SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location NE ¼ SW ¼ Sec 18 Twp 2N Rg 9E

County: Pennington
See inclosed Site Plan PMW 9

North

Please mark well location with an "X"

W E

1 Mile

Well completion Date: 11/04/14

Distance from nearest potential pollution source (Septic tank, abandoned well, feed lot, etc.)
? 130 ft. from Former Underground Tank (identify source)

PROPOSED USE:
☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☐ Irrigation ☐ Industrial ☐ Institutional ☒ Monitoring well

METHOD OF DRILLING: 3 1/4" HSA

CASING DATA: ☐ Steel ☐ Plastic ☒ Other
If other describe: Sch 40 PVC

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
Sch 40 LB/FT	2 IN	15 FT	0.5 FT	7 7/8 IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
Portland II	4	9 4/10 Lb/gal	10 Ft	Surface Ft
		Lb/gal	Ft	Ft

Describe grouting procedure: Hand mixed and placed

SCREEN: ☐ Perforated pipe ☒ Manufactured
Diameter 2 Inches Length 15 Feet
Material: Sch 40 PVC
Slot Size 10 Set From 30 Feet to 15 Feet
Other information

WAS A PACKER OR SEAL USED? ☒ Yes ☐ No
If so, what material? Bentonite
Describe packer(s) and location: Bentonite Chips 12.5-10'

DISINFECTION: Was well disinfected upon completion?
☐ Yes, How?
☒ No, Why Not? Monitoring well

Lab sample sent to for water quality analysis

Well Owner: Jens S. Christensen, P.E.
Business Name: Ellsworth Airforce Base
Address1: 28 CES / CEIEC
Address2: 2125 Scott Drive
City, State, Zip: Ellsworth AFB, S.D. 57706

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
See inclosed logs		

STATIC WATER LEVEL 19 FEET
If flowing: closed in pressure ____ PSI
GPM flow ____ through NA Inch pipe
Controlled by ☐ Valve ☐ Reducers ☐ Other
Reduced flow rate ____ GPM
Can well be completely shut in?

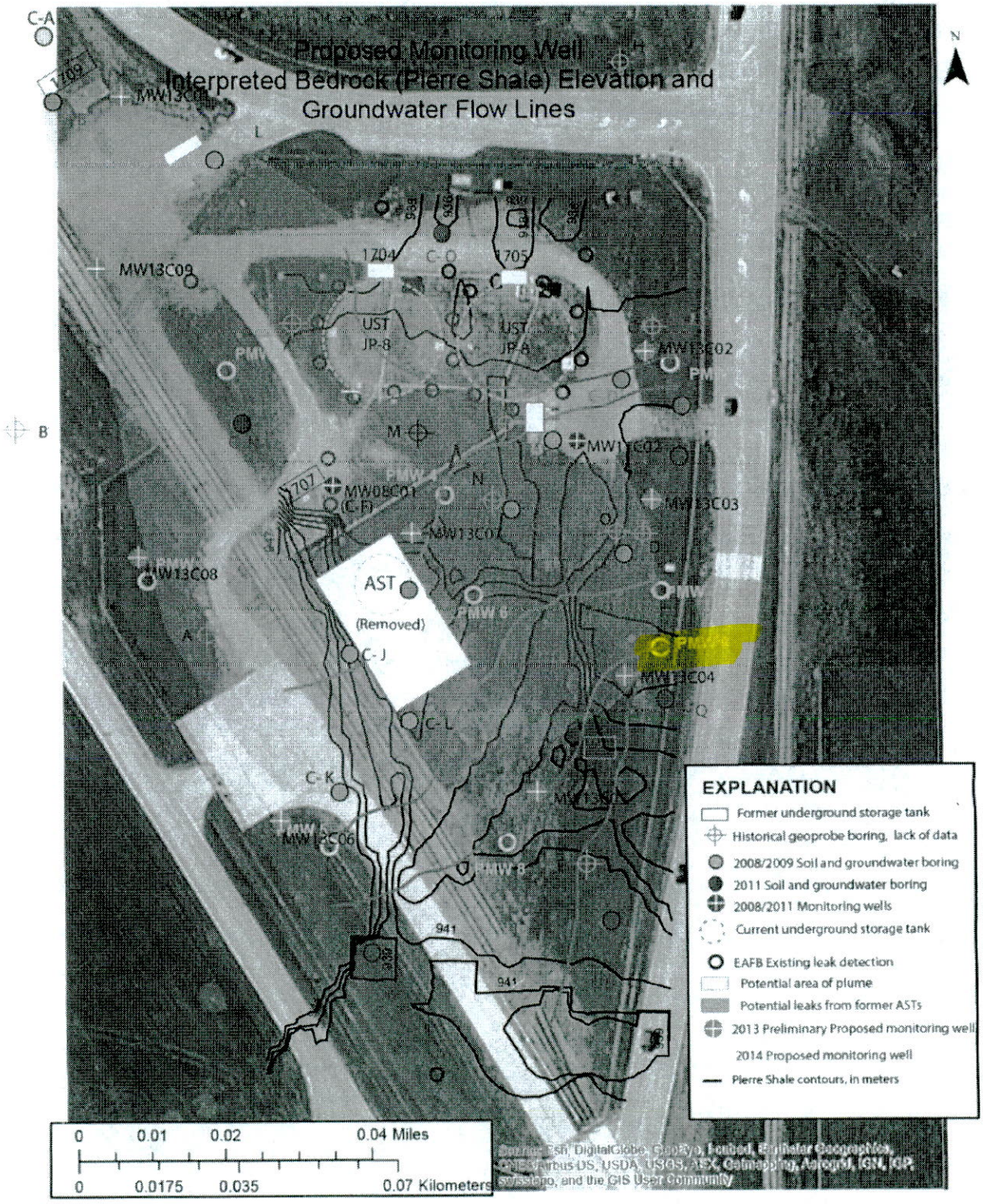
WELL TEST DATA:
☐ Pumped Describe: NA
☐ Bailed
☐ Other
Pumping Level Below Land Surface
Ft. After ____ Hrs. pumped ____ GPM
Ft. After ____ Hrs. pumped ____ GPM
If pump installed, pump rate: ____ GPM

REMARKS

RECEIVED
JAN 07 2015
WATER RIGHTS PROGRAM

This well was drilled under license # 617
And this report is true and accurate.
Drilling firm: American Technical Services
Signature of License Representative:
Signature of Well Owner or Equitable Property Holder:
Date 12/22/14

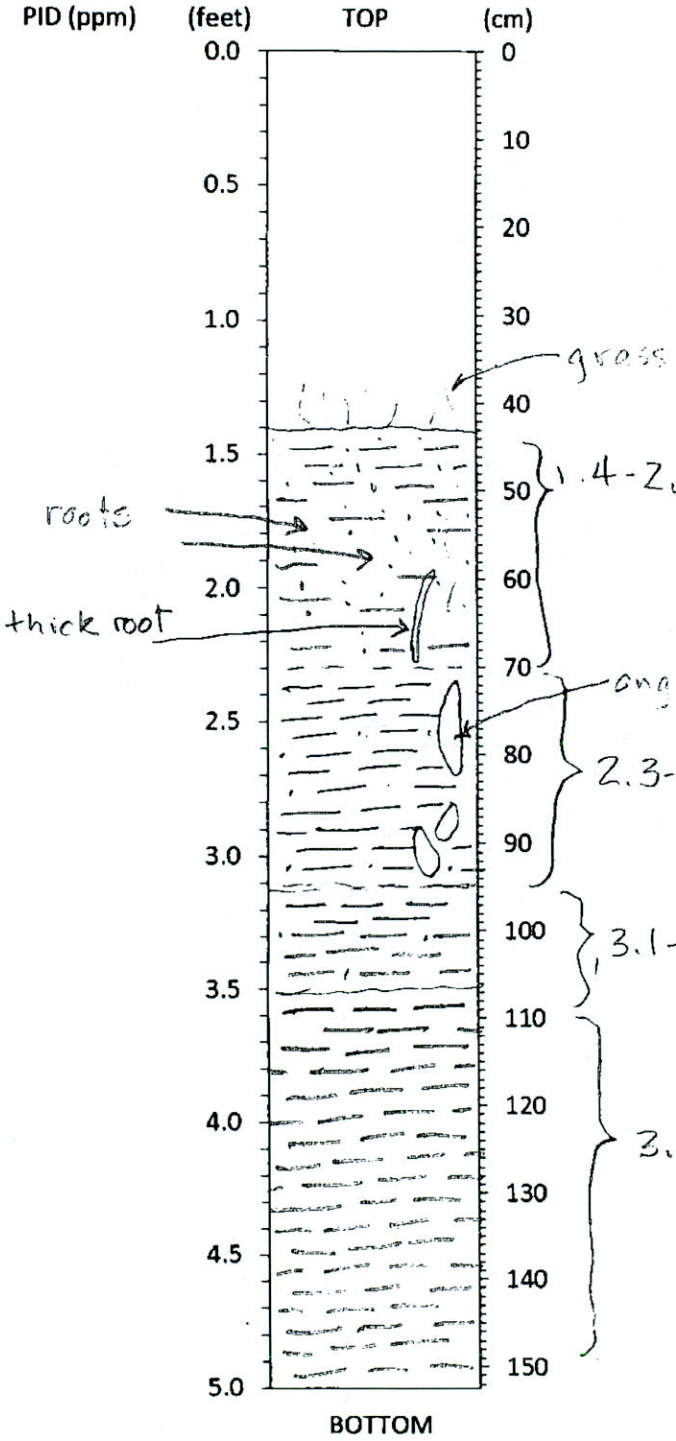
Please return White Copy to DENR Water Rights 523 E. Capitol Ave., Pierre SD 57501


Proposed Monitoring Well
Interpreted Bedrock (Pierre Shale) Elevation and
Groundwater Flow Lines
N
C-A
1709
MW13C01
L
MW13C09
1704
C-O
1705
UST
JP-8
UST
JP-8
MW13C02
PMW
B
M
MW13C02
1707
MW08C01
(C-F)
PMW-4
N
MW13C03
MW13C07
MW13C08
AST
(Removed)
PMW-6
PMW-9
A
C-J
MW13C04
C-L
C-K
MW13C06
PMW-8
941
941
EXPLANATION
Former underground storage tank
Historical geoprobe boring, lack of data
2008/2009 Soil and groundwater boring
2011 Soil and groundwater boring
2008/2011 Monitoring wells
Current underground storage tank
EAFB Existing leak detection
Potential area of plume
Potential leaks from former ASTs
2013 Preliminary Proposed monitoring well
2014 Proposed monitoring well
Pierre Shale contours, in meters
0 0.01 0.02 0.04 Miles
0 0.0175 0.035 0.07 Kilometers
Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

USGS Soil/WG Monitoring EAFB
NT00FGM0000

Site: Ellsworth AFB
Core ID: MW_09_0-5
Described by: John Stamm and David Bender

Date and Time: 11/4/2014 1:57pm
Core depth range: 0-5
Core recovery range: 1.4-5.0



1.4-2.3 dark grayish brown clay loam, roots common

2.3-3.1 dark grayish brown silty clay, isolated roots and isolated angular pebbles, 1 cobble

3.1-3.5 grayish brown silty clay

3.5-5.0 dark grayish brown clay with small calcite fleck dispersed throughout; clay parting have brown iron stain

Photos:

USGS Soil/WG Monitoring EAFB
NT00FGM0000

Site: Ellsworth AFB

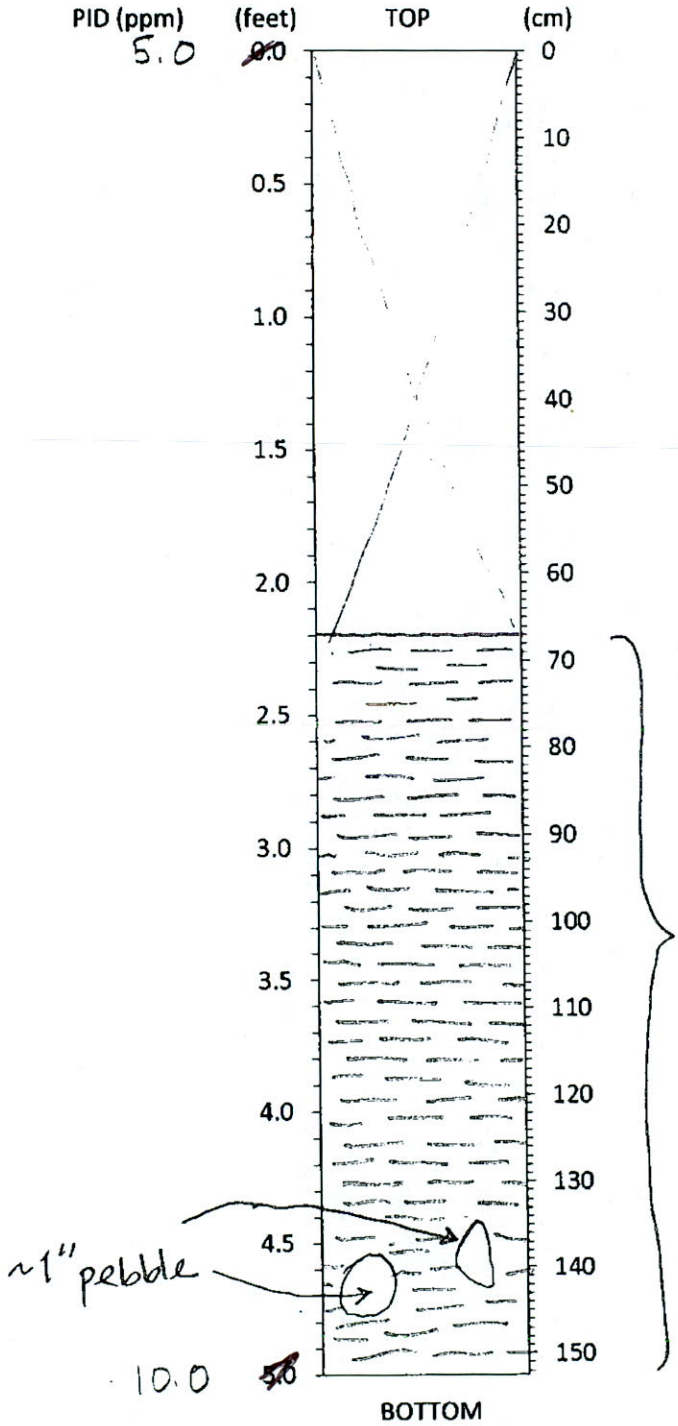
Core ID: MW09_5-10

Described by: John Stamm and David Bender

Date and Time: 11/4/2014

Core depth range: 5-10

Core recovery range: (2.2-5)
7.2-10



7.2-10 (2.2-5.0)
driller says two pebbles (one angular, possibly fractured, one rounded) sheared and twisted core sample. So, pebbles not considered part of unit.
grayish brown clay

Photos:

USGS Soil/WG Monitoring EAFB
NT00FGM0000

Site: Ellsworth AFB

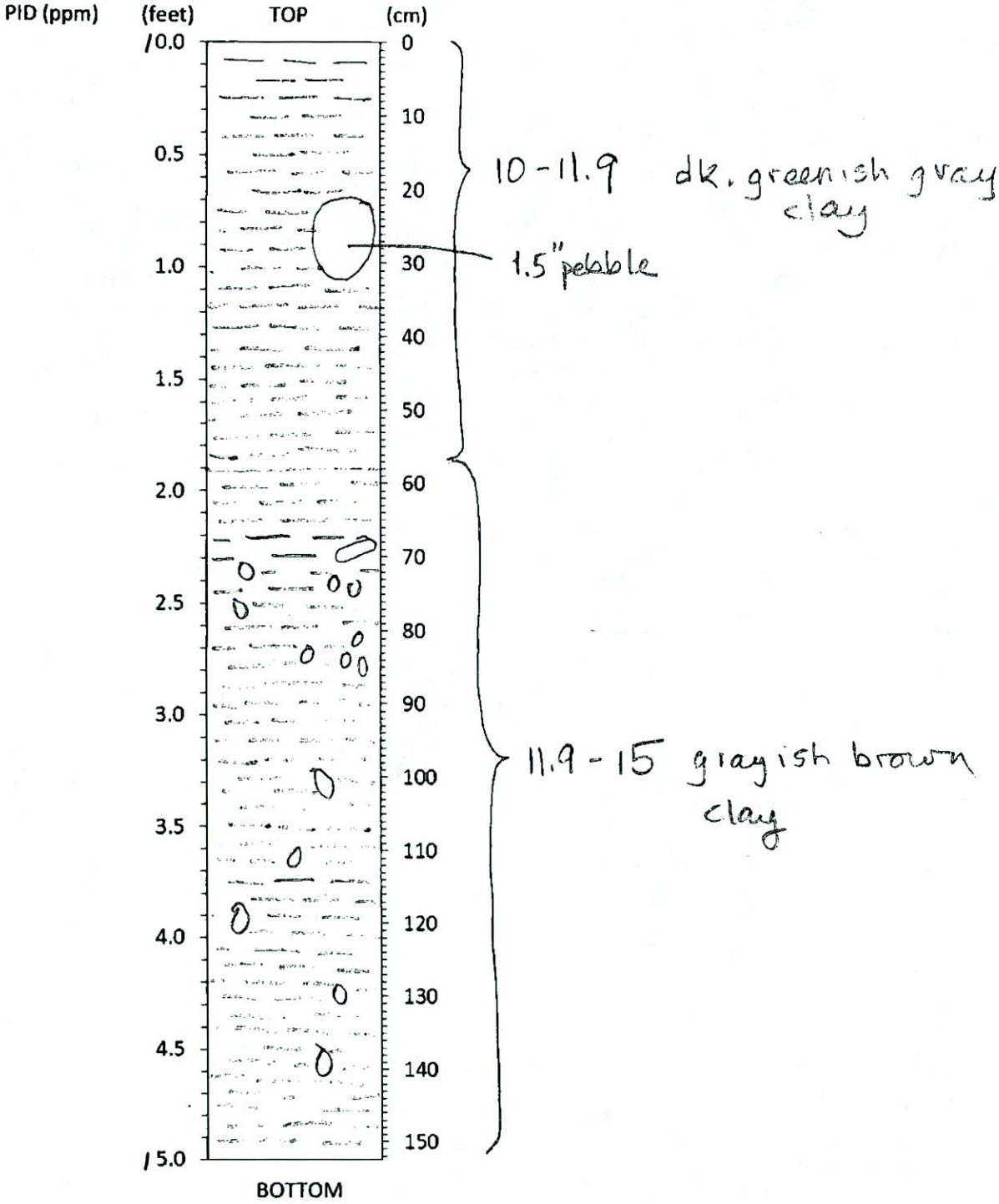
Core ID: MW_09_10-15

Described by: John Stamm and David Bender

Date and Time: 11/4/2014

Core depth range: 10 - 15

Core recovery range: 10 - 15



Photos:

USGS Soil/WG Monitoring EAFB
NT00FGM0000

Site: Ellsworth AFB

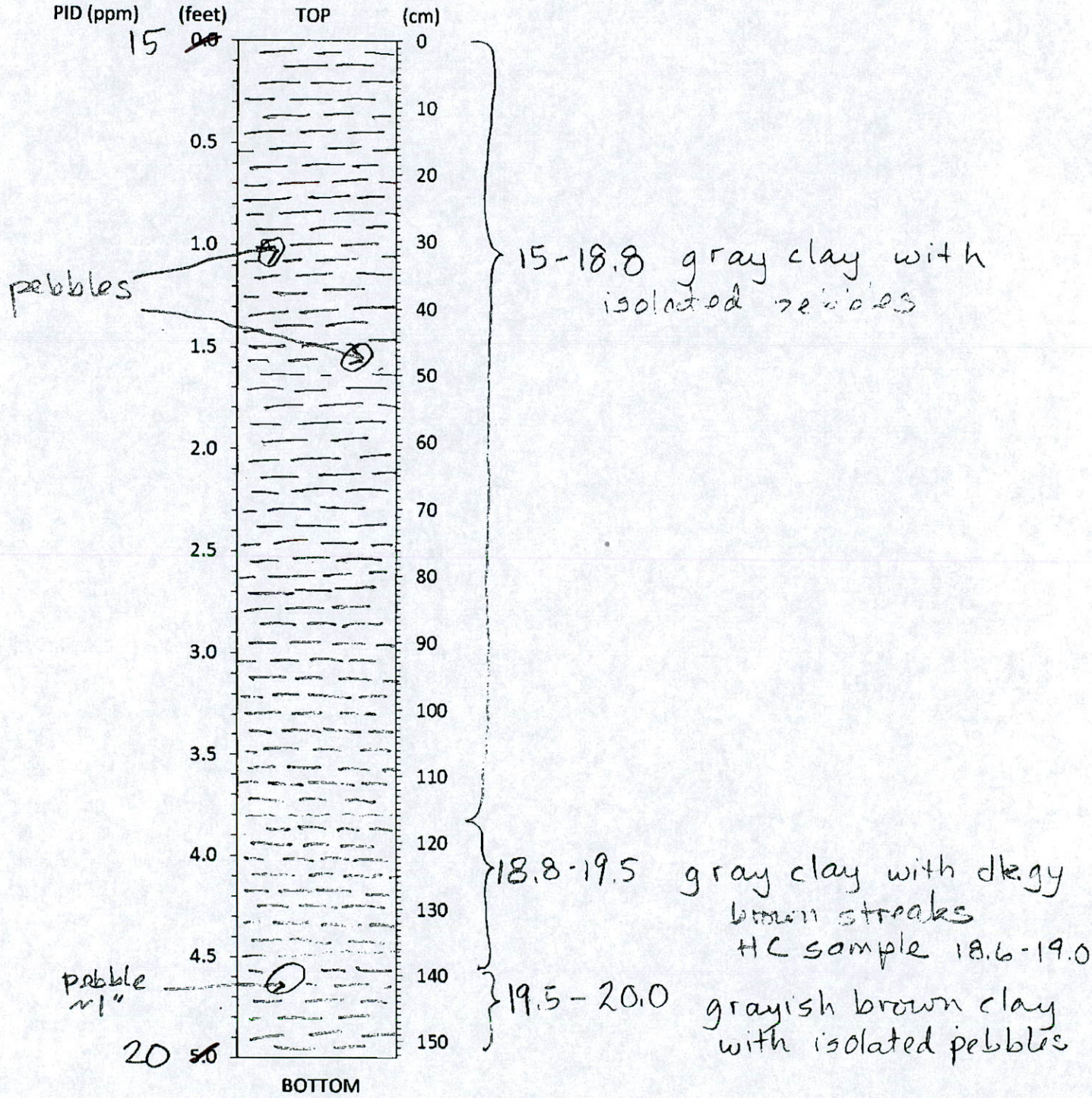
Core ID: MW_09_15-20

Described by: John Stamm and David Bender

Date and Time: 11/4/2014

Core depth range: 15-20

Core recovery range: 15-20

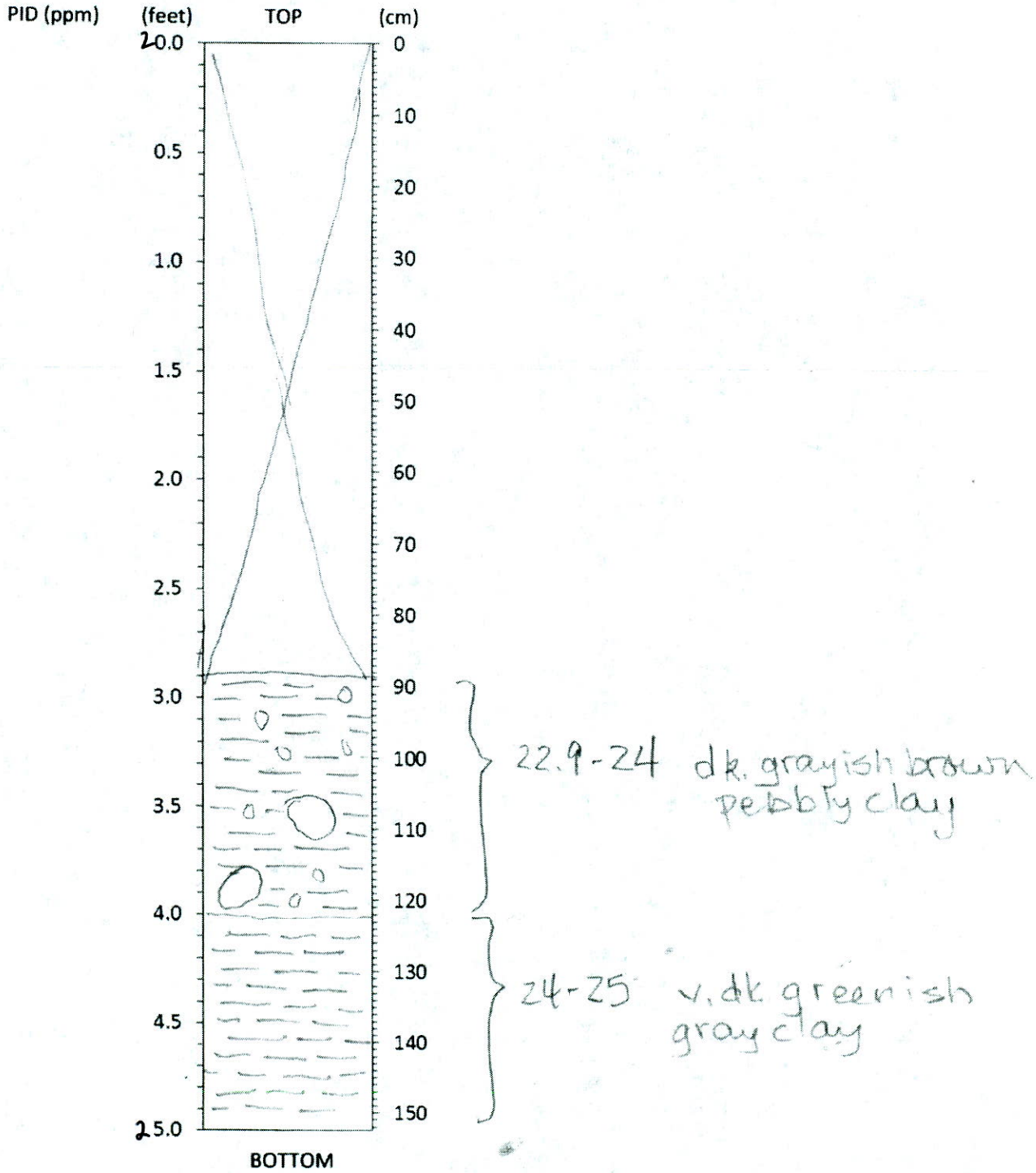


Photos:

USGS Soil/WG Monitoring EAFB
NT00FGM0000

Site: Ellsworth AFB
Core ID: MW_9_20-25
Described by: John Stamm and David Bender

Date and Time: 11/4/2014
Core depth range: 20-25
Core recovery range: 22.9-25



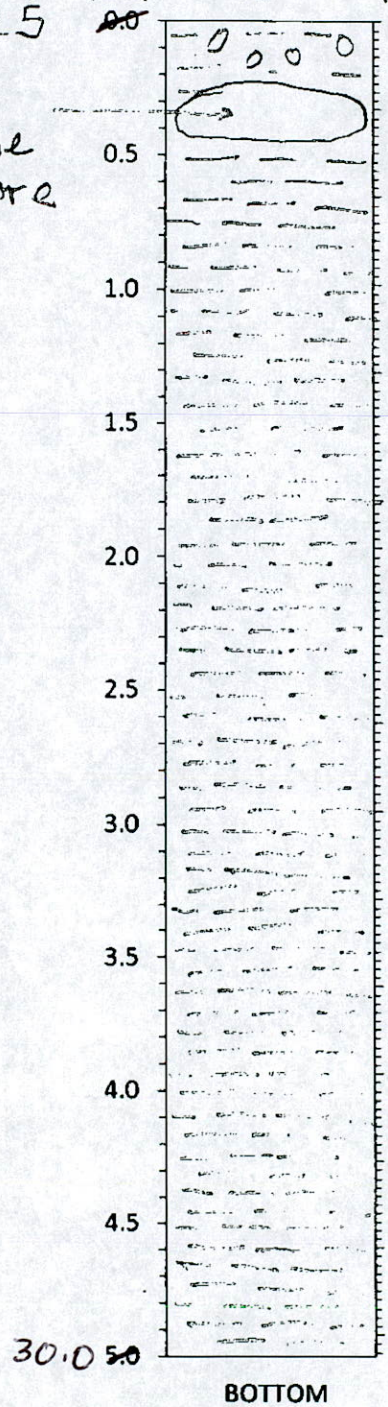
Photos:

USGS Soil/WG Monitoring EAFB
NT00FGM0000

Site: Ellsworth AFB
Core ID: MW_9_ 25-30
Described by: John Stamm and David Bender

Date and Time: 11/4/2014
Core depth range: 25-30
Core recovery range: 25-30

PID (ppm) 25



2.5" cobble fills core

25-25.4 dk gray pebbly clay

25.4-30 dk grayish brown clay
weathered/fractured shale (Pierre Shale)

Photos: