	x
171MW-15	FA41780-11		Aqueous	x	x	x	x
171IW-002	FA41780-12		Aqueous	x			x
171IW-005	FA41780-13		Aqueous	x			x
DUP-MV1	FA41780-14		Aqueous	x			x
DUP-MV2	FA41780-15		Aqueous	x	x	x	x
TRIP BLANK	FA41780-16		Aqueous	x			
FB-030217	FA41780-17		Aqueous	x	x	x	x
171IW-010S	FA41780-18		Aqueous	x			x
171MW-13	FA41780-19		Aqueous	x	x	x	x
171MW-13B	FA41780-20		Aqueous	x	x	x	x
171MW-16	FA41780-21		Aqueous	x	x	x	x
171MW-16B	FA41780-22		Aqueous	x	x	x	x
171MW-17	FA41780-23		Aqueous	x	x	x	x
171MW-17B	FA41780-24		Aqueous	x	x	x	x
DUP-MV3	FA41780-25		Aqueous	x	x	x	x

V=Volatile, G=Dissolved Gases, F=Fe, D=DOC

Duplicates: DUP-MV1/171IW-002
DUP-MV2/171IW-005
DUP-MV3/171MW-17B

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was applied based on the RPD when results are less than CRQL. Whenever a positive result for a compound is detected in one sample but not in the other, regardless of the CRQL, "J" & "UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	**DUP-MV1**	**171IW-002**	**RPD**	**Qualifier**
cis-1,2-Dichloroethylene	16.7	9.4	56	J
Trichloroethylene	159	107	39	
DOC	1.9	1.8	5	
	DUP-MV2	**171IW-005**		
Chloroform	0.85	0.81	5	
cis-1,2-Dichloroethylene	148	131	12	
trans-1,2-Dichloroethylene	0.56	0.48	15	
Trichloroethylene	75.2	82.5	9	
Vinyl Chloride	0.91	ND	IN	J, UJ
DOC	1.6	1.8	12	
	DUP-MV3	**171MW-17B**		
cis-1,2-Dichloroethylene	51.4	39.6	26	
trans-1,2-Dichloroethylene	0.79	0.55	36	
Trichloroethylene	11.7	10.1	15	
Vinyl Chloride	24.3	23.8	2	
Ethene	2.5	2.8	11	
Methane	79.5	90.3	13	
DOC	1.3	1.5	14	
Fe	485	648	29	

ORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

	Parameters	V			G		
		q	t	a	q	t	a
*	Data Completeness		25	0		20	0
*	Holding Time		25	0		20	0
*	Instrument Performance (BFB/DFTPP)		25	0		20	0
	Calibrations	x	25	25		20	0
	Laboratory and Field Blanks analyses		25	0	x	20	5
*	Surrogate Recoveries		25	0		20	0
	Matrix Spike/Matrix Spike Duplicate	x	25	1		20	0
*	Laboratory Control Sample(LCS)		25	0		20	0
	Laboratory and/or Field Duplicates	x	25	4		20	0
*	Internal Standards		25	0		20	0
*	Compound Identification		25	0		20	0
*	Compound Quantitation		25	0		20	0
	Sample Preservation		25	0	x	20	1

* All Criteria were met for that Parameter. V=Volatile, G=Dissolved Gases

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

Volatile:

- ***Calibrations:*** The end continuing calibration ECC4827-5, 3/8/2017 (8:35pm), failed the %D precision criteria of 25%, for Vinyl Acetate. Samples FA41780-01 thru -20 are associated with this calibration. Quantitation limits for this compound in these associated samples were qualified "UJ".

  The initial calibration, on 3/9/2017, instrument GCMSN, failed the %RSD precision criteria of 30%, for Methylene Chloride. Samples FA41780-21 thru -25 are associated with this

intial calibration. Quantitation limits for this compound in these associated samples were qualified “UJ”.

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA41780-12 displayed high recoveries; along with RPDs outside the QC limits for several compounds (See MS/MSD Form). Positive results were only detected for cis-1,2-Dichloroethylene & Trichloroethylene in the parent sample. Positive results for these two (2) compounds in the parent sample were qualified “J+“, unless superseded by the “J” qualifier.

Dissolved Gases:

- ***Sample Preservation:*** Sample 171MW-13B was not preserved to pH<2. However, the sample was analyzed within the holding time. Positive results & quantitation limits were qualified “J” & “UJ”, respectively.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Volatile	1,2,3-Trichlorobenzene	1.0	ug/L	Method	All
	Hexachlorobutadiene	0.84	ug/L	Method	All
	Toluene	0.48	ug/L	Method	All
D. Gases	Methane	0.48	ug/L	Method	All

*Common lab contaminant

Volatile:

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA41780-23 displayed RPD outside the QC limit for Dichlorofluoromethane & Trichlorofluoromethane. Also, displayed high recoveries for Benzene, ethylbenzene, 1,2,4-Trimethylbenzene & 1,3,5-Trimethylbenzene. No positive results were detected for these compounds in the parent sample. No data were qualified.

Dissolved Gases:

- None noted.

INORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		F			D		
		q	t	a	q	t	a
*	Data Completeness		20	0		24	0
*	Holding Time		20	0		24	0
*	Calibration Verification		20	0		24	0
	Laboratory and Field Blanks analyses		20	0	x	24	23
*	ICP Interference Check Sample results		20	0		24	0
*	Matrix Spike recoveries (MS)		20	0		24	0
*	Laboratory and Field Duplicates		20	0		24	0
*	Laboratory Control Sample(LCS)		20	0		24	0
*	Serial Dilution results		20	0		24	0
*	Furnace Atomic Absorption results (FAA)		20	0		24	0
*	Analyte Identification		20	0		24	0
*	Analyte Quantitation		20	0		24	0
*	Sample Preservation		20	0		24	0
* All Criteria were met for that Parameter, F=Fe, D=DOC							

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR ISSUES

- None noted.

MINOR ISSUES

- Laboratory and Field Blanks analyses: Analytes detected in the laboratory and/or equipment blanks, that affect sample results, with concentration above the instrument detection limit (IDL) are listed below. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analyte	Blank Type
DOC	FB

CB = Container Blank
PB = Preparation Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
FB = Field Blank
EB = Equipment Blank

NOTES

- None noted.

3-SDG: FA41781

This SDG consisted of twelve (12) aqueous samples submitted to Accutest Laboratories, Marlborough, MA, for Dissolved Gases & Dissolved Organic Carbon (DOC) analyses according to RSK-175 & SW-846 Method 5310B, respectively. One (1) field blank was identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis			
Field ID	**Lab ID**	**SDG**	**Matrix**	**V**	**G**	**F**	**D**
2MW-5	FA41781-01	FA41781	Aqueous		x		x
2MW-4D	FA41781-02		Aqueous		x		x
2MW-10	FA41781-03		Aqueous		x		x
DUP-G3	FA41781-04		Aqueous		x		x
2MW-14	FA41781-05		Aqueous		x		x
2MW-17	FA41781-06		Aqueous		x		x
2MW-25	FA41781-07		Aqueous		x		x
2MW-26	FA41781-08		Aqueous		x		x
2MW-27	FA41781-09		Aqueous		x		x
2MW-47-101	FA41781-10		Aqueous		x		x
2MW-47-102	FA41781-11		Aqueous		x		x
FB-030217	FA41781-12		Aqueous		x		x

V=Volatile, G=Dissolved Gases, F=Fe, D=DOC

Duplicates: NA

ORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		V			G		
		q	t	a	q	t	a
*	Data Completeness		0	0		12	0
*	Holding Time		0	0		12	0
*	Instrument Performance (BFB/DFTPP)		0	0		12	0
*	Calibrations		0	0		12	0
	Laboratory and Field Blanks analyses		0	0	x	12	2
*	Surrogate Recoveries		0	0		12	0
*	Matrix Spike/Matrix Spike Duplicate		0	0		12	0
*	Laboratory Control Sample(LCS)		0	0		12	0
*	Laboratory and/or Field Duplicates		0	0		12	0
*	Internal Standards		0	0		12	0
*	Compound Identification		0	0		12	0
*	Compound Quantitation		0	0		12	0
*	Sample Preservation		0	0		12	0

* All Criteria were met for that Parameter. V=Volatile, G=Dissolved Gases

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

- None noted.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional

Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
D. Gases	Methane	0.45	ug/L	Method	All

*Common lab contaminant

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MSD of sample FA41781-3 displayed low recovery for Methane due to very high native concentration in the parent sample (>4X spike amount). No action was taken.

INORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		F			D		
		q	t	a	q	t	a
*	Data Completeness		0	0		12	0
*	Holding Time		0	0		12	0
*	Calibration Verification		0	0		12	0
	Laboratory and Field Blanks analyses		0	0	x	12	9
*	ICP Interference Check Sample results		0	0		12	0
*	Matrix Spike recoveries (MS)		0	0		12	0
*	Laboratory and Field Duplicates		0	0		12	0
*	Laboratory Control Sample(LCS)		0	0		12	0
*	Serial Dilution results		0	0		12	0
*	Furnace Atomic Absorption results (FAA)		0	0		12	0
*	Analyte Identification		0	0		12	0
*	Analyte Quantitation		0	0		12	0
*	Sample Preservation		0	0		12	0
* All Criteria were met for that Parameter, F=Fe, D=DOC							

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR ISSUES

- None noted.

MINOR ISSUES

- Laboratory and Field Blanks analyses: Analytes detected in the laboratory and/or equipment blanks, that affect sample results, with concentration above the instrument detection limit (IDL) are listed below. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analyte	Blank Type
DOC	FB

CB = Container Blank
PB = Preparation Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
FB = Field Blank
EB = Equipment Blank

NOTES

- None noted.

REPORT CONTENT STATEMENT

All data for this project were reviewed in accordance with the pertinent parts of the U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review & USEPA National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

l) Glossary of Data Qualifiers
2) Electronic Data Deliverable (EDD). These include:
   (a) All results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R"), where applicable.
3) Electronic Data Package (.pdf file) as Support Documentation

DCN: EA881701-1779

Respectfully Submitted,

Sherif N. Mina Date: April 25, 2017
Sherif N. Mina

QA/Review: SM

MCGI

USEPA Data Validation

Organic & Inorganic

Data Validation Report

Picatinny Arsenal
Route 15, NJ

Lab SDG's No. FA46876, FA46923, FA46987, FA47010, FA47012, FA47143, FA47194 & FA47433

MCGI Project No. EA881704-6876

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GLOSSARY OF ACRONYMS & TERMS

GLOSSARY OF ACRONYMS & TERMS

One or more of the following acronyms and terms may have been used in the descriptive process of the **Organic** Data Validation.

Acronyms:

BFB	Bromofluorobenzene (volatile instrument performance check)
BNA	Base/Neutral/Acid
CCCs	Calibration Check Compounds
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
%D	Percent Difference
DCB	Decachlorobiphenyl (Pesticide/PCB/ surrogate compound)
DFTPP	Decafluorotriphenylphosphine (semivolatile instrument performance check)
DSF	Data Summary Form
ECD	Electron-Capture Detector
EICP	Extended Ion Current Profile
EPA	United States Environmental Protection Agency
GC	Gas Chromatography
GC/EC	Gas Chromatography/Electron Capture
GC/MS	Gas Chromatography/Mass Spectra
GPC	Gel Permeation Chromatography (Clean Up)
ICAL	Initial Calibration
IS	Internal Standard
LCS	Laboratory Control Sample
LCL	Lower Control Limit
MCL	Maximum Contamination Level
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
m/z	The ratio of mass (m) to charge (z) of ions measured by GC/MS
OADS	Organic Analysis Data Sheet (Form 1)
ORDA	Organic Regional Data Assessment
PCB	Poly Chlorinated Biphenyl
PEM	Performance Evaluation Mixture

QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plan
QC	Quality Control
%R	Percent Recovery of spiked amount
RF	Response Factor
RIC	Reconstructed Ion Chromatogram
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
RT	Retention Time
RTW	Retention Time Window
SDG	Sample Delivery Group
SMC	System Monitoring Compound
SOP	Standard Operation Procedures
SOW	Statement of Work
SPCCs	System Performance Check Compounds
SSL	Samples Shipping Log
SVOA	Semivolatile Organic Analyte
TCL	Target Compound List
TCX	Tetrachloro-m-Xylene (Pesticide/PCB surrogate compound)
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
UCL	Upper Control Limit
VOA	Volatile Organic Analyte
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples

Any sample related to a particular QC analysis.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Contractual Holding Time

The time from VTSR (validated time of sample receipt) to laboratory extraction and /or analysis.

Data Validation Qualifier (DVQ)

This refers to the column on the data summary form in which EPA Region III and other qualifiers have been placed by the data validator.

Data Validation Result (DVR)

This refers to the column on the data summary form used to report results that have been modified by the data validator. A result in the DVR column that is qualified "U" indicates a modification of the reporting limit.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate

A duplicate sample generated in the field; not in the laboratory.

Initial Calibration (ICAL)

The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbances and/or emissions versus concentration of the standards. .

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Introduction of a known concentration of a compound into a sample to provide information about the effect of sample matrix on the extraction and/or measurement methodology.

Performance Evaluation Mixture

A standard used to verify that the ICAL sequence is stable throughout the GC or GC/MS analyses.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:
- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

Technical Holding Time

The time from sample collection to laboratory extraction and /or analysis

GLOSSARY OF ACRONYMS & TERMS

One or more of the following acronyms and terms may have been used in the descriptive process of the **Inorganic** Data Validation.

Acronyms:

AA	Atomic Absorption
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRDL	Contract Required Detection Limit
CSF	Complete SDG File
CV	Cold Vapor
%D	Percent Difference
EPA	United States Environmental Protection Agency
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICS	Interference Check Sample
ICV	Initial Calibration Verification
IDL	Instrument Detection Limit
LCS	Laboratory Control Sample
LCL	Lower Control Limit
MCL	Maximum Contamination Level
MDC	Minimum Detectable Concentration
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MSA	Method of Standard Addition
PB	Preparation Blank
PCB	Poly Chlorinated Biphenyl
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plan
QC	Quality Control

%R	Percent Recovery of spiked amount
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SOP	Standard Operation Procedures
SOW	Statement of Work
SSL	Samples Shipping Log
TAL	Target Analyte List
UCL	Upper Control Limit
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples

Any sample related to a particular QC analysis. For Example:
- For ICV, all samples run under the same calibration curve.
- For duplicate RPD, all SDG samples digested/distilled of the same matrix.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Continuing Calibration Blank (CCB)

A deionized water sample run every ten (10) samples designed to detect any carryover contamination.

Continuing Calibration Verification (CCV)

A deionized water sample run every ten (10) samples designed to detect any carryover contamination.

Contract Compliance Screening (CCS)

A process in which the SMO inspects the data for contractual compliance and provides EMSL-LV laboratories and the Regions with their findings.

Contractual Holding Time

The time from VTSR (validated time of sample receipt) to laboratory extraction and /or analysis.

Data Validation Qualifier (DVQ)

This refers to the column on the data summary form in which EPA Region III and other qualifiers have been placed by the data validator.

Data Validation Result (DVR)

This refers to the column on the data summary form used to report results that have been modified by the data validator. A result in the DVR column that is qualified "U" indicates a modification of the reporting limit.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate

A duplicate sample generated in the field; not in the laboratory.

Initial Calibration (ICAL)

The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbancies and/or emissions versus concentration of the standards.

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Initial Calibration Blank (ICB)

First blank run after the calibration curve .

Initial Calibration Verification (ICV)

First standard run after the calibration curve .

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Introduction of a known concentration of a compound into a sample to provide information about the effect of sample matrix on the extraction and/or measurement methodology.

Post Digestion Spike

The addition of known amount of standard after digestion. (Also identified as analytical spike, or spike, for furnace analyses.)

Preparation Blank (PB)

Blank taken through the digestion process to detect internal laboratory contamination.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:
- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

Serial Dilution

A sample run at a specific dilution to determine whether any significant chemical or physical interferences exist due to sample matrix effect, for ICP only.

Technical Holding Time

The time from sample collection to laboratory extraction and /or analysis.

COMMUNICATION RECORDS

N/A

GLOSSARY OF DATA VALIDATION QUALIFIERS

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATED TO IDENTIFICATION:

(Confidence concerning presence or absence of compounds)

U	=	Not detected above the level of the associated value. The associated value is either the approximate sample quantitation or detection limit.
NO CODE	=	Confirmed identification
U1	=	Not detected substantially above the level reported in laboratory or field blanks.
R	=	Unusable results. Analyte may or may not be present in the sample.
N	=	Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION:

(Can be used for both positive results and sample quantitation limits)

J	=	Analyte present. Reported value may not be accurate or precise (estimated value).
J+	=	Analyte present. Reported value may be biased high. Result is estimated high.
J-	=	Analyte present. Reported value may be biased low. Result is estimated low.
UJ	=	Not detected. Quantitation limit may be inaccurate or imprecise (Estimated).
UJ-	=	Not detected. Quantitation limit is probably higher.

OTHER CODES:

NJ	=	Qualitative identification questionable. Presumptively present at approximate quantity.
Q	=	No analytical result.
X	=	Data not Validated.

DATA VALIDATION REPORT NARRATIVE

MCGI

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DATE: October 25, 2017

SUBJECT: USEPA Organic & Inorganic Data Validation Report
Volatile, Explosives, Dissolved Gases, Metals/Individual Metal analytes, Nitrite/Nitrate/Sulfate/Chloride, Total Organic Carbon (TOC)/Dissolved Organic Carbon (DOC) & Alkalinity
Accutest Lab SDG's No. FA46876, FA46923, FA46987, FA47010, FA47012, FA47143, FA47194 & FA47433
Site: Picatinny Arsenal, Route 15, NJ
MCGI Project No. EA881704-6876

FROM: Sherif N. Mina
Meridian Consultant Group, Inc.

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OVERVIEW

This report consists of eight (8) Sample Delivery Groups (SDGs) for a total of one hundred fifty-nine (159) samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile, Explosives, Dissolved Gases, Metals/Individual Metal analytes, Nitrite/Nitrate/Sulfate/Chloride, TOC/DOC & Alkalinity analyses according to SW-846 Methods 8260C, 8330, RSK-175, 6020, EPA 300.0, 5310B & SM2320B, respectively. Details about each SDG are listed in separate sections below. The samples were analyzed in accordance with the Chain-of-Custody (COC).

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review & USEPA National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses.

Deviation from USEPA NFG: The "U" qualifier recommended by USEPA NFG for blank contamination was replaced by the "U1" qualifier to clearly indicate blank contamination on the EDDs.

Calibrations: SW-846 Method 8260C was used for the volatile analysis. For the data validation purpose, a 30% RSD for the initial calibrations & 25% D for the continuing calibrations were used as the QC limits for all compounds of concern, as the basis for qualifying the data.

GENERAL NOTES

- ***Electronic Data Deliverable (EDD):*** Several rows in the electronic data deliverable (EDD) are marked with an "X" and hidden from the EDDs by the validator. These rows may include quality control samples such as Method Blanks, Laboratory Control Samples, Matrix Spikes, or Matrix Spike Duplicates which are not validated. Additionally, some field sample results may not be used since only one (1) result for each compound is reported after validation. The following list indicates some instances in which an "X" may be placed in the DVQ column:
  1. The compounds in an analysis that have exceeded the instrument calibration range.
  2. All compounds in a diluted analysis that were within the calibration range in the initial analysis.
  3. All compounds in either the initial analysis or re-analysis of a sample, depending on which analysis is not reported on the EDD.

  Although QC samples and some field samples results may not be used, all data were reviewed and considered in the overall assessment.

- ***Data Validation Qualifier (DVQ)*****:**This refers to the column on the data summary form in which EPA and other qualifiers have been placed by the data validator.

- ***Data Validation Result (DVR):***This refers to the column on the data summary form used to report results that have been modified by the data validator. A result in the DVR column that is qualified "U" indicates a modification of the reporting limit. Results in the DVR column supersede those reported by the laboratory.

- ***Tentatively Identified Compounds (TICs):*** The TICs, if applicable, were reviewed during data validation.

- ***Compound Quantitation:*** Positive results for compounds which are below the CRQL were qualified as estimated "J" on the EDD.

1-SDG: FA46876

This SDG consisted of twenty (20) aqueous samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile, Dissolved Gases, Metals/Individual Metal analytes,Nitrite/Nitrate/Sulfate & TOC/DOC analyses according to SW-846 Methods 8260C, RSK-175, 6020, EPA 300.0 & 5310B, respectively. One (1) trip & one (1) field blanks; and three (3) aqueous field duplicate pairs were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis											
Field ID	**Lab ID**	**SDG**	**Matrix**	**X**	**V**	**G**	**N**	**T**	**D**	**Mt**	**Md**	**It**	**Id**	**C**	**A**
64MW-2	FA46876-01	MC46876	Aqueous		x		x	x					x		
161MW-1B	FA46876-02		Aqueous		x		x	x					x		
161MW-4B	FA46876-03		Aqueous		x		x	x					x		
161MW-2	FA46876-04		Aqueous		x		x	x					x		
161MW-7	FA46876-05		Aqueous		x		x	x					x		
35MW-5B	FA46876-06		Aqueous		x		x	x					x		
B1038MW-2	FA46876-07		Aqueous		x		x	x					x		
B1038MW-3	FA46876-08		Aqueous		x		x	x					x		
171IMW-010S	FA46876-09		Aqueous						x						
171MW-13	FA46876-10		Aqueous		x	x	x	x	x				x		
171MW-13B	FA46876-11		Aqueous		x	x	x	x	x				x		
171MW-16	FA46876-12		Aqueous		x	x			x				x		
171MW-16B	FA46876-13		Aqueous		x	x			x				x		
171MW-17	FA46876-14		Aqueous		x	x			x			x			
171MW-17B	FA46876-15		Aqueous		x	x			x				x		
FB	FA46876-16		Aqueous		x	x	x	x	x				x		
TRIP BLANK	FA46876-17		Aqueous		x										
DUP-MV1A	FA46876-18		Aqueous		x	x							x		
DUP-MV1B	FA46876-18		Aqueous				x	x							
DUP-MV1C	FA46876-18		Aqueous						x						

X=Explosives, V=Volatile, G=Dissolved Gases, N=Nitrate/Nitrite/Sulfate, T=TOC, D=DOC, Mt=Metals,total, Md=Metals,dissolved, It=Individual Metal Analytes,total, Id=Individual Metal Analytes,dissolved, C=Chloride, A=Alkalinity

Duplicates: DUP-MV1A/171MW-16B
DUP-MV1B/171MW-13B
DUP-MV1C/171MW-010S

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was applied based on the RPD when results are less than CRQL. Whenever a positive result for a compound is detected in one sample but not in the other, regardless of the CRQL, "J" &

"UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	**DUP-MV1A**	**171MW-16B**	**RPD**	**Qualifier**
Ethene	ND	0.72 J	NA	J, UJ
Methane	1890	1730	9	
cis-1,2-Dichloroethylene	8.3	14.2	52	J
Toluene	0.57 J	0.45 J	NA	
Trichloroethylene	1.2	2.1	55	J
Vinyl Chloride	65.9	64.5	2	
Fe, dissolved	196 J	152 J	NA	
	DUP-MV1B	**171MW-13B**		
Sulfate	130	176	30	
	DUP-MV1C	**171MW-010S**		
ND				

ORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		V			X			G		
		q	t	a	q	t	a	q	t	a
*	Data Completeness		17	0			0		8	0
*	Holding Time		17	0			0		8	0
*	Instrument Performance (BFB/DFTPP)		17	0			0		8	0
	Calibrations	x	17	16			0		8	0
*	Laboratory and Field Blanks analyses		17	0			0		8	0
	Surrogate Recoveries	x	17	1			0		8	0
*	Matrix Spike/Matrix Spike Duplicate		17	0			0		8	0
*	Laboratory Control Sample(LCS)		17	0			0		8	0
	Laboratory and/or Field Duplicates	x	17	2			0	x	8	2
*	Internal Standards		17	0			0		8	0
*	Compound Identification		17	0			0		8	0
*	Compound Quantitation		17	0			0		8	0
*	Sample Preservation		17	0			0		8	0

* All Criteria were met for that Parameter. V=Volatile, X=Explosives, G=Dissolved Gases

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

Volatile:

- ***Calibrations:*** The continuing calibration ECC105-5, 8/23/17 (8:36pm), failed the %D precision criteria of 25%, for Tetrachloroethene. Samples FA46876-1 thru -8 & -10 thru -17, are associated with this end calibration. Quantitation limits for this compound in all associated samples were qualified "UJ".

- ***Surrogate Recovery:*** Sample FA46876-11 displayed low recovery for Surrogate Dibromofluoromethane (S1). Positive results & quantitation limits for compounds associated with this surrogate were qualified "J-" & "UJ", respectively, unless the "J-" qualifier was superseded by the "J" qualifier.

Dissolved Gases:

- None noted.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Volatile	Toluene	2.2	ug/L	Trip	All
Dissolved Gases	None				

*Common lab contaminant

Volatile:

- ***Sample Preservation:*** Sample FA46876-11 was not preserved to a pH<2. However, the sample was analyzed within 2 days from the date of sample collection. No action was taken.

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA46923-16, associated with SDG FA46923 were included in this SDG. This MS/MSD is evaluated in SDG FA46923.

Dissolved Gases:

- ***Sample Preservation:*** Sample FA46876-11 was not preserved to a pH<2. However, the sample was analyzed within 2 days from the date of sample collection. No action was taken.

INORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		M		
		q	t	a
*	Data Completeness			0
*	Holding Time			0
*	Calibration Verification			0
*	Laboratory and Field Blanks analyses			0
*	ICP Interference Check Sample results			0
*	Matrix Spike recoveries (MS)			0
*	Laboratory and Field Duplicates			0
*	Laboratory Control Sample(LCS)			0
*	Serial Dilution results			0
*	Furnace Atomic Absorption results (FAA)			0
*	Analyte Identification			0
*	Analyte Quantitation			0
*	Sample Preservation			0
* All Criteria were met for that Parameter, M=Metals				

q=qualified; t=total number of samples analyzed; a=number of samples affected

Note: Individual analytes & General Chem parameters are not reflected in the above Data Validation Summary table.

MAJOR ISSUES

- None noted.

MINOR ISSUES

- Laboratory and Field Blanks analyses: Analytes detected in the laboratory and/or equipment blanks, that affect sample results, with concentration above the instrument detection limit (IDL) are listed below. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Inorganic Data Review, dated August 2014.

Analyte	Blank Type
DOC	FB
TOC	FB

CB = Container Blank
PB = Preparation Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
FB = Field Blank
EB = Equipment Blank

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS of sample FA46876-11 displayed high recoveries for Nitrogen, Nitrite & Nitrogen, Nitrate. Positive results were qualified "J+", unless superseded by the "J" qualifier.

  The MS of sample FA46876-11 displayed low recoveries for Sulfate & TOC. Positive results & quantitation limits were qualified "J-" & "UJ", unless the "J" qualifier was superseded by the "J" qualifier, or opposed by the "J+" qualifier, resulting in "J" qualifier.

NOTES

- ***Sample Preservation:*** For the TOC analysis, samples FA46876-11 & -18 were not preserved to a pH<2. However, the samples were prepared and analyzed within 4 days from the date of sample collection. No action was taken.

2-SDG: FA46923

This SDG consisted of twenty-one (21) aqueous samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile, Explosives, Metals/Individual Metal analytes, Nitrite/Nitrate/Sulfate & TOC analyses according to SW-846 Methods 8260C, 8330, 6020, EPA 300.0 & 5310B, respectively. One (1) trip & one (1) field blanks; and three (3) aqueous field duplicate pairs were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis											
Field ID	**Lab ID**	**SDG**	**Matrix**	**X**	**V**	**G**	**N**	**T**	**D**	**Mt**	**Md**	**It**	**Id**	**C**	**A**
104MW-3	FA46923-01	MC46923	Aqueous		x		x	x					x		
104MW-6A	FA46923-02		Aqueous	x			x	x					x		
GMW-4	FA46923-03		Aqueous	x	x		x	x					x		
GMW-5	FA46923-04		Aqueous		x		x	x					x		
MWG-2B	FA46923-05		Aqueous		x		x	x					x		
114MW-1A	FA46923-06		Aqueous	x			x	x					x		
125MW-1A	FA46923-07		Aqueous	x	x		x	x					x		
125MW-1B	FA46923-08		Aqueous	x	x		x	x					x		
125MW-3	FA46923-09		Aqueous		x		x	x				x			
138MW-5B	FA46923-10		Aqueous	x			x	x					x		
161MW-5	FA46923-11		Aqueous		x		x	x				x			
161MW-5B	FA46923-12		Aqueous	x			x	x					x		
17MW-4	FA46923-13		Aqueous	x			x	x					x		
17MW-5	FA46923-14		Aqueous	x			x	x				x			
17MW-5B	FA46923-15		Aqueous	x			x	x					x		
DM17-3	FA46923-16		Aqueous	x	x		x	x					x		
DUP-MV2A	FA46923-17		Aqueous	x											
DUP-MV2B	FA46923-17		Aqueous					x							
DUP-MV2C	FA46923-17		Aqueous		x		x						x		
FB	FA46923-18		Aqueous	x	x		x	x					x		
TRIP BLANK	FA46923-19		Aqueous		x										

X=Explosives, V=Volatile, G=Dissolved Gases, N=Nitrate/Nitrite/Sulfate, T=TOC, D=DOC, Mt=Metals,total, Md=Metals,dissolved, It=Individual Metal Analytes, total, Id=Individual Metal Analytes, dissolved, C=Chloride, A=Alkalinity

Duplicates: DUP-MV2A/DM17-3
DUP-MV2B/161MW-5B
DUP-MV2C/MWG-2B

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was applied based on the RPD when results are less than CRQL. Whenever a positive result for

a compound is detected in one sample but not in the other, regardless of the CRQL, "J" & "UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	DUP-MV2A	DM17-3	RPD	Qualifier
HMX	0.34	0.34	0	
RDX	0.36	0.34	6	
	DUP-MV2B	**161MW-5B**		
TOC	4.5	4.7	4	
	DUP-MV2C	**MWG-2B**		
Sulfate	12.8	12.7	1	

ORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		V			X			G		
		q	t	a	q	t	a	q	t	a
*	Data Completeness		12	0		13	0			0
*	Holding Time		12	0		13	0			0
*	Instrument Performance (BFB/DFTPP)		12	0		13	0			0
*	Calibrations		12	0		13	0			0
*	Laboratory and Field Blanks analyses		12	0		13	0			0
*	Surrogate Recoveries		12	0		13	0			0
*	Matrix Spike/Matrix Spike Duplicate		12	0		13	0			0
*	Laboratory Control Sample(LCS)		12	0		13	0			0
*	Laboratory and/or Field Duplicates		12	0		13	0			0
*	Internal Standards		12	0		13	0			0
*	Compound Identification		12	0		13	0			0
*	Compound Quantitation		12	0		13	0			0
*	Sample Preservation		12	0		13	0			0

* All Criteria were met for that Parameter. V=Volatile, X=Explosives, G=Dissolved Gases

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

- None noted.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional

Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Volatile	None				
Explosives	None				

*Common lab contaminant

Volatile:

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA46923-16 displayed high recoveries for Chloroethane. No positive result was detected in the parent sample. No data were qualified.

  The MS/MSD of sample FA46923-5, displayed high recoveries for Chloroethane. No positive resullt was detected in the parent sample. No data were qualified.

Explosives:

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA46902-04, associated with different project, displayed low recoveries for Tetryl & 2,4-6-Trinitrotoluene. No action was taken.

INORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		M		
		q	t	a
*	Data Completeness			0
*	Holding Time			0
*	Calibration Verification			0
*	Laboratory and Field Blanks analyses			0
*	ICP Interference Check Sample results			0
*	Matrix Spike recoveries (MS)			0
*	Laboratory and Field Duplicates			0
*	Laboratory Control Sample(LCS)			0
*	Serial Dilution results			0
*	Furnace Atomic Absorption results (FAA)			0
*	Analyte Identification			0
*	Analyte Quantitation			0
*	Sample Preservation			0
* All Criteria were met for that Parameter, M=Metals				

q=qualified; t=total number of samples analyzed; a=number of samples affected

Note: Individual analytes & General Chem parameters are not reflected in the above Data Validation Summary table.

MAJOR ISSUES

- None noted.

MINOR ISSUES

- Laboratory and Field Blanks analyses: Analytes detected in the laboratory and/or equipment blanks, that affect sample results, with concentration above the instrument detection limit (IDL) are listed below. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Inorganic Data Review, dated August 2014.

Analyte	Blank Type
TOC	FB

CB = Container Blank
PB = Preparation Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
FB = Field Blank
EB = Equipment Blank

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS of sample FA46923-05 & -16 displayed low recoveries for TOC. Positive results & quantitation limits were qualified "J-" & "UJ", unless the "J" qualifier was superseded by the "J" qualifier, or opposed by the "J+" qualifier, resulting in "J" qualifier.

NOTES

- ***Calibrations:*** The Nitrite CCVs displayed high recoveries for Nitrogen, Nitrite. No positive results were detected. No data were qualified.

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS of samples FA46923-05 & -16 displayed high recoveries for Nitrogen, Nitrite. No positive results were detected. No data were qualified.

3-SDG: FA46987

This SDG consisted of twenty-four (24) aqueous samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile, Dissolved Gases, Metals/Individual Metal analytes, Nitrite/Nitrate/Sulfate & TOC/DOC analyses according to SW-846 Methods 8260C, RSK-175, 6020, EPA 300.0 & 5310B, respectively. One (1) trip blank; and six (6) aqueous field duplicate pairs were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis											
Field ID	**Lab ID**	**SDG**	**Matrix**	**X**	**V**	**G**	**N**	**T**	**D**	**Mt**	**Md**	**It**	**Id**	**C**	**A**
171MW-10	FA46987-01	MC46987	Aqueous		x	x			x				x		
171MW-10B	FA46987-02		Aqueous		x	x			x				x		
171MW-11B	FA46987-03		Aqueous		x		x	x					x		
171MW-11	FA46987-04		Aqueous		x		x	x					x		
171MW-2	FA46987-05		Aqueous		x	x			x				x		
171MW-5B	FA46987-06		Aqueous		x		x	x					x		
171MW-6	FA46987-07		Aqueous		x	x	x	x	x				x		
171MW-6B	FA46987-08		Aqueous		x	x	x	x	x				x		
171MW-6C	FA46987-09		Aqueous		x	x	x	x	x				x		
171MW-7B	FA46987-10		Aqueous		x		x	x					x		
171MW-8	FA46987-11		Aqueous		x	x	x	x	x				x		
171MW-9	FA46987-12		Aqueous		x		x	x					x		
171IW-002	FA46987-13		Aqueous						x						
171IW-005	FA46987-14		Aqueous						x						
171MW-14	FA46987-15		Aqueous		x	x			x				x		
171MW-14B	FA46987-16		Aqueous		x	x			x				x		
171MW-15	FA46987-17		Aqueous		x	x			x				x		
DUP-MV3A	FA46987-18		Aqueous		x		x						x		
DUP-MV3B	FA46987-18		Aqueous					x	x						
DUP-MV4A	FA46987-19		Aqueous		x										
DUP-MV4B	FA46987-19		Aqueous				x								
DUP-MV4C	FA46987-19		Aqueous			x		x	x						
DUP-MV4D	FA46987-19		Aqueous										x		
TRIP BLANK	FA46987-20		Aqueous		x										

X=Explosives, V=Volatile, G=Dissolved Gases, N=Nitrate/Nitrite/Sulfate, T=TOC, D=DOC, Mt=Metals,total, Md=Metals,dissolved, It=Individual Metal Analytes,total, Id=Individual Metal Analytes,dissolved, C=Chloride, A=Alkalinity

Duplicates:

DUP-MV3A	171MW-11B
DUP-MV3B	171IW-002
DUP-MV4A	171MW-14B
DUP-MV4B	171MW-7B
DUP-MV4C	171MW-6B
DUP-MV4D	171MW-6C

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was applied based on the RPD when results are less than CRQL. Whenever a positive result for a compound is detected in one sample but not in the other, regardless of the CRQL, "J" & "UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	**DUP-MV3A**	**171MW-11B**	**RPD**	**Qualifier**
TOC	0.54 J	1.4	89	J
Nitrite	0.13 J	0.14 J	NA	
Sulfate	13.3	13.3	0	
cis-1,2-Dichloroethylene	0.43 J	0.42 J	NA	
Trichloroethylene	232	240	3	
Fe, dissolved	268	248	8	
	DUP-MV3B	**171IW-002**		
DOC	1.3	1.4	7	
	DUP-MV4A	**171MW-14B**		
1,1-Dichloroethylene	0.59 J	ND	NA	J, UJ
cis-1,2-Dichloroethylene	236	226	4	
trans-1,2-Dichloroethylene	3.8	2.2	62	J
Trichloroethylene	176	179	2	
Vinyl Chloride	25.3	18.3	32	
	DUP-MV4B	**171MW-7B**		
TOC	0.73 J	1.3	56	J
Nitrite	0.25	0.32	25	
Sulfate	14.6	14.3	2	
	DUP-MV4C	**171MW-6B**		
DOC	2.0	1.6	22	
	DUP-MV4D	**171MW-6C**		
ND				

ORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		V			X			G		
		q	t	a	q	t	a	q	t	a
*	Data Completeness		18	0			0		11	0
*	Holding Time		18	0			0		11	0
*	Instrument Performance (BFB/DFTPP)		18	0			0		11	0
	Calibrations	x	18	8			0		11	0
*	Laboratory and Field Blanks analyses		18	0			0		11	0
*	Surrogate Recoveries		18	0			0		11	0
*	Matrix Spike/Matrix Spike Duplicate		18	0			0		11	0
*	Laboratory Control Sample(LCS)		18	0			0		11	0
*	Laboratory and/or Field Duplicates		18	0			0		11	0
*	Internal Standards		18	0			0		11	0
*	Compound Identification		18	0			0		11	0
*	Compound Quantitation		18	0			0		11	0
*	Sample Preservation		18	0			0		11	0

* All Criteria were met for that Parameter. V=Volatile, X=Explosives, G=Dissolved Gases

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

Volatile:

- ***Calibrations:*** The continuing calibration ECC105-5, 8/30/17 (7:36pm), failed the %D precision criteria of 25%, for Vinyl Acetate. Sample FA46987-3 is associated with this end calibration. Quantitation limit for this compound in the associated sample was qualified "UJ".

  The continuing calibration ECC105-5, 8/31/17 (7:37pm), failed the %D precision criteria of 25%, for Tetrachloroethene & 2,2-Dichloropropane. Samples FA46987-1, -2, -7, -8, -16 thru -19, are associated with this end calibration. Quantitation limits for these compounds in all associated samples were qualified "UJ".

Dissolved Gases:

- None noted.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of these contaminants maybe qualified "U1" or "J+", based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Volatile	Hexachlorobutadiene	0.31	ug/L	Trip	All
Dissolved Gases	None				

*Common lab contaminant

Volatile:

- ***Sample Preservation:*** Sample FA46987-09 was not preserved to a pH<2. However, the sample was analyzed within 6 days from the date of sample collection. No action was taken.

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA46987-04 & -07 displayed high recoveries for Chloroethane. No positive results were detected in the parent samples. No data were qualified.

  The MS/MSD's of samples FA47010-04 & FA47143-5, associated with SDGs FA47010 & FA47143, were included in this SDG. These MS/MSD's are evaluated in SDGs FA47010 & FA47143.

- ***Laboratory Control Sample (LCS):*** The LCS, associated with samples FA46987-01, -02, -07, -08, -16, -17, -18 & -19, displayed high recovery for Tetrachloroethylene. No positive results were detected in the associated samples. No data were qualified.

Dissolved Gases:

- ***Sample Preservation:*** Sample FA46987-09 was not preserved to a pH<2. However, the sample was analyzed within 2 days from the date of sample collection. No action was taken.

INORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		M		
		q	t	a
*	Data Completeness			0
*	Holding Time			0
*	Calibration Verification			0
*	Laboratory and Field Blanks analyses			0
*	ICP Interference Check Sample results			0
*	Matrix Spike recoveries (MS)			0
*	Laboratory and Field Duplicates			0
*	Laboratory Control Sample(LCS)			0
*	Serial Dilution results			0
*	Furnace Atomic Absorption results (FAA)			0
*	Analyte Identification			0
*	Analyte Quantitation			0
*	Sample Preservation			0
* All Criteria were met for that Parameter, M=Metals				

q=qualified; t=total number of samples analyzed; a=number of samples affected

Note: Individual analytes & General Chem parameters are not reflected in the above Data Validation Summary table.

MAJOR ISSUES

- None noted.

MINOR ISSUES

- Laboratory and Field Blanks analyses: Analytes detected in the laboratory and/or equipment blanks, that affect sample results, with concentration above the instrument detection limit (IDL) are listed below. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Inorganic Data Review, dated August 2014.

Analyte	Blank Type

CB = Container Blank
PB = Preparation Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
FB = Field Blank
EB = Equipment Blank

NOTES

- ***Sample Preservation:*** For the TOC analysis, sample FA46987-08, -11, -18 & -19 were not preserved to a pH<2. However, the samples were prepared and analyzed within 6-7 days from the date of sample collection. No action was taken.

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS of sample FA46987-4 displayed high recovery for Nitrogen, Nitrite. No positive results were detected. No data were qualified.

- ***Calibrations:*** The Nitrite CCVs displayed high recoveries for Nitrogen, Nitrite. No positive results were detected. No data were qualified.

4-SDG: FA47010

This SDG consisted of fourteen (14) aqueous samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile, Explosives, Metals/Individual Metal analytes, Nitrite/Nitrate/Sulfate & TOC analyses according to SW-846 Methods 8260C, 8330, 6020, EPA 300.0 & 5310B, respectively. One (1) trip & one (1) field blanks; and two (2) aqueous field duplicate pairs were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis											
Field ID	**Lab ID**	**SDG**	**Matrix**	**X**	**V**	**G**	**N**	**T**	**D**	**Mt**	**Md**	**It**	**Id**	**C**	**A**
MWF-2A	FA47010-01	MC47010	Aqueous		x		x	x					x		
MWF-2B	FA47010-02		Aqueous		x		x	x					x		
171MW-12	FA47010-03		Aqueous		x		x	x					x		
5MW-4	FA47010-04		Aqueous	x	x					x	x				
5MW-4D	FA47010-05		Aqueous	x	x					x	x				
5MW-8	FA47010-06		Aqueous	x	x					x	x				
6MW-4	FA47010-07		Aqueous	x	x		x	x		x	x		x		
6MW-4D	FA47010-08		Aqueous	x	x		x	x		x	x		x		
DM5-2	FA47010-09		Aqueous	x	x					x	x				
DM6-3	FA47010-10		Aqueous	x	x					x	x				
DUP-MV5	FA47010-11		Aqueous		x		x	x					x		
DUP-MV6	FA47010-12		Aqueous		x								x		
FB	FA47010-13		Aqueous		x		x	x					x		
TRIP BLANK	FA47010-14		Aqueous		x										

X=Explosives, V=Volatile, G=Dissolved Gases, N=Nitrate/Nitrite/Sulfate, T=TOC, D=DOC, Mt=Metals,total, Md=Metals,dissolved, It=Individual Metal Analytes, total, Id=Individual Metal Analytes, dissolved, C=Chloride, A=Alkalinity

Duplicates: DUP-MV5/171MW-12
DUP-MV6/MWF-2A

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was applied based on the RPD when results are less than CRQL. Whenever a positive result for a compound is detected in one sample but not in the other, regardless of the CRQL, "J" & "UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	DUP-MV5	171MW-12	RPD	Qualifier
TOC	0.46 J	0.42 J	NA	
Sulfate	13.4	13.4	0	
Iron	199 J	99.3 J	NA	

	DUP-MV6	MWF-2A		
Trichloroethylene	0.86 J	0.96 J	NA	
Iron	ND	59.9 J	NA	J, UJ

ORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		V			X			G		
		q	t	a	q	t	a	q	t	a
*	Data Completeness		14	0		7	0			0
*	Holding Time		14	0		7	0			0
*	Instrument Performance (BFB/DFTPP)		14	0		7	0			0
	Calibrations	x	14	11		7	0			0
*	Laboratory and Field Blanks analyses		14	0		7	0			0
*	Surrogate Recoveries		14	0		7	0			0
	Matrix Spike/Matrix Spike Duplicate	x	14	1		7	0			0
*	Laboratory Control Sample(LCS)		14	0		7	0			0
*	Laboratory and/or Field Duplicates		14	0		7	0			0
*	Internal Standards		14	0		7	0			0
*	Compound Identification		14	0		7	0			0
*	Compound Quantitation		14	0		7	0			0
*	Sample Preservation		14	0		7	0			0

* All Criteria were met for that Parameter. V=Volatile, X=Explosives, G=Dissolved Gases

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

Volatile:

- ***Calibrations:*** The continuing calibration ECC105-5, 8/30/17 (7:36pm), failed the %D precision criteria of 25%, for Vinyl Acetate. Samples FA47010-04 thru -14 are associated with this end calibration. Quantitation limits for this compound in the associated samples were qualified "UJ".

  The continuing calibration ECC105-5, 8/31/17 (7:37pm), failed the %D precision criteria of 25%, for Tetrachloroethene & 2,2-Dichloropropane. Samples FA47010-04-RE is associated with this end calibration. Quantitation limit for 2,2-Dichloropropene was

qualified “UJ”. Positive result for Tetrachloroethene was reported from the initial analysis, no qualification was applied.

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA47010-4 displayed low recoveries for 2,2-Dichloropropane. No positive result was detected in the parent sample. Quantitation limit was qualified “UJ” in the parent sample.

Explosives:

- None noted.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Volatile	Hexachlorobutadiene	0.31	ug/L	Method	All
Explosives	None				

*Common lab contaminant

INORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		Mt			Md		
		q	t	a	q	t	a
*	Data Completeness		7	0		7	0
*	Holding Time		7	0		7	0
*	Calibration Verification		7	0		7	0
	Laboratory and Field Blanks analyses	x	7	6	x	7	7
*	ICP Interference Check Sample results		7	0		7	0
*	Matrix Spike recoveries (MS)		7	0		7	0
*	Laboratory and Field Duplicates		7	0		7	0
*	Laboratory Control Sample(LCS)		7	0		7	0
*	Serial Dilution results		7	0		7	0
*	Furnace Atomic Absorption results (FAA)		7	0		7	0
*	Analyte Identification		7	0		7	0
*	Analyte Quantitation		7	0		7	0
*	Sample Preservation		7	0		7	0
* All Criteria were met for that Parameter, Mt=Metals,total, Md=Metals,dissolved							

q=qualified; t=total number of samples analyzed; a=number of samples affected

Note: Individual analytes & General Chem parameters are not reflected in the above Data Validation Summary table.

MAJOR ISSUES

- None noted.

MINOR ISSUES

- Laboratory and Field Blanks analyses: Analytes detected in the laboratory and/or equipment blanks, that affect sample results, with concentration above the instrument detection limit (IDL) are listed below. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Inorganic Data Review, dated August 2014.

Analyte	Blank Type
Zn	PB

CB = Container Blank
PB = Preparation Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
FB = Field Blank
EB = Equipment Blank

NOTES

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS of sample FA47010-1 displayed high recovery for Nitrogen, Nitrite. No positive results were detected. No data were qualified.

5-SDG: FA47012

This SDG consisted of sixteen (16) aqueous & three (3) soil samples submitted to Accutest Laboratories, Marlborough, MA, for Explosives analysis according to SW-846 Methods 8330. Two (2) field blanks; and two (2) aqueous & one (1) soil field duplicate pairs were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis											
Field ID	**Lab ID**	**SDG**	**Matrix**	**X**	**V**	**G**	**N**	**T**	**D**	**Mt**	**Md**	**It**	**Id**	**C**	**A**
40MW-1	FA47012-01	MC47012	Aqueous	x											
40MW-2	FA47012-02		Aqueous	x											
40MW-3	FA47012-03		Aqueous	x											
40MW-5	FA47012-04		Aqueous	x											
40MW-6	FA47012-05		Aqueous	x											
93MW-2	FA47012-06		Aqueous	x											
157MW-1	FA47012-07		Aqueous	x											
157MW-2	FA47012-08		Aqueous	x											
157MW-3	FA47012-09		Aqueous	x											
157MW-4	FA47012-10		Aqueous	x											
DUP-1-GW	FA47012-11		Aqueous	x											
79SW-1	FA47012-12		Aqueous	x											
79SW-2	FA47012-13		Aqueous	x											
DUP-1-SW	FA47012-14		Aqueous	x											
79SD-1	FA47012-15		Soil	x											
79SD-2	FA47012-16		Soil	x											
DUP-1-SD	FA47012-17		Soil	x											
FB-GW	FA47012-18		Aqueous	x											
FB-SW	FA47012-19		Aqueous	x											

X=Explosives, V=Volatile, G=Dissolved Gases, N=Nitrate/Nitrite/Sulfate, T=TOC, D=DOC, Mt=Metals,total, Md=Metals,dissolved, It=Individual Metal Analytes, total, Id=Individual Metal Analytes, dissolved, C=Chloride, A=Alkalinity

Duplicates: DUP-1-GW/40MW-2
DUP-1-SW/79SW-1
DUP-1-SD/79SD-1

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was applied based on the RPD when results are less than CRQL. Whenever a positive result for a compound is detected in one sample but not in the other, regardless of the CRQL, "J" & "UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	DUP-1-GW	40MW-2	RPD	Qualifier
1,3,5-Trinitrobenzene	ND	2.7	NA	J, UJ
1,3-Dinitrobenzene	ND	0.24	NA	J, UJ
2,4,6-Trinitrotoluene	ND	24.5	NA	J, UJ
2-amino-4,6-Dinitrotoluene	ND	6.5	NA	J, UJ
4-amino-2,6-Dinitrotoluene	ND	18.1	NA	J, UJ
HMX	ND	12.4	NA	J, UJ
RDX	ND	37.0	NA	J, UJ
	DUP-1-SW	**79SW-1**		
ND				
	DUP-1-SD	**79SD-1**		
ND				

ORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		V			X			G		
		q	t	a	q	t	a	q	t	a
*	Data Completeness			0		19	0			0
*	Holding Time			0		19	0			0
*	Instrument Performance (BFB/DFTPP)			0		19	0			0
*	Calibrations			0		19	0			0
*	Laboratory and Field Blanks analyses			0		19	0			0
*	Surrogate Recoveries			0		19	0			0
	Matrix Spike/Matrix Spike Duplicate			0	x	19	1			0
*	Laboratory Control Sample(LCS)			0		19	0			0
	Laboratory and/or Field Duplicates			0	x	19	2			0
*	Internal Standards			0		19	0			0
	Compound Identification			0	x	19	2			0
	Compound Quantitation			0	x	19	2			0
*	Sample Preservation			0		19	0			0

* All Criteria were met for that Parameter. V=Volatile, X=Explosives, G=Dissolved Gases

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- ***Compound Identification/Quantitation:*** Samples DUP-1-SW & DUP-1-SD exhibited positive results for some compounds. These samples are field duplicates of sample 79-SW-1 & 79-SD-1, respectively, which exhibited no positive results. Upon further investigation, and referring to the run log of this analysis, it was noted that samples DUP-1-SW & DUP-1-SD were analyzed immediately after samples 79SW-2 & 79SD-2, respectively, which exhibited very high concentrations of the compounds detected in both DUP-1-SW & DUP-1-SD, indicating very high possibility of a carry-over contamination. Provided that these two DUP samples were not reanalyzed, and their perspective parent samples showed no positive results, it is the validator's professional judgement not to accept and reject these positive results reported in both DUP samples, and qualify the positive results as "R". (See Run Log, pages 820 & 821 of the laboratory PDF data package).

MINOR PROBLEMS

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA47012-12 displayed low recoveries for 1,3-Dinitrobenzene, 2,6-Dinitrotoluene, 2,4-Dinitrotoluene, Tetryl, 1,3,5-Trinitrobenzene & 2,4,6-Trinitrotoluene. No positive results were detected in the parent sample. Quantitation limits for these compounds were qualified "UJ" in the parent sample.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of these contaminants maybe qualified "U1" or "J+", based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Explosives	None				

*Common lab contaminant

6-SDG: FA47143

This SDG consisted of forty (40) aqueous samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile, Metals/Individual Metal analytes, Sulfate/Chloride, TOC/DOC & Alkalinity analyses according to SW-846 Methods 8260C, 6020, EPA 300.0 & SM2320B, respectively. One (1) trip & two (2) field blanks; and three (3) aqueous field duplicate pairs were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis												
Field ID	Lab ID	SDG	Matrix	X	V	G	N	T	D	H	Mt	Md	It	Id	C	A
D-PRB-1	FA47143-01	MC47143	Aqueous		x		x						x	x	x	x
D-PRB-2	FA47143-02		Aqueous		x		x						x	x	x	x
D-PRB-7	FA47143-03		Aqueous		x		x						x	x	x	x
D-PRB-8	FA47143-04		Aqueous		x		x						x	x	x	x
D-PZ-1	FA47143-05		Aqueous		x		x						x	x	x	x
D-PZ-3	FA47143-06		Aqueous		x		x						x	x	x	x
D-PRB-9	FA47143-07		Aqueous		x											
D-9-H	FA47143-08		Aqueous		x											
D-13-1	FA47143-09		Aqueous		x											
D-41-1	FA47143-10		Aqueous		x											
D-41-14	FA47143-11		Aqueous		x											
D-41-16	FA47143-12		Aqueous		x											
D-41-17	FA47143-13		Aqueous		x											
D-92-3	FA47143-14		Aqueous		x											
D-111-1	FA47143-15		Aqueous		x											
D-112-6	FA47143-16		Aqueous		x											
D-112-7	FA47143-17		Aqueous		x											
D-CAF-2	FA47143-18		Aqueous		x											
D-CAF-6	FA47143-19		Aqueous		x											
D-MW-21-1	FA47143-20		Aqueous		x											
D-PW-131	FA47143-21		Aqueous		x											
D-SW-8	FA47143-22		Aqueous		x											
D-SW-2	FA47143-23		Aqueous		x											
D-SW-3	FA47143-24		Aqueous		x											
D-SW-4	FA47143-25		Aqueous		x											
DUP-D-SW	FA47143-26		Aqueous		x											
FB-GW	FA47143-27		Aqueous		x		x						x	x	x	x
FB-SW	FA47143-28		Aqueous		x											
DUP-D-GW	FA47143-29		Aqueous		x		x						x	x	x	x
D-PRB-3	FA47143-30		Aqueous		x		x						x	x	x	x
D-PRB-4	FA47143-31		Aqueous		x		x						x	x	x	x
D-PRB-5	FA47143-32		Aqueous		x		x						x	x	x	x

SAMPLE INFORMATION				Analysis												
Field ID	Lab ID	SDG	Matrix	X	V	G	N	T	D	H	Mt	Md	It	Id	C	A
D-PRB-6	FA47143-33		Aqueous		x		x						x	x	x	x
D-PZ-2	FA47143-34		Aqueous		x		x						x	x	x	x
D-PRB-10	FA47143-35		Aqueous		x											
D-41-8	FA47143-36		Aqueous		x											
D-41-9	FA47143-37		Aqueous		x											
D-MWD-1	FA47143-38		Aqueous		x											
DUP-D-GW2	FA47143-39		Aqueous		x											
TRIP BLANK	FA47143-40		Aqueous		x											

X=Explosives, V=Volatile, G=Dissolved Gases, N=Nitrate/Nitrite/Sulfate, T=TOC, D=DOC, H=Hg, Mt=Metals,total, Md=Metals,dissolved, It=Individual Metal Analytes, total, Id=Individual Metal Analytes, dissolved, C=Chloride, A=Alkalinity

Duplicates:

DUP-D-GW	D-PZ-1
DUP-D-GW2	D-PZ-2
DUP-D-SW	D-SW-2

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was applied based on the RPD when results are less than CRQL. Whenever a positive result for a compound is detected in one sample but not in the other, regardless of the CRQL, "J" & "UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	DUP-D-GW	D-PZ-1	RPD	Qualifier
Chloride	129	131	2	
Alkalinity	70.5	69	2	
1,1-Dichloroethylene	1.5 J	1.6	6	
cis-1,2-Dichloroethylene	435	387	12	
trans-1,2-Dichloroethylene	4.2	7.8	60	J
Trichloroethylene	93.3	80.1	15	
Vinyl Chloride	88.2	82.3	7	
Iron, total	7600	7670	1	
Iron, dissolved	159 J	166 J	NA	
	DUP-D-GW2	**D-PZ-2**		
cis-1,2-Dichloroethylene	3.2	3.1	3	
trans-1,2-Dichloroethylene	0.71	0.67	6	
Vinyl Chloride	68.5	71.3	4	
	DUP-D-SW	**D-SW-2**		
ND				

ORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		V			X			G		
		q	t	a	q	t	a	q	t	a
*	Data Completeness		40	0			0			0
*	Holding Time		40	0			0			0
*	Instrument Performance (BFB/DFTPP)		40	0			0			0
	Calibrations	x	40	40			0			0
*	Laboratory and Field Blanks analyses		40	0			0			0
*	Surrogate Recoveries		40	0			0			0
	Matrix Spike/Matrix Spike Duplicate	x	40	2			0			0
*	Laboratory Control Sample(LCS)		40	0			0			0
	Laboratory and/or Field Duplicates	x	40	1			0			0
*	Internal Standards		40	0			0			0
*	Compound Identification		40	0			0			0
*	Compound Quantitation		40	0			0			0
*	Sample Preservation		40	0			0			0

* All Criteria were met for that Parameter. V=Volatile, X=Explosives, G=Dissolved Gases

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

- ***Calibrations:*** The continuing calibration ECC105-5, 9/1/17 (7:57pm), failed the %D precision criteria of 25%, for Trichlorofluoromethane. Samples FA47143-01, -03 thru -14, and -17 thru -20 are associated with this end calibration. Quantitation limits for this compound in the associated samples were qualified "UJ".

  The continuing calibrations CC105-5, 9/6/17 (9:30am) & ECC105-5, 9/6/17 (8:18pm), failed the %D precision criteria of 25%, for Dichlorofluoromethane, Chloroethane, Trichlorofluoromethane and/or Vinyl Acetate. Samples FA47143-01RE, -02, -05RE, -07RE, -09RE, -13RE, -14RE, -15, -16, -18RE & -19RE are associated with this calibrations. Quantitation limits for these compounds in the associated samples were qualified "UJ".

The continuing calibrations CC4214-5, 9/1/17 (9:02am) & ECC4214-5, 9/1/17 (8:58pm), failed the %D precision criteria of 25%, for Chloroethane and/or Vinyl Acetate. Samples FA47143-21 thru -40 are associated with this calibrations. Quantitation limits for these compounds in the associated samples were qualified "UJ".

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS of sample FA47143-05 displayed high recoveries for cis-1,2-Dichloroethylene & Trichloroethylene. Positive results in the parent sample were qualified "J+".

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of these contaminants maybe qualified "U1" or "J+", based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Volatile	Toluene	0.49	ug/L	Trip	All

*Common lab contaminant

- ***Sample Preservation:*** Sample FA47143-27 was not preserved to a pH<2. However, the sample was analyzed within 4 days from the date of sample collection. No action was taken.

- ***Calibrations:*** The initial calibration P52509.D thru P52517.D, 8/28/17 (12:07), failed the %RSD precision criteria of 30%, for Methylene Chloride. Samples FA47143-21RE thru -40RE are associated with this initial calibration. No results for this compound were reported from the reanalyses. No data were qualified.

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of samples FA47143-05 & -23 displayed high recoveries for Chloroethane. No positive results were detected for this compound in the parent samples. No data were qualified.

- ***Laboratory Control Sample (LCS):*** The LCS, associated with samples FA47143-01, -02, -05, -07, -09, -14, -15, 16, 18 & -19, displayed high recovery for Chloroethane. No positive results were detected in the associated samples. No data were qualified.

INORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		M		
		q	t	a
*	Data Completeness			0
*	Holding Time			0
*	Calibration Verification			0
*	Laboratory and Field Blanks analyses			0
*	ICP Interference Check Sample results			0
*	Matrix Spike recoveries (MS)			0
*	Laboratory and Field Duplicates			0
*	Laboratory Control Sample(LCS)			0
*	Serial Dilution results			0
*	Furnace Atomic Absorption results (FAA)			0
*	Analyte Identification			0
*	Analyte Quantitation			0
*	Sample Preservation			0
* All Criteria were met for that Parameter, M=Metals				

q=qualified; t=total number of samples analyzed; a=number of samples affected

Note: Individual analytes & General Chem parameters are not reflected in the above Data Validation Summary table.

MAJOR ISSUES

- None noted.

MINOR ISSUES

- Laboratory and Field Blanks analyses: Analytes detected in the laboratory and/or equipment blanks, that affect sample results, with concentration above the instrument detection limit (IDL) are listed below. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Inorganic Data Review, dated August 2014.

Analyte	Blank Type

CB = Container Blank
PB = Preparation Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
FB = Field Blank
EB = Equipment Blank

NOTES

- None noted.

7-SDG: FA47194

This SDG consisted of twenty (20) aqueous samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile, Explosives, Metals/Individual Metal analytes, Nitrite/Nitrate/Sulfate & TOC analyses according to SW-846 Methods 8260C, 8330, 6020, EPA 300.0 & 5310B, respectively. One (1) trip & two (2) field blanks; and four (4) aqueous field duplicate pairs were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis											
Field ID	**Lab ID**	**SDG**	**Matrix**	**X**	**V**	**G**	**N**	**T**	**D**	**Mt**	**Md**	**It**	**Id**	**C**	**A**
MW138-1	FA47194-01	MC47194	Aqueous										x		
PW-302D	FA47194-02		Aqueous	x	x										
101MW-6	FA47194-03		Aqueous	x			x	x				x	x		
101MW-5	FA47194-04		Aqueous	x			x	x				x	x		
G-31-MW-001	FA47194-05		Aqueous	x			x	x				x	x		
MW-1_G	FA47194-06		Aqueous	x								x	x		
MW-3_G	FA47194-07		Aqueous	x			x	x				x	x		
161MW-5	FA47194-08		Aqueous	x											
125MW-3	FA47194-09		Aqueous	x											
17MW-2	FA47194-10		Aqueous	x	x		x	x	x	x	x				
DUPMV-7	FA47194-11		Aqueous	x					x	x	x	x	x		
DUP-MV8A	FA47194-12		Aqueous	x								x	x		
104SW-002	FA47194-13		Aqueous	x	x										
104SW-001	FA47194-14		Aqueous	x	x										
161SW-004	FA47194-15		Aqueous	x	x										
161SW-10A	FA47194-16		Aqueous	x	x										
DUP-SW-MV	FA47194-17		Aqueous	x	x										
FB-GW	FA47194-18		Aqueous	x	x				x	x	x	x	x		
FB-SW	FA47194-19		Aqueous	x	x										
TRIP BLANK	FA47194-20		Aqueous		x										

X=Explosives, V=Volatile, G=Dissolved Gases, N=Nitrate/Nitrite/Sulfate, T=TOC, D=DOC, Mt=Metals,total, Md=Metals,dissolved, It=Individual Metal Analytes, total, Id=Individual Metal Analytes, dissolved, C=Chloride, A=Alkalinity

Duplicates:

DUP-MV7	101MW-5
DUP-MV8A	MW138-1
DUP-MV8B	17MW-2
DUP-SW-MV	104SW-002

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was applied based on the RPD when results are less than CRQL. Whenever a positive result for a compound is detected in one sample but not in the other, regardless of the CRQL, "J" & "UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	**DUP-MV7**	**101MW-5**	**RPD**	**Qualifier**
2-amino-4,6-Dinitrotoluene	2.2	ND	NA	J, UJ
Pb, total	1.5 J	1.8 J	18	
Pb, dissolved	ND	ND		
	DUP-MV8A	**MW138-1**		
No mutual analyses				
	DUP-MV8B	**17MW-2**		
Pb, total	1.2 J	1.2 J	0	
Pb, dissolved	ND	ND		
	DUP-SW-MV	**104SW-002**		
Volatile	ND	ND		
Explosives	ND	ND		

ORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		V			X			G		
		q	t	a	q	t	a	q	t	a
*	Data Completeness		10	0		18	0			0
*	Holding Time		10	0		18	0			0
*	Instrument Performance (BFB/DFTPP)		10	0		18	0			0
	Calibrations	x	10	10		18	0			0
*	Laboratory and Field Blanks analyses		10	0		18	0			0
*	Surrogate Recoveries		10	0		18	0			0
	Matrix Spike/Matrix Spike Duplicate	x	10	1	x	18	2			0
*	Laboratory Control Sample(LCS)		10	0		18	0			0
	Laboratory and/or Field Duplicates		10	0	x	18	2			0
*	Internal Standards		10	0		18	0			0
*	Compound Identification		10	0		18	0			0
*	Compound Quantitation		10	0		18	0			0
*	Sample Preservation		10	0		18	0			0

* All Criteria were met for that Parameter. V=Volatile, X=Explosives, G=Dissolved Gases

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

Volatile:

- ***Calibrations:*** The continuing calibrations CC105-5, 9/6/17 (9:30am) & ECC105-5, 9/6/17 (8:18pm), failed the %D precision criteria of 25%, for Dichlorofluoromethane, Chloroethane, Trichlorofluoromethane and/or Vinyl Acetate. Samples FA47194-02, -10, -13 thru -19 are associated with this calibrations. Positive results & quantitation limits for these compounds in the associated samples were qualified "J" & "UJ", respectively.

  The continuing calibrations CC105-5, 9/7/17 (11:17am) & ECC105-5, 9/7/17 (9:24pm), failed the %D precision criteria of 25%, for Dichlorofluoromethane and/or Vinyl Acetate. Sample FA47194-20 is associated with this calibrations. Quantitation limits for these

compounds in the associated sample were qualified “UJ”.

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA47194-13 displayed low recoveries for most of the compounds, with RPDs outside the QC limits. No positive results were detected in the parent sample. Quantitation limits were qualified “UJ” in the parent sample for all compounds.

Explosives:

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA47194-04 displayed low recoveries for 2,6-Dinitrotoluene, 2-amino-4,6-Dinitrotoluene & 2,4,6-Trinitrotoluene. No positive results were detected in the parent sample. Quantitation limits for these compounds were qualified “UJ” in the parent sample.

  The MS/MSD of sample FA47194-13 displayed low recoveries for Tetryl & 1,3,5-Trinitrobenzene. No positive results were detected in the parent sample. Quantitation limits for these compounds were qualified “UJ” in the parent sample.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Volatile	Toluene	2.2	ug/L	Trip	All
Explosives	None				

*Common lab contaminant

Volatile:

- ***Laboratory Control Sample (LCS):*** The LCS, associated with samples FA47194-02, -10, -13, -14, -15, 16, -17, -18 & -19, displayed high recovery for Chloroethane. No positive results were detected in the associated samples. No data were qualified.

Explosives:

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA47194-04 displayed high recoveries for PETN, with RPD outside the QC limit. No positive result was detected for this compound in the parent sample. No data were qualified.

INORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		Mt			Md		
		q	t	a	q	t	a
*	Data Completeness		3	0		3	0
*	Holding Time		3	0		3	0
*	Calibration Verification		3	0		3	0
	Laboratory and Field Blanks analyses	x	3	3	x	3	3
*	ICP Interference Check Sample results		3	0		3	0
*	Matrix Spike recoveries (MS)		3	0		3	0
*	Laboratory and Field Duplicates		3	0		3	0
*	Laboratory Control Sample(LCS)		3	0		3	0
*	Serial Dilution results		3	0		3	0
*	Furnace Atomic Absorption results (FAA)		3	0		3	0
*	Analyte Identification		3	0		3	0
*	Analyte Quantitation		3	0		3	0
*	Sample Preservation		3	0		3	0
* All Criteria were met for that Parameter, Mt=Metals,total, Md=Metals,dissolved							

q=qualified; t=total number of samples analyzed; a=number of samples affected

Note: Individual analytes & General Chem parameters are not reflected in the above Data Validation Summary table.

MAJOR ISSUES

- None noted.

MINOR ISSUES

- Laboratory and Field Blanks analyses: Analytes detected in the laboratory and/or equipment blanks, that affect sample results, with concentration above the instrument detection limit (IDL) are listed below. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Inorganic Data Review, dated August 2014.

Analyte	Blank Type
Al	PB
Pb	FB
Na	FB
Zn	FB, PB

CB = Container Blank
PB = Preparation Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
FB = Field Blank
EB = Equipment Blank

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS of sample FA47194-04 displayed high recovery for Nitrogen, Nitrite. Positive results were qualified "J+".

NOTES

- None noted.

8-SDG: FA47433

This SDG consisted of one (1) aqueous sample submitted to Accutest Laboratories, Marlborough, MA, for Explosives, Metals, Nitrite/Nitrate/Sulfate & TOC analyses according to SW-846 Methods 8330, 6020, EPA 300.0 & 5310B, respectively. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis											
Field ID	**Lab ID**	**SDG**	**Matrix**	**X**	**V**	**G**	**N**	**T**	**D**	**Mt**	**Md**	**It**	**Id**	**C**	**A**
G-31-MW-002	FA47433-01	MC47433	Aqueous	x			x	x		x	x				

X=Explosives, V=Volatile, G=Dissolved Gases, N=Nitrate/Nitrite/Sulfate, T=TOC, D=DOC, Mt=Metals,total, Md=Metals,dissolved, It=Individual Metal Analytes, total, Id=Individual Metal Analytes, dissolved, C=Chloride, A=Alkalinity

Duplicates: NA

ORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		V			X			G		
		q	t	a	q	t	a	q	t	a
*	Data Completeness			0		1	0			0
*	Holding Time			0		1	0			0
*	Instrument Performance (BFB/DFTPP)			0		1	0			0
*	Calibrations			0		1	0			0
*	Laboratory and Field Blanks analyses			0		1	0			0
	Surrogate Recoveries			0	x	1	1			0
	Matrix Spike/Matrix Spike Duplicate			0	x	1	1			0
	Laboratory Control Sample(LCS)			0	x	1	1			0
*	Laboratory and/or Field Duplicates			0		1	0			0
*	Internal Standards			0		1	0			0
*	Compound Identification			0		1	0			0
*	Compound Quantitation			0		1	0			0
*	Sample Preservation			0		1	0			0

* All Criteria were met for that Parameter. V=Volatile, X=Explosives, G=Dissolved Gases

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

- ***Surrogate Recovery:*** Sample FA47433-1 displayed low surrogate recovery, as well as the MS/MSD of the same sample, indicating possible matrix interference. No positive results were detected in this sample. Quantitation limits were qualified "UJ".

- ***Laboratory Control Sample (LCS):*** The LCS, associated with sample FA47433-1 displayed low recovery for Tetryl. No positive result was detected in this sample. Quantitation limit for this compound was qualified "UJ".

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS/MSD of sample FA47433-1 displayed low recoveries for all compounds, except for HMX, RDX & PETN; with some

RPDs outside the QC limits. No positive results were detected in the parent sample. Quantitation limits for these compounds were qualified “UJ” in the parent sample.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Explosives	None				

*Common lab contaminant

INORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		Mt			Md		
		q	t	a	q	t	a
*	Data Completeness		1	0		1	0
*	Holding Time		1	0		1	0
*	Calibration Verification		1	0		1	0
*	Laboratory and Field Blanks analyses		1	0		1	0
*	ICP Interference Check Sample results		1	0		1	0
*	Matrix Spike recoveries (MS)		1	0		1	0
*	Laboratory and Field Duplicates		1	0		1	0
*	Laboratory Control Sample(LCS)		1	0		1	0
*	Serial Dilution results		1	0		1	0
*	Furnace Atomic Absorption results (FAA)		1	0		1	0
*	Analyte Identification		1	0		1	0
*	Analyte Quantitation		1	0		1	0
*	Sample Preservation		1	0		1	0
* All Criteria were met for that Parameter, Mt=Metals,total, Md=Metals,dissolved							

q=qualified; t=total number of samples analyzed; a=number of samples affected

Note: Individual analytes & General Chem parameters are not reflected in the above Data Validation Summary table.

MAJOR ISSUES

- None noted.

MINOR ISSUES

- Laboratory and Field Blanks analyses: Analytes detected in the laboratory and/or equipment blanks, that affect sample results, with concentration above the instrument detection limit (IDL) are listed below. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Inorganic Data Review, dated August 2014.

Analyte	Blank Type
Al	PB
Pb	FB
Na	FB
Zn	FB, PB

CB = Container Blank
PB = Preparation Blank
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
FB = Field Blank
EB = Equipment Blank

- ***Matrix Spike/Matrix Spike Duplicate (MS/MSD):*** The MS of sample FA47433-1 displayed low recovery for TOC. Positive results were qualified "J-".

NOTES

- None noted.

REPORT CONTENT STATEMENT

All data for this project were reviewed in accordance with the pertinent parts of the U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review & USEPA National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

l) Glossary of Data Qualifiers
2) Electronic Data Deliverable (EDD). These include:
   (a) All results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R"), where applicable.
3) Electronic Data Package (.pdf file) as Support Documentation

DCN: EA881704-6876

Respectfully Submitted,

Sherif N. Mina Date: October 25, 2017
Sherif N. Mina

QA/Review: SM

MCGI

USEPA

Organic

Data Validation Report

Picatinny Arsenal
Route 15, NJ

Accutest Lab SDG's No. MC45183, MC45736, MC45762 & MC45899

MCGI Project No. EA881603-5183-O

Prepared for:

EA Engineering, Science & Technology, Inc.
Hunt Valley, MD

Prepared by:

"MCGI"
Meridian Consultant Group, Inc.

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June 2016

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- COMMUNICATION RECORDS
- GLOSSARY OF DATA VALIDATION QUALIFIERS
- DATA VALIDATION REPORT NARRATIVE
- ELECTRONIC DATA DELIVERABLE (EDD) with applicable qualifiers, Refer to the EDD Excel file.
- SUPPORT DOCUMENTATION, Refer to the electronic Data Package PDF file.

GLOSSARY OF ACRONYMS & TERMS

GLOSSARY OF ACRONYMS & TERMS

One or more of the following acronyms and terms may have been used in the descriptive process of the **Organic** Data Validation.

Acronyms:

BFB Bromofluorobenzene (volatile instrument performance check)
BNA Base/Neutral/Acid
CARD CLP Analytical Results Database
CCCs Calibration Check Compounds
CCS Contract Compliance Screening
CF Calibration Factor
CLP Contract Laboratory Program
COC Chain of Custody
CRDL Contract Required Detection Limit
CRQL Contract Required Quantitation Limit
CSF Complete SDG File
%D Percent Difference
DAS Delivery of Analytical Services
DCB Decachlorobiphenyl (Pesticide/PCB/ surrogate compound)
DFTPP Decafluorotriphenylphosphine (semivolatile instrument performance check)
DSF Data Summary Form
ECD Electron-Capture Detector
EICP Extended Ion Current Profile
EMSL-LV Environmental Monitoring Support Laboratory - Las Vegas
EPA United States Environmental Protection Agency
GC Gas Chromatography
GC/EC Gas Chromatography/Electron Capture
GC/MS Gas Chromatography/Mass Spectra
GPC Gel Permeation Chromatography (Clean Up)
ICAL Initial Calibration
IS Internal Standard
LCS Laboratory Control Sample
LCL Lower Control Limit
MCL Maximum Contamination Level
MDL Method Detection Limit
MS/MSD Matrix Spike/Matrix Spike Duplicate
m/z The ratio of mass (m) to charge (z) of ions measured by GC/MS
OADS Organic Analysis Data Sheet (Form 1)
ORDA Organic Regional Data Assessment
PCB Poly Chlorinated Biphenyl
PEM Performance Evaluation Mixture
PRP Potential Responsible Party

QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plan
QC	Quality Control
%R	Percent Recovery of spiked amount
RAS	Routine Analytical Services
RF	Response Factor
RIC	Reconstructed Ion Chromatogram
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
RT	Retention Time
RTW	Retention Time Window
SDG	Sample Delivery Group
SMC	System Monitoring Compound
SMO	Sample Management Office
SOP	Standard Operation Procedures
SOW	Statement of Work
SPCCs	System Performance Check Compounds
SSL	Samples Shipping Log
SVOA	Semivolatile Organic Analyte
TCL	Target Compound List
TCX	Tetrachloro-m-Xylene (Pesticide/PCB surrogate compound)
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
TR	Traffic Report
UCL	Upper Control Limit
VOA	Volatile Organic Analyte
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples

Any sample related to a particular QC analysis.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Contract Compliance Screening (CCS)

A process in which the SMO inspects the data for contractual compliance and provides EMSL-LV laboratories and the Regions with their findings.

Contractual Holding Time

The time from VTSR (validated time of sample receipt) to laboratory extraction and /or analysis.

Data Validation Qualifier (DVQ)

This refers to the column on the data summary form in which EPA Region III and other qualifiers have been placed by the data validator.

Data Validation Result (DVR)

This refers to the column on the data summary form used to report results that have been modified by the data validator. A result in the DVR column that is qualified "U" indicates a modification of the reporting limit.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate

A duplicate sample generated in the field; not in the laboratory.

Initial Calibration (ICAL)

The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbances and/or emissions versus concentration of the standards. .

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Introduction of a known concentration of a compound into a sample to provide information about the effect of sample matrix on the extraction and/or measurement methodology.

Performance Evaluation Mixture

A standard used to verify that the ICAL sequence is stable throughout the GC or GC/MS analyses.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:

- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

Technical Holding Time

The time from sample collection to laboratory extraction and /or analysis

COMMUNICATION RECORDS

Subject:
RE: Picatinny - Issue with Field Blanks

From:
"DeSantis, Frank" <fdesantis@eaest.com> (Remove Preferred Sender)
Date: Mon, Mar 28, 2016 10:37 am
To: "s.mina@meridiancgi.com" <s.mina@meridiancgi.com>
Cc: "Williams, Hilary" <hwilliams@eaest.com>, "Hinckley, Dan" <dhinckley@eaest.com>, "Smith, Amanda" <asmith@eaest.com>

Sherif,

I concur with your recommendation. Please proceed as you mention below. Thank you for looking into this further.

Frank

From: s.mina@meridiancgi.com [mailto:s.mina@meridiancgi.com]
Sent: Friday, March 25, 2016 4:51 PM
To: DeSantis, Frank
Cc: Williams, Hilary; Hinckley, Dan; Smith, Amanda
Subject: RE: Picatinny - Issue with Field Blanks

Hello Frank,

After looking further into the explosive data, I've noticed that the field blank results are almost identical with Field sample DUP-1GW (Field Duplicate sample of field sample 157-MW-4); and by looking at the results for sample 157-MW-4 it was noticed that no hits at all were detected. Giving the above facts, it is very clear and certain that the field blank was somehow switched/mislabeled with sample 157-MW-4. My recommendation will be to switch the sample's ID for these 2 sample on the EDD and state that in the DV Report, along with a copy of this e-mail communication.

Very Best Regards & Have a great weekend,

-Sherif

Should you have any question or need further information, please do not hesitate to call me @ (301)803-9207.

Best Regards,

Sherif Mina
Meridian Consultant Group, Inc. (MCGI)
1997 Annapolis Exchange Pkwy, Suite 300
Annapolis, MD 21401
www.meridiancgi.com
Ph. (301)803-9207

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-------- Original Message --------
Subject: RE: Picatinny - Issue with Field Blanks
From: "DeSantis, Frank" <fdesantis@eaest.com>
Date: Fri, March 25, 2016 4:01 pm
To: "Hinckley, Dan" <dhinckley@eaest.com>, "Smith, Amanda" <asmith@eaest.com>
Cc: "smina@meridiancgi.com" <smina@meridiancgi.com>, "Smith, Amanda" <asmith@eaest.com>

I'll talk to Sovereign on Monday to see if they have any insight.

Amanda – Please cc Hilary on all PICA data e-mails going forward.

Have a good Easter.

Thanks,

Frank

From: Hinckley, Dan
Sent: Friday, March 25, 2016 3:22 PM
To: Smith, Amanda; DeSantis, Frank
Cc: smina@meridiancgi.com
Subject: RE: Picatinny - Issue with Field Blanks

A field blank with a lot of explosive detections is not good at all, and is indicative of improper decontamination between sample locations. Your choices are two (even before I talk to Sherif)-resample or accept high detection limits (Sherif will apply a 5X rule here).

Dan

Daniel Hinckley, Ph.D.

Environmental Chemist

765-465-4093

From: Smith, Amanda
Sent: Friday, March 25, 2016 2:52 PM
To: Hinckley, Dan; DeSantis, Frank
Cc: smina@meridiancgi.com
Subject: Picatinny - Issue with Field Blanks

Hi – I just spoke with Sherif and he noticed an issue with SDG MC44465. Two field blanks were collected on the same day, same time, and run for the same analysis (SW8330B). The problem is that one came back clean and the other had some high detections. The high detections in the one FB would result in a lot of the detections in the normal samples to be validated as non-detects. Sherif will need some additional information and guidance on how to proceed.

Frank – Can you please find out why Sovereign collected to FBs?

Dan – You should be receiving a phone call from Sherif soon.

Thanks,

Amanda

Amanda M. Smith

Scientist

EA Engineering, Science, and Technology, Inc., PBC

225 Schilling Circle, Suite 400

Hunt Valley, Maryland 21031

Cell (301) 639-3829

Office (410) 584-7000, ext 5346

GLOSSARY OF DATA VALIDATION QUALIFIERS

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATED TO IDENTIFICATION:

(Confidence concerning presence or absence of compounds)

U	=	Not detected above the level of the associated value. The associated value is either the approximate sample quantitation or detection limit.
NO CODE	=	Confirmed identification
U1	=	Not detected substantially above the level reported in laboratory or field blanks.
R	=	Unusable results. Analyte may or may not be present in the sample.
N	=	Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION:

(Can be used for both positive results and sample quantitation limits)

J	=	Analyte present. Reported value may not be accurate or precise (estimated value).
J+	=	Analyte present. Reported value may be biased high. Result is estimated high.
J-	=	Analyte present. Reported value may be biased low. Result is estimated low.
UJ	=	Not detected. Quantitation limit may be inaccurate or imprecise (Estimated).
UJ-	=	Not detected. Quantitation limit is probably higher.

OTHER CODES:

NJ	=	Qualitative identification questionable. Presumptively present at approximate quantity.
Q	=	No analytical result.
X	=	Data not Validated.

DATA VALIDATION REPORT NARRATIVE

MCGI

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Environmental Services & Data Validation
1997 Annapolis Exchange Pkwy., Suite 300
Annapolis, MD 21401

(301)803-9207 Phone
(410)972-4701 Fax
www.meridiancgi.com

DATE: June 13, 2016

SUBJECT: USEPA Organic Data Validation Report
Volatile, Semivolatile & Explosives
Accutest Lab SDG's No.MC45183, MC45736, MC45762 & MC45899
Site: Picatinny Arsenal, Route 15, NJ
MCGI Project No. EA881603-5183-O

FROM: Sherif N. Mina
Meridian Consultant Group, Inc.

TO: Mr. Frank DeSantis
EA Engineering, Science & Technology, Inc.

OVERVIEW

This report consists of four (4) Sample Delivery Groups (SDGs) for a total of twenty-six (26) samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile, Semivolatile & Explosive according to SW-846 Methods 8260C, 8270-SIM & 8330B, respectively. Details about each SDG are listed in separate sections below. The samples were analyzed in accordance with the Chain-of-Custody (COC).

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) National Functional Guideline for Organic Data Review, dated August 2014; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses.

Deviation from USEPA NFG: The "U" qualifier recommended by USEPA NFG for blank contamination was replaced by the "U1" qualifier to clearly indicate blank contamination on the EDDs.

Calibrations: SW-846 Method 8260C & 8270-SIM were used for the volatile & semivolatile analyses, respectively. For the data validation purpose, a 30% RSD for the initial calibrations & 25% D for the continuing calibrations were used as the QC limits for all compounds of concern, as the basis for qualifying the data.

GENERAL NOTES

- ***Electronic Data Deliverable (EDD):*** Several rows in an electronic data deliverable (EDD) are marked with an "X" and hidden before printing a data summary form. These rows may include quality control samples such as Method Blanks, Laboratory Control Samples, Matrix Spikes, or Matrix Spike Duplicates which are not validated. Additionally, some field sample results may not be used since only one (1) result for each compound is reported after validation. The following list indicates some instances in which an "X" may be placed in the DVQ column:
  1. The compounds in an analysis that have exceeded the instrument calibration range.
  2. All compounds in a diluted analysis that were within the calibration range in the initial analysis.
  3. All compounds in either the initial analysis or re-analysis of a sample, depending on which analysis is not reported on the EDD.

  Although QC samples and some field samples results may not be used, all data were reviewed and considered in the overall assessment.

- ***Data Validation Qualifier (DVQ)*****:**This refers to the column on the data summary form in which EPA and other qualifiers have been placed by the data validator.

- ***Data Validation Result (DVR):***This refers to the column on the data summary form used to report results that have been modified by the data validator. A result in the DVR column that is qualified "U" indicates a modification of the reporting limit. Results in the DVR column supersede those reported by the laboratory.

- ***Tentatively Identified Compounds (TICs):*** The TICs, if applicable, were reviewed during data validation.

- ***Compound Quantitation:*** Positive results for compounds which are below the CRQL were qualified as estimated "J" on the EDD.

1-SDG: MC45183

This SDG consisted of three (3) aqueous samples submitted to Accutest Laboratories, Marlborough, MA, for Explosives analysis according to SW-846 Methods 8330B. One (1) field blank; and one (1) aqueous field duplicate pair were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis		
Field ID	**Lab ID**	**SDG**	**Matrix**	**V**	**X**	**D**
BUILDING 173 DRAIN	MC45183-01	MC45183	Aqueous		x	
FB040416	MC45183-02		Aqueous		x	
DUP040416	MC45183-03		Aqueous		x	

V=Volatile, X=Explosives, D=Dissolved Gases

Duplicates: DUP040416/BUILDING 173 DRAIN

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guideline for Organic Data Review, dated August 2014; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		X		
		q	t	a
*	Data Completeness		3	0
*	Holding Time		3	0
*	Calibrations		3	0
*	Laboratory and Field Blanks analyses		3	0
*	Surrogate Recoveries		3	0
*	Matrix Spike/Matrix Spike Duplicate		3	0
*	Laboratory Control Sample(LCS)		3	0
*	Laboratory and/or Field Duplicates		3	0
*	Internal Standards		3	0
*	Pesticide Instrument Performance		3	0
*	Sample Cleanup		3	0
*	Compound Identification		3	0
*	Compound Quantitation		3	0
*	Sample Preservation		3	0
* All Criteria were met for that Parameter, X=Explosives				

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

- None noted.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of theses contaminants were qualified "U1" based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Explosives	None				

*Common lab contaminant

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was applied based on the RPD when results are less than CRQL. Whenever a positive result for a compound is detected in one sample but not in the other, regardless of the CRQL, "J" & "UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	**DUP040416**	**BUILDING 173 DRAIN**	**RPD**	**Qualifier**
	ND	ND		

2-SDG: MC45736

This SDG consisted of eleven (11) aqueous & three (3) soil samples submitted to Accutest Laboratories, Marlborough, MA, for Explosives analysis according to SW-846 Methods 8330B. Two (2) field blanks; and two (2) aqueous & one (1) soil field duplicate pairs were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis	
Field ID	**Lab ID**	**SDG**	**Matrix**	**V**	**X**
40MW1	MC45736-01	MC45736	Aqueous		x
DUP-G1-GW-050316	MC45736-02		Aqueous		x
40MW2	MC45736-03		Aqueous		x
40MW3	MC45736-04		Aqueous		x
40MW5	MC45736-05		Aqueous		x
40MW6	MC45736-06		Aqueous		x
FB61	MC45736-07		Aqueous		x
79SW1	MC45736-08		Aqueous		x
DUP-G1-SW-050316	MC45736-09		Aqueous		x
79SW2	MC45736-10		Aqueous		x
79SD1	MC45736-11		Soil		x
79SD2	MC45736-12		soil		x
DUP-SD-G1-050316	MC45736-13		Soil		x
SWFB	MC45736-14		Aqueous		x

V=Volatile, X=Explosives

Duplicates: DUP-G1-GW-050316/40MW1
DUP-G1-SW-050316/79SW1
DUP-SD-G1-050316/79SD1

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guideline for Organic Data Review, dated August 2014; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		X		
		q	t	a
*	Data Completeness		14	0
*	Holding Time		14	0
*	Calibrations		14	0
*	Laboratory and Field Blanks analyses		14	0
*	Surrogate Recoveries		14	0
*	Matrix Spike/Matrix Spike Duplicate		14	0
*	Laboratory Control Sample(LCS)		14	0
*	Laboratory and/or Field Duplicates		14	0
*	Internal Standards		14	0
*	Pesticide Instrument Performance		14	0
*	Sample Cleanup		14	0
*	Compound Identification		14	0
*	Compound Quantitation		14	0
*	Sample Preservation		14	0
* All Criteria were met for that Parameter, V=Volatile , X=Explosives				

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

- None noted.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of theses contaminants were qualified "U1" based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Explosives	None				

*Common lab contaminant

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was applied based on the RPD when results are less than CRQL. Whenever a positive result for a compound is detected in one sample but not in the other, regardless of the CRQL, "J" & "UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	**DUP-G1-GW-050316**	**40MW1**	**RPD**	**Qualifier**
2-amino-4,6-Dinitrotoluene	4.2	4.5	7	
4-amino-2,6-Dinitrotoluene	9.9	10.9	10	
RDX	10.5	12.2	15	
	DUP-G1-SW-050316	**79SW1**		
	ND	ND		
	DUP-SD-G1-050316	**79SD1**		
	ND	ND		

3-SDG: MC45762

This SDG consisted of six (6) aqueous samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile (Vinyl Chloride) analysis according to SW-846 Method 8260C. One (1) trip & one (1) field blanks; and one (1) aqueous field duplicate pair were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis	
Field ID	**Lab ID**	**SDG**	**Matrix**	**V**	
FB050416	MC45762-1	MC45762	Aqueous	x	
TB	MC45762-2		Aqueous	x	
MW25-6A	MC45762-5		Aqueous	x	
MW25-6B	MC45762-6		Aqueous	x	
DM19-1	MC45762-7		Aqueous	x	
DUP-C-050416	MC45762-8		Aqueous	x	

V=Volatile

Duplicates: DUP-C-050416/MW25-6B

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guideline for Organic Data Review, dated August 2014; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		V		
		q	t	a
*	Data Completeness		6	0
*	Holding Time		6	0
*	Calibrations		6	0
*	Laboratory and Field Blanks analyses		6	0
*	Surrogate Recoveries		6	0
*	Matrix Spike/Matrix Spike Duplicate		6	0
*	Laboratory Control Sample(LCS)		6	0
*	Laboratory and/or Field Duplicates		6	0
*	Internal Standards		6	0
*	Pesticide Instrument Performance		6	0
*	Sample Cleanup		6	0
*	Compound Identification		6	0
*	Compound Quantitation		6	0
*	Sample Preservation		6	0

* All Criteria were met for that Parameter, V=Volatile

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

- ***Blank Spike:*** The associated aqueous & soil Blank Spike displayed high recoveries for Nitrobenzene & Tetryl. Positive results for Tetryl in sample 79 SD-2 was qualified "J+".

  The associated soil Blank Spike displayed low recoveries for RDX, 1,3-Dinitrobenzene & 1,3,5-Trinitrobenzene. Positive results and quantitation limits in the soil samples were qualified "J-" & "UJ".

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of theses contaminants were qualified "U1" based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Volatile	None				

*Common lab contaminant

- ***Surrogate Recovery:*** The analysis of samples MC45762-1, -5 & -6 displayed high surrogate recovery for Dibromofluoromethane. No positive results were detected in these samples. No data were qualified.

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was applied based on the RPD when results are less than CRQL. Whenever a positive result for a compound is detected in one sample but not in the other, regardless of the CRQL, "J" & "UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	**DUP-C-050416**	**MW25-6B**	**RPD**	**Qualifier**
	ND	ND		

4-SDG: MC45899

This SDG consisted of three (3) aqueous samples submitted to Accutest Laboratories, Marlborough, MA, for semivolatile (1,2-Dioxane) analyses according to SW-846 Method 8570-SIM. One (1) aqueous field duplicate pair were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis	
Field ID	**Lab ID**	**SDG**	**Matrix**	**S**	
D-PW-131	MC45899-01	MC45899	Aqueous	x	
PW-302D	MC45899-02		Aqueous	x	
DUP-PW-0511-16	MC45899-03		Aqueous	x	

S=Semivolatile

Duplicates: DUP-PW-0511-16/PW-302D

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guideline for Organic Data Review, dated August 2014; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		S					
		q	t	a	q	t	a
*	Data Completeness		3	0			
*	Holding Time		3	0			
*	Calibrations		3	0			
*	Laboratory and Field Blanks analyses		3	0			
*	Surrogate Recoveries		3	0			
*	Matrix Spike/Matrix Spike Duplicate		3	0			
*	Laboratory Control Sample(LCS)		3	0			
*	Laboratory and/or Field Duplicates		3	0			
*	Internal Standards		3	0			
*	Pesticide Instrument Performance		3	0			
*	Sample Cleanup		3	0			
*	Compound Identification		3	0			
*	Compound Quantitation		3	0			
*	Sample Preservation		3	0			

* All Criteria were met for that Parameter, S=Semivolatile

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

- None noted.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of theses contaminants were qualified "U1" based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Semivolatile	None				

*Common lab contaminant

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was applied based on the RPD when results are less than CRQL. Whenever a positive result for a compound is detected in one sample but not in the other, regardless of the CRQL, "J" & "UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	**DUP-PW-0511-16**	**PW-302D**	**RPD**	**Qualifier**
	ND	ND		

REPORT CONTENT STATEMENT

All data for this project were reviewed in accordance with the pertinent parts of the U.S. Environmental Protection Agency (USEPA) National Functional Guideline for Organic Data Review, dated August 2014; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

l) Glossary of Data Qualifiers
2) Electronic Data Deliverable (EDD). These include:
   (a) All results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R"), where applicable.
3) Electronic Data Package (.pdf file) as Support Documentation

DCN: EA881603-5183-O

Respectfully Submitted,

Sherif N. Mina Date: June 13, 2016
Sherif N. Mina

QA/Review: SM

MCGI

USEPA Data Validation

Organic & Inorganic

Data Validation Report

Picatinny Arsenal
Route 15, NJ

Lab SDG No. FA43395

MCGI Project No. EA881702-3395-O

Prepared for:

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June 2017

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- GLOSSARY OF ACRONYMS & TERMS
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GLOSSARY OF ACRONYMS & TERMS

GLOSSARY OF ACRONYMS & TERMS

One or more of the following acronyms and terms may have been used in the descriptive process of the **Organic** Data Validation.

Acronyms:

BFB	Bromofluorobenzene (volatile instrument performance check)
BNA	Base/Neutral/Acid
CCCs	Calibration Check Compounds
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
%D	Percent Difference
DCB	Decachlorobiphenyl (Pesticide/PCB/ surrogate compound)
DFTPP	Decafluorotriphenylphosphine (semivolatile instrument performance check)
DSF	Data Summary Form
ECD	Electron-Capture Detector
EICP	Extended Ion Current Profile
EPA	United States Environmental Protection Agency
GC	Gas Chromatography
GC/EC	Gas Chromatography/Electron Capture
GC/MS	Gas Chromatography/Mass Spectra
GPC	Gel Permeation Chromatography (Clean Up)
ICAL	Initial Calibration
IS	Internal Standard
LCS	Laboratory Control Sample
LCL	Lower Control Limit
MCL	Maximum Contamination Level
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
m/z	The ratio of mass (m) to charge (z) of ions measured by GC/MS
OADS	Organic Analysis Data Sheet (Form 1)
ORDA	Organic Regional Data Assessment
PCB	Poly Chlorinated Biphenyl
PEM	Performance Evaluation Mixture

QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plan
QC	Quality Control
%R	Percent Recovery of spiked amount
RF	Response Factor
RIC	Reconstructed Ion Chromatogram
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
RT	Retention Time
RTW	Retention Time Window
SDG	Sample Delivery Group
SMC	System Monitoring Compound
SOP	Standard Operation Procedures
SOW	Statement of Work
SPCCs	System Performance Check Compounds
SSL	Samples Shipping Log
SVOA	Semivolatile Organic Analyte
TCL	Target Compound List
TCX	Tetrachloro-m-Xylene (Pesticide/PCB surrogate compound)
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
UCL	Upper Control Limit
VOA	Volatile Organic Analyte
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples

Any sample related to a particular QC analysis.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Contractual Holding Time

The time from VTSR (validated time of sample receipt) to laboratory extraction and /or analysis.

Data Validation Qualifier (DVQ)

This refers to the column on the data summary form in which EPA Region III and other qualifiers have been placed by the data validator.

Data Validation Result (DVR)

This refers to the column on the data summary form used to report results that have been modified by the data validator. A result in the DVR column that is qualified "U" indicates a modification of the reporting limit.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate

A duplicate sample generated in the field; not in the laboratory.

Initial Calibration (ICAL)

The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbances and/or emissions versus concentration of the standards. .

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Introduction of a known concentration of a compound into a sample to provide information about the effect of sample matrix on the extraction and/or measurement methodology.

Performance Evaluation Mixture

A standard used to verify that the ICAL sequence is stable throughout the GC or GC/MS analyses.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:
- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

Technical Holding Time

The time from sample collection to laboratory extraction and /or analysis

GLOSSARY OF ACRONYMS & TERMS

One or more of the following acronyms and terms may have been used in the descriptive process of the **Inorganic** Data Validation.

Acronyms:

AA	Atomic Absorption
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CF	Calibration Factor
CLP	Contract Laboratory Program
COC	Chain of Custody
CRDL	Contract Required Detection Limit
CSF	Complete SDG File
CV	Cold Vapor
%D	Percent Difference
EPA	United States Environmental Protection Agency
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICS	Interference Check Sample
ICV	Initial Calibration Verification
IDL	Instrument Detection Limit
LCS	Laboratory Control Sample
LCL	Lower Control Limit
MCL	Maximum Contamination Level
MDC	Minimum Detectable Concentration
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MSA	Method of Standard Addition
PB	Preparation Blank
PCB	Poly Chlorinated Biphenyl
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plan
QC	Quality Control

%R	Percent Recovery of spiked amount
RPD	Relative Percent Difference
RRF	Relative Response Factor
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SOP	Standard Operation Procedures
SOW	Statement of Work
SSL	Samples Shipping Log
TAL	Target Analyte List
UCL	Upper Control Limit
VTSR	Validated Time of Sample Receipt

Terms:

Associated Samples

Any sample related to a particular QC analysis. For Example:
- For ICV, all samples run under the same calibration curve.
- For duplicate RPD, all SDG samples digested/distilled of the same matrix.

Case A finite, usually predetermined number of samples collected over a given time period for a particular site. A Case consists of one or more Sample Delivery Group(s).

Continuing Calibration Blank (CCB)

A deionized water sample run every ten (10) samples designed to detect any carryover contamination.

Continuing Calibration Verification (CCV)

A deionized water sample run every ten (10) samples designed to detect any carryover contamination.

Contract Compliance Screening (CCS)

A process in which the SMO inspects the data for contractual compliance and provides EMSL-LV laboratories and the Regions with their findings.

Contractual Holding Time

The time from VTSR (validated time of sample receipt) to laboratory extraction and /or analysis.

Data Validation Qualifier (DVQ)

This refers to the column on the data summary form in which EPA Region III and other qualifiers have been placed by the data validator.

Data Validation Result (DVR)

This refers to the column on the data summary form used to report results that have been modified by the data validator. A result in the DVR column that is qualified "U" indicates a modification of the reporting limit.

Field Blank Field blanks are intended to identify contaminants that may have been introduced in the field. Examples are rinsate blank (RB), field blanks (FB) and trip blank (TB).

Field Duplicate

A duplicate sample generated in the field; not in the laboratory.

Initial Calibration (ICAL)

The establishment of a calibration curve with the appropriate number of standards and concentration ranges. The calibration curve plots absorbancies and/or emissions versus concentration of the standards.

.

Initial Calibration Blank (ICB)

First blank run after the calibration curve .

Initial Calibration Verification (ICV)

First standard run after the calibration curve .

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Introduction of a known concentration of a compound into a sample to provide information about the effect of sample matrix on the extraction and/or measurement methodology.

Post Digestion Spike

The addition of known amount of standard after digestion. (Also identified as analytical spike, or spike, for furnace analyses.)

Preparation Blank (PB)

Blank taken through the digestion process to detect internal laboratory contamination.

Sample Delivery Group (SDG)

Defined by one of the following, whichever occurs first:
- case of sample
- each twenty field samples in a case or
- each 14-day calendar period during which field samples in a case are received, beginning with the receipt of the first sample in the SDG.

Serial Dilution

A sample run at a specific dilution to determine whether any significant chemical or physical interferences exist due to sample matrix effect, for ICP only.

Technical Holding Time

The time from sample collection to laboratory extraction and /or analysis.

COMMUNICATION RECORDS

N/A

GLOSSARY OF DATA VALIDATION QUALIFIERS

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATED TO IDENTIFICATION:

(Confidence concerning presence or absence of compounds)

U	=	Not detected above the level of the associated value. The associated value is either the approximate sample quantitation or detection limit.
NO CODE	=	Confirmed identification
U1	=	Not detected substantially above the level reported in laboratory or field blanks.
R	=	Unusable results. Analyte may or may not be present in the sample.
N	=	Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION:

(Can be used for both positive results and sample quantitation limits)

J	=	Analyte present. Reported value may not be accurate or precise (estimated value).
J+	=	Analyte present. Reported value may be biased high. Result is estimated high.
J-	=	Analyte present. Reported value may be biased low. Result is estimated low.
UJ	=	Not detected. Quantitation limit may be inaccurate or imprecise (Estimated).
UJ-	=	Not detected. Quantitation limit is probably higher.

OTHER CODES:

NJ	=	Qualitative identification questionable. Presumptively present at approximate quantity.
Q	=	No analytical result.
X	=	Data not Validated.

DATA VALIDATION REPORT NARRATIVE

MCGI

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DATE: June 19, 2017

SUBJECT: USEPA Organic & Inorganic Data Validation Report
Volatile & Explosives
Accutest Lab SDG No. FA43395
Site: Picatinny Arsenal, Route 15, NJ
MCGI Project No. EA881702-1779

FROM: Sherif N. Mina
Meridian Consultant Group, Inc.

TO: Mr. Frank DeSantis
EA Engineering, Science & Technology, Inc.

OVERVIEW

This report consists of one (1) Sample Delivery Group (SDG) for a total of three (3) samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile & Explosives analyses according to SW-846 Methods 8260B & 8330, respectively. Details about this SDG are listed in a separate section below. The samples were analyzed in accordance with the Chain-of-Custody (COC).

The analytical results were validated according to the pertinent parts of U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review & USEPA National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses.

Deviation from USEPA NFG: The "U" qualifier recommended by USEPA NFG for blank contamination was replaced by the "U1" qualifier to clearly indicate blank contamination on the EDDs.

Calibrations: SW-846 Method 8260C was used for the volatile analysis. For the data validation purpose, a 30% RSD for the initial calibrations & 25% D for the continuing calibrations were used as the QC limits for all compounds of concern, as the basis for qualifying the data.

GENERAL NOTES

- ***Electronic Data Deliverable (EDD):*** Several rows in the electronic data deliverable (EDD) are marked with an "X" and hidden from the EDDs by the validator. These rows may include quality control samples such as Method Blanks, Laboratory Control Samples, Matrix Spikes, or Matrix Spike Duplicates which are not validated. Additionally, some field sample results may not be used since only one (1) result for each compound is reported after validation. The following list indicates some instances in which an "X" may be placed in the DVQ column:
  1. The compounds in an analysis that have exceeded the instrument calibration range.
  2. All compounds in a diluted analysis that were within the calibration range in the initial analysis.
  3. All compounds in either the initial analysis or re-analysis of a sample, depending on which analysis is not reported on the EDD.

  Although QC samples and some field samples results may not be used, all data were reviewed and considered in the overall assessment.

- ***Data Validation Qualifier (DVQ)*:**This refers to the column on the data summary form in which EPA and other qualifiers have been placed by the data validator.

- ***Data Validation Result (DVR):***This refers to the column on the data summary form used to report results that have been modified by the data validator. A result in the DVR column that is qualified "U" indicates a modification of the reporting limit. Results in the DVR column supersede those reported by the laboratory.

- ***Tentatively Identified Compounds (TICs):*** The TICs, if applicable, were reviewed during data validation.

- ***Compound Quantitation:*** Positive results for compounds which are below the CRQL were qualified as estimated "J" on the EDD.

1-SDG: FA43395

This SDG consisted of three (3) aqueous samples submitted to Accutest Laboratories, Marlborough, MA, for Volatile & Explosives analyses according to SW-846 Methods 8260B & 8330, respectively. One (1) trip blank; and one (1) aqueous field duplicate pair were identified in this sample set. The samples were analyzed in accordance with the Chain-of-Custody (COC), see Sample Identification Summary.

Sample Identification Summary

SAMPLE INFORMATION				Analysis			
Field ID	**Lab ID**	**SDG**	**Matrix**	**V**	**X**		
BLDG 173 DRAIN	FA43395-1	FA43395	Aqueous	x	x		
DUP042417	FA43995-2		Aqueous	x	x		
TRIP BLANK	FA43995-3		Aqueous	x			

V=Volatile, X=Explosives

Duplicates: BLDG 173 DRAIN/DUP042417

- ***Field Duplicates:*** For the associated aqueous & soil field duplicate pairs, an RPD of 50% was used as the QC limit for results that are at or above the CRQL, no qualification was applied based on the RPD when results are less than CRQL. Whenever a positive result for a compound is detected in one sample but not in the other, regardless of the CRQL, "J" & "UJ" qualifiers were applied to that compound in the field duplicate pair. A table summarizing the RPDs for the associated aqueous field duplicate pair is provided below.

Compound	BLDG173DRAIN	DUP042417	RPD	Qualifier
Trichloroethylene	2.4	2.1	13	
RDX	ND	ND		

ORGANIC VALIDATION

SUMMARY

All samples were successfully analyzed for all target compounds according to U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. All instruments and method sensitivities were according to the specified analytical methods, except as noted in the Major Problem section. Refer to Minor Problems for information regarding biases identified during data validation.

Data Validation Summary

Parameters		V			X		
		q	t	a	q	t	a
*	Data Completeness		3	0		2	0
*	Holding Time		3	0		2	0
*	Instrument Performance (BFB/DFTPP)		3	0		2	0
*	Calibrations		3	0		2	0
*	Laboratory and Field Blanks analyses		3	0		2	0
*	Surrogate Recoveries		3	0		2	0
*	Matrix Spike/Matrix Spike Duplicate		3	0		2	0
*	Laboratory Control Sample(LCS)		3	0		2	0
*	Laboratory and/or Field Duplicates		3	0		2	0
*	Internal Standards		3	0		2	0
*	Compound Identification		3	0		2	0
*	Compound Quantitation		3	0		2	0
*	Sample Preservation		3	0		2	0
* All Criteria were met for that Parameter. V=Volatile, X=Explosives							

q=qualified; t=total number of samples analyzed; a=number of samples affected

MAJOR PROBLEMS

- None noted.

MINOR PROBLEMS

- None noted.

NOTES

- ***Blank Contaminants:*** The maximum concentration of all compounds found in the analyses of the trip, field or laboratory method blanks are listed in the following table. Associated samples with positive results of these contaminants maybe qualified “U1" or “J+”, based on the concentration level found in the samples, according to USEPA National Functional Guideline for Organic Data Review, dated August 2014.

Analytical Fraction	**Compound**	Maximum Concentration	Units	Blank Type	Associated Samples
Volatile	None				
	None				

*Common lab contaminant

REPORT CONTENT STATEMENT

All data for this project were reviewed in accordance with the pertinent parts of the U.S. Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Data Review & USEPA National Functional Guidelines for Inorganic Data Review, dated August 2014; Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, dated January 2009; along with the Quality Assurance/Quality Control (QA/QC) requirements for the analytical methods used for the analyses. The text of the report addresses only those problems affecting data usability.

ATTACHMENTS

l) Glossary of Data Qualifiers
2) Electronic Data Deliverable (EDD). These include:
   (a) All results for target compounds with qualifier codes where applicable.
   (b) All unusable detection limits (qualified "R"), where applicable.
3) Electronic Data Package (.pdf file) as Support Documentation

DCN: EA881702-3395

Respectfully Submitted,

Sherif N. Mina Date: June 19, 2017
Sherif N. Mina

QA/Review: SM