# Boring: GS-06

| | | | |
|---|---|---|---|
| Client | Westinghouse Electric Company | Drilling Contractor: | IPS |
| Location: | Hematite, MO | Drilling Method: | Direct Push |
| Project: | Hematite Remedial Investigation | Surf. Elev: | 440.06 |
| Date Started: | 06/14/04 | Northing: | 866667.00 |
| Date Finished: | 06/14/04 | Easting: | 828850.00 |
| Geologist: | J. Grupp | Total Depth of Boring: | 26.0 feet |

| Elevation (ft) | Depth (ft) | Core Recovery (Pen/Rec) | RAD (Beta/Gamma) | PID (MIP) | PID (Conventional) (ppm) 0 25 | Sample | Lithology | Lithology Description | USCS |
|---|---|---|---|---|---|---|---|---|---|
| 440 | 0 | 4.0/4.0 | 46/7400 | | | GS-06-05-SL (4.0-6.0') | | TOPSOIL | |
| | | | | | | | | CLAY: brown, plastic, dry, w/gravel and trace fine sand | CH |
| 435 | 5 | 4.0/4.0 | | | | | | | |
| | | | | | | | | GRAVELLY CLAY: brown, slightly plastic | CL |
| | | 4.0/4.0 | 52/7600 | | | | | CLAY: brown, slightly platic, moist, silty | |
| 430 | 10 | | | | | | | | CL |
| | | 4.0/4.0 | | | | | | | |
| 425 | 15 | | | | | | | | |
| | | 4.0/4.0 | 44/7700 | | | GS-06-19-SL (18.0-20.0') | | SAND: brown, fine grained w/fine gravel | SP |
| | | | | | | | | CLAY: tan to light gray mottled, slightly plastic, moist w/silt and sand | CL |
| 420 | 20 | | | | | | | SANDSTONE: weathered | |
| | | 4.0/4.0 | | | | | | CLAY: brown w/light gray mottling, slightly plastic w/weathered siltstone intermixed | CL |
| 415 | 25 | 4.0/2.0 | 46/7420 | | | GS-06-25-SL (24.0-26.0') | | SANDSTONE: tan, soft, weathered | |
| | | | | | | | | Bottom of Hole 26.0' | |
| 410 | 30 | | | | | | | | |
| 405 | 35 | | | | | | | | |
| | 40 | | | | | | | | |


Westinghouse Electric Company
Hematite Facility
3300 State Road P
Festus, MO 63028

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St. Louis, MO 63114


| | |
|---|---|
| Client: | Westinghouse Electric Company |
| Project: | Hematite Remedial Investigation |
| Location: | Hematite, MO |
| Borehole: | GS-06 |
| Sheet: | 1 of 1 |

# Boring: GS-07

| | | | |
|---|---|---|---|
| Client | Westinghouse Electric Company | Drilling Contractor: | IPS |
| Location: | Hematite, MO | Drilling Method: | Direct Push |
| Project: | Hematite Remedial Investigation | Surf. Elev: | 441.87 |
| Date Started: | 06/14/04 | Northing: | 866696.00 |
| Date Finished: | 06/14/04 | Easting: | 828809.00 |
| Geologist: | J. Grupp | Total Depth of Boring: | 26.0 feet |

| Elevation (ft) | Depth (ft) | Core Recovery (Pen/Rec) | RAD (Beta/Gamma) | PID (MIP) | PID (Conventional) (ppm) 0 – 25 | Sample | Lithology | Lithology Description | USCS |
|---|---|---|---|---|---|---|---|---|---|
| 440 | 0 | 4.0/4.0 | 52/6700 | | | | | TOPSOIL | |
| | | | | | | | | CLAY: brown, slightly plastic, dry w/gravel and trace sand | CL |
| | 5 | 4.0/4.0 | | | | GS-07-05-SL (4.0-6.0') | | | |
| 435 | | | | | | | | GRAVELLY CLAY: brown | CL |
| | | | | | | | | CLAY: light brown, slightly plastic, moist, silty | |
| | 10 | 4.0/4.0 | 58/6400 | | | | | | |
| 430 | | | | | | | | | CL |
| | | 4.0/4.0 | 58/6400 | | | | | | |
| | 15 | | | | | GS-07-15-SL (14.0-16.0') | | | |
| 425 | | 4.0/4.0 | | | | | | | |
| | 20 | | 55/7500 | | | | | CLAY: brown, plastic, moist to wet w/gravel | |
| 420 | | 4.0/4.0 | | | | | | | CH |
| | 25 | 2.0/2.0 | 44/8000 | | | GS-07-25-SL (24.0-26.0') | | | |
| 415 | | | | | | | | Bottom of Hole 26.0' | |
| | 30 | | | | | | | | |
| 410 | | | | | | | | | |
| | 35 | | | | | | | | |
| 405 | | | | | | | | | |
| | 40 | | | | | | | | |


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| | |
|---|---|
| Client: | Westinghouse Electric Company |
| Project: | Hematite Remedial Investigation |
| Location: | Hematite, MO |
| Borehole: | GS-07 |
| Sheet: | 1 of 1 |

# Boring: GS-09

| | | | |
|---|---|---|---|
| Client | Westinghouse Electric Company | Drilling Contractor: | IPS |
| Location: | Hematite, MO | Drilling Method: | Direct Push |
| Project: | Hematite Remedial Investigation | Surf. Elev: | 435.76 |
| Date Started: | 06/14/04 | Northing: | 866643.00 |
| Date Finished: | 06/14/04 | Easting: | 828768.00 |
| Geologist: | J. Grupp | Total Depth of Boring: | 24.0 feet |

| Elevation (ft) | Depth (ft) | Core Recovery (Pen/Rec) | RAD (Beta/Gamma) | PID (MIP) | PID (Conventional) (ppm) 0 250 | Sample | Lithology | Lithology Description | USCS |
|---|---|---|---|---|---|---|---|---|---|
| 435 | 0 | 4.0/4.0 | 45/6000 | | | | | TOPSOIL | |
| | | | | | | | | CLAY: brown, slightly plastic, dry, silty | CL |
| | 5 | 4.0/4.0 | | | | GS-09-05-SL (4.0-6.0') | | GRAVELLY CLAY: w/fine sand | CL |
| 430 | | | | | | | | CLAY: light brown, plastic, moist w/silt | |
| | 10 | 4.0/4.0 | 60/5200 | | | | | | CL |
| 425 | | | | | | | | | |
| | | 4.0/4.0 | | | | | | | |
| 420 | 15 | | | | | GS-09-15-SL (14.0-16.0') | | | |
| | | 4.0/4.0 | 44/5500 | | | | | CLAY: brown, plastic, moist to wet | CH |
| 415 | 20 | | | | | | | CLAY: brown, plastic, moist to wet w/fine gravel | |
| | | 4.0/4.0 | | | | GS-09-23-SL (22.0-24.0') | | | CH |
| 410 | 25 | | | | | | | Bottom of Hole 24.0' | |
| | 30 | | | | | | | | |
| 405 | | | | | | | | | |
| | 35 | | | | | | | | |
| 400 | | | | | | | | | |
| | 40 | | | | | | | | |


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| | |
|---|---|
| Client: | Westinghouse Electric Company |
| Project: | Hematite Remedial Investigation |
| Location: | Hematite, MO |
| Borehole: | GS-09 |
| Sheet: | 1 of 1 |

# Boring: LF-06

| | | | |
|---|---|---|---|
| Client | Westinghouse Electric Company | Drilling Contractor: | IPS |
| Location: | Hematite, MO | Drilling Method: | Direct Push |
| Project: | Hematite Remedial Investigation | Surf. Elev: | 435.27 |
| Date Started: | 07/19/04 | Northing: | 864560.00 |
| Date Finished: | 07/19/04 | Easting: | 827096.00 |
| Geologist: | J. Grupp | Total Depth of Boring: | 33.0 feet |

| Elevation (ft) | Depth (ft) | Core Recovery (Pen/Rec) | RAD (Beta/Gamma) | PID (MIP) | PID (Conventional) (ppm) 0 – 25 | Sample | Lithology | Lithology Description | USCS |
|---|---|---|---|---|---|---|---|---|---|
| 435 | 0 | | | | Bkgrd=0.3 | | | | |
| | | 4.0/2.0 | 48/4200 | | | | | CONCRETE<br>FILL | |
| 430 | 5 | 4.0/4.0 | | | | LF-06-05-SL (4.0-6.0') | | CLAY: brown and gray mottling, slightly plastic, damp, silty | |
| | | 4.0/4.0 | | | | | | | CL |
| 425 | 10 | 4.0/4.0 | 46/4600 | | | | | | |
| | | 4.0/4.0 | | | | LF-06-13-SL (12.0-14.0') | | | |
| 420 | 15 | 4.0/4.0 | | | | | | CLAY: brown w/gray to black mottling, plastic, moist, silty | |
| | | 4.0/4.0 | 26/4800 | | | | | | CL |
| 415 | 20 | 4.0/4.0 | | | | | | | |
| | | 4.0/4.0 | | | | | | CLAY: brown, plastic, moist to wet, silty | |
| 410 | 25 | 4.0/4.0 | | | | LF-06-27-SL (26.0-28.0') | | | CL |
| | | 4.0/4.0 | 29/9600 | | | | | | |
| 405 | 30 | 4.0/4.0 | | | | | | | |
| | | 3.0/2.0 | | | | LF-06-32-SL (31.0-33.0') | | GRAVEL: brown, fine grained w/coarse sand | GP |
| 400 | 35 | | | | | | | Bottom of Hole 33.0' | |
| | 40 | | | | | | | | |

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|---|---|
| Client: | Westinghouse Electric Company |
| Project: | Hematite Remedial Investigation |
| Location: | Hematite, MO |
| Borehole: | LF-06 |
| Sheet: | 1 of 1 |

# Boring: LF-07

| | | | |
|---|---|---|---|
| Client | Westinghouse Electric Company | Drilling Contractor: | IPS |
| Location: | Hematite, MO | Drilling Method: | Direct Push |
| Project: | Hematite Remedial Investigation | Surf. Elev: | 435.14 |
| Date Started: | 07/19/04 | Northing: | 864522.00 |
| Date Finished: | 07/19/04 | Easting: | 827116.00 |
| Geologist: | J. Grupp | Total Depth of Boring: | 35.0 feet |

| Elevation (ft) | Depth (ft) | Core Recovery (Pen/Rec) | RAD (Beta/Gamma) | PID (MIP) | PID (Conventional) (ppm) 0 – 25 | Sample | Lithology | Lithology Description | USCS |
|---|---|---|---|---|---|---|---|---|---|
| | | | Bkgrd = 62/6000 | | Bkgrd= 0.2 | | | | |
| 435 | 0 | | | | | | | CONCRETE | |
| | | 4.0/2.0 | | | | LF-07-03-SL (2.0-4.0') | | FILL | |
| 430 | 5 | 4.0/4.0 | 60/6200 | | | | | | |
| | | | | | | | | CLAY: brown and gray mottling, slightly plastic, moist, silty | |
| 425 | 10 | 4.0/4.0 | 80/7300 | | | LF-07-09-SL (8.0-10.0') | | | CL |
| | | 4.0/4.0 | 59/6000 | | | | | | |
| 420 | 15 | 4.0/4.0 | | | | LF-07-15-SL (14.0-16.0') | | | CL |
| 415 | 20 | 4.0/4.0 | 68/5500 | | | | | CLAY: brown w/gray mottling, slightly plastic, moist to wet | |
| | | 4.0/4.0 | | | | | | | CL |
| 410 | 25 | 4.0/4.0 | | | | LF-07-25-SL (24.0-26.0') | | | |
| | | | | | | | | SAND: brown, fine grained, wet | SP |
| 405 | 30 | 4.0/4.0 | 82/5200 | | | | | CLAY: brown w/gray mottling, plastic w/silt | CL |
| | | | | | | | | CLAY: gray, plastic sandy | SC |
| | | 3.0/2.0 | | | | LF-07-34-SL (33.0-35.0') | | CLAY: gray, plastic, gravelly | SW |
| 400 | 35 | | | | | | | | GC |
| | | | | | | | | Bottom of Hole 35.0' | |
| | 40 | | | | | | | | |

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|---|---|
| Client: | Westinghouse Electric Company |
| Project: | Hematite Remedial Investigation |
| Location: | Hematite, MO |
| Borehole: | LF-07 |
| Sheet: | 1 of 1 |

| | | | |
|---|---|---|---|
| Client | Westinghouse Electric Company | Drilling Contractor: | IPS |
| Location: | Hematite, MO | Drilling Method: | Direct Push |
| Project: | Hematite Remedial Investigation | Surf. Elev: | 431.19 |
| Date Started: | 06/08/04 | Northing: | 864741.00 |
| Date Finished: | 06/08/04 | Easting: | 827985.00 |
| Geologist: | J. Grupp | Total Depth of Boring: | 31.0 feet |

# Boring: NB-37 (P2-6)

| Elevation (ft) | Depth (ft) | Core Recovery (Pen/Rec) | RAD (Beta/Gamma) | PID (MIP) | PID (Conventional) (ppm) 0 25 | Sample | Lithology | Lithology Description | USCS |
|---|---|---|---|---|---|---|---|---|---|
| 430 | 0 | | | | | | | | |
| | | 4.0/3.0 | 26/4900 | N/A | | | | FILL | |
| | | | | | | | | CLAY: brown, slightly plastic, dry w/silt | CL |
| | 5 | 4.0/4.0 | | | | NB-37-05-SL (4.0-6.0') | | CLAY: brown, slightly plastic, moist, silty | |
| 425 | | | | | | | | | |
| | | 4.0/4.0 | 34/5000 | | | | | | CL |
| | 10 | | | | | | | | |
| 420 | | 4.0/4.0 | | | | | | | |
| | | | 22/5000 | | | | | CLAY: brown w/black mottling, slightly plastic, moist, silty | CL |
| | 15 | | | | | NB-37-15-SL (14.0-16.0') | | | |
| 415 | | 4.0/4.0 | | | | | | CLAY: brown, plastic, wet w/silt | CH |
| | 20 | | | | | | | | |
| 410 | | 4.0/4.0 | 26/5000 | | | | | CLAY: brownish gray, plastic, wet, stiff | CH |
| | 25 | | | | | NB-37-25-SL (24.0-26.0') | | | |
| 405 | | 4.0/4.0 | 52/5000 | | | | | | |
| | | | | | | | | CLAY: gray, plastic, wet | CH |
| | 30 | 3.0/3.0 | | | | | | CLAY: gray, plastic, wet, sandy | CH |
| 400 | | | | | | | | | GP |
| | | | | | | | | GRAVEL: fine grained w/medium to coarse sand | |
| | 35 | | | | | | | Bottom of Hole 31.0' | |
| 395 | | | | | | | | | |
| | 40 | | | | | | | | |


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|---|---|
| Client: | Westinghouse Electric Company |
| Project: | Hematite Remedial Investigation |
| Location: | Hematite, MO |
| Borehole: | NB-37 |
| Sheet: | 1 of 1 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client | Westinghouse Electric Company | | | | | | | | Drilling Contractor: | IPS |
| Location: | Hematite, MO | | | | | | | | Drilling Method: | Direct Push |
| Project: | Hematite Remedial Investigation | | | | | | | | Surf. Elev: | 431.62 |
| Date Started: | 06/10/04 | | | | | | | | Northing: | 864316.00 |
| Date Finished: | 06/10/04 | | | | | | | | Easting: | 827369.00 |
| Geologist: | J. Grupp | | | | | | | | Total Depth of Boring: | 32.0 feet |

# Boring: NB-40 (P2-15)

| Elevation (ft) | Depth (ft) | Core Recovery (Pen/Rec) | RAD (Beta/Gamma) | PID (MIP) | PID (Conventional) (ppm) 0 25 | Sample | Lithology | Lithology Description | USCS |
|---|---|---|---|---|---|---|---|---|---|
| 430 | 0 | | | | | | | | |
| | | 4.0/3.0 | 26/5600 | | | | | FILL | |
| | 5 | 4.0/4.0 | | | | NB-40-05-SL (4.0-6.0') | | CLAY: brown, slightly plastic, damp, silty | CL |
| 425 | | | 46/5600 | | | | | | |
| | 10 | 4.0/4.0 | | | | | | | |
| 420 | | 4.0/4.0 | 60/6000 | | | | | CLAY: brown, slightly plastic, moist, silty | CL |
| | 15 | | | | | | | | |
| 415 | | 4.0/4.0 | | | | NB-40-17-SL (16.0-18.0') | | CLAY: brown, slightly plastic, moist to wet | CL |
| | 20 | | 45/6200 | | | | | CLAY: brown, slightly plastic, moist to wet, silty w/fine sand | CL |
| 410 | | 4.0/4.0 | | | | | | CLAY: brown, slightly plastic, wet, sandy | CL |
| | 25 | 4.0/3.0 | 20/4800 | | | NB-40-25-SL (24.0-26.0') | | SAND: brown, fine grained, wet | SP |
| 405 | | | | | | | | GRAVEL: brown, fine grained w/coarse sand | GP |
| | 30 | 4.0/3.0 | 36/5100 | | | NB-40-31-SL (30.0-32.0') | | GRAVEL: gray, fine to coarse grained w/medium to coarse sand<br>clay seam 31.0-31.3' | GW |
| 400 | | | | | | | | Bottom of Hole 32.0' | |
| | 35 | | | | | | | | |
| 395 | | | | | | | | | |
| | 40 | | | | | | | | |


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| | |
|---|---|
| Client: | Westinghouse Electric Company |
| Project: | Hematite Remedial Investigation |
| Location: | Hematite, MO |
| Borehole: | NB-40 |
| Sheet: | 1 of 1 |

| | | | |
|---|---|---|---|
| Client | Westinghouse Electric Company | Drilling Contractor: | IPS |
| Location: | Hematite, MO | Drilling Method: | Direct Push |
| Project: | Hematite Remedial Investigation | Surf. Elev: | 420.79 |
| Date Started: | 06/11/04 | Northing: | 863931.00 |
| Date Finished: | 06/11/04 | Easting: | 827546.00 |
| Geologist: | J. Grupp | Total Depth of Boring: | 22.0 feet |

# Boring: NB-41 (P2-17)

| Elevation (ft) | Depth (ft) | Core Recovery (Pen/Rec) | RAD (Beta/Gamma) | PID (MIP) | PID (Conventional) (ppm) 0–25 | Sample | Lithology | Lithology Description | USCS |
|---|---|---|---|---|---|---|---|---|---|
| 420 | 0 | | | | | | | | |
| | | 4.0/3.0 | 46/4600 | | | | | FILL | |
| | 5 | | | | | | | CLAY: brown, slightly plastic, damp, silty w/fine sand | |
| 415 | | 4.0/4.0 | | | | NB-41-05-SL (4.0-6.0') | | | CL |
| | 10 | 4.0/4.0 | 34/4400 | | | | | | |
| 410 | | | | | | | | SANDY CLAY: brown, slightly plastic, moist | CL |
| | | 4.0/2.0 | | | | NB-41-13-SL (12.0-14.0') | | GRAVEL: brown, fine grained, wet w/coarse to medium sand | GP |
| | 15 | | | | | | | | |
| 405 | | 4.0/1.0 | 24/2600 | | | | | | |
| | 20 | | | | | NB-41-19-SL (18.0-20.0') | | GRAVEL: brown, fine to coarse grained, wet w/medium to coarse sand | GW |
| 400 | | 2.0/1.0 | | | | | | | |
| | | | | | | | | Bottom of Hole 22.0' | |
| | 25 | | | | | | | | |
| 395 | | | | | | | | | |
| | 30 | | | | | | | | |
| 390 | | | | | | | | | |
| | 35 | | | | | | | | |
| 385 | | | | | | | | | |
| | 40 | | | | | | | | |


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| | |
|---|---|
| Client: | Westinghouse Electric Company |
| Project: | Hematite Remedial Investigation |
| Location: | Hematite, MO |
| Borehole: | NB-41 |
| Sheet: | 1 of 1 |

| | | | |
|---|---|---|---|
| Client | Westinghouse Electric Company | Drilling Contractor: | IPS |
| Location: | Hematite, MO | Drilling Method: | Direct Push |
| Project: | Hematite Remedial Investigation | Surf. Elev: | 419.34 |
| Date Started: | 06/11/04 | Northing: | 863988.00 |
| Date Finished: | 06/11/04 | Easting: | 827775.00 |
| Geologist: | J. Grupp | Total Depth of Boring: | 24.0 feet |

# Boring: NB-42 (P2-18)

| Elevation (ft) | Depth (ft) | Core Recovery (Pen/Rec) | RAD (Beta/Gamma) | PID (MIP) | PID (Conventional) (ppm) 0 25 | Sample | Lithology | Lithology Description | USCS |
|---|---|---|---|---|---|---|---|---|---|
| 420 | 0 | | | | | | | | |
| | | 4.0/3.5 | 46/5600 | | | | | FILL | |
| 415 | 5 | 4.0/3.0 | | | | NB-42-05-SL (4.0-6.0') | | CLAY: brown, slightly plastic, damp to moist, silty, trace fine sand | CL |
| 410 | 10 | 4.0/3.0 | 38/6600 | | | | | | |
| | | 4.0/3.0 | | | | NB-42-13-SL (12.0-14.0') | | GRAVEL: brown, fine to coarse grained, wet w/medium to coarse sand | GW |
| 405 | 15 | | | | | | | GRAVEL: gray, plastic w/organics | CH |
| | | 4.0/3.0 | 48/6400 | | | | | GRAVEL: gray to brown, fine to coarse grained w/ coarse sand | GW |
| 400 | 20 | 4.0/2.0 | | | | NB-42-23-SL (22.0-24.0') | | GRAVEL: brown, fine to coarse grained, wet | GW |
| 395 | 25 | | | | | | | Bottom of Hole 24.0' | |
| 390 | 30 | | | | | | | | |
| 385 | 35 | | | | | | | | |
| 380 | 40 | | | | | | | | |

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|---|---|
| Client: | Westinghouse Electric Company |
| Project: | Hematite Remedial Investigation |
| Location: | Hematite, MO |
| Borehole: | NB-42 |
| Sheet: | 1 of 1 |