

From: Wootton, Brian
To: ["Joan Smyth";](#)
Subject: RE: Red Rock Landfill Landfill Gas Probe Installation - ID #11031
Date: Friday, July 02, 2010 10:48:00 AM

Joan,

The landfill gas well monitoring installation and report looks satisfactory

Brian

Brian Wootton

Brian Wootton, Hydrogeologist
Solid Waste Section
Division of Waste Management
1646 Mail Service Center
Raleigh, NC 27699-1646
401 Oberlin Road, Suite 150, 27605
tel: 919-508-8524, fax: 919-733-4810
Brian.Wootton@ncdenr.gov<<mailto:Brian.Wootton@ncdenr.gov>>
<http://wastenotnc.org/swhome/>

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From: Joan Smyth [<mailto:joan@rsgengineers.com>]
Sent: Tuesday, June 29, 2010 4:03 PM
To: 'Donald Plessinger'; 'David Pepper'; Wootton, Brian
Cc: bradley.bailey@ncmail.net; stacey@rsgengineers.com
Subject: Red Rock Landfill Landfill Gas Probe Installation

Attached please find the landfill gas probe installation letter for the Red Rock Landfill. Please let me know if you have any questions, or require any additional information.

Thanks!

[Joan A. Smyth, P.G.](#)

Richardson Smith Gardner and Associates, Inc.
14 N. Boylan Avenue
Raleigh, NC 27603
ph: 919-828-0577 x 221
cell: 919-815-1494



June 29, 2010

Mr. Brian Wootton
Hydrogeologist
NCDENR Division of Waste Management
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

**RE: Methane Monitoring Well Installation
Red Rock Disposal, LLC - C&D Landfill
NC Solid Waste Permit No. 92-28
Holly Springs, North Carolina**

Dear Mr. Wootton:

On behalf of Red Rock Disposal, LLC, Richardson Smith Gardner & Associates (RSG) is hereby providing information regarding the installation of six (6) landfill gas monitoring probes installed in accordance with the Phase 1C-2 permit. The permit application proposed landfill gas monitoring probes for the entire footprint of the landfill. At this time, only those wells that are located adjacent to waste areas have been installed. The installed probe locations are shown on the attached **Figure 1**.

Landfill Gas Probe Installation

RSG personnel mobilized to the site on May 24, 2010 with Ronald Barron of Piedmont Industrial Services, Inc. (license # 2901-A) for the probe installation. A track-mounted Geoprobe drill rig with hollow stem auger capabilities was used to install probes GP-4, GP-5, GP-15, GP-16, GP-25, and GP-26. In each instance, the Geoprobe sampler was used to collect continuous soil samples to the depth of probe installation. Upon completion of sampling, the hollow stem augers were advanced to the approximate depth of groundwater for the probe installation.

Each probe consists of a 2-inch diameter PVC screened interval and solid riser pipe with appropriate sand pack and bentonite plug in the annular space. Each well was completed with a slip well cap and outer protective steel casing. Each probe was advanced to auger refusal. The landfill gas probe installations are summarized in **Table 1**, while the boring logs and well completion records for the wells are included in **Attachment A**.

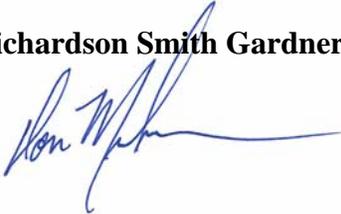
Additionally, three piezometers were abandoned during this drilling event, PZ-3, PZ-4 and PZ-5. The piezometers were abandoned by sealing with grout using a tremie pipe. Well abandonment records are also included in **Attachment A**.

Mr. Brian Wootton
June 29, 2010
Page 2 of 2

If you have any question or comments, please feel free to contact us by phone at (919) 828-0577 or by email below.

Sincerely,

Richardson Smith Gardner & Associates, Inc.



Don Misenheimer
Project Scientist, ext. 224
don@rsgengineers.com

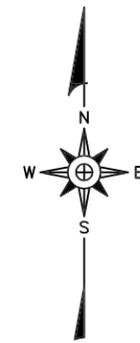
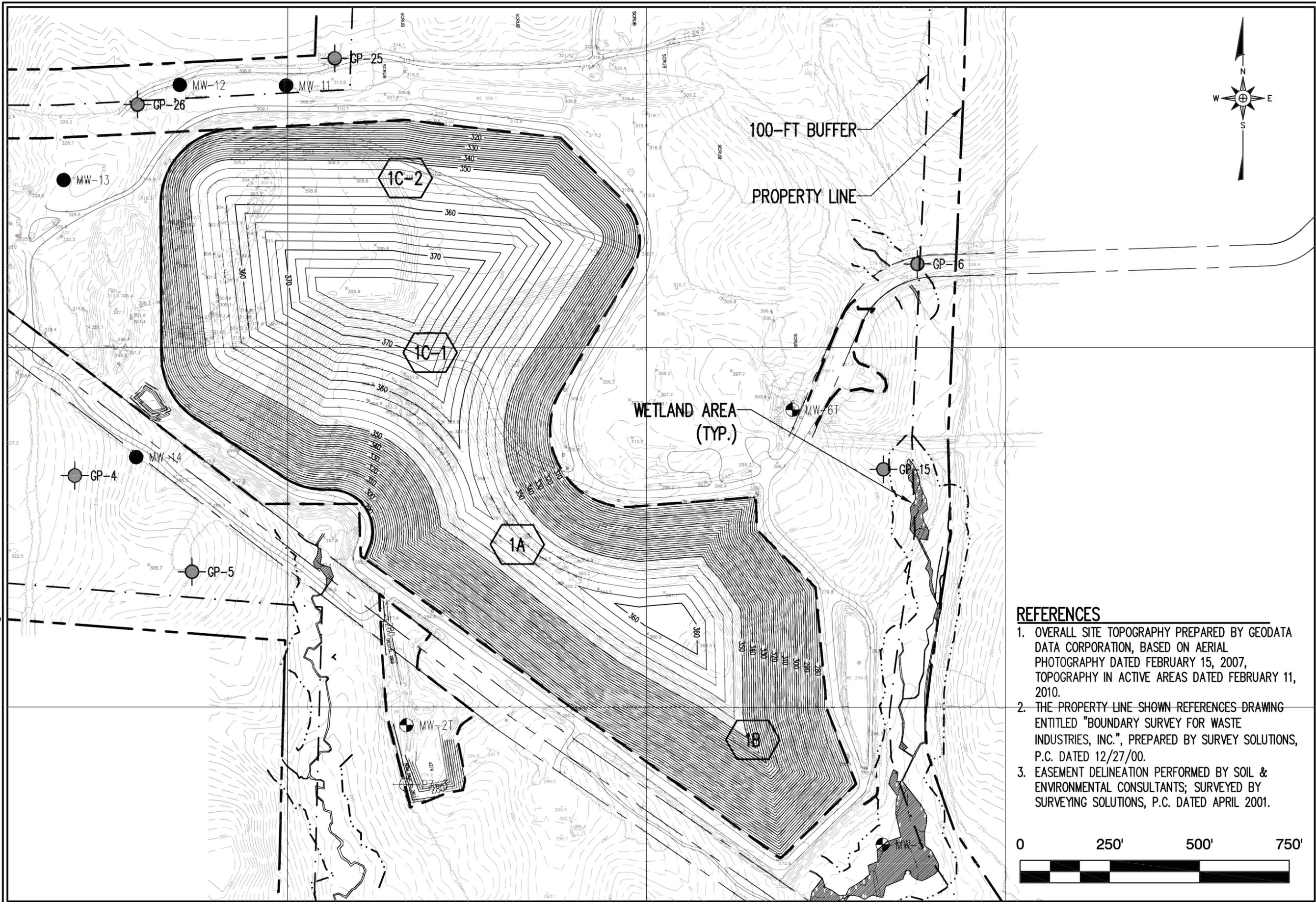


Joan A. Smyth, P.G.
Senior Hydrogeologist ext. 221
joan@rsgengineers.com

Cc: Mr. Don Plessinger - Waste Industries, USA
Mr. David Pepper - Waste Industries, USA
Mr. Brad Bailey - NCDENR
File

Figure

G:\CAD\Red Rock 10-1\sheet\REDROCK-B0108.dwg - 6/15/2010 1:36 PM



REFERENCES

1. OVERALL SITE TOPOGRAPHY PREPARED BY GEODATA DATA CORPORATION, BASED ON AERIAL PHOTOGRAPHY DATED FEBRUARY 15, 2007, TOPOGRAPHY IN ACTIVE AREAS DATED FEBRUARY 11, 2010.
2. THE PROPERTY LINE SHOWN REFERENCES DRAWING ENTITLED "BOUNDARY SURVEY FOR WASTE INDUSTRIES, INC.", PREPARED BY SURVEY SOLUTIONS, P.C. DATED 12/27/00.
3. EASEMENT DELINEATION PERFORMED BY SOIL & ENVIRONMENTAL CONSULTANTS; SURVEYED BY SURVEYING SOLUTIONS, P.C. DATED APRIL 2001.




RICHARDSON SMITH GARDNER & ASSOCIATES
NC L.C. NO. C-2828 (Engineering)
www.rsgeengineers.com
ph: 919-826-0577
fax: 919-826-3899

FIGURE NO.	1
SCALE:	AS SHOWN
CHECKED BY:	J.A.S.
PROJECT NO.	RED ROCK 10-1
DRAWN BY:	J.A.L.
DATE:	Jun. 2010
FILE NAME	REDROCK-B0108

TITLE:

**LFG WELL LOCATIONS
 RED ROCK DISPOSAL, LLC
 C&D LANDFILL
 WAKE COUNTY, NC**

Table

TABLE 1
Landfill Gas Monitoring Well Construction
Red Rock C&D Landfill
Holly Springs, North Carolina

MONITORING POINT	Location		DATE INSTALLATION COMPLETE	GROUND ELEVATION (ft msl)	TOC ELEVATION (ft msl)	BORING DEPTH (ft bg)	AUGER REFUSAL (ft bg)	DEPTH INTERVAL (ft bg)				Installed By	Surveyed By	Survey Date
								SCREEN (ft)		BENTONITE PLUG (ft bg)	GROUTED INTERVAL(ft bg)			
	Northing	Easting						INTERVAL	LENGTH					
GP-4	674644.09	2028406.52	5/25/2010	317.17	320.10	19.0	19	4' - 19'	15	2' - 3'	0' - 2'	RSG	SS	6/8/2010
GP-5	674376.53	2028733.18	5/25/2010	301.93	304.71	14.5	14.5	4.5' - 14.5'	10	2' - 3'	0' - 2'	RSG	SS	6/8/2010
GP-15	674661.37	2030660.14	5/24/2010	273.92	277.19	8.5	8.5	3.5' - 8.5'	5	2' - 2.5'	0' - 2'	RSG	SS	6/8/2010
GP-16	675232.04	2030755.00	5/24/2010	286.67	289.29	12.0	12	5' - 12'	7	2' - 4'	0' - 2'	RSG	SS	6/8/2010
GP-25	675803.95	2029130.98	5/24/2010	312.57	315.01	10.0	10	5' - 10'	5	2' - 3'	0' - 2'	RSG	SS	6/8/2010
GP-26	675675.22	2028581.42	5/25/2010	319.51	322.54	10.0	10	5' - 10'	5	2' - 3'	0' - 2'	RSG	SS	6/8/2010

Notes: All wells are 2-inch diameter wells.
 Auger refusal is defined as the depth hollow stem augers could not be advanced beyond.
 Survey was conducted by Surveying Solutions

Attachment A



FIELD BOREHOLE LOG

BOREHOLE NUMBER **GP-4**

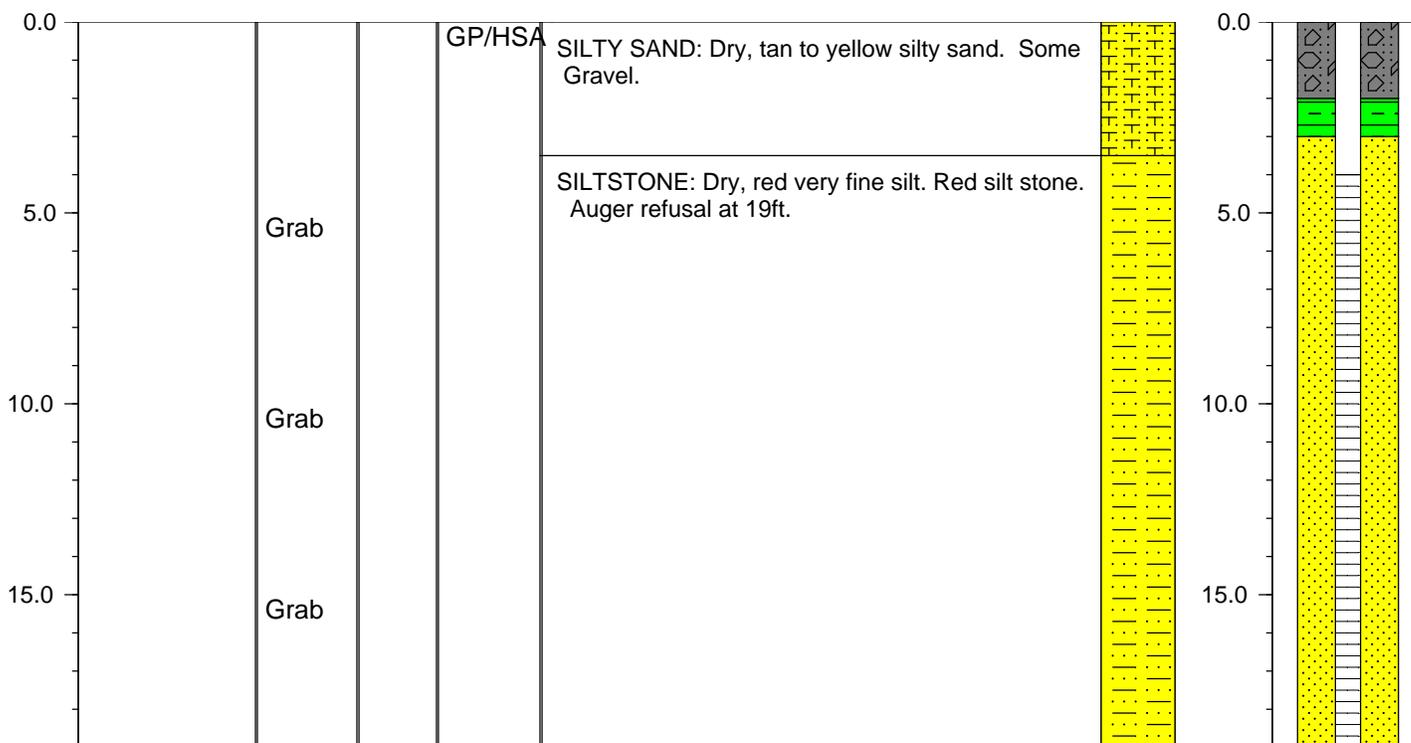
Page 1 of 1

PROJECT NAME: **Red Rock Disposal C&D Landfill**
 LOCATION: **Holly Springs, NC**
 DRILLING CO: **Piedmont Industrial Services, Inc.**
 DRILLING METHOD: **Geoprobe/HSA**
 FIELD PARTY: **Ronnie Barron**
 GEOLOGIST: **Don Misenheimer**
 DATE BEGUN: **5/25/10** COMPLETED: **5/25/10**

TOTAL DEPTH: **19**
 TOP OF CASING ELEV.: **320.10** GROUND ELEV.: **317.17**
 NORTHING: **674644.09** EASTING: **2028406.52**

STATIC WATER LEVEL (BLS)		
Depth (ft)		
Time		
Date		

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
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FIELD BOREHOLE LOG

BOREHOLE NUMBER **GP-5**

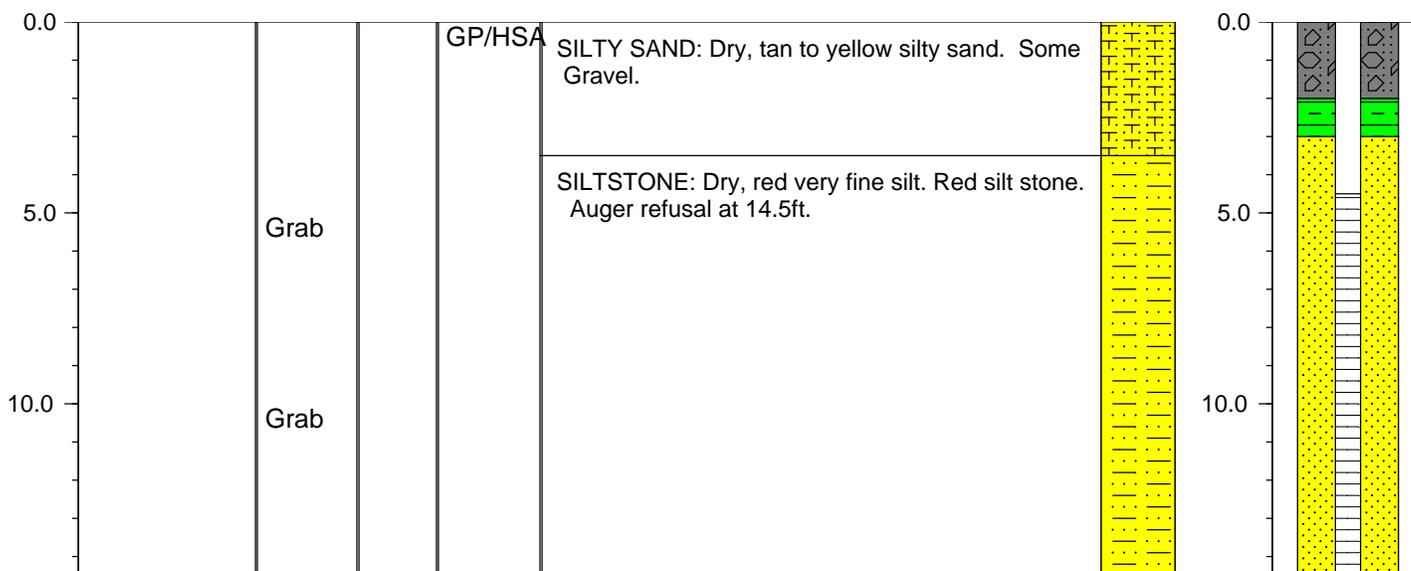
Page 1 of 1

PROJECT NAME: **Red Rock Disposal C&D Landfill**
 LOCATION: **Holly Springs, NC**
 DRILLING CO: **Piedmont Industrial Services, Inc.**
 DRILLING METHOD: **Geoprobe/HSA**
 FIELD PARTY: **Ronnie Barron**
 GEOLOGIST: **Don Misenheimer**
 DATE BEGUN: **5/25/10** COMPLETED: **5/25/10**

TOTAL DEPTH: **14.5**
 TOP OF CASING ELEV.: **304.71** GROUND ELEV.: **301.93**
 NORTHING: **674376.53** EASTING: **2028733.18**

STATIC WATER LEVEL (BLS)		
Depth (ft)		
Time		
Date		

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
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NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2091-A

COPY

1. WELL CONTRACTOR:

Ronald F. Barron
 Well Contractor (Individual) Name
Piedmont Industrial Services
 Well Contractor Company Name
1679-A Lowery Street
 Street Address
Winston Salem NC 27101
 City or Town State Zip Code
(336) 722-6505
 Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# n/a
 OTHER ASSOCIATED PERMIT#(if applicable) n/a
 SITE WELL ID #(if applicable) GP-5

3. WELL USE (Check One Box) Monitoring Municipal/Public

Industrial/Commercial Agricultural Recovery Injection

Irrigation Other (list use) Methane Gas Probe

DATE DRILLED 5-25-10

4. WELL LOCATION:

7130 New Landfill Dr. 27540
 (Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Holly Springs COUNTY Wake

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

Slope Valley Flat Ridge Other

LATITUDE 35 ° 36 ' 179.0000 " DMS OR 3X.XXXXXXXX DD

LONGITUDE 78 ° 54 ' 207.0000 " DMS OR 7X.XXXXXXXX DD

Latitude/longitude source: GPS Topographic map
 (location of well must be shown on a USGS topo map and attached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)

Red Rock Landfill n/a
 Facility Name Facility ID# (if applicable)

7130 New Landfill Dr.
 Street Address

Holly Springs NC 27540
 City or Town State Zip Code

Don Plessinaer / General Manager
 Contact Name

7130 New Landfill Dr.
 Mailing Address

Holly Springs NC 27540
 City or Town State Zip Code

(919) 557-9583
 Area code Phone number

6. WELL DETAILS:

a. TOTAL DEPTH: 14'6"

b. DOES WELL REPLACE EXISTING WELL? YES NO

c. WATER LEVEL Below Top of Casing: n/a FT.
 (Use "+" if Above Top of Casing)

d. TOP OF CASING IS 3.0' FT. Above Land Surface*
 *Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): n/a METHOD OF TEST n/a

f. DISINFECTION: Type n/a Amount n/a

g. WATER ZONES (depth):
 Top n/a Bottom _____ Top _____ Bottom _____
 Top _____ Bottom _____ Top _____ Bottom _____
 Top _____ Bottom _____ Top _____ Bottom _____

7. CASING: Depth	Diameter	Thickness/Weight	Material
Top <u>+3.0'</u> Bottom <u>4'6"</u>	Ft. <u>2"</u>	<u>sch 40</u>	<u>pvc</u>
Top _____ Bottom _____	Ft. _____	_____	_____
Top _____ Bottom _____	Ft. _____	_____	_____

8. GROUT: Depth	Material	Method
Top <u>0</u> Bottom <u>2'</u>	Ft. <u>Portland</u>	<u>poured</u>
Top _____ Bottom _____	Ft. _____	_____
Top _____ Bottom _____	Ft. _____	_____

9. SCREEN: Depth	Diameter	Slot Size	Material
Top <u>4'6"</u> Bottom <u>14'6"</u>	Ft. <u>2</u> in. <u>.010</u> in.	<u>pvc</u>	
Top _____ Bottom _____	Ft. _____ in. _____ in.	_____	
Top _____ Bottom _____	Ft. _____ in. _____ in.	_____	

10. SAND/GRAVEL PACK: Depth	Size	Material
Top <u>3'</u> Bottom <u>14'6"</u>	Ft. <u>#3</u>	<u>sand</u>
Top <u>2'</u> Bottom <u>3'</u>	Ft. <u>3/8</u>	<u>Bent. chips</u>
Top _____ Bottom _____	Ft. _____	_____

11. DRILLING LOG	Formation Description
Top _____ Bottom <u>0 / 3'6"</u>	<u>tan to yellow silty sand</u>
_____ / _____	<u>some gravel</u>
_____ / <u>3'6" / 14'6"</u>	<u>dry, red very fine silt, red silt stone</u>
_____ / _____	_____
_____ / _____	_____
_____ / _____	_____
_____ / _____	_____
_____ / _____	_____
_____ / _____	_____

12. REMARKS:

well set w/4x4 well post, pad, lock, tag

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Ronald F. Barron 5-28-10
 SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

Ronald F. Barron
 PRINTED NAME OF PERSON CONSTRUCTING THE WELL



FIELD BOREHOLE LOG

BOREHOLE NUMBER **GP-15**

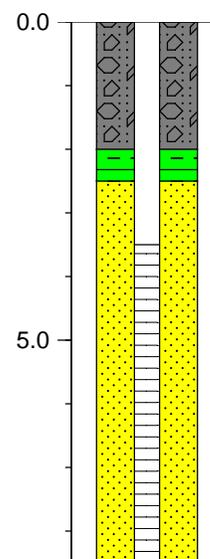
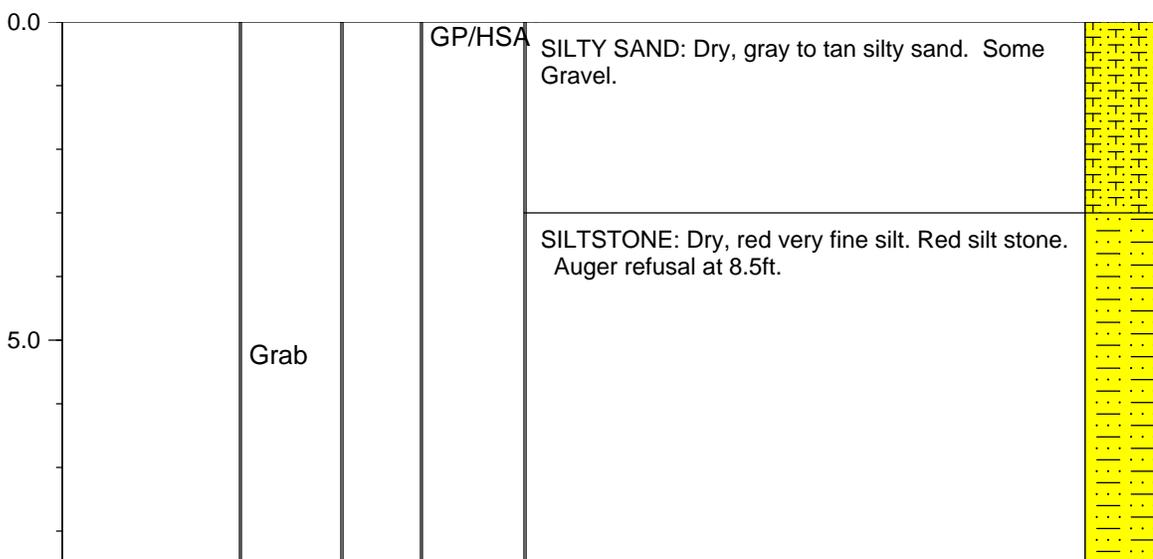
Page 1 of 1

PROJECT NAME: **Red Rock Disposal C&D Landfill**
 LOCATION: **Holly Springs, NC**
 DRILLING CO: **Piedmont Industrial Services, Inc.**
 DRILLING METHOD: **Geoprobe/HSA**
 FIELD PARTY: **Ronnie Barron**
 GEOLOGIST: **Don Misenheimer**
 DATE BEGUN: **5/24/10** COMPLETED: **5/24/10**

TOTAL DEPTH: **8.5**
 TOP OF CASING ELEV.: **277.19** GROUND ELEV.: **273.92**
 NORTHING: **674661.37** EASTING: **2030660.14**

STATIC WATER LEVEL (BLS)		
Depth (ft)		
Time		
Date		

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
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NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2091-A

COPY

1. WELL CONTRACTOR:

Ronald F. Barron

Well Contractor (Individual) Name

Piedmont Industrial Services

Well Contractor Company Name

1679-A Lowery Street

Street Address

Winston Salem NC 27101

City or Town State Zip Code

(336) 722-6505

Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# n/a

OTHER ASSOCIATED PERMIT#(if applicable) n/a

SITE WELL ID #(if applicable) GP-15

3. WELL USE (Check One Box) Monitoring Municipal/Public

Industrial/Commercial Agricultural Recovery Injection

Irrigation Other (list use) Methane Gas Probe

DATE DRILLED 5-24-10

4. WELL LOCATION:

7130 New Landfill Dr., 27540

(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Holly Springs COUNTY Wake

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

Slope Valley Flat Ridge Other

LATITUDE 35 ° 36 ' 214.0000 " DMS OR 3X.XXXXXXXXXX DD

LONGITUDE 78 ° 53 ' 802.0000 " DMS OR 7X.XXXXXXXXXX DD

Latitude/longitude source: GPS Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)

Red Rock Landfill n/a

Facility Name Facility ID# (if applicable)

7130 New Landfill Dr.

Street Address

Holly Springs NC 27540

City or Town State Zip Code

Don Plessinger / General Manager

Contact Name

7130 New Landfill Dr.

Mailing Address

Holly Springs NC 27540

City or Town State Zip Code

(919) 557-9583

Area code Phone number

6. WELL DETAILS:

a. TOTAL DEPTH: 8'6"

b. DOES WELL REPLACE EXISTING WELL? YES NO

c. WATER LEVEL Below Top of Casing: n/a FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 3.0' FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): n/a METHOD OF TEST n/a

f. DISINFECTION: Type n/a Amount n/a

g. WATER ZONES (depth):

Top n/a Bottom _____ Top _____ Bottom _____

Top _____ Bottom _____ Top _____ Bottom _____

Top _____ Bottom _____ Top _____ Bottom _____

7. CASING:	Depth	Diameter	Thickness/ Weight	Material
Top	<u>+3.0'</u>	Bottom <u>3'6"</u>	Ft. <u>2"</u>	<u>sch 40 pvc</u>
Top	_____	Bottom _____	Ft. _____	_____
Top	_____	Bottom _____	Ft. _____	_____

8. GROUT:	Depth	Material	Method	
Top	<u>0</u>	Bottom <u>2'</u>	Ft. <u>Portland</u>	<u>poured</u>
Top	_____	Bottom _____	Ft. _____	_____
Top	_____	Bottom _____	Ft. _____	_____

9. SCREEN:	Depth	Diameter	Slot Size	Material
Top	<u>3'6"</u>	Bottom <u>8'6"</u>	Ft. <u>2</u> in.	<u>.010</u> in. <u>pvc</u>
Top	_____	Bottom _____	Ft. _____ in.	_____ in. _____
Top	_____	Bottom _____	Ft. _____ in.	_____ in. _____

10. SAND/GRAVEL PACK:

10. SAND/GRAVEL PACK:	Depth	Size	Material	
Top	<u>2'6"</u>	Bottom <u>8'6"</u>	Ft. <u>#3</u>	<u>sand</u>
Top	<u>2'</u>	Bottom <u>2'6"</u>	Ft. <u>3/8</u>	<u>Bent. chips</u>
Top	_____	Bottom _____	Ft. _____	_____

11. DRILLING LOG

Top	Bottom	Formation Description
<u>0</u>	<u>/ 3'</u>	<u>gray to tan silty sand some</u>
<u>/</u>	<u>/</u>	<u>some gravel</u>
<u>3'</u>	<u>/ 8'6"</u>	<u>dry, red very fine silt sand</u>
<u>/</u>	<u>/</u>	<u>red silt stone</u>
<u>/</u>	<u>/</u>	_____

12. REMARKS:

well set w/4x4 well post, pad, lock, tag

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Ronald F. Barron 5-28-10
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

Ronald F. Barron
PRINTED NAME OF PERSON CONSTRUCTING THE WELL



FIELD BOREHOLE LOG

BOREHOLE NUMBER **GP-16**

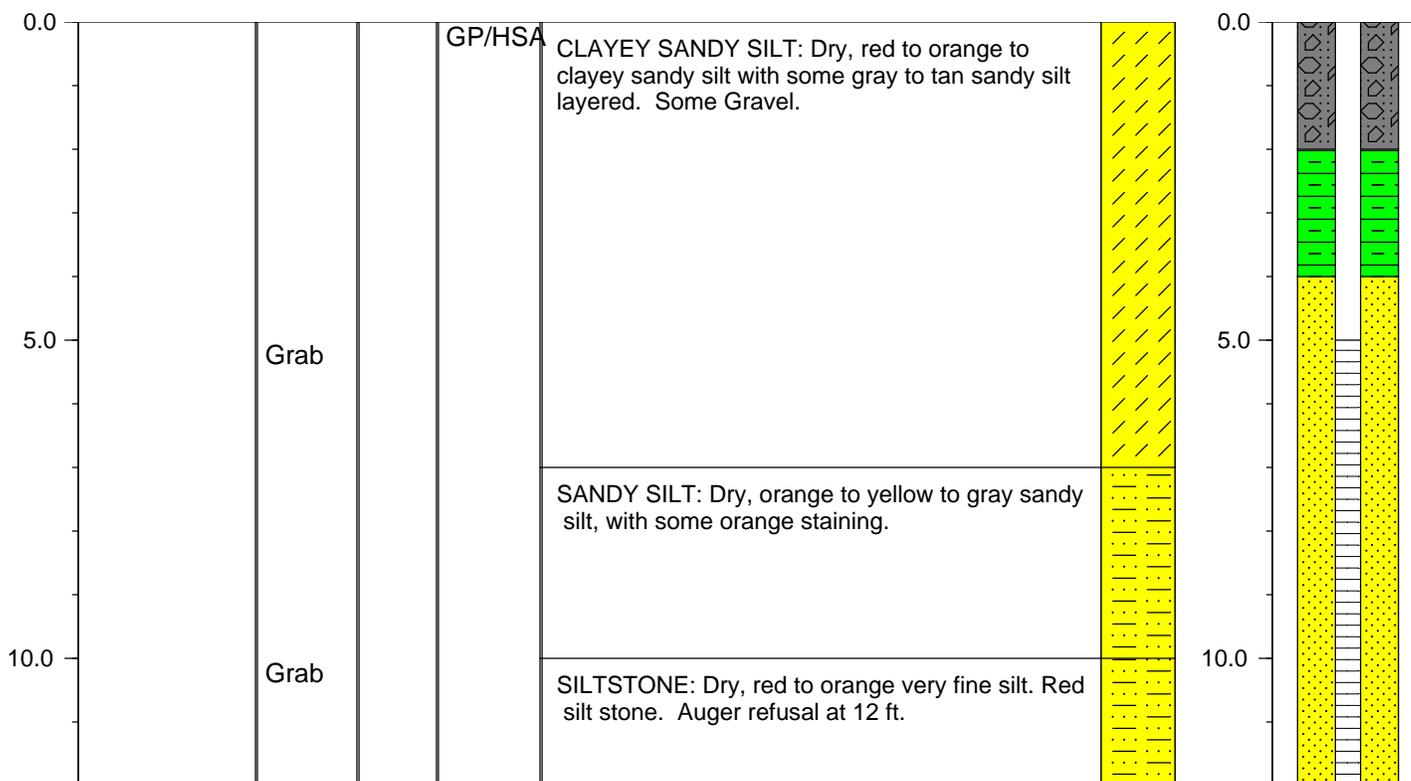
Page 1 of 1

PROJECT NAME: **Red Rock Disposal C&D Landfill**
 LOCATION: **Holly Springs, NC**
 DRILLING CO: **Piedmont Industrial Services, Inc.**
 DRILLING METHOD: **Geoprobe/HSA**
 FIELD PARTY: **Ronnie Barron**
 GEOLOGIST: **Don Misenheimer**
 DATE BEGUN: **5/24/10** COMPLETED: **5/24/10**

TOTAL DEPTH: **12**
 TOP OF CASING ELEV.: **289.29** GROUND ELEV.: **286.67**
 NORTHING: **675232.04** EASTING: **2030755**

STATIC WATER LEVEL (BLS)		
Depth (ft)		
Time		
Date		

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
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North Carolina Department of Environment and Natural Resources- Division of Water Quality

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COPY

1. WELL CONTRACTOR:

Ronald F. Barron

Well Contractor (Individual) Name

Piedmont Industrial Services

Well Contractor Company Name

1679-A Lowery Street

Street Address

Winston Salem

NC

27101

City or Town

State

Zip Code

(336) 722-6505

Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# n/a

OTHER ASSOCIATED PERMIT#(if applicable) n/a

SITE WELL ID #(if applicable) GP-16

3. WELL USE (Check One Box) Monitoring Municipal/Public

Industrial/Commercial Agricultural Recovery Injection

Irrigation Other (list use) Methane Gas Probe

DATE DRILLED 5-24-10

4. WELL LOCATION:

7130 New Landfill Dr., 27540

(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Holly Springs COUNTY Wake

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

Slope Valley Flat Ridge Other

LATITUDE 35 ° 36 ' 321.0000 " DMS OR 3X.XXXXXXXX DD

LONGITUDE 78 ° 53 ' 795.0000 " DMS OR 7X.XXXXXXXX DD

Latitude/longitude source: GPS Topographic map

(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)

Red Rock Landfill n/a

Facility Name

Facility ID# (if applicable)

7130 New Landfill Dr.

Street Address

Holly Springs

NC

27540

City or Town

State

Zip Code

Don Plessinger / General Manager

Contact Name

7130 New Landfill Dr.

Mailing Address

Holly Springs

NC

27540

City or Town

State

Zip Code

(919) 557-9583

Area code Phone number

6. WELL DETAILS:

a. TOTAL DEPTH: 12.0'

b. DOES WELL REPLACE EXISTING WELL? YES NO

c. WATER LEVEL Below Top of Casing: n/a FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 3.0' FT. Above Land Surface*

*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): n/a METHOD OF TEST n/a

f. DISINFECTION: Type n/a Amount n/a

g. WATER ZONES (depth):

Top n/a Bottom _____ Top _____ Bottom _____

Top _____ Bottom _____ Top _____ Bottom _____

Top _____ Bottom _____ Top _____ Bottom _____

7. CASING: Depth Diameter Thickness/Weight Material

Top +3.0' Bottom 5' Ft. 2" sch 40 pvc

Top _____ Bottom _____ Ft. _____ _____

Top _____ Bottom _____ Ft. _____ _____

8. GROUT: Depth Material Method

Top 0 Bottom 2' Ft. Portland poured

Top _____ Bottom _____ Ft. _____ _____

Top _____ Bottom _____ Ft. _____ _____

9. SCREEN: Depth Diameter Slot Size Material

Top 5' Bottom 12' Ft. 2 in. .010 in. pvc

Top _____ Bottom _____ Ft. _____ in. _____ in. _____

Top _____ Bottom _____ Ft. _____ in. _____ in. _____

10. SAND/GRAVEL PACK:

Depth Size Material

Top 4' Bottom 12' Ft. #3 sand

Top 2' Bottom 4' Ft. 3/8 Bent. chips

Top _____ Bottom _____ Ft. _____ _____

11. DRILLING LOG

Top Bottom Formation Description

0 / 7' red, orange clayey sandy silt

7' / 10' w/gray to tan sandy silt layered

10' / 12' orange to yellow to gray sandy

12' / 12' silt layered

12' / 12' Dry, red to orange very fine silt

12' / 12' red silt stone

12. REMARKS:

well set w/4x4 well post, pad, lock, tag

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Ronald F. Barron 5-28-10
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

Ronald F. Barron
PRINTED NAME OF PERSON CONSTRUCTING THE WELL



Richardson Smith Gardner & Assoc
 14 North Boylan Avenue, Raleigh NC 27603
 (919) 828-0577

FIELD BOREHOLE LOG

BOREHOLE NUMBER **GP-25**

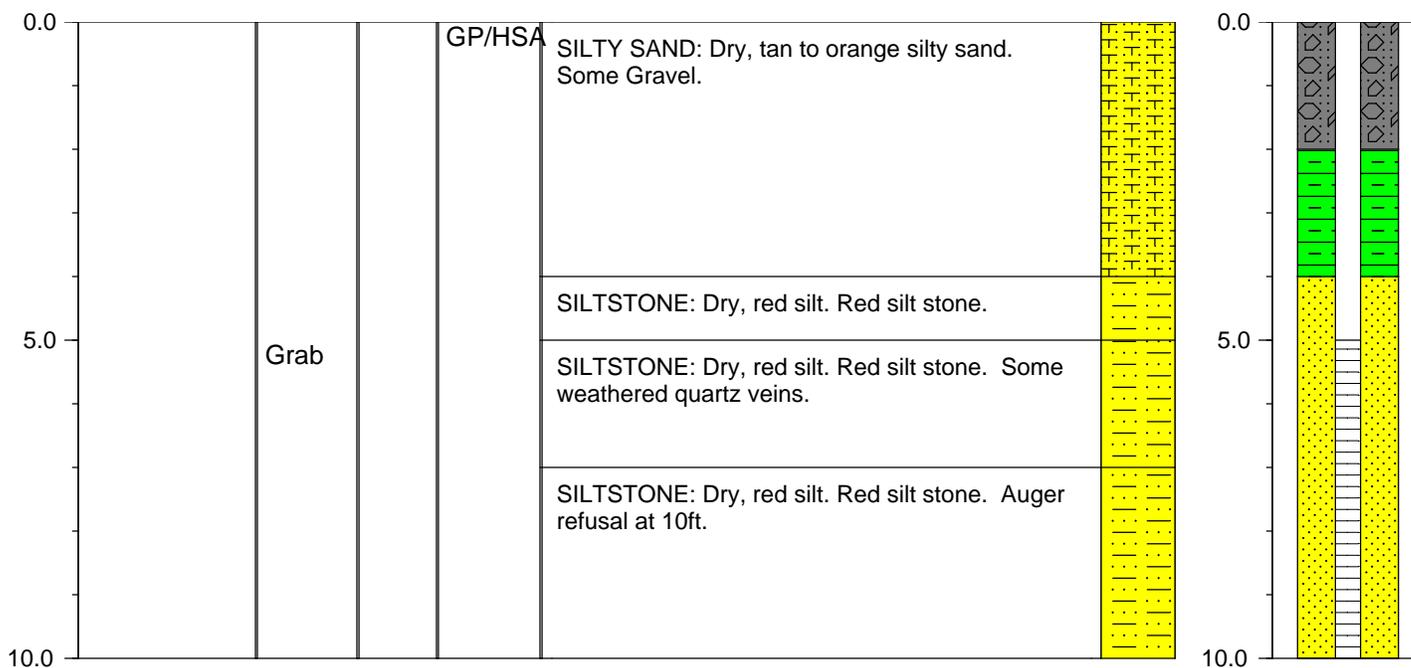
Page 1 of 1

PROJECT NAME: **Red Rock Disposal C&D Landfill**
 LOCATION: **Holly Springs, NC**
 DRILLING CO: **Piedmont Industrial Services, Inc.**
 DRILLING METHOD: **Geoprobe/HSA**
 FIELD PARTY: **Ronnie Barron**
 GEOLOGIST: **Don Misenheimer**
 DATE BEGUN: **5/24/10** COMPLETED: **5/24/10**

TOTAL DEPTH: **10**
 TOP OF CASING ELEV.: **315.01** GROUND ELEV.: **312.57**
 NORTHING: **675803.95** EASTING: **2029130.98**

STATIC WATER LEVEL (BLS)		
Depth (ft)		
Time		
Date		

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
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NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2091-A

COPY

1. WELL CONTRACTOR:

Ronald F. Barron

Well Contractor (Individual) Name

Piedmont Industrial Services

Well Contractor Company Name

1679-A Lowery Street

Street Address

Winston Salem NC 27101

City or Town State Zip Code

(336) 722-6505

Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# n/a

OTHER ASSOCIATED PERMIT#(if applicable) n/a

SITE WELL ID #(if applicable) GP-25

3. WELL USE (Check One Box) Monitoring Municipal/Public

Industrial/Commercial Agricultural Recovery Injection

Irrigation Other (list use) Methane Gas Probe

DATE DRILLED 5-24-10

4. WELL LOCATION:

7130 New Landfill Dr., 27540

(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Holly Springs COUNTY Wake

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

Slope Valley Flat Ridge Other

LATITUDE 35 ° 36 ' 403.0000 " DMS OR 3X.XXXXXXXXXX DD

LONGITUDE 78 ° 54 ' 125.0000 " DMS OR 7X.XXXXXXXXXX DD

Latitude/longitude source: GPS Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)

Red Rock Landfill n/a

Facility Name Facility ID# (if applicable)

7130 New Landfill Dr.

Street Address

Holly Springs NC 27540

City or Town State Zip Code

Don Plessinaer / General Manager

Contact Name

7130 New Landfill Dr.

Mailing Address

Holly Springs NC 27540

City or Town State Zip Code

(919) 557-9583

Area code Phone number

6. WELL DETAILS:

a. TOTAL DEPTH: 10'

b. DOES WELL REPLACE EXISTING WELL? YES NO

c. WATER LEVEL Below Top of Casing: n/a FT.
(Use "+" if Above Top of Casing)

d. TOP OF CASING IS 3.0' FT. Above Land Surface*

*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. YIELD (gpm): n/a METHOD OF TEST n/a

f. DISINFECTION: Type n/a Amount n/a

g. WATER ZONES (depth):

Top n/a Bottom _____ Top _____ Bottom _____

Top _____ Bottom _____ Top _____ Bottom _____

Top _____ Bottom _____ Top _____ Bottom _____

7. CASING: Depth	Diameter	Thickness/Weight	Material
Top <u>+3.0'</u> Bottom <u>5'</u>	Ft. <u>2"</u>	<u>sch 40</u>	<u>pvc</u>
Top _____ Bottom _____	Ft. _____	_____	_____
Top _____ Bottom _____	Ft. _____	_____	_____

8. GROUT: Depth	Material	Method
Top <u>0</u> Bottom <u>2'</u>	Ft. <u>Portland</u>	<u>poured</u>
Top _____ Bottom _____	Ft. _____	_____
Top _____ Bottom _____	Ft. _____	_____

9. SCREEN: Depth	Diameter	Slot Size	Material
Top <u>5'</u> Bottom <u>10'</u>	Ft. <u>2</u> in.	<u>.010</u> in.	<u>pvc</u>
Top _____ Bottom _____	Ft. _____ in.	_____ in.	_____
Top _____ Bottom _____	Ft. _____ in.	_____ in.	_____

10. SAND/GRAVEL PACK: Depth	Size	Material
Top <u>3'</u> Bottom <u>10'</u>	Ft. <u>#3</u>	<u>sand</u>
Top <u>2'</u> Bottom <u>3'</u>	Ft. <u>3/8</u>	<u>Bent. chips</u>
Top _____ Bottom _____	Ft. _____	_____

11. DRILLING LOG

Top Bottom Formation Description

0 / 4' tan to orange sily sand

/ some gravel

4' / 5' red silt. red silt stone

5' / 7' red silt. red silt stone some

/ weathered quartz veins

7' / 10' dry. red silt. red silt stone

/ _____

/ _____

/ _____

/ _____

12. REMARKS:

well set w/4x4 well post, pad, lock, tag

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Ronald F. Barron 5-28-10
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

Ronald F. Barron
PRINTED NAME OF PERSON CONSTRUCTING THE WELL



Richardson Smith Gardner & Assoc
 14 North Boylan Avenue, Raleigh NC 27603
 (919) 828-0577

FIELD BOREHOLE LOG

BOREHOLE NUMBER **GP-26**

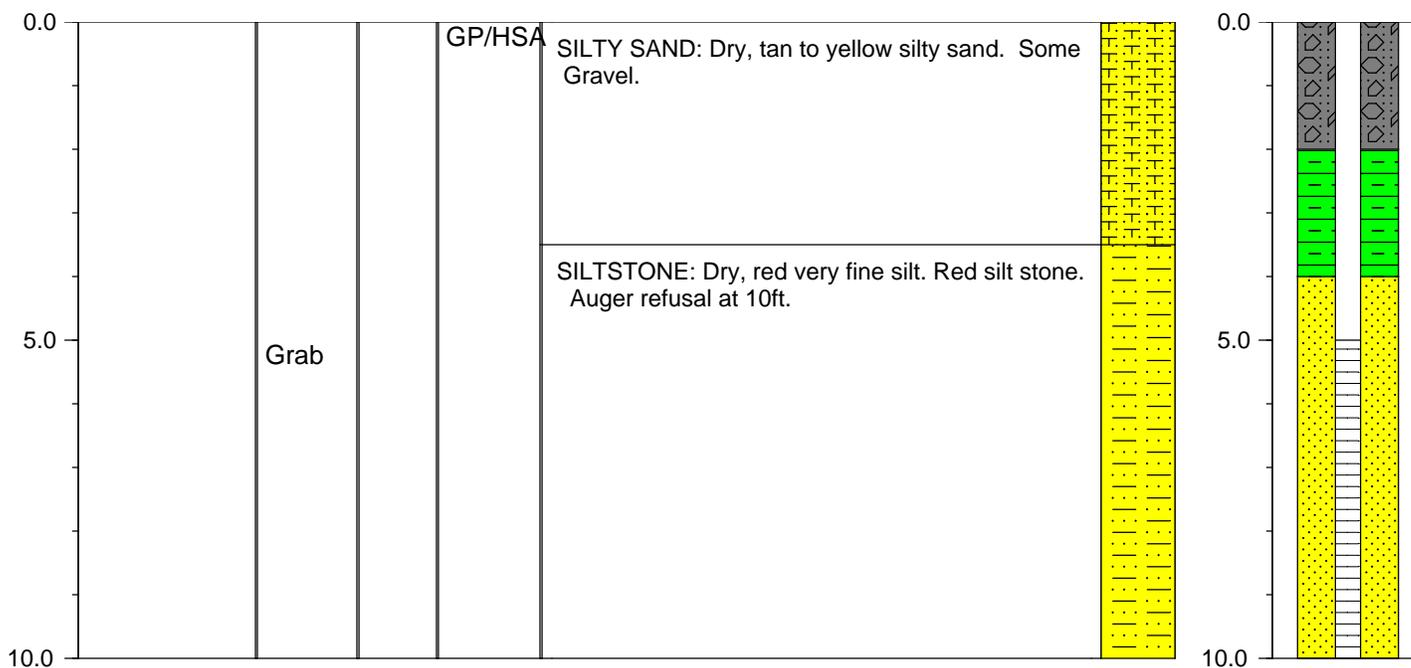
Page 1 of 1

PROJECT NAME: **Red Rock Disposal C&D Landfill**
 LOCATION: **Holly Springs, NC**
 DRILLING CO: **Piedmont Industrial Services, Inc.**
 DRILLING METHOD: **Geoprobe/HSA**
 FIELD PARTY: **Ronnie Barron**
 GEOLOGIST: **Don Misenheimer**
 DATE BEGUN: **5/25/10** COMPLETED: **5/25/10**

TOTAL DEPTH: **10**
 TOP OF CASING ELEV.: **322.54** GROUND ELEV.: **319.51**
 NORTHING: **675675.22** EASTING: **2028581.42**

STATIC WATER LEVEL (BLS)		
Depth (ft)		
Time		
Date		

DEPTH Feet	BLOW COUNT Per 6"	SAMPLING METHOD	RECOVERY Inches	DRILL METHOD	DESCRIPTION	LITHOLOGY	DEPTH Feet	WELL INSTALLATION
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WELL ABANDONMENT RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION #2091-A

COPY

1. WELL CONTRACTOR:

Ronald F. Barron
Well Contractor (Individual) Name

Piedmont Industrial Services
Well Contractor Company Name

STREET ADDRESS 1670-A Lowery Street

Winston Salem NC 27101
City or Town State Zip Code

(336) - 722-6505
Area code - Phone number

2. WELL INFORMATION:

SITE WELL ID # (if applicable) PZ-3

STATE WELL PERMIT # (if applicable) n/a

COUNTY WELL PERMIT # (if applicable) n/a

DWQ or OTHER PERMIT # (if applicable) n/a

WELL USE (Check applicable use): Monitoring Residential

Municipal/Public Industrial/Commercial Agricultural

Recovery Injection Irrigation

Other (list use) Piezometer

3. WELL LOCATION:

COUNTY Wake QUADRANGLE NAME _____

NEAREST TOWN: Holly Springs

7130 New Landfill Drive, 27540

(Street/Road Name, Number, Community, Subdivision, Lot No., Parcel, Zip Code)

TOPOGRAPHIC / LAND SETTING:

Slope Valley Flat Ridge Other _____

(Check appropriate setting)

LATITUDE N35 36.079

LONGITUDE W78 54.081

May be in degrees, minutes, seconds, or in a decimal format

Latitude/longitude source: GPS Topographic map

(Location of well must be shown on a USGS topo map and attached to this form if not using GPS.)

4a. FACILITY- The name of the business where the well is located. Complete 4a and 4b. (If a residential well, skip 4a; complete 4b, well owner information only.)

FACILITY ID # (if applicable) n/a

NAME OF FACILITY Red Rock Landfill

STREET ADDRESS 7130 New Landfill Drive

Holly Springs NC 27540
City or Town State Zip Code

4b. CONTACT PERSON/WELL OWNER:

NAME Don Plessinger / General Manager

STREET ADDRESS 7130 New Landfill Dr., 27540

5. WELL DETAILS:

a. Total Depth: 37.5' ft. Diameter: 2" in.

b. Water Level (Below Measuring Point): 25.45' ft.
Measuring point is 0 ft. above land surface.

6. CASING:

a. Casing Depth (if known): _____ ft. _____ in.

b. Casing Removed: 3' ft. 2" in.

7. DISINFECTION: n/a

(Amount of 65%-75% calcium hypochlorite used)

8. SEALING MATERIAL:

Neat Cement

Cement 141 lb.
Water 10 gal.

Sand Cement

Cement _____ lb.
Water _____ gal.

Bentonite

Bentonite _____ lb.

Type: Slurry Pellets

Water _____ gal.

Other

Type material _____

Amount _____

9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL:

Cut off top 3' of 2" well casing to ground surface.
Proceeded to tremie grout from bottom of PZ to ground surface.

10. WELL DIAGRAM: Draw a detailed sketch of the well on the back of this form showing total depth, depth and diameter of screens (if any) remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.

11. DATE WELL ABANDONED 5/26/10

I DO HEREBY CERTIFY THAT THIS WELL WAS ABANDONED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Ronald F. Barron 5-27-10
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

SIGNATURE OF PRIVATE WELL OWNER ABANDONING THE WELL DATE
(The private well owner must be an individual who personally abandons his/her residential well in accordance with 15A NCAC 2C .0113.)

Ronald F. Barron
PRINTED NAME OF PERSON ABANDONING THE WELL



COPY

WELL ABANDONMENT RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION #2091-A

1. WELL CONTRACTOR:

Ronald F. Barron

Well Contractor (Individual) Name

Piedmont Industrial Services

Well Contractor Company Name

STREET ADDRESS 1670-A Lowery Street

Winston Salem NC 27101

City or Town State Zip Code

(336) - 722-6505

Area code - Phone number

2. WELL INFORMATION:

SITE WELL ID # (if applicable) PZ-4

STATE WELL PERMIT # (if applicable) n/a

COUNTY WELL PERMIT # (if applicable) n/a

DWQ or OTHER PERMIT # (if applicable) n/a

WELL USE (Check applicable use): [X] Monitoring [] Residential

[] Municipal/Public [] Industrial/Commercial [] Agricultural

[] Recovery [] Injection [] Irrigation

[] Other (list use) Piezometer

3. WELL LOCATION:

COUNTY Wake QUADRANGLE NAME

NEAREST TOWN: Holly Springs

7130 New Landfill Drive, 27540

(Street/Road Name, Number, Community, Subdivision, Lot No., Parcel, Zip Code)

TOPOGRAPHIC / LAND SETTING:

[] Slope [X] Valley [] Flat [] Ridge [] Other

(Check appropriate setting)

LATITUDE N35 35.993

LONGITUDE W78 53.924

May be in degrees, minutes, seconds, or in a decimal format

Latitude/longitude source: [X] GPS [] Topographic map

(Location of well must be shown on a USGS topo map and attached to this form if not using GPS.)

4a. FACILITY- The name of the business where the well is located. Complete 4a and 4b. (If a residential well, skip 4a; complete 4b, well owner information only.)

FACILITY ID # (if applicable) n/a

NAME OF FACILITY Red Rock Landfill

STREET ADDRESS 7130 New Landfill Drive

Holly Springs NC 27540

City or Town State Zip Code

4b. CONTACT PERSON/WELL OWNER:

NAME Don Plessinger / General Manager

STREET ADDRESS 7130 New Landfill Dr., 27540

5. WELL DETAILS:

a. Total Depth: 11.5' ft Diameter: 2" in.

b. Water Level (Below Measuring Point): 3.85' ft. Measuring point is 0 ft. above land surface.

6. CASING: Length Diameter

a. Casing Depth (if known): ft. in.

b. Casing Removed: 3' ft. 2" in.

7. DISINFECTION: n/a

(Amount of 65%-75% calcium hypochlorite used)

8. SEALING MATERIAL:

Neat Cement

Sand Cement

Cement 94 lb. Water 6 gal.

Cement lb. Water gal.

Bentonite

Bentonite lb.

Type: [] Slurry [] Pellets

Water gal.

Other

Type material

Amount

9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL:

Cut off top 3' of 2" well casing to ground surface. Proceeded to tremie grout from bottom of PZ to ground surface.

10. WELL DIAGRAM: Draw a detailed sketch of the well on the back of this form showing total depth, depth and diameter of screens (if any) remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.

11. DATE WELL ABANDONED 5/26/10

I DO HEREBY CERTIFY THAT THIS WELL WAS ABANDONED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Ronald F. Barron 5-27-10 SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

SIGNATURE OF PRIVATE WELL OWNER ABANDONING THE WELL DATE (The private well owner must be an individual who personally abandons his/her residential well in accordance with 15A NCAC 2C .0113.)

Ronald F. Barron PRINTED NAME OF PERSON ABANDONING THE WELL



WELL ABANDONMENT RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

COPY

WELL CONTRACTOR CERTIFICATION #2091-A

1. WELL CONTRACTOR:

Ronald F. Barron
 Well Contractor (Individual) Name
 Piedmont Industrial Services
 Well Contractor Company Name
 STREET ADDRESS 1670-A Lowery Street
 Winston Salem NC 27101
 City or Town State Zip Code
 (336) - 722-6505
 Area code - Phone number

2. WELL INFORMATION:

SITE WELL ID # (if applicable) PZ-5
 STATE WELL PERMIT # (if applicable) n/a
 COUNTY WELL PERMIT # (if applicable) n/a
 DWQ or OTHER PERMIT # (if applicable) n/a
 WELL USE (Check applicable use): Monitoring Residential
 Municipal/Public Industrial/Commercial Agricultural
 Recovery Injection Irrigation
 Other (list use) Piezometer

3. WELL LOCATION:

COUNTY Wake QUADRANGLE NAME _____
 NEAREST TOWN: Holly Springs
7130 New Landfill Drive, 27540
 (Street/Road Name, Number, Community, Subdivision, Lot No., Parcel, Zip Code)
 TOPOGRAPHIC / LAND SETTING:
 Slope Valley Flat Ridge Other _____
 (Check appropriate setting)

LATITUDE N35 35.972
 LONGITUDE W78 53.919

May be in degrees, minutes, seconds, or in a decimal format

Latitude/longitude source: GPS Topographic map
 (Location of well must be shown on a USGS topo map and attached to this form if not using GPS.)

4a. FACILITY- The name of the business where the well is located. Complete 4a and 4b. (If a residential well, skip 4a; complete 4b, well owner information only.)

FACILITY ID #(if applicable) n/a
 NAME OF FACILITY Red Rock Landfill
 STREET ADDRESS 7130 New Landfill Drive
 Holly Springs NC 27540
 City or Town State Zip Code

4b. CONTACT PERSON/WELL OWNER:

NAME Don Plessinger / General Manager
 STREET ADDRESS 7130 New Landfill Dr., 27540

5. WELL DETAILS:

a. Total Depth: 21.0' ft. Diameter: 2" in.
 b. Water Level (Below Measuring Point): 6.50' ft.
 Measuring point is 0 ft. above land surface.

6. CASING: Length Diameter

a. Casing Depth (if known): _____ ft. _____ in.
 b. Casing Removed: 3' ft. 2" in.

7. DISINFECTION: n/a

(Amount of 65%-75% calcium hypochlorite used)

8. SEALING MATERIAL:

<u>Neat Cement</u>	<u>Sand Cement</u>
Cement <u>94</u> lb.	Cement _____ lb.
Water <u>6</u> gal.	Water _____ gal.

Bentonite
 Bentonite _____ lb.
 Type: Slurry Pellets
 Water _____ gal.

Other
 Type material _____
 Amount _____

9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL:

Cut off top 3' of 2" well casing to ground surface.
Proceeded to tremie grout from bottom of PZ to ground surface.

10. WELL DIAGRAM: Draw a detailed sketch of the well on the back of this form showing total depth, depth and diameter of screens (if any) remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.

11. DATE WELL ABANDONED 5/26/10

I DO HEREBY CERTIFY THAT THIS WELL WAS ABANDONED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Ronald F. Barron 5-27-10
 SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

SIGNATURE OF PRIVATE WELL OWNER ABANDONING THE WELL DATE
 (The private well owner must be an individual who personally abandons his/her residential well in accordance with 15A NCAC 2C .0113.)

Ronald F. Barron
 PRINTED NAME OF PERSON ABANDONING THE WELL