



Westinghouse Electric Company Hematite Facility

Well Inspection Report



Well Number: WS-16	Date Installed: Unknown	Project Number: SAHEM00136
Coordinates (MO State Plane NAD83):		Elevation (TOC):
 Northing/Easting		
N 865005.102	E 827834.839	432.16
Total Depth (feet BTOC):	Riser Height (feet above pad):	Water Level (feet BTOC):
22.18	1.86	10.94
Well Construction	Well Casing	Screen Length
Material:	Diameter (inches):	(feet):
PVC	2	10.0
Hydrostratigraphic	Inspected By:	Date Inspected:
Zone:	R. Tubbs	8/18/2004
Unconsolidated		

Visual Observations:

- Well condition noted as good
- Protective outer casing constructed of 4 inch square aluminum
- Well pad construction – 12 inch round concrete
- No guard posts in place
- Water-tight cap in place with dedicated bailer
- Well needs relabeling
- During redevelopment, well produced brown water with small amounts of gravel
- Rehabilitation with mud dispersant recommended to remove additional fines accumulated around filter pack



Video Observations:

- Screen slots observed at 12.5 feet below top of casing
- Active screen action observed
- Total depth with camera 21.9 feet
- Joint around 7 feet appears to be glued with excess glue continuing down well



Well No. WS-16 Installation: Above Ground Completion
 Project No. Client/Project: Westinghouse Electric Company Site: Hematite Facility
 Contractor: Unknown Drill Contractor: Unknown
 Start Date: Unknown End Date: Unknown Elevation (Top of Pad): ft amsl 430.30
 Coordinates: N 865005.102
 E 827834.839

1.86'

 Depth

Protective Casing

Material Type: Aluminum
 Diameter: 4 inch square
 Weep Hole? (Y / N): Yes
 Guard Posts (Y / N): No

Surface Pad

Composition and Size: 12 in. round Concrete

Surface Casing

Type: Unknown

Riser Pipe

Type: SCH 40 PVC
 Diameter: 2 inch
 Total Depth (Ground surface to TOS): 10.3'

Annular Seal

Type: Unknown
 Interval BGS: Unknown

Bentonite Seal

Type: Unknown
 Interval BGS: Unknown

Primary Filter Pack

Type: Unknown
 Amt. Used: Unknown

Screen

Type: SCH 40 PVC
 Diameter: 2 in.
 Length: 10 ft
 Slot Size and Type: 0.010 slotted
 Interval BGS: 10.3' – 20.3'

10.3'

20.3'

Unknown

NOT TO SCALE

Note: All depths inferred from video logging observations

WESTINGHOUSE ELECTRIC COMPANY
 HEMATITE FACILITY
 HEMATITE, MISSOURI





Westinghouse Electric Company Hematite Facility

Well Inspection Report



Well Number: WS-17B	Date Installed: 6/26/1996	Project Number: SAHEM00136
Coordinates (MO State Plane NAD83): Northing/Easting		Elevation (TOC):
N 864810.010	E 827553.822	435.32
Total Depth (feet BTOC):	Riser Height (feet above pad):	Water Level (feet BTOC):
18.15	1.79	7.38
Well Construction	Well Casing	Screen Length
Material: PVC	Diameter (inches): 2	(feet): 13.0
Hydrostratigraphic Zone:	Inspected By:	Date Inspected:
Unconsolidated	R. Tubbs	8/19/2004

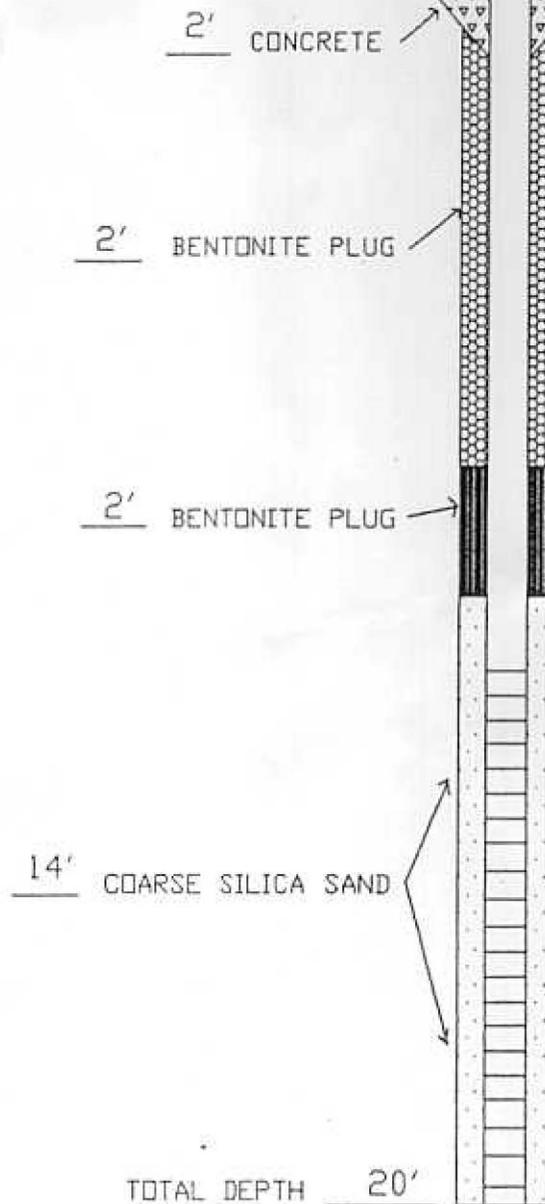
Visual Observations:

- Well condition noted as good
- Protective outer casing constructed of 4 inch square aluminum
- Well pad construction – 12 inch round concrete
- Three guard posts in place
- Water-tight cap in place with dedicated bailer
- Rehabilitation and/or maintenance not required



Cast Aluminum Protective Casing
 Ground Elevation : 433.0'
 Coordinates : N961.2, E1896.4

Top of Well Elevation : 435.36'
 Stick up : 2.36'
 Date Installed : June 26, 1996



RISER :
 Diameter : 2'
 Material : PVC
 Schedule : 40
 Type of Joints : Threaded

SCREEN :
 Diameter : 2'
 Material : PVC
 Slot Size : 0.010"
 Length : 13'

CAP :
 Type : PVC

<p><u>DRILLER</u> ROBERT'S ENVIRONMENTAL DRILLING INCORPORATED</p> <p><u>DRILLING METHOD</u> 4.25 INCH HOLLOW STEEL AUGERS</p>	<p>MONITORING WELL CONSTRUCTION DIAGRAM</p> <p>ABB COMBUSTION ENGINEERING</p> <p>WS17B</p>	
<p>DATE: JUNE 20, 1996</p>	<p>GATEWAY ENVIRONMENTAL ASSOCIATES</p>	<p>BY: CFN</p>

Westinghouse Electric Company Hematite Facility



Well Inspection Report



Well Number: WS-22	Date Installed: 9/24/1998	Project Number: SAHEM00136
Coordinates (MO State Plane NAD83):		Elevation (TOC):
 Northing/Easting		
N 865303.641	E 827216.171	440.93
Total Depth (feet BTOC): 19.17	Riser Height (feet above pad): 2.56	Water Level (feet BTOC): 12.68
Well Construction Material: PVC	Well Casing Diameter (inches): 2	Screen Length (feet): 5.0
Hydrostratigraphic Zone: NSSSC/Unconsolidated	Inspected By: R. Tubbs	Date Inspected: 8/11/2004

Visual Observations:

- Well condition noted as good
- Protective outer casing constructed of 4 inch square steel - rusted
- Well pad construction – 2 ft X 2 ft concrete
- Six guard posts in place
- Water-tight lockable cap in place with dedicated bailer
- Well needs numbering/labeling
- During redevelopment, well initially produced gray water having the appearance of bentonite grout, but cleared up by completion of redevelopment
- Rehabilitation with mud dispersant recommended to remove additional fines accumulated around filter pack





LOG OF BORING WS22

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Combustion Engineering
Missouri State Route P
Hematite, Missouri

Date Started : 09/24/98
Date Completed : 09/24/98
Hole Diameter : 8 5/8"
Drilling Method : Hollow Stem Auger
Driller : RED I
Sampling Method : 5' Split-Spoon Sampler

Logged By: Kerry L. Nikolaisen, RG

Depth in Feet	USCS	GRAPHIC	Water Levels		DESCRIPTION	Samples	% Recovery	PID (ppm)	Net CPM (0.5 min)	Well Construction Information
			During Drilling	After Completion (prior to development)						
0					SILT/CLAYEY-SILT/SILTY-CLAY, moist pale yellow brown to moderate yellow brown, friable but firm. Trace roots.					Well: WS22 Elev.: 441.12 Cover Well Cap Cement Bentonite chips Casing Sand Screen Sand Bentonite chips
5					becomes slightly plastic w/ depth, softer. some black mottles (stringers).					
10	ML/CL				grading firm. Limonite staining.					WELL CONSTRUCTION Date Compl: 9/24/98 Hole Diam. : 8 5/8 in. Drill. Method HSA WELL CASING Material : PVC Diameter : 2 in. Joints : threaded WELL SCREEN Material : PVC Diameter : 2 in. Joints : threaded Opening : .010 slot NOTES (PP) Pocket Penetrometer (CPM) Counts per minute Soil lithology was taken from WS-23.
15	CH				CLAY/FAT CLAY, saturated, firm to very firm, gray/ olive gray some limonite staining and black mottles. (PP 2-2.25).					
18					Boring terminated @ 18 feet bgs.					

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Westinghouse Electric Company Hematite Facility



Well Inspection Report



Well Number: WS-23	Date Installed: 9/24/1998	Project Number: SAHEM00136
Coordinates (MO State Plane NAD83): Northing/Easting		Elevation (TOC):
N 865300.148	827219.760	440.97
Total Depth (feet BTOC):	Riser Height (feet above pad):	Water Level (feet BTOC):
41.23	2.51	20.04
Well Construction	Well Casing	Screen Length
Material: PVC	Diameter (inches): 2	(feet): 10.0
Hydrostratigraphic Zone:	Inspected By:	Date Inspected:
DSCC/Unconsolidated	R. Tubbs	8/11/2004

Visual Observations:

- Well condition noted as good
- Protective outer casing constructed of 4 inch square steel - rusted
- Well pad construction – 2 ft X 2 ft concrete
- Six guard posts in place
- Water-tight cap in place with dedicated bailer
- Well needs numbering/labeling
- During development, well continually produced gray water having the appearance of bentonite grout
- Rehabilitation with mud dispersant recommended to remove additional fines accumulated around filter pack





LOG OF BORING WS23

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Combustion Engineering
Missouri State Route P
Hematite, Missouri

Date Started : 09/24/98
Date Completed : 09/24/98
Hole Diameter : 8 5/8"
Drilling Method : Hollow Stem Auger
Driller : REDI
Sampling Method : 5' Split-Spoon Sampler

Logged By: Kerry L. Nikolaisen, RG

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Samples	% Recovery	PID (ppm)	Net CPM (0.5 min)	Well Construction Information
								Well: WS23 Elev.: 441.16 Cover Well Cap Cement Grout Casing Bentonite chips Sand Screen
0			SILT, CLAYEY-SILT/SILTY-CLAY, moist pale yellow brown to moderate yellow brown, friable but firm. Trace roots.	1	70	0.0	24	WELL CONSTRUCTION Date Compl: 9/24/98 Hole Diam.: 8 5/8 in. Drill. Method: HSA WELL CASING Material: PVC Diameter: 2 in. Joints: threaded WELL SCREEN Material: PVC Diameter: 2 in. Joints: threaded Opening: .010 slot NOTES (PP) Pocket Penetrometer (CPM) Counts per minute
5	ML/CL		becomes slightly plastic w/ depth, softer. some black mottles (stringers).	2	96	0.0	36	
10			grading firm, limonite staining.	3	100	0.2	10	
15			CLAY/FAT CLAY, saturated, firm to very firm, gray/ olive gray. Some limonite staining and black mottles. (PP 2-2.25).	4	100	0.2	36	
20	CH			5	50	0.0	26	
25			SILTY CLAY/CLAYEY SILT, saturated, soft olive/ gray, black mottles, slightly plastic.	6	50	0.0	22	
30	ML/CL		olive gray/blue alternating layers of soft, slightly firm, nonplastic to slightly plastic soils.	7			18	
35				8	50	0.0	60	
38	GP		SANDY GRAVEL, poorly sorted.	9	100	0.0	2	
40			AUGER REFUSAL @ 38' feet bgs	10	0			

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