REVISED GROUNDWATER MONITORING PLAN

GROUNDWATER MONITORING PLAN
GREEN RECYCLING SOLUTIONS LLC
CONSTRUCTION & DEMOLITION DEBRIS (C&D) LANDFILL
MAYSVILLE, NORTH CAROLINA

PHASE 1, CELLS 1A – 1C

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Introduction

In accordance with 15A NCAC 13B .0544 MONITORING PLANS AND REQUIREMENTS FOR C&DLF FACILITIES, a Monitoring Plan must be submitted that contains information regarding the proposed groundwater monitoring system(s), sampling and analysis requirements, and detection monitoring requirements. The Plan shall include a sufficient number of detection wells and background water quality wells to effectively monitor water quality of the representative aquifer located below the landfill footprint. This Plan has been developed based on the Site Hydrogeologic Study information submitted to NCDENR – Division of Waste Management prepared by ERM NC, Inc. dated December 16, 2011.

Background Information

The proposed Green Recycling Solutions LLC, C&D Landfill is located within the physiographic region of the Inner Coastal Plain. "The Inner Coastal Plain Province consists of stair-step-like planar terraces that dip gently towards the ocean. At higher elevations, the land is dissected to form gently rolling hills and valleys. Elevations range from about 600 feet to 25 feet above mean sea level. The boundary between the Piedmont and Coastal Plain is the Fall Zone. This zone represents the elevational break between the resistant rocks of the Piedmont and the more easily eroded sediments of the Coastal Plain." *(Ref: North Carolina Geological Survey, Physiography of North Carolina, M.A. Medina, J.C. Reid, and R.H. Carpenter, 2004*). The site location is shown on the North Carolina Physiography Map (*Figure - 1*) for reference.

"The unconfined, surficial aquifer of much of the southeastern North Carolina Coastal Plain typically consists of variably thick, Pliocene, Pleistocene, and Holocene deposits. On the south side of the Neuse River, Pleistocene surficial deposits (sand, mud, shell, gravel) are thin (20 ft thick), and the top of the Cretaceous (Peedee) confining unit occurs at a depth of 132 ft. Between these surfaces is a thick sequence (110 ft) of muddy sand, sand and limestone that includes Paleocene (Beaufort Formation), Eocene (Castle Hayne Formation), and Oligocene (Riverbend/Belgrade Formations) deposits. These formations include a variety of siliciclastic and carbonate facies, some of which form porous and permeable aquifers." (Reference: Shallow Aquifers and Confining Units in the

Neuse River Basin, Surry to Suffolk Scarp, Fiscal Year 2003 Grant, NC-DENR Contract Number EW04035).

In Jones County, the Coastal Plain deposits consist primarily of limestone and unconsolidated sands and clays. Geologically, the proposed site is located within the Belgrade Formation (*Ref. North Carolina Geological Survey, Generalized Geologic Map of North Carolina, 1991)* as shown in *Figure – 2*. Generally, the surficial soils within the site area consist of silty sands and clayey sands with discrete areas of surface clays/silts that typically support wetland areas. Based on the predominance of silty and clayey sands observed in shallow borings advanced at the proposed site, the site is considered to be within the Haywood Landing Member of the Belgrade Formation.

The sandy soils within the upper 20-feet of soil strata includes the uppermost ground water aquifer for this region. The ground water level within the surficial aquifer may vary several feet based on significant rainfall events as this aquifer is primarily recharged by rainfall.

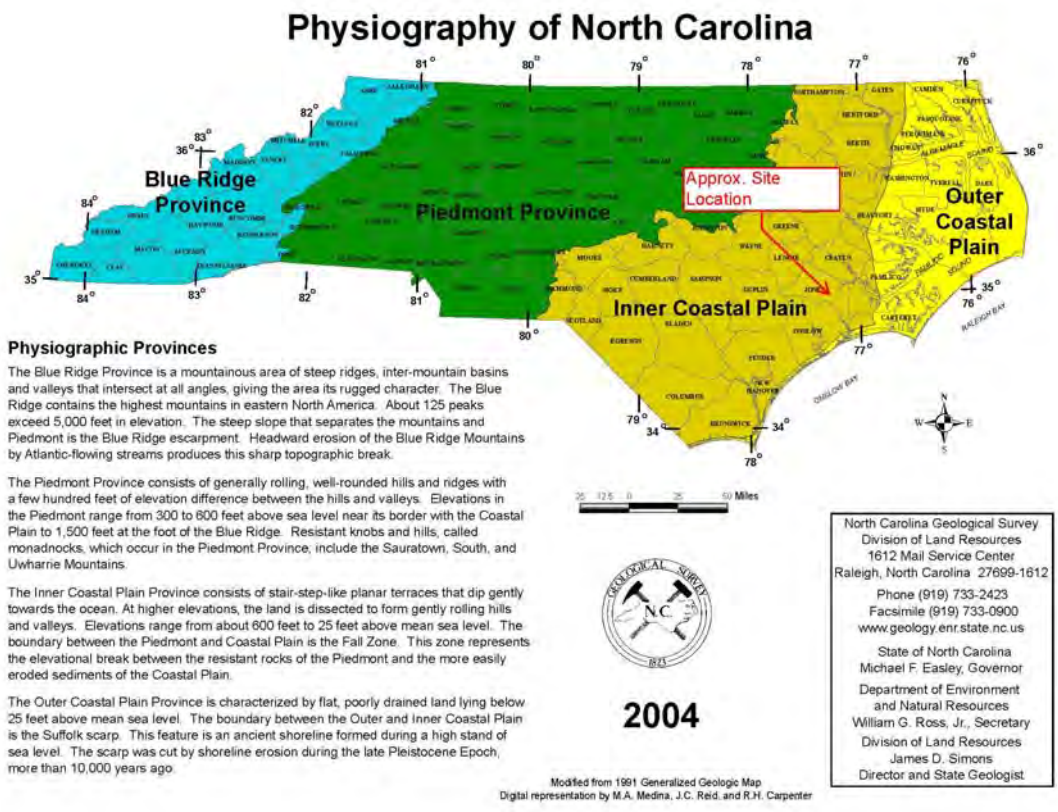
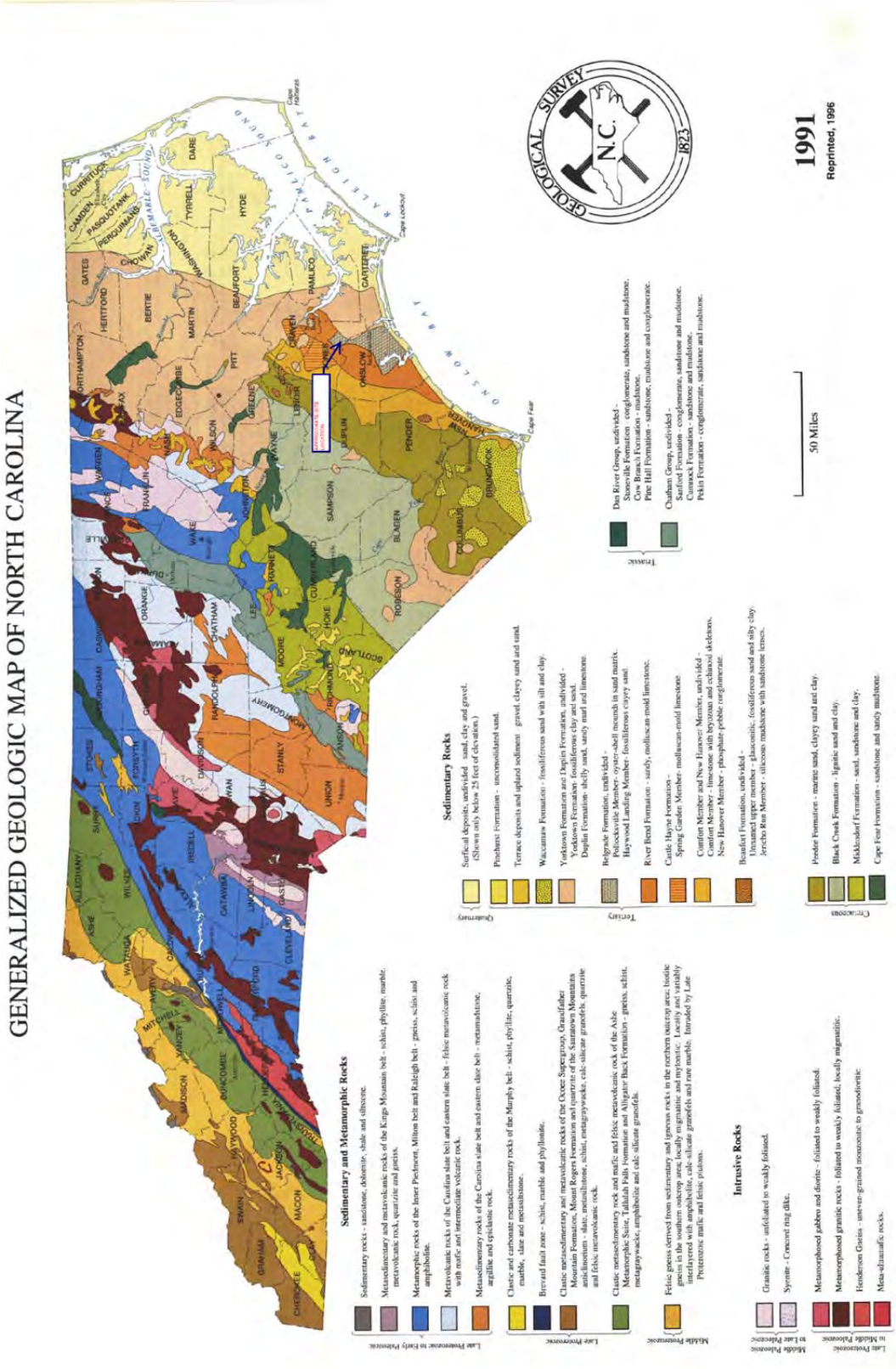


Figure 1


GENERALIZED GEOLOGIC MAP OF NORTH CAROLINA
GEOLOGICAL SURVEY
N.C.
1823
1991
Reprinted, 1996
50 Miles
Sedimentary and Metamorphic Rocks
Sedimentary rocks - sandstone, dolomite, shale and siltstone.
Metasedimentary and metavolcanic rocks of the Kings Mountain belt - schist, phyllite, marble, metavolcanic rock, quartzite and gneiss.
Metamorphic rocks of the Inner Piedmont, Milton belt and Raleigh belt - gneiss, schist and amphibolite.
Metavolcanic rocks of the Carolina slate belt and eastern slate belt - felsic metavolcanic rock with mafic and intermediate volcanic rock.
Metasedimentary rocks of the Carolina slate belt and eastern slate belt - metamudstone, argillite and epiclastic rock.
Clastic and carbonate metasedimentary rocks of the Murphy belt - schist, phyllite, quartzite, marble, slate and metasiltstone.
Brevard fault zone - schist, marble and phyllonite.
Clastic metasedimentary and metavolcanic rocks of the Ocoee Supergroup, Grandfather Mountain Formation, Mount Rogers Formation and quartzite of the Sauratown Mountains anticlinorium - slate, metasiltstone, schist, metagraywacke, calc-silicate granofels, quartzite and felsic metavolcanic rock.
Clastic metasedimentary rock and mafic and felsic metavolcanic rock of the Ashe Metamorphic Suite, Tallulah Falls Formation and Alligator Back Formation - gneiss, schist, metagraywacke, amphibolite and calc-silicate granofels.
Felsic gneiss derived from sedimentary and igneous rocks in the northern outcrop area; biotite gneiss in the southern outcrop area; locally migmatitic and mylonitic. Locally and variably interlayered with amphibolite, calc-silicate granofels and rare marble. Intruded by Late Proterozoic mafic and felsic plutons.
Late Proterozoic to Early Paleozoic
Late Proterozoic
Middle Proterozoic
Intrusive Rocks
Granitic rocks - unfoliated to weakly foliated.
Syenite - Concord ring dike.
Metamorphosed gabbro and diorite - foliated to weakly foliated.
Metamorphosed granitic rocks - foliated to weakly foliated, locally migmatitic.
Henderson Gneiss - uneven-grained monzonite to granodiorite.
Meta-ultramafic rocks.
Middle Proterozoic to Late Proterozoic
Late Proterozoic to Middle Proterozoic
Sedimentary Rocks
Surficial deposits, undivided - sand, clay and gravel. (Shown only below 25 feet of elevation.)
Pinehurst Formation - unconsolidated sand.
Terrace deposits and upland sediment - gravel, clayey sand and sand.
Waccamaw Formation - fossiliferous sand with silt and clay.
Yorktown Formation and Duplin Formation, undivided - Yorktown Formation: fossiliferous clay and sand. Duplin Formation: shelly sand, sandy marl and limestone.
Belgrade Formation, undivided - Pelocketsville Member: oyster-shell mounds in sand matrix. Haywood Landing Member: fossiliferous clayey sand.
River Bend Formation - sandy, mollusc-mold limestone.
Castle Hayne Formation - Spring Garden Member: mollusca-mold limestone. Comfort Member and New Hanover Member, undivided - Comfort Member: limestone with bryozoan and echinoid skeletons. New Hanover Member: phosphate-pebble conglomerate.
Beaufort Formation, undivided - Duranta upper member: glauconitic, fossiliferous sand and silty clay. Jerrehs Run Member: siliceous mudstone with sandstone lenses.
Quaternary
Tertiary
Pendee Formation - marine sand, clayey sand and clay.
Black Creek Formation - lignitic sand and clay.
Middendorf Formation - sand, sandstone and clay.
Cape Fear Formation - sandstone and sandy mudstone.
Cretaceous
Dan River Group, undivided - Stoneville Formation: conglomerate, sandstone and mudstone. Cow Branch Formation: mudstone. Pine Hall Formation: sandstone, mudstone and conglomerate.
Chatham Group, undivided - Sanford Formation: conglomerate, sandstone and mudstone. Cumnock Formation: sandstone and mudstone. Pekin Formation: conglomerate, sandstone and mudstone.
Triassic
Cape Hatteras
Cape Lookout
Cape Fear
RALEIGH BAY
PAMLICO SOUND
ONSLOW BAY
CURRITUCK
CAMDEN
PASQUOTANK
PERQUIMANS
CHOWAN
GATES
HERTFORD
BERTIE
MARTIN
WASHINGTON
TYRRELL
DARE
HYDE
BEAUFORT
PITT
PAMLICO
CARTERET
NORTHAMPTON
HALIFAX
EDGECOMBE
NASH
WILSON
GREENE
CRAVEN
LENOIR
JONES
MARTIN
WARREN
FRANKLIN
WAYNE
ONSLOW
JAMES CITY
SURRY
STOKES
ALLEGHANY
ASHE
WATAUGA
WILKES
ALEXANDER
CALDWELL
CATAWBA
LINCOLN
GASTON
CLEVELAND
RUTHERFORD
POLK
MITCHELL
YANCEY
AVERY
MADISON
BUNCOMBE
HENDERSON
TRANSYLVANIA
HAYWOOD
JACKSON
SWAIN
GRAHAM
CHEROKEE
CLAY
MACON
ORANGE
CHATHAM
LEE
MOORE
RANDOLPH
MONTGOMERY
STANLY
UNION
ANSON
RICHMOND
SCOTLAND
HOKE
CUMBERLAND
ROBESON
BLADEN
SAMPSON
DUPLIN
PENDER
NEW HANOVER
BRUNSWICK
COLUMBUS
WAKE
NASH
FRANKLIN
VANCE
GRANVILLE
PERSON
CASWELL
ROCKINGHAM
STOKES
SURRY
ALLEGHANY
ASHE
WATAUGA
WILKES
ALEXANDER
CALDWELL
CATAWBA
LINCOLN
GASTON
CLEVELAND
RUTHERFORD
POLK
MITCHELL
YANCEY
AVERY
MADISON
BUNCOMBE
HENDERSON
TRANSYLVANIA
HAYWOOD
JACKSON
SWAIN
GRAHAM
CHEROKEE
CLAY
MACON
ORANGE
CHATHAM
LEE
MOORE
RANDOLPH
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STANLY
UNION
ANSON
RICHMOND
SCOTLAND
HOKE
CUMBERLAND
ROBESON
BLADEN
SAMPSON
DUPLIN
PENDER
NEW HANOVER
BRUNSWICK
COLUMBUS
WAKE
NASH
FRANKLIN
VANCE
GRANVILLE
PERSON
CASWELL
ROCKINGHAM
STOKES
SURRY

Figure 2

Locally, Martin-Marietta operates a quarry in Belgrade, North Carolina (approximately 2.5 miles south of the site) for extraction of sand and rock. Reportedly, a limestone layer is encountered within the quarry at depths ranging from 40 to 60 feet below natural ground surface. The thickness of the limestone varies and is overlying deposits of sands. Similar reports have been identified for the Morton Trucking, US 17 mine located approximately 8 miles south of the site with a limestone layer encountered approximately 70 to 80 feet below natural ground surface approximately 14 to 18 feet thick. This mine also reports that sand deposits are beneath the limestone layer.

Site Hydrogeologic Conditions

The following is taken from the Site Hydrogelogic Study prepared by ERM NC, Inc. dated December 16, 2011. In summary, fifteen (15) soil test borings and observation wells were installed on site to gather subsurface information to identify and map the surficial aquifer for permitting and monitoring purposes. The Potentiometric Groundwater Plan previously submitted is included in Appendix A of this Plan for reference. The proposed limits and grades for development of Phase 1 of the landfill have been included on the Potentiometric Plan.

The site hydrogeology is characterized by a shallow surficial aquifer within the upper 10 feet of unconsolidated silts, clays and sands of the Inner Coastal Plain deposits. The water table is generally encountered at depths of 2 to 7 feet below land surface at the site. The groundwater flow conditions within the surficial aquifer at the site are characterized by very low hydraulic gradients and groundwater velocities. The groundwater contours indicate a subtle radial pattern of groundwater flow centered in the vicinity of the well OWB-11 located in the eastern portion of the site. The surficial soils in area around well OWB-11 are more sandy than the rest of the site and serve as a local preferential groundwater recharge area. In the western portion of the site, the general groundwater flow direction is southwestward toward the unnamed tributary to the White Oak River located approximately 2,550 feet west. The horizontal hydraulic gradient is essentially flat and the calculated groundwater velocities are on the order of 1 foot per year or less. The wetlands within the site study area do not appear to be connected to the surficial aquifer. Generally, water in the wetland areas is observed to occur at ground elevations that are 3 to 4 feet higher than the water table elevations measured in adjacent observation wells (i.e the wetlands adjacent to well OWB-7). The groundwater elevation data indicate that observation wells located within the immediate vicinity of wetland boundaries (OWB-1, 4, 6, 7, 9 & 14) reflect water table elevations very similar to those in observation wells at locations removed from the vicinity of wetland boundaries. The wetland areas contain hydric soils (clays / silts) in localized

topographically depressed areas that collect and pool rainfall; independent of the ground water table.

The low gradients and groundwater velocities at the site combine to limit both groundwater movement from the site and discharge to the nearest natural drainage features. The low groundwater flow conditions are advantageous for effective monitoring of the site as it allows more time for detection of and response to potential releases before offsite migration can occur from the C&DLF units.

There are no known drinking water supply wells, groundwater receptors or groundwater discharge features within 2,000 feet of proposed facility boundaries. All residences that are located within the study area along US Highway 17 or White Oak River Road are served by public water supply. Based on the lack of groundwater receptors and considering the limited groundwater flow regime at the site, the potential for offsite migration and impacts is considered to be low.

Monitoring Well Network

The proposed groundwater monitoring well network for Phase 1 of landfill construction, operation, closure and post-closure will consist of one (1) upgradient background quality monitoring well (OWB-10) and five (5) downgradient detection wells (OWB-1, OWB-2, OWB-3, OWB-4 and OWB-6). These wells were installed during the Site Hydrogeologic Study with the intent of incorporation into the groundwater monitoring plan. Based on the potentiometric contours developed for the site, OWB-10 is located in the highest potentiometric area available on site. Groundwater flow from this area occurs in a radial pattern as a result of rainfall recharge.

The five detection wells were chosen based on horizontal location in reference to the Phase 1 landfill limits and appropriate screened intervals within the representative surficial aquifer. Based on previous studies, groundwater flow will generally occur in an east to west-southwest pattern in the vicinity of Phase 1. The detection wells are located from 110 feet (OWB-3) to 170 feet (OWB-1) from the proposed waste boundary. Well OWB-5 located south of Phase 1, Cell 1 will be abandoned for construction of the first Cell and not available for inclusion in the monitoring well network.

Monitoring Well Construction

As stated previously, the monitoring wells included within the Phase 1 groundwater monitoring well network were previously installed during the Site Hydrogeologic Study in 2011. These wells were constructed in accordance with

North Carolina Well Constructions Standards so that they could be used as permanent monitoring wells. The construction records for these wells are included in Appendix B for reference.

The depth to seasonal high groundwater at each location and screened intervals for the existing wells are as follows:

Measured Seasonal High Water Table

Well locations survey data supplied by Parker & Associates

Well OWB-#	Date Drilled	Ground Surface Elevation (MSL)	Top of PVC Elevation (MSL)	Well PVC Stick-Up (ft)	Well Depth (ft)	Screened Interval (ft)	Seasonal High Elev.
OWB-1	8/25/11	39.28	42.03	2.75	20.0	20.0 - 7.0	35.21
OWB-2	8/25/11	38.02	40.89	2.87	20.0	20.0 - 7.0	35.03
OWB-3	8/25/11	37.61	40.32	2.71	20.0	20.0 - 8.0	34.94
OWB-4	8/25/11	39.09	41.68	2.59	20.0	20.0 - 8.0	35.15
OWB-6	8/24/11	39.25	42.18	2.93	15.0	20.0 - 8.0	35.24
OWB-10	8/22/11	39.67	42.40	2.73	20.0	20.0 - 8.0	36.69

Following installation of the temporary observation wells on August 26, 2011, Hurricane Irene resulted in over 7 inches of rainfall at the site around August 27, 2011. A significant rise occurred in all wells installed at the site along with the nearby wells in the Division of Water Resources network (Reference Hydrogeologic Report Appendix 2). In general water table elevations rose approximately 6 to 7 feet following the storm event. With the transition into colder months and decreasing evapotranspiration, the water levels remained at or near the levels recorded following Hurricane Irene. Therefore the elevations captured during our groundwater level monitoring following a tropical rainfall event reflect long term seasonal high water levels.

Well Installation Procedures

The monitoring wells proposed for this groundwater monitoring plan have been installed in accordance with North Carolina Well Construction Standards. Refer to individual Well Construction Records in Appendix B for details.

Sampling, Analytical Testing & Reporting

Groundwater monitoring, sampling and reporting shall be executed in accordance with the current Solid Waste Section memorandums, templates and forms regarding groundwater monitoring and submitting reports to the Solid

Waste Section. These reports can be located on the Solid Waste Section's web page located at:
http://portal.ncdenr.org/web/wm/sw/envmonitoring

For reference the memoranda, templates and forms are currently:

- Memorandum - October 16, 2007 - Environmental Monitoring Data for North Carolina Solid Waste Management Facilities

- Memorandum - October 27, 2006 New Guidelines for Electronic Submittal of Environmental Monitoring Data

- February 23, 2007 - Addendum to October 27, 2006, North Carolina Solid Waste Section Memorandum Regarding New Guidelines for Electronic Submittal of Environmental Monitoring Data

- Solid Waste Section - Guidelines for Groundwater, Soil, and Surface Water Sampling

- Electronic Data Deliverable (EDD) Template (Last updated: May 5, 2010)

- Solid Waste Environmental Monitoring Data Form (Last updated: June 10, 2009)

- Constituent Look-up webpage (Solid Waste Section Limits) (Last updated: June 13, 2011)

Groundwater monitoring results shall be sent to Ms. Jaclynne Drummond by electronic format. The following link is the template for the submittal of groundwater monitoring data in EDD format.

http://portal.ncdenr.org/c/document_library/get_file?uuid=3246fa1e-e618-417e-a643-6f5b92bce754&groupId=38361

Contact information for Ms. Jaclynne Drummond is listed below:

Jaclynne Drummond
Compliance Hydrogeologist
NC Department of Environment and Natural Resources
Division of Waste Management - Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646
919-707-8294 (phone/fax)

A background sampling event of monitoring wells will be performed prior to the acceptance of any waste at the landfill. Background and routine monitoring requirements for the Green Recycling Solutions LLC C&D Landfill groundwater wells will include laboratory analysis for the constituents included in Table 1 on the following page.

Table – 1 – Constituents for Analysis

Analytical Method: EPA 6010 Preparation Method: EPA 3010

Arsenic
Barium
Cadmium
Chromium
Copper
Iron
Lead
Manganese
Selenium
Silver
Zinc

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury

Analytical Method: EPA 8260

Acetone
Acrylonitrile
Benzene
Bromochloromethane
Bromodichloromethane
Bromoform
Bromomethane
2-Butanone
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
1,2-Dibromo-3-chloropropane
Dibromochloromethane
1,2-Dibromoethane (EDB)
1,2-Dichlorobenzene
1,4-Dichlorobenzene
trans-1,4-Dichloro-2-butene
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
cis-1,3-Dichloropropene

Table – 1 – Constituents for Analysis (Continued)

trans-1,3-Dichloropropene
Ethylbenzene
2-Hexanone
Iodomethane
Methylene Chloride
4-Methyl-2-pentanone (MIBK)
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride
Xylene (Total)
m&p-Xylene
o-Xylene

Total Dissolved Solids Analytical Method: SM 2540C

Total Dissolved Solids

Total Suspended Solids Analytical Method: SM 2540D

Total Suspended Solids

5 day Analytical Method: SM 5210B

BOD, 5 day

IC Anions 28 Days Analytical Method: EPA 300.0

Fluoride
Sulfate

Nitrogen, NO2/NO3 unpres Analytical Method: EPA 353.2

Nitrogen, Nitrate

Chloride Analytical Method: SM 4500-Cl-E

Chloride

COD Analytical Method: SM 5220D

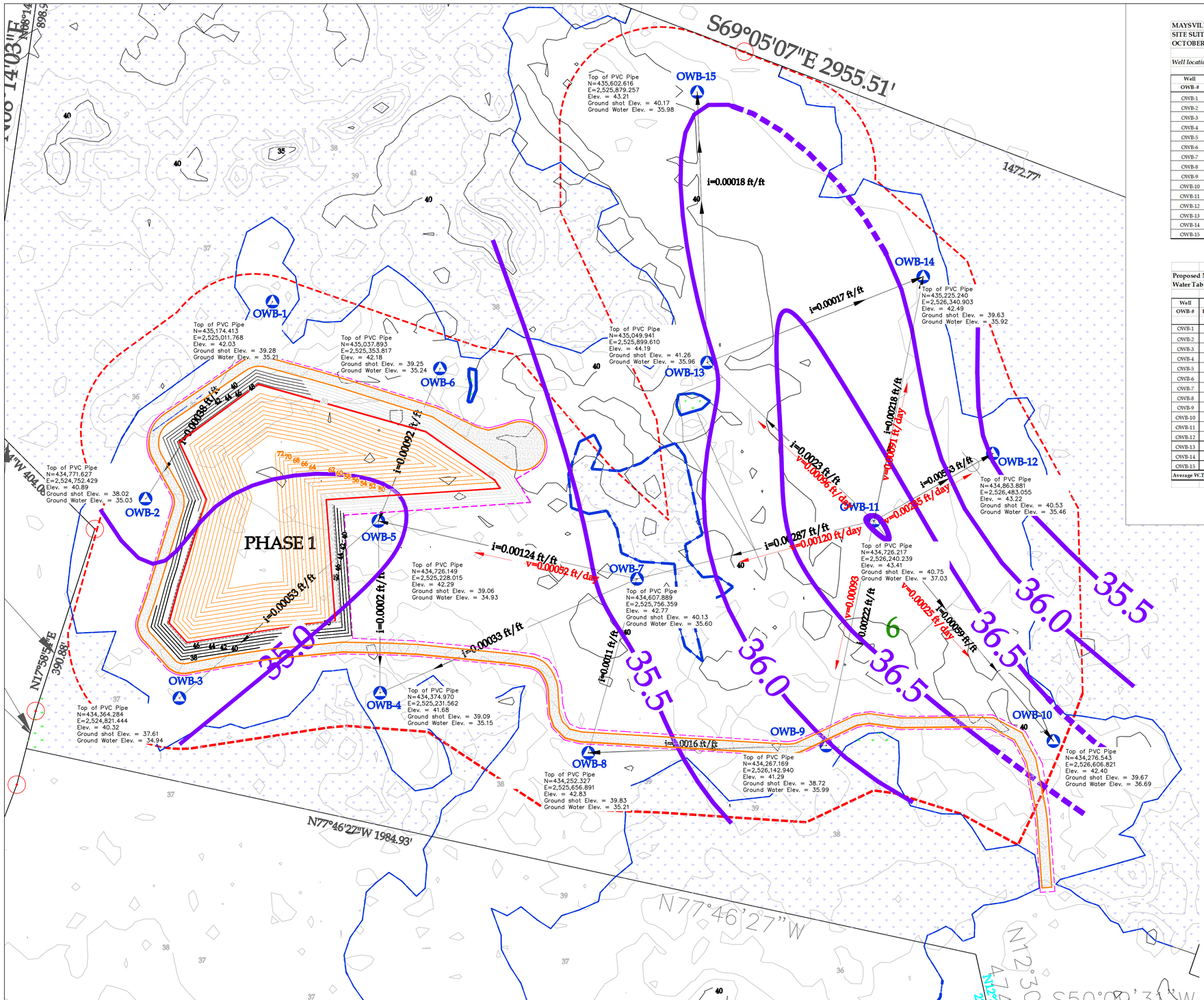
Chemical Oxygen Demand

TOC Analytical Method: SM 5310B

Total Organic Carbon

APPENDIX A

GROUNDWATER POTENTIOMETRIC PLAN



MAYSVILLE C&D LANDFILL
SITE SUITABILITY - OBSERVATION WELL DATA
OCTOBER 6, 2011

Well locations survey data supplied by Parker & Associates

Well OWB-#	Date Drilled	Ground Surface Elevation (MSL)	Top of PVC Elevation (MSL)	Well PVC Stick-Up (ft)	Well Depth (ft)	Screened Interval (ft)	NC State Plane Northing	NC State Plane Easting
OWB-1	8/25/11	39.28	42.03	2.75	20.0	20.0 - 7.0	435174.413	2525011.768
OWB-2	8/25/11	38.02	40.89	2.87	20.0	20.0 - 7.0	434771.627	2524752.429
OWB-3	8/25/11	37.61	40.32	2.71	20.0	20.0 - 8.0	434364.284	2524821.444
OWB-4	8/25/11	39.09	41.68	2.59	20.0	20.0 - 8.0	434374.970	2525231.562
OWB-5	8/24/11	39.06	42.29	3.23	15.0	19.0 -7.0	434726.149	2525228.015
OWB-6	8/24/11	39.25	42.18	2.93	15.0	20.0 - 8.0	435037.893	2525353.817
OWB-7	8/24/11	40.13	42.77	2.64	15.0	34.0 - 21.0	434607.889	2525756.359
OWB-8	8/23/11	39.83	42.83	3.00	20.0	20.0 - 8.0	434252.327	2525656.891
OWB-9	8/23/11	38.72	41.29	2.57	15.0	3.0 - 15.0	434267.169	2526142.940
OWB-10	8/22/11	39.67	42.40	2.73	20.0	20.0 - 8.0	434276.543	2526606.821
OWB-11	8/23/11	40.75	43.41	2.66	15.0	15 -3.5	434726.217	2526240.239
OWB-12	8/23/11	40.53	43.22	2.69	20.0	20.0 - 8.0	434863.881	2526483.055
OWB-13	8/24/11	41.26	44.19	2.93	20.0	20.0 - 8.0	435049.941	2525899.610
OWB-14	8/23/11	39.63	42.49	2.86	20.0	20.0 - 8.0	435225.240	2526340.903
OWB-15	8/24/11	40.17	43.21	3.04	20.0	20.0 - 8.0	435602.616	2525879.257

Proposed Maysville C&D Landfill
Water Table Elevations - Through 11-22-11

Well OWB-#	Top of PVC Elevation (MSL)	Groundwater Level Elevations													
		T.O.B.		24-Hr.		8/26/11		9/6/11		9/9/11		10/10/11		11/22/11	
		Depth (ft)	Elev.	Depth (ft)	Elev.	Depth (ft)	Elev.	Depth (ft)	Elev.	Depth (ft)	Elev.	Depth (ft)	Elev.	Depth (ft)	Elev.
OWB-1	42.03	13.55	28.48	13.92	28.11	13.92	28.11	7.21	34.82	6.82	35.21	7.80	34.23	7.11	34.92
OWB-2	40.89	13.62	27.27	13.62	27.27	13.62	27.27	6.33	34.56	5.86	35.03	7.02	33.87	6.23	34.66
OWB-3	40.32	12.75	27.57	12.79	27.53	12.79	27.53	5.79	34.53	5.38	34.94	6.54	33.78	5.80	34.52
OWB-4	41.68	13.93	27.75	13.86	27.82	13.86	27.82	6.89	34.79	6.53	35.15	7.68	34.00	6.92	34.76
OWB-5	42.29	15.05	27.24	15.00	27.29	14.30	27.99	7.52	34.77	7.36	34.93	8.22	34.07	7.44	34.85
OWB-6	42.18	13.70	28.48	13.78	28.40	13.82	28.36	7.31	34.87	6.94	35.24	7.91	34.27	7.10	35.08
OWB-7	42.77	15.55	27.22	14.85	27.92	14.75	28.02	7.69	35.08	7.17	35.60	8.58	34.19	7.79	34.98
OWB-8	42.83	15.05	27.78	14.97	27.86	14.99	27.84	7.93	34.90	7.62	35.21	8.68	34.15	7.83	35.00
OWB-9	41.29	13.89	27.40	13.10	28.19	13.11	28.18	5.58	35.71	5.30	35.99	5.22	36.07	7.50	33.79
OWB-10	42.40	13.68	28.72	13.70	28.70	13.70	28.70	6.68	35.72	5.71	36.69	7.15	35.25	6.20	36.20
OWB-11	43.41	13.62	29.79	13.65	29.76	13.64	29.77	6.93	36.48	6.38	37.03	7.61	35.80	6.75	36.66
OWB-12	43.22	16.25	26.97	15.13	28.09	15.15	28.07	8.07	35.15	7.76	35.46	8.40	34.82	7.86	35.36
OWB-13	44.19	15.15	29.04	15.34	28.85	15.37	28.82	8.51	35.68	8.23	35.96	9.27	34.92	8.40	35.79
OWB-14	42.49	14.40	28.09	14.09	28.40	14.06	28.43	6.86	35.63	6.57	35.92	7.65	34.84	6.74	35.75
OWB-15	43.21	14.61	28.60	14.56	28.65	14.65	28.56	7.40	35.81	7.23	35.98	8.59	34.62	7.83	35.38
Average W.T. Elevation			28.03		28.19		28.23		35.23		35.62		34.59		35.18

LEGEND

- EXISTING CONTOUR (1-FT INTERVAL)
- ACOE APPROVED WETLAND LIMITS
- FACILITY BOUNDARY
- OWB-8 WELL LOCATION
- GROUNDWATER ELEVATION CONTOUR

i = GROUNDWATER GRADIENT
v = GROUNDWATER VELOCITY

N

SCALE IN FEET
100 50 25 0 100

NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION

MAYSVILLE C&D LANDFILL

GREEN RECYCLING SOLUTIONS LLC — MAYSVILLE, NC

DRAWN BY: DWW
PROJECT ENGINEER: DWW
DESIGN ENGINEER: DWW
PROJECT MANAGER: DWW

LICENSE #C-2206
ERM NC, INC.
5000 CORPORATE CENTER DRIVE, SUITE 200
CHARLOTTE, NORTH CAROLINA 28226
(704) 365-0345

NOT FOR CONSTRUCTION

GROUNDWATER POTENTIOMETRIC MAP

SCALE: 1"=100'
DATE: DECEMBER 2011
PROJECT NO.: 0140408
AutoCAD 2007
POTENTIOMETRIC MAP.DWG

DRAWING NO. 1
REV. NO.
SHEET 1 OF 1

APPENDIX B

WELL CONSTRUCTION RECORDS

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2402

1. WELL CONTRACTOR:

MIKE MCCONAHEY
Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC
Well Contractor Company Name

176 COMMERCE BLVD
Street Address

STATESVILLE | NC | 28625
City or Town | State | Zip Code

(704) 872-7686
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# N/A

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) OBW-1

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation☐ Other ☐ (list use)

DATE DRILLED 08/25/11

4. WELL LOCATION:

WHITE OAK RIVER ROAD 28555
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: MAYSVILLE COUNTY JONES

TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other

LATITUDE ___°___'___" DMS **OR** ___ DD

LONGITUDE ___°___'___" DMS **OR** ___ DD

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

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

PROPOSED C&D LANDFILL | N/A
Facility Name | Facility ID# (if applicable)

WHITE OAK RIVER ROAD
Street Address

MAYSVILLE | NC | 28555
City or Town | State | Zip Code

GREEN RECYCLING SOLUTIONS, LLC
Contact Name

166 CENTER STREET
Mailing Address

JACKSONVILLE | NC | 28546
City or Town | State | Zip Code

( )
Area code Phone number

6. WELL DETAILS:

a. **TOTAL DEPTH:** 20.0 FEET

b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑

c. **WATER LEVEL** Below Top of Casing: 11.0 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 2.5 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	Bottom	Top	Bottom
Top	Bottom	Top	Bottom
Top	Bottom	Top	Bottom

7. CASING:

Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 10.0 Ft.	2 INCH	SCH 40	PVC
Top	Bottom Ft.			
Top	Bottom Ft.			

8. GROUT:

Depth		Material	Method
Top 0.0	Bottom 5.0 Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom Ft.		
Top	Bottom Ft.		

9. SCREEN:

Depth		Diameter	Slot Size	Material
Top 10.0	Bottom 20.0 Ft.	2.0 in.	.010 in.	PVC
Top	Bottom Ft.	in.	in.	
Top	Bottom Ft.	in.	in.	

10. SAND/GRAVEL PACK:

Depth		Size	Material
Top 8.0	Bottom 20.0 Ft.	20-40	FINE SILICA SAND
Top	Bottom Ft.		
Top	Bottom Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	WOOD/WEEDS/TOPSOIL
1.0	10.0	TAN/WHITE SILTY CLAY
10.0	15.0	BLACK SILTY SAND/SHELL
15.0	20.0	GRAY/GREEN CLAY SILT SAND/SHELL

12. REMARKS:

BENTONITE SEAL FROM 5.0 TO 8.0 FEET

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.

SIGNATURE OF CERTIFIED WELL CONTRACTOR | 08/29/11 DATE

MIKE MCCONAHEY
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2402

1. WELL CONTRACTOR:

MIKE MCCONAHEY
Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC
Well Contractor Company Name

176 COMMERCE BLVD
Street Address

STATESVILLE NC 28625
City or Town State Zip Code

(704) 872-7686
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# N/A

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) OBW-2

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation☐ Other ☐ (list use)

DATE DRILLED 08/25/11

4. WELL LOCATION:

WHITE OAK RIVER ROAD 28555
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: MAYSVILLE COUNTY JONES

TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other

LATITUDE ___°___'___" DMS **OR** ___ DD

LONGITUDE ___°___'___" DMS **OR** ___ DD

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

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

PROPOSED C&D LANDFILL N/A
Facility Name Facility ID# (if applicable)

WHITE OAK RIVER ROAD
Street Address

MAYSVILLE NC 28555
City or Town State Zip Code

GREEN RECYCLING SOLUTIONS, LLC
Contact Name

166 CENTER STREET
Mailing Address

JACKSONVILLE NC 28546
City or Town State Zip Code

(___) ___
Area code Phone number

6. WELL DETAILS:

a. **TOTAL DEPTH:** 20.0 FEET

b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑

c. **WATER LEVEL** Below Top of Casing: 11.0 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 2.5 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	Bottom	Top	Bottom
Top	Bottom	Top	Bottom
Top	Bottom	Top	Bottom

7. CASING:

Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 10.0	Ft. 2 INCH	SCH 40	PVC
Top	Bottom	Ft.		
Top	Bottom	Ft.		

8. GROUT:

Depth		Material	Method
Top 0.0	Bottom 5.0	Ft. PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.	
Top	Bottom	Ft.	

9. SCREEN:

Depth		Diameter	Slot Size	Material
Top 10.0	Bottom 20.0	Ft. 2.0 in.	.010 in.	PVC
Top	Bottom	Ft. in.	in.	
Top	Bottom	Ft. in.	in.	

10. SAND/GRAVEL PACK:

Depth		Size	Material
Top 8.0	Bottom 20.0	Ft. 20-40	FINE SILICA SAND
Top	Bottom	Ft.	
Top	Bottom	Ft.	

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	WOOD/WEEDS/TOPSOIL
1.0	10.0	TAN/WHITE SILTY CLAY
10.0	15.0	BLACK SILTY SAND/SHELL
15.0	20.0	GRAY/GREEN CLAY SILT SAND/SHELL

12. REMARKS:

BENTONITE SEAL FROM 5.0 TO 8.0 FEET

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.

SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE 08/29/11

MIKE MCCONAHEY
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2402

1. WELL CONTRACTOR:

MIKE MCCONAHEY
Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC
Well Contractor Company Name

176 COMMERCE BLVD
Street Address

STATESVILLE NC 28625
City or Town State Zip Code

(704) 872-7686
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# N/A

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) OBW-3

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation☐ Other ☐ (list use)

DATE DRILLED 08/25/11

4. WELL LOCATION:

WHITE OAK RIVER ROAD 28555
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: MAYSVILLE COUNTY JONES

TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other

LATITUDE ___°___'___" DMS **OR** ___ DD

LONGITUDE ___°___'___" DMS **OR** ___ DD

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

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

PROPOSED C&D LANDFILL N/A
Facility Name Facility ID# (if applicable)

WHITE OAK RIVER ROAD
Street Address

MAYSVILLE NC 28555
City or Town State Zip Code

GREEN RECYCLING SOLUTIONS, LLC
Contact Name

166 CENTER STREET
Mailing Address

JACKSONVILLE NC 28546
City or Town State Zip Code

(_____) _____
Area code Phone number

6. WELL DETAILS:

a. **TOTAL DEPTH:** 20.0 FEET

b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑

c. **WATER LEVEL** Below Top of Casing: 11.0 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 2.5 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	Bottom	Top	Bottom
Top	Bottom	Top	Bottom
Top	Bottom	Top	Bottom

7. CASING:

Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 10.0	Ft. 2 INCH	SCH 40	PVC
Top	Bottom	Ft.		
Top	Bottom	Ft.		

8. GROUT:

Depth		Material	Method
Top 0.0	Bottom 5.0	Ft. PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.	
Top	Bottom	Ft.	

9. SCREEN:

Depth		Diameter	Slot Size	Material
Top 10.0	Bottom 20.0	Ft. 2.0 in.	.010 in.	PVC
Top	Bottom	Ft. in.	in.	
Top	Bottom	Ft. in.	in.	

10. SAND/GRAVEL PACK:

Depth		Size	Material
Top 8.0	Bottom 20.0	Ft. 20-40	FINE SILICA SAND
Top	Bottom	Ft.	
Top	Bottom	Ft.	

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	WOOD/WEEDS/TOPSOIL
1.0	10.0	TAN/WHITE SILTY CLAY
10.0	15.0	BLACK SILTY SAND/SHELL
15.0	20.0	GRAY/GREEN CLAY SILT SAND/SHELL

12. REMARKS:

BENTONITE SEAL FROM 5.0 TO 8.0 FEET

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.

SIGNATURE OF CERTIFIED WELL CONTRACTOR 08/29/11 DATE

MIKE MCCONAHEY
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2402

1. WELL CONTRACTOR:
MIKE MCCONAHEY
Well Contractor (Individual) Name
GEOLOGIC EXPLORATION, INC
Well Contractor Company Name
176 COMMERCE BLVD
Street Address
STATESVILLE NC 28625
City or Town State Zip Code
(704) 872-7686
Area code Phone number

2. WELL INFORMATION:
WELL CONSTRUCTION PERMIT# N/A
OTHER ASSOCIATED PERMIT#(if applicable)
SITE WELL ID #(if applicable) OBW-4

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation☐ Other ☐ (list use)
DATE DRILLED 08/25/11

4. WELL LOCATION:
WHITE OAK RIVER ROAD 28555
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: MAYSVILLE COUNTY JONES
TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other
LATITUDE ___°___'___" DMS **OR** ___ DD
LONGITUDE ___°___'___" DMS **OR** ___ DD
Latitude/longitude source: ☐GPS ☐Topographic map
(location of well must be shown on a USGS topo map andattached to this form if not using GPS)

5. FACILITY (Name of the business where the well is located.)
PROPOSED C&D LANDFILL N/A
Facility Name Facility ID# (if applicable)
WHITE OAK RIVER ROAD
Street Address
MAYSVILLE NC 28555
City or Town State Zip Code
GREEN RECYCLING SOLUTIONS, LLC
Contact Name
166 CENTER STREET
Mailing Address
JACKSONVILLE NC 28546
City or Town State Zip Code
(___) ___
Area code Phone number

6. WELL DETAILS:
a. **TOTAL DEPTH:** 20.0 FEET
b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑
c. **WATER LEVEL** Below Top of Casing: 11.0 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 2.5 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___ Bottom___ Top___ Bottom___
Top___ Bottom___ Top___ Bottom___
Top___ Bottom___ Top___ Bottom___

7. CASING:	Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 10.0	Ft.	2 INCH	SCH 40	PVC
Top	Bottom	Ft.			
Top	Bottom	Ft.			

8. GROUT:	Depth		Material	Method
Top 0.0	Bottom 5.0	Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.		
Top	Bottom	Ft.		

9. SCREEN:	Depth		Diameter	Slot Size	Material
Top 10.0	Bottom 20.0	Ft.	2.0 in.	.010 in.	PVC
Top	Bottom	Ft.	in.	in.	
Top	Bottom	Ft.	in.	in.	

10. SAND/GRAVEL PACK:	Depth		Size	Material
Top 8.0	Bottom 20.0	Ft.	20-40	FINE SILICA SAND
Top	Bottom	Ft.		
Top	Bottom	Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	WOOD/WEEDS/TOPSOIL
1.0	10.0	TAN/WHITE SILTY CLAY
10.0	15.0	BLACK SILTY SAND/SHELL
15.0	20.0	GRAY/GREEN CLAY SILT SAND/SHELL

12. REMARKS:
BENTONITE SEAL FROM 5.0 TO 8.0 FEET

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.

SIGNATURE OF CERTIFIED WELL CONTRACTOR 08/29/11 DATE

MIKE MCCONAHEY
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2402

1. WELL CONTRACTOR:

MIKE MCCONAHEY
Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC
Well Contractor Company Name

176 COMMERCE BLVD
Street Address

STATESVILLE | NC | 28625
City or Town | State | Zip Code

(704) 872-7686
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# N/A

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) OBW-6

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)

DATE DRILLED 08/24/11

4. WELL LOCATION:

WHITE OAK RIVER ROAD 28555
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: MAYSVILLE COUNTY JONES

TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other

LATITUDE ___°___'___" DMS **OR** ___ DD

LONGITUDE ___°___'___" DMS **OR** ___ DD

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

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

PROPOSED C&D LANDFILL | N/A
Facility Name | Facility ID# (if applicable)

WHITE OAK RIVER ROAD
Street Address

MAYSVILLE | NC | 28555
City or Town | State | Zip Code

GREEN RECYCLING SOLUTIONS, LLC
Contact Name

166 CENTER STREET
Mailing Address

JACKSONVILLE | NC | 28546
City or Town | State | Zip Code

( )
Area code Phone number

6. WELL DETAILS:

a. **TOTAL DEPTH:** 20.0 FEET

b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑

c. **WATER LEVEL** Below Top of Casing: 11.0 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 2.5 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	Bottom	Top	Bottom
Top	Bottom	Top	Bottom
Top	Bottom	Top	Bottom

7. CASING:

Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 10.0 Ft.	2 INCH	SCH 40	PVC
Top	Bottom Ft.			
Top	Bottom Ft.			

8. GROUT:

Depth		Material	Method
Top 0.0	Bottom 5.0 Ft.	PORTLAND BENTONITE	SLURRY
Top	Bottom Ft.		
Top	Bottom Ft.		

9. SCREEN:

Depth		Diameter	Slot Size	Material
Top 10.0	Bottom 20.0 Ft.	2.0 in.	.010 in.	PVC
Top	Bottom Ft.	in.	in.	
Top	Bottom Ft.	in.	in.	

10. SAND/GRAVEL PACK:

Depth		Size	Material
Top 8.0	Bottom 20.0 Ft.	20-40	FINE SILICA SAND
Top	Bottom Ft.		
Top	Bottom Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	WOOD/WEEDS/TOPSOIL
1.0	10.0	TAN/WHITE SILTY CLAY
10.0	15.0	BLACK SILTY SAND/SHELL
15.0	20.0	GRAY/GREEN CLAY SILT SAND/SHELL

12. REMARKS:

BENTONITE SEAL FROM 5.0 TO 8.0 FEET

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.

SIGNATURE OF CERTIFIED WELL CONTRACTOR | 08/29/11 DATE

MIKE MCCONAHEY
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300

Form GW-1b
Rev. 2/09

NON RESIDENTIAL WELL CONSTRUCTION RECORD

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

WELL CONTRACTOR CERTIFICATION # 2402

1. WELL CONTRACTOR:

MIKE MCCONAHEY
Well Contractor (Individual) Name

GEOLOGIC EXPLORATION, INC
Well Contractor Company Name

176 COMMERCE BLVD
Street Address

STATESVILLE | NC | 28625
City or Town | State | Zip Code

(704) 872-7686
Area code Phone number

2. WELL INFORMATION:

WELL CONSTRUCTION PERMIT# N/A

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) OBW-10

3. WELL USE (Check One Box) Monitoring ☑ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)

DATE DRILLED 08/23/11

4. WELL LOCATION:

WHITE OAK RIVER ROAD 28555
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: MAYSVILLE COUNTY JONES

TOPOGRAPHIC / LAND SETTING: (check appropriate box)
☐Slope ☐Valley ☐Flat ☐Ridge ☐Other

LATITUDE ___°___'___" DMS **OR** ___ DD

LONGITUDE ___°___'___" DMS **OR** ___ DD

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

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

PROPOSED C&D LANDFILL | N/A
Facility Name | Facility ID# (if applicable)

WHITE OAK RIVER ROAD
Street Address

MAYSVILLE | NC | 28555
City or Town | State | Zip Code

GREEN RECYCLING SOLUTIONS, LLC
Contact Name

166 CENTER STREET
Mailing Address

JACKSONVILLE | NC | 28546
City or Town | State | Zip Code

( )
Area code Phone number

6. WELL DETAILS:

a. **TOTAL DEPTH:** 20.0 FEET

b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑

c. **WATER LEVEL** Below Top of Casing: 11.0 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 2.5 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	Bottom	Top	Bottom
Top	Bottom	Top	Bottom
Top	Bottom	Top	Bottom

7. CASING:

Depth		Diameter	Thickness/ Weight	Material
Top 0.0	Bottom 10.0	Ft. 2 INCH	SCH 40	PVC
Top	Bottom	Ft.		
Top	Bottom	Ft.		

8. GROUT:

Depth		Material	Method
Top 0.0	Bottom 5.0	Ft. PORTLAND BENTONITE	SLURRY
Top	Bottom	Ft.	
Top	Bottom	Ft.	

9. SCREEN:

Depth		Diameter	Slot Size	Material
Top 10.0	Bottom 20.0	Ft. 2.0 in.	.010 in.	PVC
Top	Bottom	Ft. in.	in.	
Top	Bottom	Ft. in.	in.	

10. SAND/GRAVEL PACK:

Depth		Size	Material
Top 8.0	Bottom 20.0	Ft. 20-40	FINE SILICA SAND
Top	Bottom	Ft.	
Top	Bottom	Ft.	

11. DRILLING LOG

Top	Bottom	Formation Description
0.0	1.0	WOOD/WEEDS/TOPSOIL
1.0	10.0	TAN/WHITE SILTY CLAY
10.0	15.0	BLACK SILTY SAND/SHELL
15.0	20.0	GRAY/GREEN CLAY SILT SAND/SHELL

12. REMARKS:

BENTONITE SEAL FROM 5.0 TO 8.0 FEET

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.

SIGNATURE OF CERTIFIED WELL CONTRACTOR | 08/29/11 DATE

MIKE MCCONAHEY
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300

Form GW-1b
Rev. 2/09

PROJECT: Proposed Maysville C&D Landfill				OWB-1	
BORING LOCATION: Proposed Maysville C&D Landfill				GROUND SURFACE ELEVATION AND DATUM: TBD	
DRILLING CONTRACTOR: Geologic Exploration				DATE STARTED: 8/25/11	DATE FINISHED: 8/25/11
DRILLING METHOD: Hollow-stem auger				TOTAL DEPTH (ft.): 20	SCREEN INTERVAL (ft.): 10-20
DRILLING EQUIPMENT: Diedrich D-120 Truck Rig				DEPTH TO WATER: FIRST: 13.55 COMPL. 13.92	CASING: 2" Sch.40PVC
SAMPLING METHOD: Split Spoon				LOGGED BY: Chris Means	
HAMMER WEIGHT: 142 Lbs.	DROP: 32"			DRILLER: Mike McConahey	REG. NO. 2402

DEPTH (feet)	SAMPLES Blows/ 6 Inches	OVM Reading	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0				Above Grade Well Monument
1	4-4-5	N/A	Dark grey/Dark Brown, fine sandy SILT, dry	
2				10" diameter borehole Neat cement grout.
3				
4				2" diameter Schedule 40 PVC casing
5	2-6-8		Light/medium brown, clayey medium SAND, dry/slightly moist	
6				Bentonite Chip Seal
7				
8				#2 filter pack sand
9			SM - Light brown, coarse SAND with very little clay with a few rounded quartz pieces, very moist	
10	3-3-3			
11			Light brown, silty CLAY, slightly moist	
12				
13				
14				
15	4-4-3		SM - Black, clayey coarse SAND with small well rounded quartz pieces, wet	2" diameter, 0.010" slot, Schedule 40 PVC screen
16				
17				
18				
19			SP - Dark grey, clayey coarse SAND, wet	
20	woh-woh-woh			2" diameter Schedule 40 PVC end cap
21				Slough

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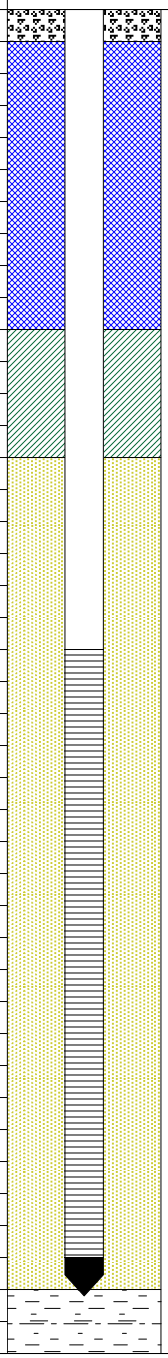
PROJECT: Proposed Maysville C&D Landfill				OWB-2	
BORING LOCATION: Proposed Maysville C&D Landfill				GROUND SURFACE ELEVATION AND DATUM: TBD	
DRILLING CONTRACTOR: Geologic Exploration				DATE STARTED: 8/25/11	DATE FINISHED: 8/25/11
DRILLING METHOD: Hollow-stem auger				TOTAL DEPTH (ft.): 20	SCREEN INTERVAL (ft.): 10-20
DRILLING EQUIPMENT: Diedrich D-120 Truck Rig				DEPTH TO WATER: FIRST: 13.62 COMPL. 13.62	CASING: 2" Sch.40PVC
SAMPLING METHOD: Split Spoon				LOGGED BY: Chris Means	
HAMMER WEIGHT: 142 Lbs.	DROP: 32"			DRILLER: Mike McConahey	REG. NO. 2402

DEPTH (feet)	SAMPLES Blows/ 6 Inches	OVM Reading	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0				Above Grade Well Monument
1	4-4-4	N/A	Medium brown, clayey SILT, dry	
2				10" diameter borehole
3				Neat cement grout.
4				2" diameter Schedule 40 PVC casing
5	5-5-4		Light/medium brown, silty CLAY, dry/slightly moist	
6				Bentonite Chip Seal
7				
8				#2 filter pack sand
9				
10	3-3-3		SM - Medium brown, coarse SAND, very moist	
11				
12				
13				
14				
15	2-1-1			2" diameter, 0.010" slot, Schedule 40 PVC screen
16				
17			SP - Dark grey, clayey coarse SAND, very wet, small clay lenses	
18				
19				
20	wor-wor-1			2" diameter Schedule 40 PVC end cap
21				Slough



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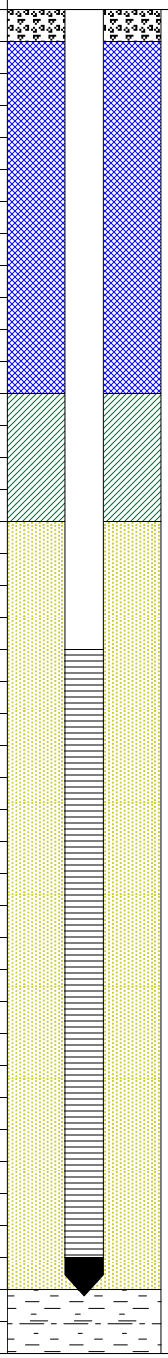
PROJECT: Proposed Maysville C&D Landfill				OWB-3	
BORING LOCATION: Proposed Maysville C&D Landfill				GROUND SURFACE ELEVATION AND DATUM: TBD	
DRILLING CONTRACTOR: Geologic Exploration				DATE STARTED: 8/25/11	DATE FINISHED: 8/25/11
DRILLING METHOD: Hollow-stem auger				TOTAL DEPTH (ft.): 20	SCREEN INTERVAL (ft.): 10-20
DRILLING EQUIPMENT: Diedrich D-120 Truck Rig				DEPTH TO WATER: FIRST: 12.75 COMPL. 12.79	CASING: 2" Sch.40PVC
SAMPLING METHOD: Split Spoon				LOGGED BY: Chris Means	
HAMMER WEIGHT: 142 Lbs.	DROP: 32"			DRILLER: Mike McConahey	REG. NO. 2402

DEPTH (feet)	SAMPLES Blows/ 6 Inches	OVM Reading	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0				Above Grade Well Monument
1	2-3-4	N/A	Dark/medium brown, silty CLAY, dry, tight	
2				10" diameter borehole Neat cement grout.
3				
4				2" diameter Schedule 40 PVC casing
5	3-3-3		Light/medium brown, fine sandy CLAY, slightly moist, very fine sand	
6				
7				Bentonite Chip Seal
8			Black, silty CLAY, moist	#2 filter pack sand
9				
10	2-2-3			
11			SM - Light/medium brown, coarse SAND, very moist	
12				
13				
14				
15	woh-woh-1			2" diameter, 0.010" slot, Schedule 40 PVC screen
16				
17			SP - Dark grey, clayey SAND, wet, small intermittent clay lenses	
18				
19				
20	woh-woh-woh			2" diameter Schedule 40 PVC end cap
21				Slough



PROJECT: Proposed Maysville C&D Landfill				OWB-4
BORING LOCATION: Proposed Maysville C&D Landfill				GROUND SURFACE ELEVATION AND DATUM: TBD
DRILLING CONTRACTOR: Geologic Exploration			DATE STARTED: 8/25/11	DATE FINISHED: 8/25/11
DRILLING METHOD: Hollow-stem auger			TOTAL DEPTH (ft.): 20	SCREEN INTERVAL (ft.): 10-20
DRILLING EQUIPMENT: Diedrich D-120 Truck Rig			DEPTH TO WATER: FIRST: 13.93 / COMPL. 13.86	CASING: 2" Sch.40PVC
SAMPLING METHOD: Split Spoon			LOGGED BY: Chris Means	
HAMMER WEIGHT: 142 Lbs.	DROP: 32"		DRILLER: Mike McConahey	REG. NO. 2402

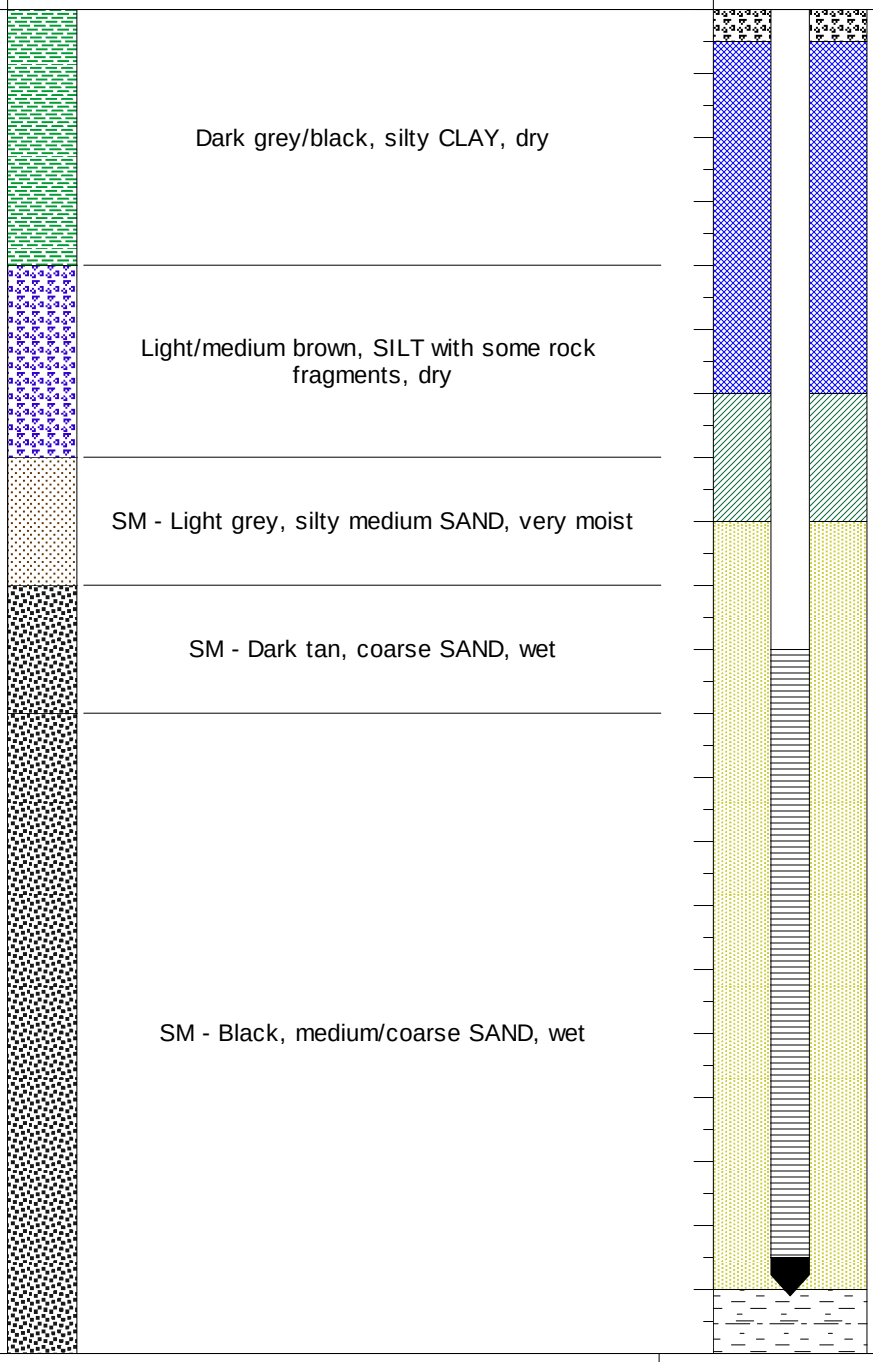
DEPTH (feet)	SAMPLES Blows/ 6 Inches	OVM Reading	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0			Dark grey, fine sandy SILT, dry	Above Grade Well Monument
1	4-5-5	N/A		
2			Light/medium grey, silty CLAY, slightly moist, tight	10" diameter borehole Neat cement grout.
3				
4				2" diameter Schedule 40 PVC casing
5	5-9-8		Light brown, clayey medium SAND, slightly moist	
6				
7				Bentonite Chip Seal
8				#2 filter pack sand
9				
10	2-3-3		SM - Light/medium brown, silty SAND, moist	
11				
12				
13				
14				
15	wor-wor-wor			2" diameter, 0.010" slot, Schedule 40 PVC screen
16				
17			SP - Dark grey, clayey coarse SAND, wet, small intermittent clay lenses	
18				
19				
20	wor-wor-wor			2" diameter Schedule 40 PVC end cap
21				Slough

PROJECT: Proposed Maysville C&D Landfill				OWB-6	
BORING LOCATION: Proposed Maysville C&D Landfill				GROUND SURFACE ELEVATION AND DATUM: TBD	
DRILLING CONTRACTOR: Geologic Exploration				DATE STARTED: 8/24/11	DATE FINISHED: 8/24/11
DRILLING METHOD: Hollow-stem auger				TOTAL DEPTH (ft.): 20	SCREEN INTERVAL (ft.): 10-20
DRILLING EQUIPMENT: Diedrich D-120 Truck Rig				DEPTH TO WATER: FIRST: 13.70 COMPL. 13.78	CASING: 2" Sch.40PVC
SAMPLING METHOD: Split Spoon				LOGGED BY: Chris Means	
HAMMER WEIGHT: 142 Lbs.	DROP: 32"			DRILLER: Mike McConahey	REG. NO. 2402

DEPTH (feet)	SAMPLES Blows/ 6 Inches	OVM Reading	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0				Above Grade Well Monument
1	3-3-3	N/A		
2			Medium grey, fine sandy SILT, dry	10" diameter borehole Neat cement grout.
3				
4				2" diameter Schedule 40 PVC casing
5	2-1-3			
6			Light grey, silty CLAY, slightly moist	
7				Bentonite Chip Seal
8				#2 filter pack sand
9				
10	3-2-3		SP - Black, silty coarse SAND, with a few well rounded pieces of quartz	
11				
12				
13				
14				
15	2-8-9		SP-SM - Light/medium grey, silty coarse SAND, with some shell material, wet	2" diameter, 0.010" slot, Schedule 40 PVC screen
16				
17				
18				
19			SP - Dark grey, fine sandy SILT with a small amount of clay, wet	2" diameter Schedule 40 PVC end cap
20	woh-woh-6			
21			Light grey, shell material, SAND with some gravel	Slough

PROJECT: Proposed Maysville C&D Landfill				OWB-10	
BORING LOCATION: Proposed Maysville C&D Landfill				GROUND SURFACE ELEVATION AND DATUM: TBD	
DRILLING CONTRACTOR: Geologic Exploration				DATE STARTED: 8/22/11	DATE FINISHED: 8/23/11
DRILLING METHOD: Hollow-stem auger				TOTAL DEPTH (ft.): 20	SCREEN INTERVAL (ft.): 10-20
DRILLING EQUIPMENT: Diedrich D-120 Truck Rig				DEPTH TO WATER: FIRST: 13.68 COMPL. 13.70	CASING: 2" Sch.40PVC
SAMPLING METHOD: Split Spoon				LOGGED BY: Chris Means	
HAMMER WEIGHT: 142 Lbs.	DROP: 32"			DRILLER: Mike McConahey	REG. NO. 2402

DEPTH (feet)	SAMPLES Blows/ 6 Inches	OVM Reading	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0				Above Grade Well Monument
1	N/A	N/A		
2			Dark grey/black, silty CLAY, dry	10" diameter borehole Neat cement grout.
3				
4				2" diameter Schedule 40 PVC casing
5	9-5-4		Light/medium brown, SILT with some rock fragments, dry	
6				
7				Bentonite Chip Seal
8			SM - Light grey, silty medium SAND, very moist	#2 filter pack sand
9				
10	10-7-4		SM - Dark tan, coarse SAND, wet	
11				
12				
13				
14				
15	2-1-1			2" diameter, 0.010" slot, Schedule 40 PVC screen
16			SM - Black, medium/coarse SAND, wet	
17				
18				
19				
20	wor-woh-2			2" diameter Schedule 40 PVC end cap
21				Slough



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