March 23, 2023
File No. 25222265.00

Mr. David Buser
Wisconsin Department of Natural Resources
1027 W. St. Paul Ave.
Milwaukee, WI 53233

Subject: Monitoring Well Abandonment Documentation – S302 Nest
WMWI Orchard Ridge RDF East Expansion
License #4491
Menomonee Falls, Wisconsin

Dear Mr. Buser:

On behalf of Waste Management of Wisconsin, Inc. (WMWI), SCS Engineers (SCS) is submitting the enclosed documentation for the abandonment of three monitoring wells located at the WMWI Orchard Ridge Recycling and Disposal Facility (RDF).

The wells were abandoned as proposed in the Plan of Operation for the Orchard Ridge RDF Eastern Expansion, Southern Unit, which was approved by the Wisconsin Department of Natural Resources (WDNR) on December 15, 2022.

The S302 nest, consisting of monitoring wells S302, S302A, and S302B, was abandoned because it was located within the footprint of the first phase of the Orchard Ridge RDF East Expansion, Southern Unit.

In accordance with Wisconsin Administrative Code NR 507.04(2), SCS provided a professional geologist or qualified technician directly supervised by a professional geologist to observe the abandonment of the wells. The monitoring well abandonment forms are included in **Attachment A**, along with the original well construction forms and soil boring logs. Details of the abandonment are presented below.

Well protective casings and covers were removed from the wells prior to abandonment. Dedicated well tubing and associated well wizard pumps were also removed prior to abandonment.

Each monitoring well was overdrilled utilizing a roto-sonic track rig equipped with a water rotary drill bit. The bit had a welded steel extension rod designed to keep the drill bit centered within the 2-inch PVC riser pipe and screen, preventing deviation from the original borehole. PVC fragments were observed in the drill cuttings for each well overdrill, indicating that the overdrill was aligned with the well. Once the target depth of each overdrill was reached, the drill crew pumped bentonite-cement grout to the bottom of the hole using the water rotary drill stem. The drill stem was then retracted in sections, with grout pumped as each section was withdrawn to displace the groundwater and seal the well bore from the bottom up. Grout reached the surface and was circulated within the borehole at each former well location.

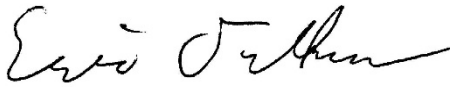
During final review of the well abandonment documentation, SCS determined that the target overdrill depths provided to the driller and field geologist did not account for the fact that the well casings for the S302 wells had been extended approximately 8 feet to accommodate perimeter berm construction after the initial installation. Due to this oversight in the abandonment planning, the PVC casing and screen were not completely removed by overdrilling; however, we believe the abandonment meets the intent of the NR 141 requirements. For water table well S302, the overdrill extended to approximately 1.5 feet above the bottom of the well screen. For piezometers S302A and S302B, the overdrill extended to approximately the top of the filter pack. Bentonite-cement grout pumped through the drill stem at the overdrill depth likely filled the well screen below and a portion of the filter pack. The piezometers were screened in permeable sand units; therefore, vertical migration within the screened interval is not a concern. The well casings were removed and the borehole was sealed above the filter packs, preventing vertical flow across the clay aquitard layers.

On March 20, 2023, SCS (Sherren Clark) contacted you to discuss the abandonment procedure and overdrill depths. Based on the information discussed, you indicated that you did not have concerns regarding the well abandonments.

If you have any questions or concerns regarding the enclosed documentation, please contact Eric Oelkers at 608-444-3934 or eoelkers@scsengineers.com.

Sincerely,

Aaron C. Lofberg
Staff Professional
SCS Engineers



Eric Oelkers, PG
Senior Project Manager / Hydrogeologist
SCS Engineers

ACL/jsn/EO/SCC

cc: BJ Leroy, WDNR
Dan Roche, WMWI
Brett Coogan, WMWI
Alicia Zewicki, WDNR
Ann Bekta, WDNR
Greg Konsionowski, WMWI

Encl. Attachment A – Monitoring Well Nest S302 Abandonment Forms, Well Construction Forms, and Soil Boring Logs

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Attachment A

Monitoring Well Nest S302 Abandonment Forms, Well Construction Forms, and Soil Boring Logs

State of Wis., Dept. of Natural Resources SCS No. 25222265
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☒ Waste Management ☐ Other:

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Waukesha		

Latitude / Longitude (see instructions): ____ N ____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ SW	¼ NE	Section	Township	Range
or Gov't Lot #		1	8 N	20 ☒ E ☐ W

Well Street Address: W124 N9355, Boundary Rd

Well City, Village or Town	Well ZIP Code
Menomonee Falls	53051

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Landfill Expansion	

2. Facility / Owner Information

Facility Name: Orchard Ridge RDF Eastern Expansion
Facility ID (FID or PWS): 268262940
License/Permit/Monitoring #: License #4491
Original Well Owner: Waste Management of Wisconsin, Inc.
Present Well Owner: Waste Management of Wisconsin, Inc.
Mailing Address of Present Owner: W124 N9355 Boundary Road

City of Present Owner	State	ZIP Code
Menomonee Falls	WI	53051

3. Filled & Sealed Well / Drillhole / Borehole Information

☒ Monitoring Well ☐ Water Well ☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 12/15/2006
If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug ☐ Other (specify):

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
15.2	2

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
8.5	5.7

Was well annular space grouted? ☒ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
3.5	6.5

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☒ No	☐ N/A
Was casing cut off below surface?	☐ Yes	☒ No	☐ N/A
Did sealing material rise to surface?	☐ Yes	☐ No	☒ N/A
Did material settle after 24 hours?	☐ Yes	☐ No	☒ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☒ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain):

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☒ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Bentonite-Cement Grout	Surface	22	25 gallons	

6. Comments

S302, overdrilled and grouted well, DNR Well ID Number: 122

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Horizon Construction & Exploration		11/15/2022

Street or Route	Telephone Number
764 Tower Drive	(262) 692-3348

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Fredonia	WI	53021	Aaron Tolley	11/22/2022

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources SCS No. 25222265
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☒ Waste Management ☐ Other:

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Waukesha	VT567	

Latitude / Longitude (see instructions): ____ N ____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range
SW	NE	1	8 N	20 ☒ E ☐ W

or Gov't Lot #

Well Street Address: W124 N9355, Boundary Rd

Well City, Village or Town	Well ZIP Code
Menomonee Falls	53051

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Landfill Expansion	VT567

2. Facility / Owner Information

Facility Name: Orchard Ridge RDF Eastern Expansion
Facility ID (FID or PWS): 268262940
License/Permit/Monitoring #: License #4491
Original Well Owner: Waste Management of Wisconsin, Inc.
Present Well Owner: Waste Management of Wisconsin, Inc.
Mailing Address of Present Owner: W124 N9355 Boundary Road

City of Present Owner	State	ZIP Code
Menomonee Falls	WI	53051

3. Filled & Sealed Well / Drillhole / Borehole Information

☒ Monitoring Well ☐ Water Well ☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 12/15/2006

If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (specify):

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
48.6	2

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
8.5	44

Was well annular space grouted? ☒ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
40	8.6

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☒ No	☐ N/A
Was casing cut off below surface?	☐ Yes	☒ No	☐ N/A
Did sealing material rise to surface?	☐ Yes	☐ No	☒ N/A
Did material settle after 24 hours?	☐ Yes	☐ No	☒ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☒ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain):

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☒ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Bentonite-Cement Grout	Surface	50	55 gallons	

6. Comments

S302A, overdrilled and grouted well, DNR Well ID Number: 123

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Horizon Construction & Exploration		11/15/2022

Street or Route	Telephone Number
764 Tower Drive	(262) 692-3348

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Fredonia	WI	53021	Aaron Tolley	11/22/2022

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources SCS No. 25222265
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☒ Waste Management ☐ Other:

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Waukesha	VT568	

Latitude / Longitude (see instructions): ____ N ____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range
SW	NE	1	8 N	20 ☒ E ☐ W

or Gov't Lot #

Well Street Address: W124 N9355, Boundary Rd

Well City, Village or Town	Well ZIP Code
Menomonee Falls	53051

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Landfill Expansion	VT568

2. Facility / Owner Information

Facility Name: Orchard Ridge RDF Eastern Expansion
Facility ID (FID or PWS): 268262940
License/Permit/Monitoring #: License #4491
Original Well Owner: Waste Management of Wisconsin, Inc.
Present Well Owner: Waste Management of Wisconsin, Inc.
Mailing Address of Present Owner: W124 N9355 Boundary Road

City of Present Owner	State	ZIP Code
Menomonee Falls	WI	53051

3. Filled & Sealed Well / Drillhole / Borehole Information

☒ Monitoring Well ☐ Water Well ☐ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 12/14/2006

If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (specify):

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
76.1	2

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
8.5	71.4

Was well annular space grouted? ☒ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)
67.6	17.5

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☒ Yes	☐ No	☐ N/A
Was casing cut off below surface?	☐ Yes	☒ No	☐ N/A
Did sealing material rise to surface?	☐ Yes	☐ No	☒ N/A
Did material settle after 24 hours?	☐ Yes	☐ No	☒ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☒ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain):

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☒ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Bentonite-Cement Grout	Surface	77	70 gallons	

6. Comments

S302B, overdrilled and grouted well, DNR Well ID Number: 124

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Horizon Construction & Exploration		11/15/2022

Street or Route	Telephone Number
764 Tower Drive	(262) 692-3348

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Fredonia	WI	53021	Aaron Tolley	11/22/2022

DNR Use Only

Date Received	Noted By

Comments:

Note: Well casing extended to 765.02 due to berm construction

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: WM Orchard Ridge RDF BT2 #3185A	Local Grid Location of Well: ft. ☐N ☐S, ft. ☐E ☐W	Well Name: S302
Facility License, Permit or Monitoring No.: 4491	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.: VT 566 / DNR Well ID No.: 122
Facility ID: 268262940	St. Plane 437656 ft. N, 2514748 ft. E. S/C/N	Date Well Installed: 12 / 15 / 2006 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: SW 1/4 of NE 1/4 of Sec. 1, T. 8 N, R. 20 ☒E ☐W	Well Installed By: Name (first, last) and Firm: Kevin McCumber / Badger State Drilling
Distance from Waste/Source ft. / Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number

A. Protective pipe, top elevation 757.41 ft. MSL
B. Well casing, top elevation 757.06 ft. MSL
C. Land surface elevation 754.8 ft. MSL
D. Surface seal, bottom 751.3 ft. MSL or 2.4 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☒ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

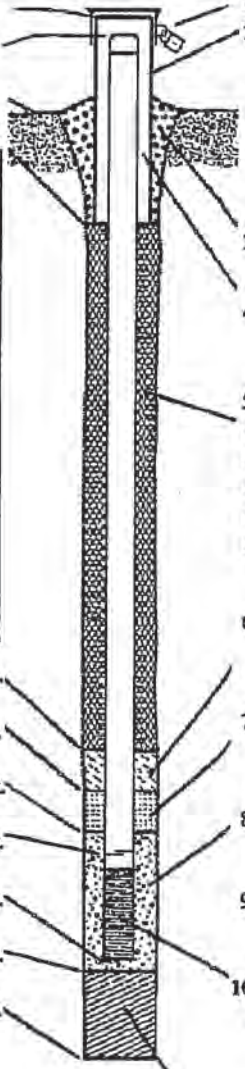
14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☐ No
Describe

17. Source of water (attach analysis, if required):

E. Bentonite seal, top 754.8 ft. MSL or ft.
F. Fine sand, top 751.3 ft. MSL or 3.5 ft.
G. Filter pack, top 750.8 ft. MSL or 4.0 ft.
H. Screen joint, top 749.1 ft. MSL or 5.7 ft.
I. Well bottom 739.6 ft. MSL or 15.2 ft.
J. Filter pack, bottom 739.3 ft. MSL or 15.5 ft.
K. Borehole, bottom 739.3 ft. MSL or 15.5 ft.
L. Borehole, diameter 8.5 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.05 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 3.8 in.
b. Length: 5.0 ft.
c. Material: Anodized Aluminum — Steel ☐ 04 Other ☒
d. Additional protection? ☐ Yes ☒ No
If yes, describe:
3. Surface seal: Bentonite ☒ 30 Concrete ☐ 01 Other ☐
4. Material between well casing and protective pipe: Pea Gravel — Bentonite ☐ 30 Other ☐
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☒ 50
e. 1.2 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite chips ☐ 32
c. Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. Sidley Ohio Silica #40/60 ☒
b. Volume added 0.2 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. Sidley Ohio Silica #5 ☒
b. Volume added 4.1 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐
10. Screen material: PVC Schedule 40
a. Screen type: Factory cut ☒ 11 Continuous slot ☐ 01 Other ☐
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 9.5 ft.
11. Backfill material (below filter pack): None ☒ 14 Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Rick Jahr For Terry March — Firm: BT2, Inc. 2830 Dairy Drive, Madison, WI 53718-6751

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Note: Well casing extended to 765.34 due to berm construction

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name WM Orchard Ridge RDF BT2 #3185A	**Local Grid Location of Well** ☐ ft. ☐ N. ☐ S. ☐ ft. ☐ E. ☐ W.	**Well Name** S302A
Facility License, Permit or Monitoring No. 4491	**Local Grid Origin** ☐ (estimated: ☐) or **Well Location** ☐ Lat. ° ' " Long. ° ' " or	**Wis. Unique Well No.** VT 567
Facility ID 268262940	St. Plane 437656 ft. N, 2514753 ft. E. S/C/N	**DNR Well ID No.** 123
Type of Well Well Code 12 / PZ	**Section Location of Waste/Source** SW 1/4 of NE 1/4 of Sec. 1 T. 8 N. R. 20 ☒ E ☐ W	**Date Well Installed** 12 / 15 / 2006 (m m d d y y y y)
Distance from Waste/Source ft. **Enf. Stds. Apply** ☐	**Location of Well Relative to Waste/Source** u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	**Gov. Lot Number**
		Well Installed By: Name (first, last) and Firm Kevin McCumber Badger State Drilling

A. Protective pipe, top elevation 757.68 ft. MSL
B. Well casing, top elevation 757.31 ft. MSL
C. Land surface elevation 754.9 ft. MSL
D. Surface seal, bottom 749.8 ft. MSL or 5.2 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

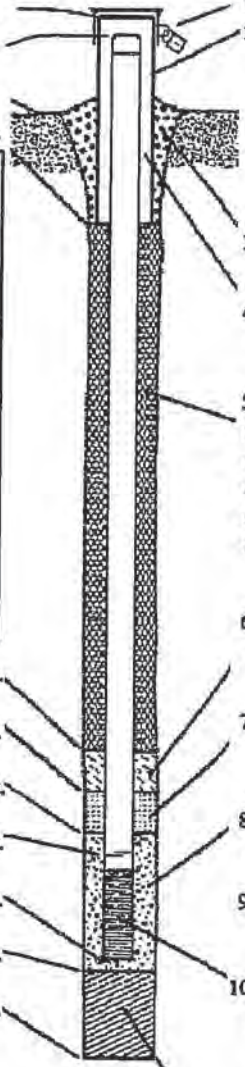
14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☐ No
Describe

17. Source of water (attach analysis, if required):

E. Bentonite seal, top 719.8 ft. MSL or 35.0 ft.
F. Fine sand, top 714.6 ft. MSL or 40.3 ft.
G. Filter pack, top 713.3 ft. MSL or 41.5 ft.
H. Screen joint, top 711.0 ft. MSL or 43.9 ft.
I. Well bottom 706.3 ft. MSL or 48.6 ft.
J. Filter pack, bottom 705.8 ft. MSL or 49.0 ft.
K. Borehole, bottom 705.8 ft. MSL or 49.0 ft.
L. Borehole, diameter 8.5 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.05 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 3.8 in.
b. Length: 8.0 ft.
c. Material: Steel ☐ 04
Anodized Aluminum Other ☒
d. Additional protection? ☐ Yes ☒ No
If yes, describe:
3. Surface seal: Bentonite ☒ 30
Concrete ☐ 01
Other ☐
4. Material between well casing and protective pipe:
Bentonite ☐ 30
Pea Gravel Other ☒
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. Lbs/gal mud weight . . . . . Bentonite slurry ☒ 31
d. % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 11.0 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☒ 02
Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. Sidley Ohio Silica #40/60 ☒
b. Volume added 1.2 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. Sidley Ohio Silica #5 ☒
b. Volume added 2.7 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐
10. Screen material: PVC Schedule 40
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
Other ☐
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 4.7 ft.
11. Backfill material (below filter pack): None ☒ 14
Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: For Terry Hart
Firm: BT2, Inc. 2830 Dairy Drive, Madison, WI 53718-6751

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

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Note: Well casing extended to 765.41 due to berm construction

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☒
Remediation/Redevelopment ☐ Other ☐

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name WM Orchard Ridge RDF BT2 #3185A	**Local Grid Location of Well** ☐ft. ☐N. ☐ft. ☐E. ☐W.	**Well Name** S302B
Facility License, Permit or Monitoring No. 4491	**Local Grid Origin** ☐ (estimated: ☐) or **Well Location** ☐ Lat. ° ' " Long. ° ' " or	**Wis. Unique Well No.** VT 568
Facility ID 268262940	St. Plane 437657 ft. N, 2514759 ft. E. S/C/N	**DNR Well ID No.** 124
Type of Well Well Code 12 / PZ	**Section Location of Waste/Source** SW 1/4 of NE 1/4 of Sec. 1 T. 8 N, R. 20 ☒E. ☐W.	**Date Well Installed** 12 / 14 / 2006 (m m d d y y y y)
Distance from Waste/Source ft. **Enf. Stds. Apply** ☐	**Location of Well Relative to Waste/Source** u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	**Gov. Lot Number**
		Well Installed By: Name (first, last) and Firm Kevin McCumber Badger State Drilling

A. Protective pipe, top elevation 757.67 ft. MSL
B. Well casing, top elevation 757.28 ft. MSL
C. Land surface elevation 755.1 ft. MSL
D. Surface seal, bottom 748.8 ft. MSL or 5.4 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☒ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☒ Yes ☐ No

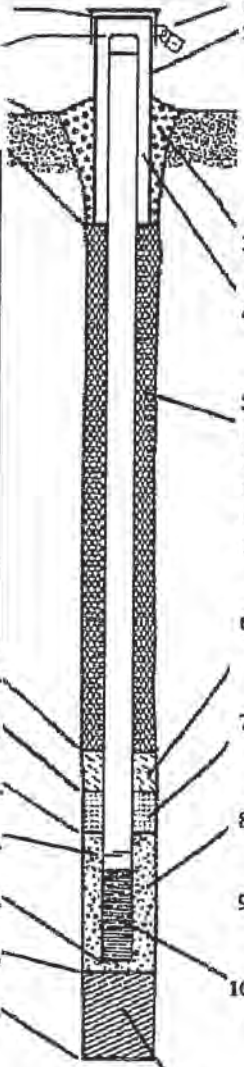
14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☒ 41
Other ☐

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☐ No
Describe

17. Source of water (attach analysis, if required):

E. Bentonite seal, top 692.4 ft. MSL or 62.4 ft.
F. Fine sand, top 687.2 ft. MSL or 67.6 ft.
G. Filter pack, top 686.0 ft. MSL or 68.8 ft.
H. Screen joint, top 683.7 ft. MSL or 71.4 ft.
I. Well bottom 679.0 ft. MSL or 76.1 ft.
J. Filter pack, bottom 676.8 ft. MSL or 78.0 ft.
K. Borehole, bottom 664.8 ft. MSL or 90.0 ft.
L. Borehole, diameter 8.5 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.05 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 3.8 in.
b. Length: 8.0 ft.
c. Material: Steel ☐ 04
Anodized Aluminum Other ☒
d. Additional protection? ☐ Yes ☒ No
If yes, describe:
3. Surface seal: Bentonite ☒ 30
Concrete ☐ 01
Other ☐
4. Material between well casing and protective pipe:
Bentonite ☐ 30
Pea Gravel Other ☐
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☒ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 21.0 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☒ 02
Gravity ☐ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. Sidley Ohio Silica #40/60 ☒
b. Volume added 1.2 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. Sidley Ohio Silica #5 ☒
b. Volume added 3.3 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐
10. Screen material: PVC Schedule 40
a. Screen type: Factory cut ☒ 11
Continuous slot ☐ 01
Other ☐
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 4.7 ft.
11. Backfill material (below filter pack): None ☐ 14
Bentonite Chips Other ☒

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Rick Jahr For Terry Marsh
Firm: BT2, Inc. 2830 Dairy Drive, Madison, WI 53718-6751

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

Route To:
Solid Waste
Emergency Response
Wastewater
Haz. Waste
Underground Tanks
Water Resources
Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 10-92

Facility/Project Name: WM Orchard Ridge RDF Eastern Expansion BT²# 3185A
License/Permit/Monitoring Number: 4491
Boring Number: S302

Boring Drilled By (Firm name and name of crew chief): Badger State Drilling Kevin McCumber
Drilling Started: 12/15/2006
Drilling Completed: 12/15/2006
Drilling Method: 4¼"HSA

DNR Facility Well No.: 122
WI Unique Well No.: VT566
Common Well Name:
Static Water Level: Feet
Surface Elevation: 754.8 Feet
Borehole Diam.: 8.5 Inches

Boring Location
State Plane 437656 N, 2514748 E
SW 1/4 of NE 1/4 of Section 1, T. 8 N., R. 20 E.
Lat.
Long.
Local Grid Location (If applicable)

County: Waukesha
DNR County Code: 68
Civil Town/City/or Village: Menomonee Falls

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
			5	Blind drilled 0 to 15.5'; See boring log S302B for soil descriptions.								
			10									
			15									
				End of boring @ 15.5'; Set 10' PVC screen at 15.2'.								
			20									
			25									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Terry March For
Firm: BT², Inc. Terry March

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this form is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06 Wis. Stats.

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State of Wisconsin
Department of Natural Resources

Route To:
Solid Waste
Emergency Response
Wastewater
Haz. Waste
Underground Tanks
Water Resources
Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 10-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
WM Orchard Ridge RDF Eastern Expansion BT²# 3185A	4491	S302A

Boring Drilled By (Firm name and name of crew chief)	Drilling Started	Drilling Completed	Drilling Method
Badger State Drilling Kevin McCumber	12/15/2006	12/15/2006	4¼"HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Static Water Level	Surface Elevation	Borehole Diam.
123	VT567		Feet	754.9 Feet	8.5 Inches

Boring Location	Lat. / Long.	Local Grid Location (If applicable)
State Plane 437656 N, 2514753 E SW 1/4 of NE 1/4 of Section 1, T. 8 N., R. 20 E.		

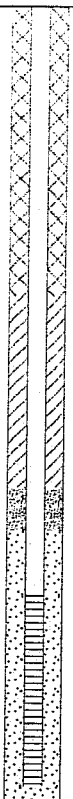
County	DNR County Code	Civil Town/City/or Village
Waukesha	68	Menomonee Falls

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
			5 10 15 20 25	Blind drilled 0 to 49'; See boring log S302B for soil descriptions.								

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Richard Jahn For | Firm BT², Inc. Terry March

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this form is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06 Wis. Stats.

Sample Number	Sample Length Recovered	Sample Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	Soil Properties: RQD/ Comments
			30	Blind drilled 0-49'; See boring log S302B for soil descriptions.								
			35									
			40									
			45									
			50	End of boring @ 49'; Set 5' PVC screen at 48.6'.								
			55									
			60									
			65									

State of Wisconsin
Department of Natural Resources

Route To: Solid Waste, Emergency Response, Wastewater, Haz. Waste, Underground Tanks, Water Resources, Other _____

SOIL BORING LOG INFORMATION

Form 4400-122 10-92

Facility/Project Name: WM Orchard Ridge RDF Eastern Expansion BT²# 3185A	License/Permit/Monitoring Number: 4491	Boring Number: S302B	
Boring Drilled By (Firm name and name of crew chief): Badger State Drilling — Kevin McCumber	Drilling Started: 12/13/2006	Drilling Completed: 12/14/2006	Drilling Method: 4¼"HSA & 3 7/8" RWB
DNR Facility Well No.: 124	WI Unique Well No.: VT568	Common Well Name:	Static Water Level: Feet
Surface Elevation: 755.1 Feet	Borehole Diam.: 8.5 Inches		
Boring Location: State Plane 437657 N, 2514759 E; SW 1/4 of NE 1/4 of Section 1, T. 8 N., R. 20 E.	Lat. / Long.	Local Grid Location (If applicable)	
County: Waukesha	DNR County Code: 68	Civil Town/City/or Village: Menomonee Falls	

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P200	RQD/ Comments
S1	--	--		FILL - RAILROAD GRADE.	FILL				.	M	.	No Split Spoon Sample
S2	--	--							-	M		
S3	14	04-10 12-15	5	CLAY, brown (10YR 5/3); some fine to coarse sand and gravel; stiff.	FILL				1.5	M		
S4	22	07-14 17-20		LEAN CLAY, dark yellowish brown (10YR 4/4); some fine to coarse sand; little gravel; very stiff. At 8' to 10'; % g-s-si-cl=10-13-35-42. LL = 29 PI = 15	CL				2.5	M		
S5	24	07-09 11-15	10						2.5	M	77	
S6	24	07-11 15-22		LEAN CLAY, dark grayish brown (10YR 4/2); very stiff to hard.	CL				3-4.5	M		
S7	24	10-17 16-19		SILT, grayish brown (10YR 5/2); very stiff.	ML				2.5	M		
S8	24	08-09 10-13	15	LEAN CLAY, dark grayish brown (10YR 4/2); very stiff.					4.5+	W		
S9	24	05-12 12-14							2.5	W		
S10	24	09-15 18-22							4.0	W		
S11	24	09-16 25-31	20		CL				3.5	W		
S12	24	10-17 20-25							3.25	W		
S13	24	06-09 13-18	25						3.0	W		

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Rich Lahr For — Firm: BT², Inc. — Terry March

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Sample Number	Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Moisture Content	P200	RQD/ Comments
S14	24	10-10 14-18		LEAN CLAY, dark grayish brown (10YR 4/2); very stiff.					2.5	W		
S15	24	09-15 19-24	30		CL				2.5	W		
S16	24	13-18 14-15		Interbedded layers of SILT and LEAN CLAY, grayish brown (10YR 5/2); soft.					0	W		
S17	24	07-09 09-11			ML-CL				0	W		
S18	24	08-08 12-13	35						0	W		
S19	no recovery	0		POORLY GRADED SAND, grayish brown (10YR 5/2), fine to medium; little silt; loose.	SP				-	W		
S20	24	01-02 03-04							-	W		
S21	15	10-14 10-11	40	POORLY GRADED SAND, gray (10YR 5/1), fine to coarse; some gravel; trace silt; medium dense to dense.					-	W	3	
S22	17	05-17 12-16		At 42' to 46': % g-s-si & cl=27-70-3.					-	W		
S23	19	11-11 13-16	45		SP				-	W		
S24	18	18-18 18-18							-	W		
S25	16	19-29 34-41							-	W		
S26	13	33-44 50/2	50	POORLY GRADED SAND, grayish brown (10YR 5/2) fine to medium; little silt; very dense.	SP				-	W		
S27	20	11-22 27-33		LEAN CLAY, gray (10YR 5/1); little to some fine to coarse sand; trace to little gravel; very stiff to hard.					3.5	W		
S28	-	-	55						3.5	W		3" Shelby Tube
S29	24	31-31 36-44			CL				4.5+	W		
S30	NR	45- 50/4							4.5+	W		
S31	3	50-3	60						1.0	W		
S32	19	21-20 35-41		LEAN CLAY, grayish brown (10YR 5/2); medium stiff.					.75	W		
S33	24	27-39 41-47	65		CL				1.0	W		

Sample Number	Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID/FID	Soil Properties: Standard Penetration	Moisture Content	P200	RQD/ Comments
S34	24	30-46		LEAN CLAY, grayish brown (10YR 5/2); medium stiff.					1.0	W		(blow counts 47-50/2 at 67 to 68')
S35	24	14-22 37-45			CL				1.0	W		
			70									
S36	24	34-42 46-50		SILTY SAND, gray (10YR 5/1) fine; little silt.					-	W		
S37	10	38- 50/5		at 72' to 76': % g-s-si & cl=0-86-14.	SM				-	W	14	
S38	15	32-32 35-40	75						-	W		
S39	24	13-15 24-31		LEAN CLAY, dark grayish brown (10YR 5/2); stiff to very stiff.					2.5	W		
S40	24	11-14 19-24							1.5	W		
			80									
S41	24	13-14 12-15							1.0	W		
S42	24	10-13 17-20			CL				1.5	W		
S43	24	11-20 18-23	85						1.75	W		
S44	24	12-17 23-27							2.0	W		
S45	24	13-19 22-26							2.0	W		
			90	End of boring @ 90'; Set 5' PVC screen to 76.1'.								
			95									
			100									
			105									