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Phone: 256.847.0780
Fax: 256.847.0905
matrixdesigngroup.com

November 27, 2018

Mr. Jason Wilson, Chief
c/o Mrs. Brandi Little
Governmental Hazardous Waste Branch Land Division
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, Alabama 36130-1463

Subject: Monitoring Well Abandonment
Iron Mountain Road Extension, Former Fort McClellan
Anniston, Alabama

Dear Mr. Wilson,

Matrix Environmental Services, LLC (MES), on behalf of the McClellan Development Authority (MDA) plans to abandon four existing monitoring wells located within the footprint of the Iron Mountain Road extension and is submitting this revised monitoring well abandonment plan with additional procedural details for Alabama Department of Environmental Management (ADEM) approval. The monitoring wells listed below are constructed of four-inch diameter polyvinyl chloride (PVC) and range in depth from 27.2 feet below ground surface (bgs) to 261 feet bgs. Two of the wells, OLF-G33 and OLF-G34 are located within the SR21 median.

- OLF-G15
- OLF-G33
- OLF-G34
- OLF-G38

MES proposes abandoning the monitoring wells in accordance with the guidelines set forth in the Alabama Environmental Investigation and Remediation Guidance, Revision 4.0 (AEIRG, 2017) Appendix B, Section B.5.2(c) and is more fully described in the attached monitoring well abandonment plan. MES will submit a summary report of the abandonment activities upon completion.

The MDA would like to request an expedited review of the subject document in order to complete the work in a timely fashion so as not to delay road construction. Should you have any questions, please contact me at (256) 847-0780.

Sincerely,
Matrix Environmental Services, LLC.

Richard Satkin, P.G.
Program Manager

cc: Mrs. Brandi Little, ADEM
Ms. Ashley Mastin, ADEM
Mr. Jason Odom, MDA
Mr. Gerald Hardy, MES
MES Project Files

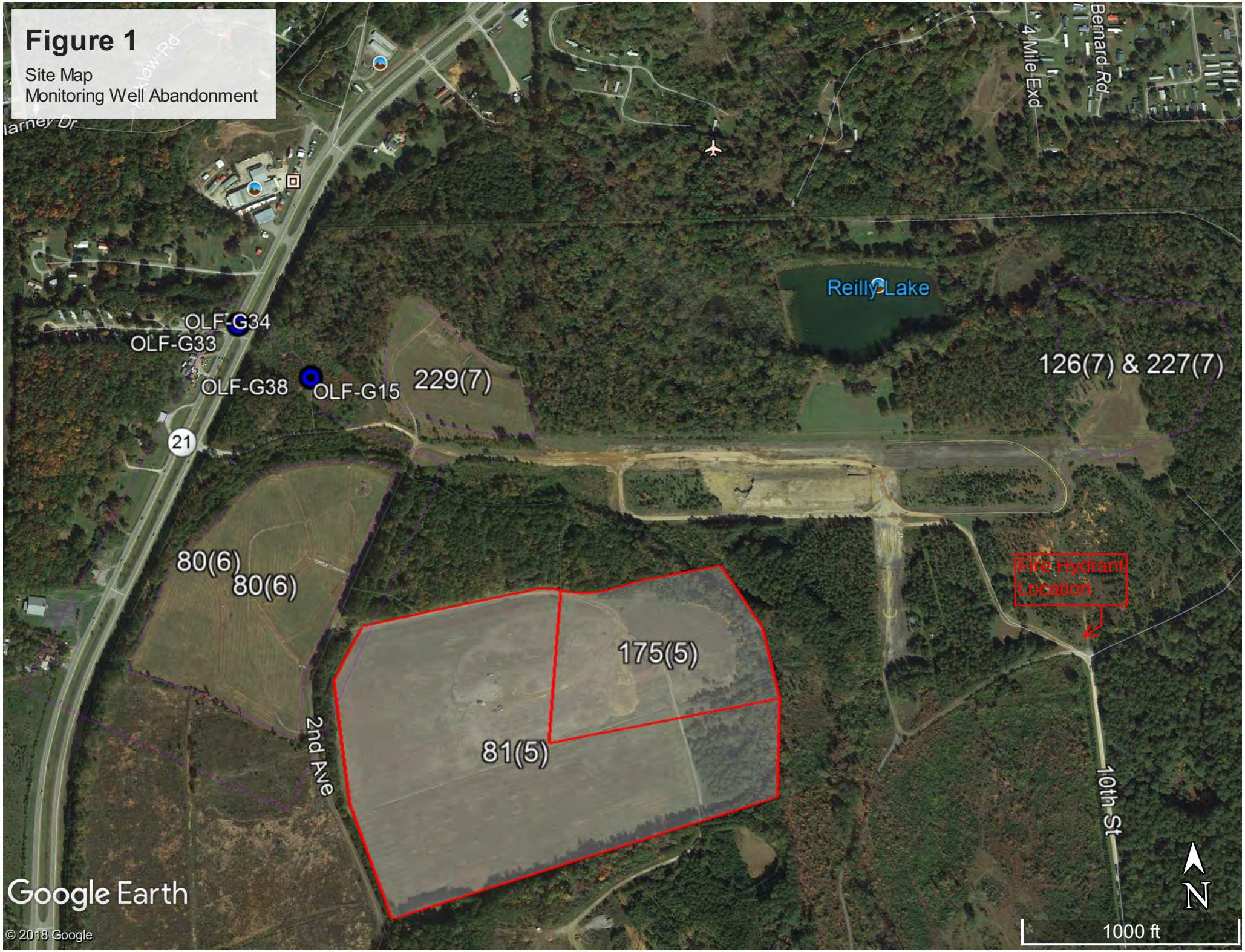
Figure 1
Site Map
Monitoring Well Abandonment
Bernard Rd
4 Mile Exd
Reilly Lake
OLF-G34
OLF-G33
OLF-G38
OLF-G15
229(7)
126(7) & 227(7)
21
80(6)
80(6)
Fire Hydrant Location
175(5)
81(5)
2nd Ave
10th St
N
1000 ft
Google Earth
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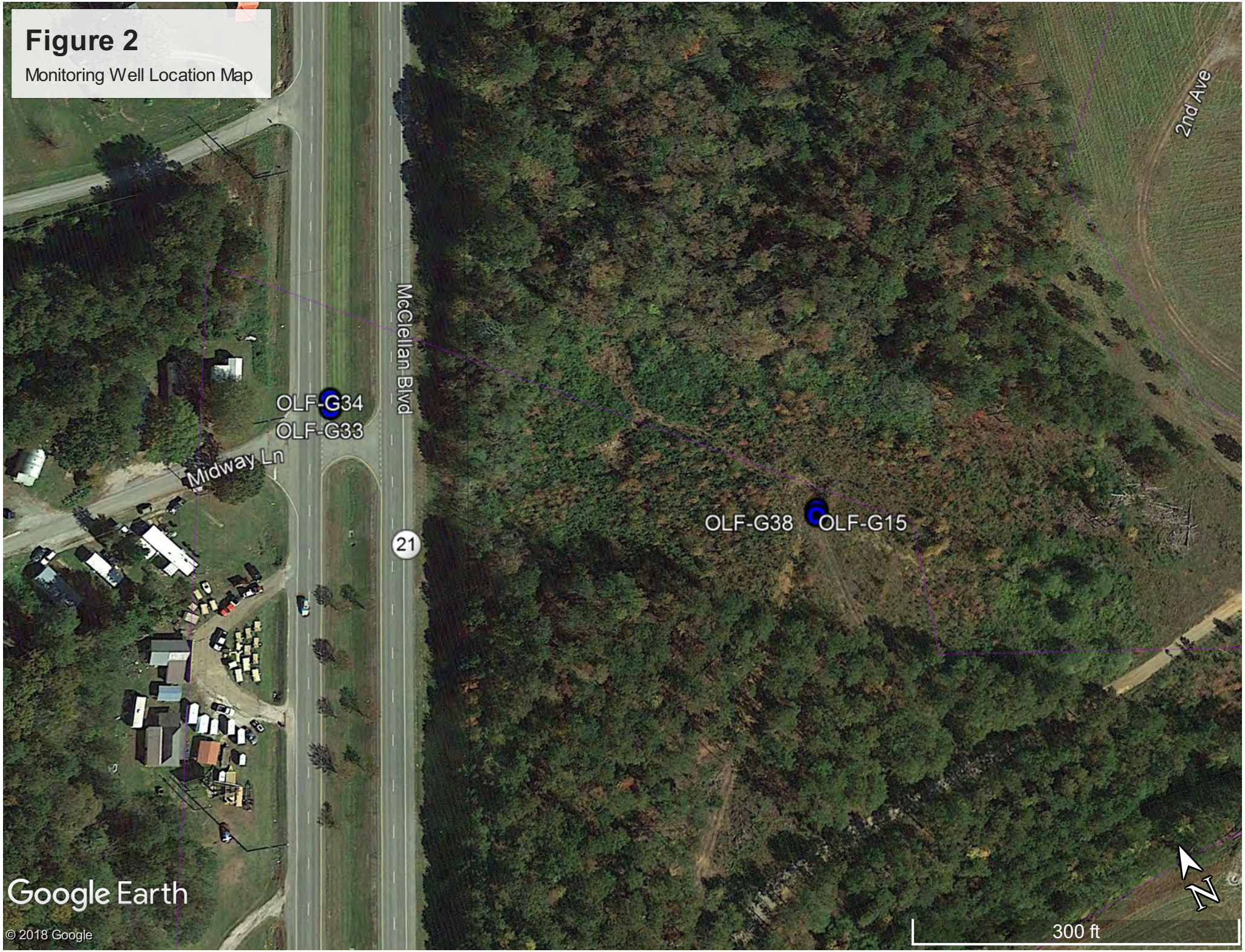


Figure 2
Monitoring Well Location Map
McClellan Blvd
2nd Ave
Midway Ln
OLF-G34
OLF-G33
OLF-G38
OLF-G15
21
Google Earth
© 2018 Google
N
300 ft

Well Abandonment Procedure

Well abandonment procedures follow the guidelines set forth in the Alabama Environmental Investigation and Remediation Guidance (AEIRG) Appendix B, Section B.5.2(c), Hazardous Waste Management Sites and is summarized below:

i. Contractor will completely remove the well casing and screen. This may be accomplished by augering with a hollow stem auger over the well casing down to the bottom of the borehole, thereby removing the grout and filter pack materials from the hole. The well casing will then be removed from the hole with the drill rig or other appropriate equipment.

ii. The clean borehole will then be backfilled with the appropriate grout material (e.g.: concrete, bentonite grout, or neat cement). The backfill material will be placed into the borehole from the bottom to the top by pressure grouting with the positive displacement method (tremie method).

iii. Because of its brittleness, PVC wells may be more difficult to remove than metal casing wells. If the PVC well casing breaks during removal, the borehole will be cleaned out by using a drag bit or roller cone bit with the wet or air rotary method to grind the casing into small cuttings and flushed out of the borehole by the selected drilling fluid. Alternatively, a solid-stem auger with a carbide auger head may be used to grind the PVC casing into small cuttings that will be brought to the surface on the rotating flights. After the casing materials have been removed from the borehole, the borehole should be cleaned out and pressure grouted with the approved grouting materials. In well OLF-G38, both the 8-inch protective surface steel casing and PVC casing will removed to a depth of 3 feet; the remaining 8-inch steel casing and PVC casing and screen will be left in place and pressure grouted.

iv. After the grout material has settled (minimum of 48 hours) Contractor shall return to the site and the top 2 feet of the borehole poured with concrete to ensure a secure surface seal.

v. Contractor shall also remove all surface completion materials (i.e., well stickup, protective steel casing, well pad, and protective posts). All materials generated during the abandonment process will be managed as nonhazardous waste and properly disposed.

Below is a summary of the well construction and well installation logs.

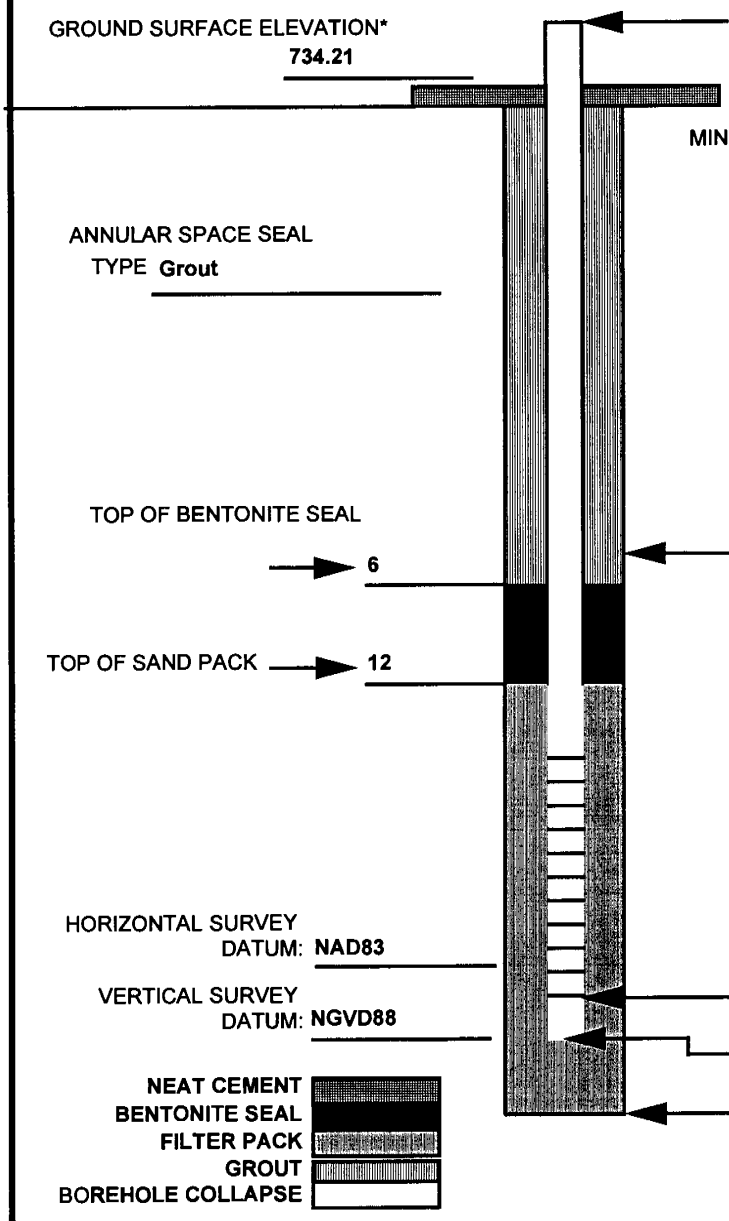
Well ID	Northing	Easting	Date Installed	Well Material	Top of Casing	Well Screen Top	Well Sump Bottom
OLF-G15	1181231.34	669321.72	04/20/1994	4” PVC	736.78	17.0	27.2
OLF-G33	1181493.21	668931.93	02/14/2002	4” PVC	736.98	166.0	182.0
OLF-G34	1181484.77	668928.66	02/10/2002	4” PVC	737.07	246.0	261.0
OLF-G38	1181192.20	669310.07	05/06/2002	4” PVC	739.92	226.0	246.0

Notes:
Northing and easting in NAD83.
Top of casing in feet mean sea level.
Well screen top and well sump bottom in feet below ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan, SAD TERC
LOCATION Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR Environmental Exploration Inc
DRILLER: K. Bray
FIELD REPRESENTATIVE: C. Houck (SAIC)

WELL NO: OLF-G15
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE 04/20/94
NORTHING: 1181231.34
EASTING: 669321.72
JOB NO: 774645



GROUND SURFACE ELEVATION* 734.21

TOP of WELL CASING or RISER PIPE EL* 736.78 STICKUP 2.57

TYPE of SURFACE SEAL Concrete

MINIMUM THICKNESS of SURFACE SEAL 4 inches

ANNULAR SPACE SEAL TYPE Grout

TOP OF BENTONITE SEAL 6

TOP OF SAND PACK 12

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 40

INSIDE DIAMETER of RISER (inches) 4

APPROXIMATE DIAMETER of BOREHOLE (inches) 8.75

TOP OF SCREENED INTERVAL EL* 717.21 DEPTH 17

TYPE of SCREEN MATERIAL PVC SCH 40

SLOT SIZE (inches) 0.010

INSIDE DIAMETER (inches) 4

TYPE of SAND PACK AROUND SCREEN Sand

HORIZONTAL SURVEY DATUM: NAD83

VERTICAL SURVEY DATUM: NGVD88

BOTTOM of SCREENED INTERVAL EL* 707.21 DEPTH 27

BOTTOM of SUMP and WELL EL* 707.01 DEPTH 27.2

BOTTOM of BOREHOLE EL* 706.21 DEPTH 28.0

NEAT CEMENT
BENTONITE SEAL
FILTER PACK
GROUT
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.

All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Bob Erickson
SHAW FIELD REPRESENTATIVE: Adam Day

WELL NO: OLF-G33
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 14-FEB-02
NORTHING: 1181493.21
EASTING: 668931.93
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 737.26

TOP of WELL CASING or RISER PIPE
EL* 736.98 STICKUP N/A

SURFACE SEAL
TYPE of SURFACE SEAL: Concrete
MINIMUM THICKNESS: 4 inches

ANNULAR SPACE SEAL TYPE
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 7.63

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
Bentonite	10
Sand No 0	155

FILTER PACK

TYPE of SAND PACK AROUND SCREEN	TOP OF SAND PACK
Sand No 1	160

CASING

TYPE of RISER MATERIAL (Flush Threaded)	INSIDE DIAMETER of RISER (inches)
PVC SCH 80	4

SCREEN

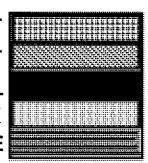
TYPE of SCREEN MATERIAL	SLOT SIZE (inches)	INSIDE DIAMETER (inches)
PVC SCH 80	0.010	4

TOP OF SCREENED INTERVAL
EL* 571.26 DEPTH 166

BOTTOM of SCREENED INTERVAL
EL* 555.26 DEPTH 182

BOTTOM of SUMP and WELL
EL* 555.26 DEPTH 182

BOTTOM of BOREHOLE
EL* 555.26 DEPTH 182



NEAT CEMENT GROUT
BENTONITE SEAL
FILTER PACK
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.
All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Boart Longyear
DRILLER: Bob Erickson
SHAW FIELD REPRESENTATIVE: Adam Day

WELL NO: OLF-G34
DRILLING METHOD: Rotasonic
INSTALLATION DATE: 10-FEB-02
NORTHING: 1181484.77
EASTING: 668928.66
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 737.42

TOP of WELL CASING or RISER PIPE
EL* 737.07 STICKUP N/A

SURFACE SEAL
TYPE of SURFACE SEAL: Concrete
MINIMUM THICKNESS: 4 inches

ANNULAR SPACE SEAL TYPE
Grout

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
Bentonite	10
Sand No 0	235

FILTER PACK

TYPE of SAND PACK AROUND SCREEN	TOP OF SAND PACK
Sand No 1	240

CASING

TYPE of RISER MATERIAL (Flush Threaded)	INSIDE DIAMETER of RISER (inches)
PVC SCH 80	4

SCREEN

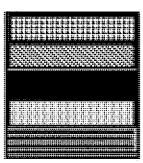
TYPE of SCREEN MATERIAL	SLOT SIZE (inches)	INSIDE DIAMETER (inches)
PVC SCH 80	0.010	4

TOP OF SCREENED INTERVAL
EL* 491.42 DEPTH 246

BOTTOM of SCREENED INTERVAL
EL* 476.42 DEPTH 261

BOTTOM of SUMP and WELL
EL* 476.42 DEPTH 261

BOTTOM of BOREHOLE
EL* 476.42 DEPTH 261



*All elevations (EL) are referenced to MSL.
All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Miller Drilling Company
DRILLER: Mike Martin
SHAW FIELD REPRESENTATIVE: Adam Day

WELL NO: OLF-G38
DRILLING METHOD: Air Rotary
INSTALLATION DATE: 06-MAY-02
NORTHING: 1181192.2
EASTING: 669310.07
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796886

GROUND SURFACE ELEVATION* 737.63

TOP of WELL CASING or RISER PIPE
EL* 739.92 STICKUP 2.29

SURFACE SEAL
TYPE of SURFACE SEAL: Concrete
MINIMUM THICKNESS: 4 inches

APPROXIMATE DIAMETER of BOREHOLE (inches) 10

ANNULAR SPACE SEAL TYPE
Grout
Grout

SURFACE CASING
BOTTOM of SURFACE CASING

MATERIAL	INSIDE DIAMETER	EL*	DEPTH
Steel	8	530.63	207

CASING

TYPE of RISER MATERIAL (Flush Threaded)	INSIDE DIAMETER of RISER (inches)
PVC SCH 80	4

APPROXIMATE DIAMETER of BOREHOLE (inches) 7.88

TOP OF SEAL

SEAL MATERIAL	SEAL START DEPTH
Bentonite	187
Sand No 0	216

SCREEN

TYPE of SCREEN MATERIAL	SLOT SIZE (inches)	INSIDE DIAMETER (inches)
PVC SCH 80	0.010	4

FILTER PACK

TYPE of SAND PACK AROUND SCREEN	TOP OF SAND PACK
Sand No 1	221

TOP OF SCREENED INTERVAL
EL* 511.63 DEPTH 226

BOTTOM of SCREENED INTERVAL
EL* 491.63 DEPTH 246

BOTTOM of SUMP and WELL
EL* 491.63 DEPTH 246

BOTTOM of BOREHOLE
EL* 491.63 DEPTH 246

NEAT CEMENT
GROUT
BENTONITE SEAL
FILTER PACK
BOREHOLE COLLAPSE

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All depths and heights are given in feet and are referenced to the ground surface.