RCO File
Approved 2-7, 2006
49-03

PERMIT APPLICATION

PHASE 2A

Iredell Co.

CONSTRUCTION AND DEMOLITION LANDFILL

SCANNED
8/26/14

IREDELL COUNTY
STATESVILLE, NORTH CAROLINA

PROJECT NO. G04100

APPROVED
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION
DATE 2-7-06 BY

49-03

Janaury 2006

This - letter, possibly a draft + not mailed.

NCDENR

North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary

January 31, 2006

David F. Lambert
Iredell County
354 Twin Oaks Road
Statesville, North Carolina 28625

Re: Solid Waste Permit, Part 1- Permit to Construct
Iredell County MSWLF Landfill - CDLF Expansion 2A
Permit Number 49-03

Dear Mr. Lambert:

Enclosed is Solid Waste Permit 49-03, Part 1 - Permit to Construct for CDLF expansion (800 x 100) and specific construction of Phase 2 of the CDLF. Also enclosed is an approved copy of the permit to construct application.

Please note the Facility and CDLF pre-operative conditions (Condition No.'s 13, 14 and 19) that must be met in order to obtain Solid Waste Permit, Part 2 - Permit to Operate.

Please contact me at (704) 235-2163, if you have any questions or comments.

Sincerely,

John E. Murray, P.E.
Regional Permitting Engineer
Solid Waste Section

cc: Wayne Sullivan, Municipal Engineering
Brent Rockett, DWM
Ed Mussler, DWM
Teresa Bradford, DWM
Brian Wooten, DSW

610 East Center Avenue, Suite 301, Mooresville, North Carolina 28115
Phone: 704-663-1699 \ FAX: 704-663-6040 \ Internet: www.enr.state.nc.us

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One NorthCarolina Naturally

January 17, 2006

MEMORANDUM

APPROVED
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION
DATE 2-7-06 BY

To: John Murray

From: Brian Wootton

Subject: Application for Permit to Construct
Iredell County – C&D Landfill
Proposed Phase 2 Extension – 100 feet X 800 feet
Final Comments
Permit No. 49-03

I have reviewed the written request by Municipal Engineering Services, P.A. (December 16, 2005) on behalf of Iredell County to construct an additional 80,000 square feet to Phase 2. The hydrogeologic study was completed for Phase 2 and 3 on January 28, 2004. Vertical separation requirements between the seasonal high water table, rock, and bottom of waste are ample based on groundwater level data and statistical data from 2001 to 2005. **The Study and supporting information meets the criteria required in the Rules [(i.e. 15A NCAC 13B .0505(7)(a), and Solid Waste Section policy]; therefore, I have no objection to issuance of this portion to Permit to Construct based on this rule.**

Construction Conditions: (Include these conditions in the Permit to Construct)

The owner's geologist shall examine the cell excavation and note any pertinent geologic features exposed during the construction process and shall notify the Solid Waste Section Hydrogeologist of these findings prior to placement of any liner materials.

Surface water and ground-water monitoring requirements shall remain the same.

Please contact me with any questions or comments. I can be reached at (919) 508-8524 or by e-mail.

Sincerely,

Brian Wootton

Brian Wootton

File name: 4903-hydro-approval-RC0158

OPERATION/CONSTRUCTION MANAGERS

Municipal Services

CIVIL/SANITARY ENGINEERS

Engineering Company, P.A.

January 11, 2006

Mr. Brian Wootton
Solid Waste Section
Division of Waste Management
North Carolina Department of Environment and Natural Resources
401 Oberlin Road, Suite 150
Raleigh, NC 27605

Re: Iredell County C&D Landfill Phase 2 Extension - Permit # 49-03
MESCO Project No. G04100

Dear Mr. Wootton:

In response to your concerns that the excavation has altered the groundwater elevations post design study. It has just come to my attention that the design study for the phase 2 & 3 portions of the Iredell county C&D landfills was performed post excavation of the area. Excavation of the area as a borrow site was performed in 2001 and 2002. Piezometers installed for the Phase 2 & 3 study were installed in October and November 2001. Water levels used to calculate seasonal highs were collected from February 2002 until December 2003.

The site has been sampled four times since completion of the Design Study. As part of the ground water sampling groundwater levels were measured. Four of the design study piezometers were converted to monitoring wells (CD-3 to MW-22, CD-6 to MW-23, CD-8S to MW-24S, and CD-8D to MW-24D). Monitoring wells MW-24S and MW-24D are down gradient of the excavated area. Water levels fluctuations observed during the sampling events in monitoring wells MW-24S and MW-24D are in-line with the water level fluctuations observed from monitoring wells MW-9RR and MW-10R. Groundwater levels from the sampling events have not indicated a rise in water levels since the design study was completed. Groundwater levels, on average, from January 2004 through July 2005 have decreased in depth as compared to measured averages. Included is a summary of groundwater levels for wells used during sampling events and a general site map showing monitoring well locations.

If you have any questions or comments regarding this information, please contact me at (919) 772-5393 or by email at ecaldwell@mesco.com

Sincerely,
MUNICIPAL ENGINEERING SERVICES CO., P.A.

Ethan J. Caldwell, PG
Geologist

Enclosures
cc: Mr. John Murray, NCDENR Environmental Engineer, Mooresville Regional Office

OPERATION/CONSTRUCTION MANAGERS

Municipal Services

CIVIL/SANITARY ENGINEERS

Engineering Company, P.A.

December 16, 2005

Received
JAN
Solid Waste Section

Mr. Brian Wootton
Solid Waste Section
Division of Waste Management
North Carolina Department of Environment and Natural Resources
401 Oberlin Road, Suite 150
Raleigh, NC 27605

Re:: Iredell County C&D Landfill Phase 2 Extension - Permit # 49-03
MESCO Project No. G04100

Dear Mr. Wootton:

Included is a brief summary of the approved Phase 2 & 3 Hydrogeologic Study for Iredell County C&D Landfill. The study was completed and on January 28, 2004. Phase 2 & 3 of the C&D landfill consists of approximately 17 acres. As part of the Phase 2 & 3 investigation Municipal Engineering Services (MESCO) installed ten piezometers to supplement the existing ten monitoring wells/piezometers from the Phase 1 portion.

Water levels for the Phase 2 & 3 investigation were collected from December 26, 2001 until December 17, 2003. The data collected was utilized to statistically predict long-term seasonal high water table elevations correlated to long-term seasonal high groundwater elevations from USGS wells. Plate 1, attached, depicts the calculated long term seasonal high potentiometric contours. Additionally on Plate 1, a cross section line along the proposed Phase 2 extension shows the calculated long term seasonal high, proposed sub-grade and existing grade-based on a February 2005 survey. Included are copies of pertinent plates from the Phase 2 & 3 Hydrogeologic Study. The first plate, Plate 4, shows cross section lines across Phase 2 & 3. The second plate, Plate 4A, depicts the cross sections showing soil lithologies, calculated long term seasonal high groundwater, proposed sub-grade, and proposed fill.

Boring logs were reviewed to determine top of competent rock. Competent rock was only encountered in boring CD-2, based on hollow stem auger refusal. Refusal occurred at 45 feet below ground surface (820.46 ft). Calculated long seasonal high for CD-2 is 835.13 ft., or 14.67 ft. above competent rock.

Phase 2 was build with a minimum vertical separation of 4 feet above calculated seasonal high groundwater in compliance with 15A NCAC 13B .0503 (d) (i). The Phase 2 extension and Phase 3 will also be built with a minimum 4 foot separation above the calculated long term seasonal high.

PO Box 97, Garner, North Carolina 27529 (919) 772-5393
PO Box 1197, Morehead City, NC 28557 (252) 726-9481
PO Box 349, Boone, North Carolina 28607 (828) 262-1767

Coinciding with the Phase 3 Engineering Permit, the Ground and Surface Water Sampling and Analysis Plan, as submitted in Appendix E of the Phase 2 & 3 Hydrogeologic Study, will be amended. The submitted sampling and analysis plan was submitted to adequately monitor all three phases of the C&D landfill. The plan falls to take into account the down gradient aspect of Phase 3, as such, the plan will be amended to address this concern.

If you have any questions or comments regarding this information, please contact me at (919) 772-5393 or by email at ecaldwell@mesco.com

Sincerely,
MUNICIPAL ENGINEERING SERVICES CO., P.A.

Ethan J. Caldwell, PG
Geologist

Enclosures
cc: Mr. John Murray, NCDENR Environmental Engineer, Mooresville Regional Office

000731

IREDELL COUNTY NC
Book 1212
Pages 1092 - 1093
FILED 2 PAGE(S)
08/07/2000 3:37 PM
BRENDA D. BELL
Register Of Deeds

IREDELL COUNTY NC 08/07/2000
$1534.00
STATE OF NORTH CAROLINA Real Estate Excise Tax

Excise Tax $1,534.00

Recording Time, Book and Page

19
2

Tax Lot No. _____ Parcel Identifier No. _____
Verified by _____ County on the _____ day of _____, 19___
by _____

Mail after recording to **Pope, McMillan, Kutteh, Simon & Privette, P.A.** **No Title Opinion**
This instrument was prepared by William P. Pope, Attorney at Law
Brief Description for the index

NORTH CAROLINA GENERAL WARRANTY DEED

THIS DEED made August 7, 2000, by and between

GRANTOR	GRANTEE
Joy Acres Farm, Ltd., a North Carolina Limited Partnership	**Iredell County, a body politic and corporate and a political subdivision of the State of North Carolina** **P.O. Box 788** **Statesville, NC**

Enter in appropriate block for each party: name, address, and, if appropriate, character of entity, e.g., corporation or partnership.

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in the City of , Chambersburg Township, **Iredell** County, North Carolina and more particularly described as follows:

To locate the beginning point commence at an existing concrete monument which is situated in the Southeast corner of Accuma Corporation (Deed Book 1188,Page 1434) and run from said existing concrete monument N 05°36' 28" East 269.84 feet to a new iron pin corner subject property and Accuma Corporation(said iron pin is located N 76°45' 53" West 8.86 feet from the eastern edge of a sanitary sewer easement; and running from the beginning with the line of Accuma Corporation N 76°45' 53" West a total distance of 888.98 feet to an existing rebar (the N.C. Grid coordinates of which are N=7.37,558.65 and E=1,457,461.85) corner J.C. Steele & Sons, Inc. (Deed Book 574, Page 127); thence with Steele's line N 60° 26' 23" West 354.12feet to a new iron pin thence with another line of Steele N 04°36'27" West 710.00 feet to a new iron pin another corner of Steele thence with another line of Steele S 87°38' 55" West 470.0 feet to a new iron pin thence with another line of Steele S 05° 56' 55" West 1177.33 feet to a existing iron corner Ideal Basic Industries, (Deed Book 693, Page 732) thence with this line N 75° 57'12" West 730.64 feet to an existing rebar thence N 01°45'24" East 164.88 feet to an existing stone corner Iredell Development Company(Deed Book 1147, Page 1750) thence with its line N 03°16'09" East 450.50 feet to an existing iron thence N 88°39'07" West 187.41 feet to an existing iron pin thence N 00° 36' 03" East 96.87 feet to an existing rebar thence N 04°51'17" West 372.43 feet to an existing rebar thence N 47°21' 40" West 22.19 feet to an existing iron bolt thence N 01°37' 40" West 82.45 feet to an existing rebar corner of Iredell County(Deed Book 816, Page 155) thence with the line of Iredell County S 87°17' 53" East 2847.68 feet to a new iron pin in the line of a tract now or formerly owned by K.D. Haneline (Deed Book 939, Page 1822) thence S 04°51'51" West

N.C. Bar Assoc. Form No. 3 © 1977
Printed by Agreement with the N.C. Bar Assoc.
#003

181.12 feet to a point in the centerline of sanitary sewer easement thence continuing S 04°51'51" West 21.30 feet to an existing rebar corner of Merchant Metals, Inc. (Deed Book 670, Page 918) thence S 05°36'28" 947.21 feet to a new iron pin at the point of beginning and containing 54.76 acres more or less and being according to a survey by Municipal Engineering Services Company, P.A. dated June 20, 2000. For back title see the deed recorded in Book 567, Page 495, Iredell County Registry.

Together with a non-exclusive fifty (50) foot rights fo way and easements recorded in Deed Book 441, page 240, Iredell County Registry.

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever except for the exceptions hereinafter stated.

Title to the property hereinabove described is subject to the following exceptions:

IN WITNESS WHEREOF, the Grantor has hereunto set his hand and seal, or if corporate, has caused this instrument to be signed in its corporate name by its duly authorized officers and its seal to be hereunto affixed by authority of its Board of Directors, the day and year first above written.

JOY ACRES FARM, LTD.
(Corporate Name)

By: Thomas A. Fanjoy
~~President~~ General Partner

ATTEST:

Secretary (Corporate Seal)

SEAL-STAMP

NORTH CAROLINA, Iredell County.
I, the undersigned, a Notary Public of the County and State aforesaid, certify that Thomas A. Fanjoy Partner of Joy Acres Farm, Ltd., a North Carolina General Partnership, Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument.

Witness my hand and official stamp or seal, this 7 day of August, 2000.

My commission expires: 09-28-2000 Amy J. Cummings Notary Public

USE BLACK INK ONLY

The foregoing Certificate(s) of Amy J. Cummings

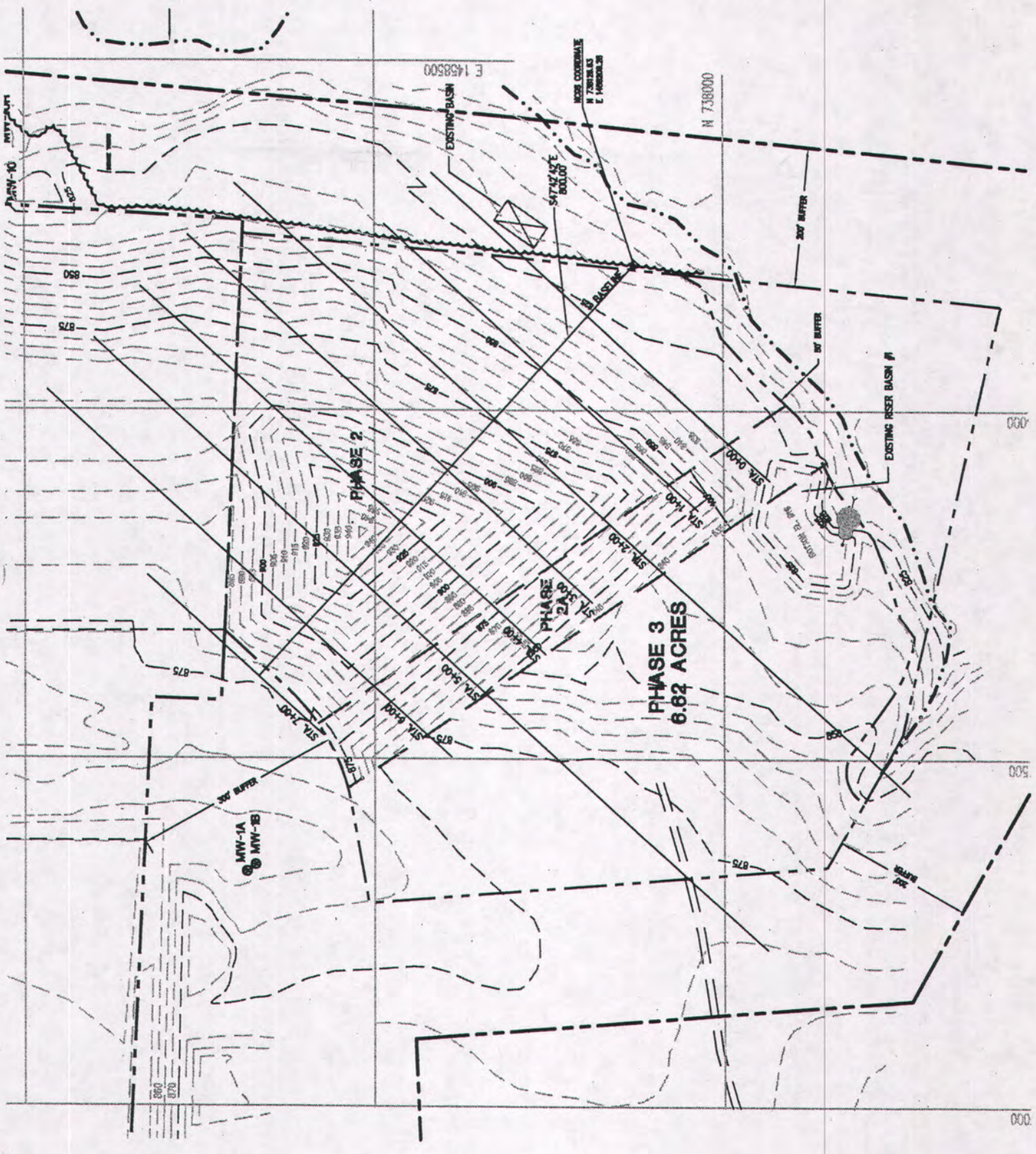
is/are certified to be correct. This instrument and this certificate are duly registered at the date and time and in the Book and Page shown on the first page hereof.

Brenda D. Bell REGISTER OF DEEDS FOR Iredell COUNTY

By Teresa L. Fox Deputy/~~Assistant~~ Register of Deeds.

N.C. Bar Assoc. Form No. 3 © 1977
Printed by Agreement with the N.C. Bar Assoc.
#003

PHASE 3 FOOTPRINT = 6.62 ACRES



1200

STATE OF NORTH CAROLINA
Rec. Estate Excise Tax
DEC 27 '90
502.00

BOOK 0816 PAGE 155
FILED
IREDELL COUNTY
'90 DEC 27 PM 3 49
BRENDA D. BELL
REGISTER OF DEEDS

Excise Tax 502.00 RS. Recording Time, Book and Page

Tax Lot No. ..... Parcel Identifier No. .....
Verified by ..... County on the day of ....., 19 ....
by .....

Mail after recording to P. O. Box 788, Statesville, NC 28677

This instrument was prepared by E. Bedford Cannon, Attorney at Law
Brief description for the Index

NORTH CAROLINA GENERAL WARRANTY DEED

THIS DEED made this 27th day of ~~November~~ December, 1990, by and between

GRANTOR	GRANTEE
JOY ACRES FARM LTD., a North Carolina limited partnership	IREDELL COUNTY
	P.O. Box 788 Statesville, NC 28677

Enter in appropriate block for each party: name, address, and, if appropriate, character of entity, e.g. corporation or partnership.

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in the City of Chambersburg Township, County, North Carolina and more particularly described as follows:

see attached Exhibit A

COPY

EXHIBIT A

BOOK 816 PAGE 156

BEING ALL of that tract of land containing 91.1296 acres by coordinate geometry lying approximately 1800 feet northeast of U.S. Highway 70 in Chambersburg Township, Iredell County, North Carolina; bounded by natural boundaries and/or lands owned by or in the possession of persons as follows: On the north by Vernon C. Neal, Inc. (Deed Book 756, Page 9, Tract 5); On the east by Vernon C. Neal, Inc. (Deed Book 756, Page 9, Tract 3); Iredell County (Deed Book 744, Page 750); Jeffrey Vinson (Lot 22, Ms. Robey Lackey Subdivision, Plat Book 7, Page 36), and Johnny Kimber Haneline (Deed Book 384, Page 218, Lots 21, Lackey Subdivision), On the south by Joy Acres Farms, Ltd. (Deed Book 567, Page 492), on the west by Paul and Harry Tsumas (Deed Book 614, Page 318), ACTT Corporation (Deed Book 491, Page 345) and Ebony Acres Subdivision (Plat Book 12, Page 45), and being more particularly described by courses (N.C. Grid) and distances horizontal surface (according to a survey performed in October and November 1990 by Municipal Engineering Services Company, P.A. under the direction and supervision of C. Neal Bare, R.L.S. L-2425 in North Carolina as follows):

BEGINNING at a point in a new dividing line of Joy Acres Farms, Ltd. (said point of beginning can be located by beginning at USGS Control Monument "Third" having a 1983 NAD Grid coordinate value of X=443,954.051m Y=224,594.659m) and running from said control monument North 14° 27' 1" East a horizontal distance of 1817.99 feet, and running thence from the point of Beginning and along the new line, North 87° 17' 55" West a total distance of 1327.76 feet to a point in the eastern boundary line of the aforesaid Tsumas property (which point is located North 1° 44' 26" East 81.91 feet from an existing iron (bolt) at a fence corner on the the west bank of a branch); thence along said line the following five courses and distances: (1) North 01° 44' 26" West 404.86 feet to an iron rebar set at a fence corner; (2) North 28° 46' 34" East 23.07 feet to an iron rebar set in the center of the aforesaid branch; (3) North 01° 20' 34" East 151.58 feet to an iron pipe found at a fence corner; (4) North 79° 51' 02" West 20.56 feet to an iron rod found at a fence corner, and (5) North 05° 45' 40" East 256.92 feet to an iron rebar set at a fence corner (double post) at the southeast corner of the aforesaid ACTT Corporation property; thence along the eastern boundary of said property, the following three courses and distances: (1) North 04° 10' 07" East 214.50 feet to an iron rebar set; (2) North 53° 50' 07" East 495.00 feet to an iron rod found in a fence line near a corner of same, and (3) North 03° 14' 38" East 722.86 feet 6.38 feet normal to an iron found, continuing 125.07 feet 7.56 normal to an iron found,c ontinuing 109.82 feet 8.74 feet normal to an iron found, continuing 60.13 feet 9.34 feet normal to an iorn found, continuing 66.31 feet 9.47 feet normal to an iron found, continuing 103.81 feet for a total distance of 1188.0 feet to an iron rebar set at South 03° 14' 38" West 23.44 feet from a 2 inch iron pipe found on the north bank of another branch; said rebar also being the southwest corner of the aforesaid Vernon C. Neal, Inc. property (Tract 5); thence along the southern boundary of said boundary of said property the following five (5) courses and distances: (1) South 69° 59' 14" East 282.92 feet to an iron rebar set; (2) South 32° 38' 24" East 177.56 feet to an iron rebar set; (3) South 70° 36' 14" East 271.13 feet to an iron rebar set; (4) North 75° 53' 06" East 127.15 feet to an iron found at the south base of a 30 inch elm tree on the southeast side of a creek; and (5) North 85°10' 10" East 143.53 feet to a 2 inch iron found near a fence corner and in the western boundary of the Vernon C. Neal, Inc. property (Tract 3); thence along said boundary, South 04° 47' 49" West 153.67 feet to an iron rod found at the northeast corner of the aforesaid County property; thence along the western and a portion of the southern boundaries of said property the following two (2) courses and distances: (1) South 04° 11' 41" West 1186.24 feet to an iron rod found at a fence corner, and (2) South 87° 17' 55" East passing through a point at 1477.92 feet 1.46 feet for a total distance of 1647.98 feet to an iron found (drive shaft) on the east side of another branch at South 73° 25' 32" West 376.34 feet from an iron found, said drive shaft also being the northwest corner of the aforesaid Vinson property; thence along the western boundary of said property, South 03° 19' 07" West 267.60 feet to an iron pipe found (2 inch) at the northwest corner of the aforesaid Haneline property; thence along the western boundary of said property, South 03° 19' 07" West 639.85 feet to a point (which point is located North 15° 39' 38" East 184.52 feet from an existing iron pin found); thence along the aforesaid new dividing line of Joy Acres Farms, Ltd., North 87° 17' 55" West, a total distance of 1544.99 feet to the point and place of Beginning, and containing by area computed by coordinate geometry 91.1296 acres.

STATE OF Tennessee
COUNTY OF Knox

BOOK 0816 PAGE 157

I, a Notary Public of the County and State aforesaid, certify that John A. Fanjoy, a general partner of Joy Acres Farm Ltd., a North Carolina limited partnership, Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument. Witness my hand and official seal, this 10 day of December, 1990.

Sheila K Thompson
Notary Public

My commission expires: 6-20-94

STATE OF North Carolina
COUNTY OF Burke

I, a Notary Public of the County and State aforesaid, certify that Weldon S. Fanjoy, a general partner of Joy Acres Farm Ltd., a North Carolina limited partnership, Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument. Witness my hand and official seal, this 12th day of December, 1990.

Veronica Lee Byers
Notary Public

My commission expires: 12 Feb 94

Official

STATE OF NORTH CAROLINA -- Iredell County

The foregoing certificate (s) of Darla C. Ramsey, a Notary Public of Iredell Co NC, Sheila K. Thompson, a Notary Public of Knox Co TN + Veronica Lee Byers, a Notary Pub of Burke Co NC

is (are) certified to be correct. This instrument was presented for registration this day and hour and duly recorded in the office of the Register of Deeds of Iredell County, North Carolina in Book 816, Page 155.

This 27 day of December, A.D., 19 90 at 3:49 o'clock P .M.

Brenda O. Bell
REGISTER OF DEEDS

By: _____
Deputy Register of Deeds

IC-1

BOOK 0816 PAGE 158

The property hereinabove described was acquired by Grantor by instrument recorded in .....

.....

A map showing the above described property is recorded in Plat Book ..... page .....

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever except for the exceptions hereinafter stated.
Title to the property hereinabove described is subject to the following exceptions:
(a) easements and restrictions of record, (b) all 1990 ad valorem taxes which shall be prorated through date of closing, (c) zoning ordinances of any governmental authority which impact upon the premises.

The Sellers make no warranties as to the presence or absence on the premises of any hazardous waste or materials. Further, the Sellers make no warranties or representations regarding any environmental concerns which may impact upon the premises. By accepting this deed, the Grantee assumes sole responsibility and risk for any environmental concerns or problems connected with or impacting upon the premises, including but not limited to the presence of hazardous or toxic materials or waste.

IN WITNESS WHEREOF, the Grantor has hereunto set his hand and seal, or if corporate, has caused this instrument to be signed in its corporate name by its duly authorized officers and its seal to be hereunto affixed by authority of its Board of Directors, the day and year first above written.

..... (Corporate Name)

..... President

ATTEST:

..... Secretary (Corporate Seal)

USE BLACK INK ONLY

By: JOY ACRES FARM LTD., a NC limited partners
Thomas A. Fanjoy, general partner (SEAL)

Thomas A. Fanjoy, general partner (SEAL)

Weldon S. Fanjoy, general partner (SEAL)

..... (SEAL)

SEAL-STAMP

NORTH CAROLINA, Iredell County.

I, a Notary Public of the County and State aforesaid, certify that Thomas A. Fanjoy, a general partner of Joy Acres Farm Ltd. a North Carolina limited parternship Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument. Witness my hand and official stamp or seal, this 17th day of December, 19 90.

My commission expires: March 2, 1991 Darla C. Ramsey Notary Public

Use Black Ink

SEAL-STAMP

NORTH CAROLINA, ... County.

I, a Notary Public of the County and State aforesaid, certify that .....

personally came before me this day and acknowledged that .... he is ..... Secretary of ..... a North Carolina corporation, and that by authority duly given and as the act of the corporation, the foregoing instrument was signed in its name by its ..... President, sealed with its corporate seal and attested by ..... as its ..... Secretary.

Witness my hand and official stamp or seal, this ..... day of ....., 19.....

My commission expires: ..... Notary Public

Use Black Ink

The foregoing Certificate(s) of Darla C. Ramsey, a Notary Public of Iredell Co. NC

is/are certified to be correct. This instrument and this certificate are duly registered at the date and time and in the Book and Page shown on the first page hereof.

Darla D. Bell REGISTER OF DEEDS FOR Iredell COUNTY

By ..... Deputy/Assistant Register of Deeds

N. C. Bar Assoc. Form No. 3 © 1976, Revised © 1977 ...

Book:816,Page:155

OPERATION/CONSTRUCTION MANAGERS

Municipal Services

CIVIL/SANITARY ENGINEERS

Engineering Company, P.A.

October 11, 2006

Mr. Brian Wootton
Solid Waste Section
Division of Waste Management
North Carolina Department of Environment and Natural Resources
401 Oberlin Road, Suite 150
Raleigh, NC 27605

Re: Permit Application
Iredell County C&D Phase 3
Permit No. 49-03

Mr. Wootton,

In response to you letter dated July 20, 2006, Municipal Engineering Services Co., P.A. (MESCO) has included the supplemental information to clarify and expedite the review process for the above referenced site.

Following are responses to your comments and questions:

Section Comment: *Section 2 Written Report – (i): Page 5*

Part (i) of the Written Report States the following "*A survey plat and deed for this property has been included in this section.*"

A copy of the survey plat and deed could not be located in the application or I overlooked it during review of the application. Please provide copie(s) or clarification.

Also, depict on this map or an additional map the acreage for the footprint for Phase 3.

Three (3) copies of the survey plat and deed are included herein. An additional map depicting the acreage of the footprint for Phase 3 is included (3 copies).

Section Comment: Section 3 – *Operation plan for Iredell County – 3 Page 12*

Page 12 of the Operational Plan mentions, in part, the frequency of surface and ground-water sampling.

Additional ground-water well(s) and surface water sampling point(s) may be required to monitor any potential impacts to surface water and groundwater from Phase 3 landfill operations. Submit a written discussion of possible revised Water Quality Plan (that includes Phase 3) explaining the reasoning and possible necessity of additional ground-water wells and surface water sampling points.

Also, provide the most current map, depicting the location of existing and proposed locations of ground-water sampling wells and surface water sampling points associated with this phase, and adjacent phases.

<u>If additional ground-water and surface sampling points are required, then installation of well(s) and sampling will be required before a Permit to Operate is issued.</u>

The drawing submitted with the application do not depict locations of borings, piezometers/wells inside the waste boundary of proposed Phase 3. Please clarify by stating whether or not previous existing wells, piezometer, and borings have been abandoned (sealed) correctly within the proposed footprint of Phase 3.

Attached are three (3) copies of the revised Ground and Surface Water Sampling Analysis Plan (SAP) for Iredell County C&D Phase 3. Included in the SAP are the addition of three (3) groundwater monitoring wells. It should be noted that the monitoring wells have already been installed. A map (Plate A) depicts the current sampling locations. Monitoring wells MW-25, MW-26S, and MW-26D are shown inside the buffer limits, but they are outside the proposed fill area as can be seen on Plate A.

Background groundwater samples of MW-25, MW-26S and MW-26D are scheduled to be collected on October 12, 2006. Piezometers which were located inside the Phase 3 waste boundary were abandoned with grout in compliance with 15A NCAC 2C Rule .0113(a)(2) during the Phase 2 construction with the exception of CD-7. Piezometer CD-7 was abandoned with grout on January 28, 2005. Well construction records and well abandonment records are provided in the appendix of the SAP.

If you have any questions please feel free to contact me at (919) 772-5393.

Sincerely,

MUNICIPAL ENGINEERING SERVICES CO., P.A.

Ethan J. Caldwell, PG

Enclosures

cc: Mr. David Lambert, Iredell County Solid Waste Director

Groundwater Elevation Summary
Iredell County C & D Landfill Phase 2 & 3

-	10/28/1993	9/20/1994	3/7/1995	12/20/1995	7/10/1996	12/6/1996	7/1/1997	12/10/1997	6/30/1998	7/1/1998	10/26/1998	12/16/1998
MW-1A	852.23	852.16	852.49	850.27	850.17	849.85	849.23	848.41	849.26	-	847.59	-
MW-1B	852.62	852.56	865.58	860.34	850.63	865.43	849.73	848.96	849.52	-	848.13	-
MW-1C	-	-	-	-	-	-	-	-	-	-	-	-
MW-9R	-	-	-	-	-	-	-	-	-	-	-	-
MW-9RR	-	-	-	-	-	-	-	-	-	-	-	-
MW-10	804.65	808.64	809.93	806.70	805.97	805.63	NM	804.78	-	805.97	-	803.38
MW-10R	-	-	-	-	-	-	-	-	-	-	-	-
MW-16	-	-	-	-	-	-	-	-	-	-	-	-
MW-22	-	-	-	-	-	-	-	-	-	-	-	-
MW-23	-	-	-	-	-	-	-	-	-	-	-	-
MW-24D	-	-	-	-	-	-	-	-	-	-	-	-
MW-24S	-	-	-	-	-	-	-	-	-	-	-	-
P2-1D	-	-	-	-	-	-	-	-	-	-	-	-
P2-1S	-	-	-	-	-	-	-	-	-	-	-	-
NC-142		820.81	821.89	821.78	821.22	821.37	821.75		821.38	821.36	818.53	818.31

Groundwater Elevation Summary
Iredell County C & D Landfill Phase 2 & 3

-	12/17/1998	7/7/1999	12/22/1999	7/12/2000	1/15/2001	7/17/2001	12/26/2001	1/3/2002	2/4/2002	3/14/2002	4/25/2002	5/30/2002
MW-1A	847.12	846.10	844.75	844.55	843.26	843.32	-	841.97	-	-	-	-
MW-1B	861.03	846.59	dry	dry	dry	dry	-	dry	-	-	-	-
MW-1C	-	-	-	-	-	-	-	-	-	-	-	-
MW-9R	-	-	-	796.25	794.84	795.85	-	793.80	-	-	-	-
MW-9RR	-	-	-	-	-	-	-	787.58	-	-	-	-
MW-10	-	803.35	802.75	-	-	-	-	-	-	-	-	-
MW-10R	-	-	-	797.14	797.09	797.09	-	796.30	-	-	-	-
MW-16	-	-	-	782.53	782.53	782.51	-	782.45	-	-	-	-
MW-22	-	-	-	-	-	-	798.63	-	799.21	799.50	799.65	799.23
MW-23	-	-	-	-	-	-	807.59	-	810.60	809.30	808.75	808.83
MW-24D	-	-	-	-	-	-	-	-	-	-	-	-
MW-24S	-	-	-	-	-	-	-	-	-	-	-	-
P2-1D	-	-	-	-	-	834.16	-	833.50	-	-	-	-
P2-1S	-	-	-	-	836.41	836.23	-	835.54	-	-	-	-
NC-142	818.31	818.32	817.14	816.76	815.27	815.22	813.68	813.6	814.59	814.81	814.74	813.99

Groundwater Elevation Summary
Iredell County C & D Landfill Phase 2 & 3

-	7/16/2002	7/17/2002	1/21/2003	1/24/2003	7/15/2003	10/22/2003	12/11/2003	12/17/2003	1/14/2004	8/4/2004	1/25/2005	7/19/2005
MW-1A	841.81	-	842.90	-	845.95	-	-	845.29	842.90		845.23	845.08
MW-1B	dry	-	dry	-	dry	-	-	859.83			DRY	DRY
MW-1C	-	-	-	-	-	-	-	843.90			843.44	843.33
MW-9R	793.09	-	794.97	-	796.24	-	-	795.55	793.64	794.52	-	794.25
MW-9RR	787.51	-	788.33	-	788.61	-	-	789.06	787.52	788.22	-	787.54
MW-10	-	-	-	-	-	-	-	-			-	-
MW-10R	795.70	-	800.38	-	798.59	-	-	798.27	796.68	797.64	798.73	797.38
MW-16	780.64	-	783.02	-	-	-	-	782.82	782.97		783.12	782.50
MW-22	-	-	801.26	801.26	-	800.15	-	800.71	799.68		799.88	800.23
MW-23	-	-	-	-	-	812.31	-	813.12	808.15		809.82	809.02
MW-24D	-	-	-	-	-	809.55	810.00	810.31			810.21	809.16
MW-24S	-	-	-	-	-	809.16	809.64	809.89	808.52		809.86	808.74
P2-1D	-	832.99	-	-	-	-	-	836.33			-	-
P2-1S	-	836.09	-	837.04	-	-	-	838.33	834.55	835.75	-	837.30
NC-142	813.1	813.08	816.56	816.41	820.39	819.64	819.28	819.62				

Groundwater Elevation Summary
Iredell County C & D Landfill Phase 2 & 3

-	Average DTW	Average DTW Post Design Study	Difference	Observed Low	Observed High	Calculated Season High
MW-1A	847.08	844.46	-2.62	841.81	852.49	858.14
MW-1B	854.69			846.59	865.58	--
MW-1C	843.90	843.47	-0.43	843.33	843.90	--
MW-9R	795.07	794.14	-0.94	793.09	796.25	799.04
MW-9RR	788.22	787.76	-0.46	787.51	789.06	790.07
MW-10	805.61			802.75	809.93	816.24
MW-10R	797.57	797.31	-0.26	795.70	800.38	--
MW-16	782.36	782.86	0.51	780.64	783.12	
MW-22	799.96	799.91	-0.05	798.63	801.26	812.62
MW-23	810.07	808.87	-1.20	807.59	813.12	816.85
MW-24D	809.95	809.65	-0.31	809.16	810.31	--
MW-24S	809.56	809.01	-0.56	808.52	809.89	813.55
P2-1D	834.25			832.99	836.33	837.99
P2-1S	836.61	835.87	-0.74	834.55	838.33	840.04
NC-142	817.76			813.08	821.89	825.34

LIFE EXPECTANCY CALCULATIONS
IREDELL COUNTY C & D
LANDFILL PHASE 2 EXTENSION

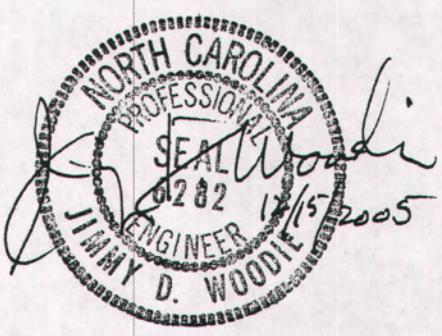
APPROVED
NC DENR WASTE MANAGEMENT
SOLID WASTE SECTION
DATE 3-3-06 BY

Given:

Based on the survey data for July 2005 Iredell County averages approximately 107,404 yd^3 per year, therefore:

Life Expectancy Remaining = 208,000 cubic yards ÷ 107,404 cubic yards
In Phase 2 with the 100'
Extension of Phase 2 = 1.94 years

*Determined by AutoCADD computer program.



Ground and Surface Water Sampling and Analysis Plan

Prepared for

Iredell County C&D Landfill, Phase 3
Statesville, North Carolina

extra copy received

original received

MESCO Project Number: G04100.6

Completed October 10, 2006

Municipal Engineering Services Company, P.A.
Garner, Boone and Morehead City, North Carolina

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Plate B ..... Single Day Potentiometric Surface
Plate C ..... Typical Monitoring Well
Plate D ..... Graphical Plot of Standing Volumes of Water

1 INTRODUCTION

1.1 Objective

The objective of the Ground and Surface Water Sampling and Analysis Plan is to provide clear guidelines and procedures to be followed by field and laboratory personnel when obtaining and testing ground and surface water samples. This plan is developed for the Iredell County C&D landfill located in Statesville, North Carolina, and applies to all three phases (Phases 1, 2, and 3) of the construction and demolition (C&D) landfill, and supersedes all previous monitoring plans developed for the subject landfill facility. Sampling and reporting is performed in conjunction with the Iredell County Subtitle D MSW Landfill Phases 1 & 2. The sampling procedures outlined in this analysis plan are guidelines by which sampling will be performed. Deviation from the procedures may be warranted depending on facility conditions or unforeseen sampling variables. Alternative sampling procedures need to conform with the N.C. Water Quality Monitoring Guidance Document for Solid Waste Facilities (Guidance Document).

Note that those ground and surface water monitoring points that have been added to the plan upon the inclusion of the Phase 3 portions of the C&D landfill shall be sampled at least once prior to acceptance of waste in order to provide background information on water quality. All ground and surface water monitoring points, and leachate monitoring points, shall be sampled semi-annually thereafter for the Appendix I list of constituents. Proposed additions to groundwater monitoring plan for Phase 3 include monitoring wells MW-25, MW-26S and MW-26D.

1.2 Water Quality Monitoring Summary

The monitoring plan being discussed in this report consists of thirteen (13) groundwater monitoring wells (MW-1A, MW-1C, MW-9R, MW-9RR, MW-10R, MW-16, MW-22, MW-23, MW-24S, MW-24D, MW-25, MW-26S, and MW-26D), and two (2) surface water monitoring points numbered SW-3 and SW-6. Sampling locations are shown on Plate A. Three (3) monitoring wells MW-25, MW-26S and MW-26D were recently incorporated into the monitoring plan for the inclusion of Phase 3. Monitoring well MW-25, MW-26S and MW-26D were installed during the hydrogeological investigation of the Subtitle D Phase 4 unit in anticipating their inclusion into the sampling plan. Well construction records for the monitoring wells are provided in the appendix. In addition, piezometer P-7, which was retained from the Site Hydrogeologic Study Iredell County C&D Phase 2 & 3 for groundwater levels was abandoned. An exhaustive list of all monitoring points included in this plan is provided as Table E-1.

1.3 Groundwater Monitoring Wells

As mentioned in the previous section, thirteen (13) groundwater monitoring wells are included as part of this monitoring network designated for the entire C&D landfill. The nature of the groundwater flow at the site is generally toward the unnamed creek which is located south and east of the C&D landfill. A single day potentiometric map is provided as Plate B. Monitoring wells MW-1A and MW-1C consist of a nested pair that serves as background, hydraulically upgradient, wells for the Subtitle D Phase 1 & 2 and the C&D portions of the facility. Originally, MW-1B accompanied MW-1A as the shallow member of the nested group, however due to its prolonged dryness was later replaced by MW-1C.

Four (4) monitoring wells (MW-9R, MW-9RR, MW-10R, and MW-16) were installed upon the expansion of the C&D Phase 1 area. MW-9R and MW-10R replaced MW-9 and MW-10, respectively, to accommodate the eastward expansion of the original C&D area that overlapped the locations of the original MW-9 and MW-10. MW-16 was installed to monitor the northeastern addition between the main access road and the stream. MW-9RR was installed as part of a groundwater investigation initiated in response to contamination detected in MW-9R. Trace amounts of cis-1,2-Dichloroethene continue to be detected in MW-9R and MW-9RR. Detected levels are below 15A NCAC 2L, .0202 standards and are in compliance with 15A NCAC 13B Section .0600. Historical detected results from monitoring well MW-9R and MW-9RR and included as Table E-2.

Monitoring wells MW-22, MW-23 MW-24S, and MW-24D-were installed as part of the expansion of C&D Phase 2 for an early detection of contaminant plume that could originate from the aforementioned area. MW-22, MW-23, MW-24S, and MW-24D were semi-equally spaced to achieve maximum efficiency, desirable for an area with relatively uniform groundwater flow.

Monitoring wells---MW-25, MW-26S and MW-26D---were installed in anticipation of expansion into Phase 3. Monitoring well MW-25 was installed as a cross gradient well to detect an potential release prior to reaching the surface water sampling point SW-6 location. Monitoring wells MW-26S and MW-26D were installed as a well cluster for early detection of a release down gradient from Phase 3.

1.4 Surface Water Sampling

Surface water monitoring is conducted to catch potential discharge of leachate from the C&D landfill into the creeks. The previously established surface water monitoring points SW-3 and SW-6 will continue be sampled. SW-3 serves as downstream sampling point for the C&D landfill, and SW-6 serves as the upstream sampling point of the C&D landfill.

1.5 Sampling Equipment

Groundwater samples will be obtained in the field using, stainless steel bailer sanitized in accordance with the following procedure:

1. Completely disassemble bailer.
2. Clean with phosphate-free, laboratory grade soap and organic-free, distilled water wash.
3. Rinse with organic-free, deionized water.
4. Rinse with isopropyl alcohol.
5. Rinse with organic-free, deionized water.
6. Air dry.
7. Wrap bailer in aluminum foil, shiny side out.
8. Wrap bailer in plastic.

The standard equipment necessary to conduct sampling for each well consists of sample containers (including trip blanks and equipment blanks), one wide-mouth container, at least two 600-ft spools of 1/4-inch nylon rope, at least two boxes of latex gloves, one box of large plastic bags, temperature indicator, pH indicator, conductivity indicator, water level indicator, storage coolers, and ice. In case of emergency, supplies to clean bailers as described above may also be brought to the site. If the total depth of all wells to be sampled exceeds 1,200 feet, additional spools of rope will be required to complete the sampling. If the number of wells to be sampled exceeds one third of the number of pairs of gloves in stock, additional boxes of gloves will be necessary. The bailers, wrapped in foil and plastic, will be transported between pieces of peaked foam rubber to prevent damage to the wrappings. All equipment subject to damage and contamination will be transported in sealed, plastic bags.

1.6 Sampling Containers

Ground and surface water monitoring will include organic and inorganic analysis. Samples will be collected for the various analyses in laboratory supplied containers.

1. Each sample container will be labeled providing the following information: site name, county location, sample identification number, parameters to be analyzed, preservative added, date and time of sample, initials of sampler.
2. Samples to be analyzed for organic content will be collected first in three 40-ml glass vials with Teflon caps. The sample vials will be completely filled to create zero head space in vials.
3. Samples to be analyzed for inorganics contamination will be collected second in quart/1-liter polyethylene container.

Each sample container will be clearly labeled providing the site name and county location, well identification number, parameters to be analyzed, preservative added, date and time of sampling, and initials of the sampler. Samples to be analyzed for organic content will be collected in four 40-ml glass vials with Teflon caps. The sample vials will be completely filled with no air left in the vials. Samples to be analyzed for inorganic contamination will be collected in a quart/1-liter polyethylene container, with ½ inch space for air permitted.

All sample containers will be obtained from an independent laboratory in a sterilized condition. Some of the containers will have a pre-measured amount of preservative in them as necessary. In this event, care will be taken not to rinse the container or allow the preservative to wash out during sampling.

2 SAMPLING

Wells will be sampled from upgradient to downgradient, or when previous analytical data is available, from least contaminated to most contaminated. This procedure is required to limit the potential of cross contamination between sampling points.

2.1 Set-Up

A clean sheet of plastic should be placed around the well to provide a clean surface for sampling equipment. The total well depth read from the well tag and the measured depth to water, determined using the water level indicator, will be used to compute the depth of water in the well. The total well depth will be measured and compared to the depth indicated on the well tag as a check for siltation or blockage at depth. The amount of standing water will be calculated by subtracting the depth to water from total depth of well. Gallons of water in the well, as compared to well diameter, will be determined using the chart on Plate D. For example, if a two-inch well is 29 feet deep and has a measured depth to water of 10 feet, there are 19 feet of standing water or 3.3 gallons in the well.

The EPA recommends the indicator parameters: pH, specific conductance, and temperature measured on purged and recovered monitoring wells before collecting samples. When three consecutive measurements are within a 10% range, temperature and specific conductance are considered stable, pH is considered stable when three consecutive measurements are within a range of 0.2 units. All information will be recorded on a field data sheet or in a field logbook with copies submitted to the Division of Waste Management with the analytical results.

All meters will be calibrated immediately prior to purging and sampling and those readings recorded in a field logbook. The meters should be recalibrated at the end of each sampling event and those readings recorded in the log also. Entries will always include pre- and post- calibration readings as well as the model and serial number of the equipment and the date, time, and person performing the calibration(s). Two standards, which bracket the average or suspected measurements for pH and specific conductance, will be used at the site. Additionally, if an equipment blank needs to be run, it should be done before any sampling is started.

2.2 Purging

Purging is done prior to sampling to remove stagnant water from the well, and to introduce fresh groundwater for sampling. Each well will be purged three to five well volumes (quantity of water in the well), or until dry. In the above example, 10 gallons would be adequate.

After determining the amount of water to be purged from a well, the equipment necessary will be assembled including rope, a 5-gallon bucket, bailer, and gloves. Pull the top portion of foil away exposing the eyelet, keeping the bailer in a stable upright position. Using gloved hands: secure rope to the bailer via the eyelet hole and suspend to remove the remaining plastic and foil. These gloves are now contaminated and cannot touch the bailer or the rope. Clean, gloved hands will lower the suspended bailer into the well until the bailer contacts the bottom. Cut a rope to length and secure it to prevent loss of the bailer, again replace contaminated gloves. During purging the rope cannot touch the ground or contaminated surfaces including, dirtied plastics, gloves, boots, etc.; many methods are available and it is to the sampler's discretion which method they prefer. The wind-mill method, looping the rope between thumbs, bucket method, where rope is lowered into a clean plastic bag lining a bucket, or simply placing plastic onto the ground near the well covering shoes, are all commonly used.

If purging and sampling of a well are performed at separate times, the bailer will be left suspended in the well, above the water table, with the rope secured. The remaining rope will be removed, in order to prevent contamination issues. The rope may be doubled and grasped in a tight loop in one hand then covered by pulling the corresponding hands glove on top, inside out. The procedure can be repeated using the other hand if necessary. The glove-encased rope will be set on top of the well head until time to sample. Alternatively, the rope remaining after securing may be gathered in a tight loop and pushed into the 2-inch PVC well pipe and left. Even when sampling immediately follows purging, new gloves will be necessary.

Based on the number of wells to be sampled and their proximity to each other, all the wells may be purged one after another with sampling to follow. In this manner, if a well is purged dry, it may be allowed to recharge prior to sampling.

2.3 Groundwater Sample Collection

Lower the bailer into the well slowly, with gloved hands, to avoid releasing any volatiles from the groundwater; the bailer should not splash or smack the water surface. Once full, the bailer will be retrieved and containers filled by emptying the water through the hole at the bottom of the bailer. To top off the VOC's collect some of the groundwater in the cap and pour it onto the samples contents to acquire the needed meniscus to eliminate air bubbles. The polyethylene containers will be filled and sealed with the cap, leaving about 1/2 inch of airspace at the top. In addition to collecting the samples, water will be collected in the wide-mouth container for pH, temperature, and conductivity measurements. Upon completion of sampling, sample containers will be placed in labeled and sealed plastic bags, including equipment and trip blanks, and stored on ice in coolers. The contaminated latex gloves and rope will be discarded.

2.4 Surface Water Sample Collection

Surface water sampling will be taken with given consideration to minimize turbulence and aeration. Surface water sample containers will be handled with gloves on, keeping one hand near the base; containers will be dipped at location points with extreme caution in order to avoid contamination at the mouth of the container, pushing rapidly at an angle into the water, mouth up, and tilted towards the stream current, fill so as not to lose any of the preservative into the surrounding water. If there is little current movement, the container will be moved slowly through the water laterally. During times of drought, if the water is not deep enough to allow filling of the container, a pool may be scooped out of the bottom of the stream to obtain a sample. The pool will be allowed to clear before sampling. All containers will be filled in the same manner and treated as the ground water samples were. The samples will be sealed in labeled, plastic bags, stored and transported on ice. In addition to collecting the samples, water will be collected in the wide-mouth container for pH, temperature, and conductivity measurements.

2.5 Chain of Custody

Trip blanks, equipment blanks, and sample containers will all travel and be stored together on ice in coolers. Trip blanks will remain in the condition they are received from the laboratory and will not be opened or tampered with during the sampling. A chain-of-custody record will be completed for each day's samples, indicating the date and time, sample location, sample matrix (soil, water, etc.), and laboratory analyses to be conducted. In addition, a field sampling data sheet will be completed indicating the depth to water, pH, temperature, and specific conductivity of the sample measured in the field at each well sampled. Chain of

custody forms are also used to document every time the samples change hands, for example from the sampler to the driver, or from the driver to the laboratory.

3 ANALYSIS

When the water samples reach the laboratory, they will be transferred to a sample custodian who will sign the chain of custody documentation as receipt of the samples. Internal control of the water samples in the laboratory will be in accordance with QA/QC procedures for the laboratory. Copies of QA/QC manuals for approved laboratories are on file at the Division of Solid Waste. Groundwater and surface water will be analyzed for the Appendix I list of chemical constituents. QA/QC procedures utilized during the testing will be in conformance with laboratory QA/QC manual.

4 CONCLUSION

This report was completed as part of the Permit Application for the Iredell County C&D Phase 3. The ground and surface water monitoring plan is designed to be effective in the early detection of any possible release of hazardous constituents to the uppermost aquifer.

MUNICIPAL ENGINEERING SERVICES COMPANY, P.A.

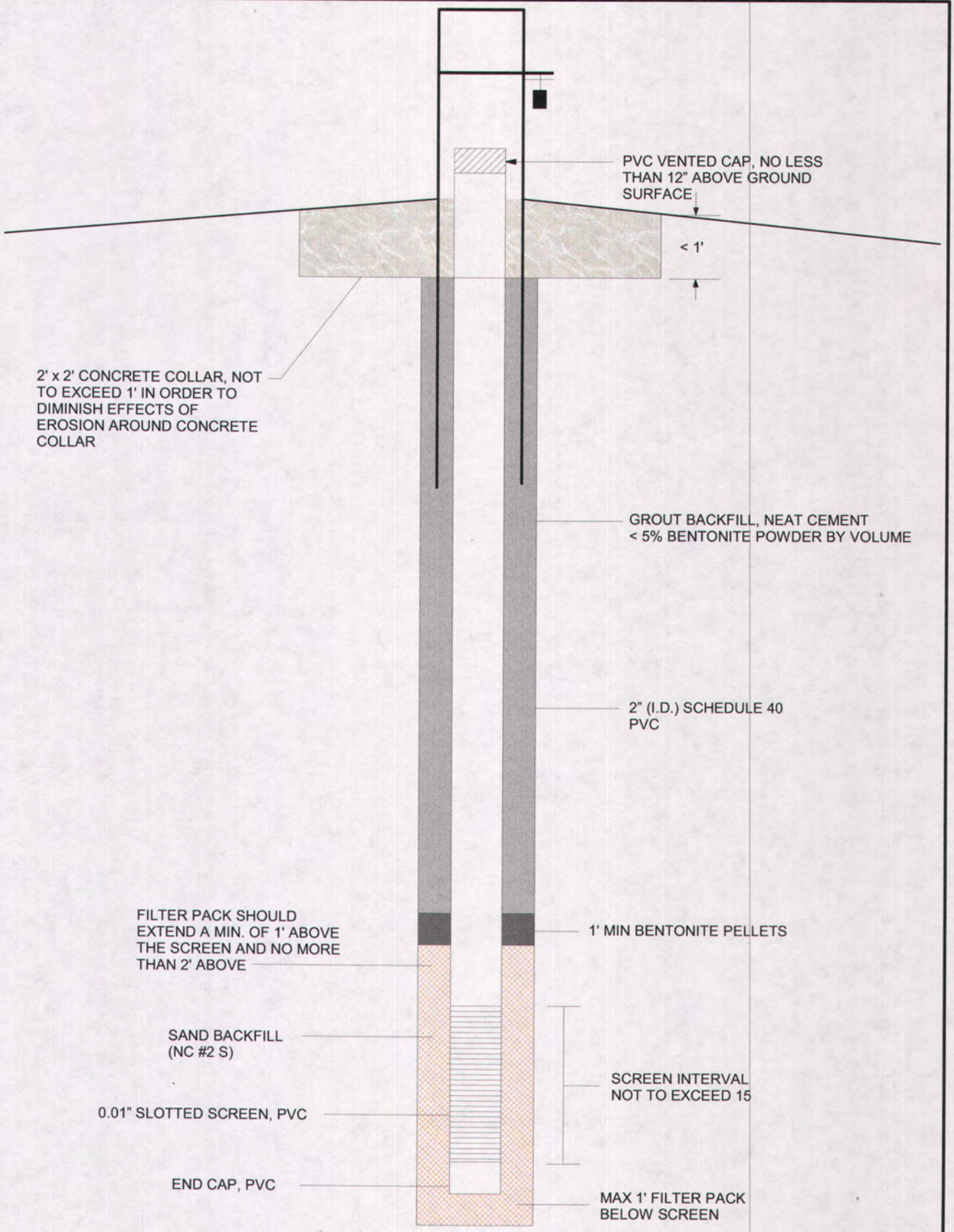
Ethan J. Caldwell, P.G.
Professional Geologist

Table E-1. Summary of ground and surface water monitoring points

Sampling Point	Type	Gradient	Total Depth (ft)
MW-1A	Monitoring Well	Up	39
MW-1C	Monitoring Well	Up	34
MW-9R	Monitoring Well	Down	20
MW-9RR	Monitoring Well	Down	22
MW-10R	Monitoring Well	Down	25
MW-16	Monitoring Well	Down	20
MW-22	Monitoring Well	Down	37
MW-23	Monitoring Well	Down	23
MW-24S	Monitoring Well	Down	16
MW-24D	Monitoring Well	Down	38
MW-25	Monitoring Well	Cross	25
MW-26S	Monitoring Well	Down	20.25
MW-26D	Monitoring Well	Down	61.75
SW-3	Surface Water	DownSteam	
SW-6	Surface Water	Upstream Stream	

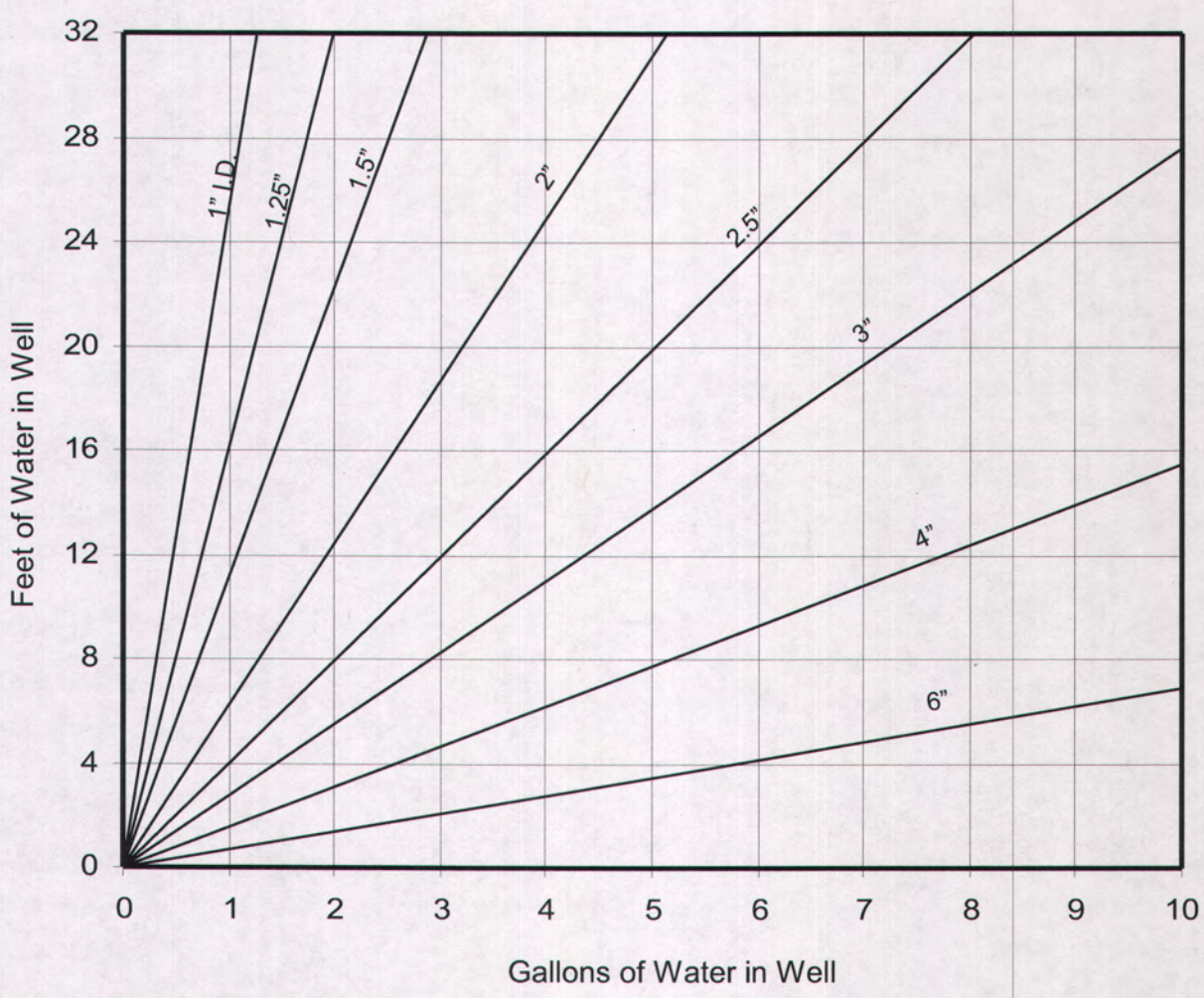
Table E-2. Summary of Historic VOC's detected in MW-9R and MW-9RR

Well ID	Parameter Name	Sample Date	Result	Unit	PQL	NCGW2L	Exceedance
MW-9R	**Trichloroethene**	**07/12/2000**	**25**	**ug/l**	**5**	**2.8**	**22.2**
MW-9R	**cis-1,2-Dichloroethene**	**07/12/2000**	**110**	**ug/l**	**5**	**70**	**40**
MW-9R	**Trichloroethene**	**1/15/2001**	**15**	**ug/l**	**5**	**2.8**	**12.2**
MW-9R	**cis-1,2-Dichloroethene**	**1/15/2001**	**77**	**ug/l**	**5**	**70**	**7**
MW-9R	**Trichloroethene**	**7/17/2001**	**10**	**ug/l**	**5**	**2.8**	**7.2**
MW-9R	**cis-1,2-Dichloroethene**	**7/17/2001**	**82**	**ug/l**	**5**	**70**	**12**
MW-9R	**Trichloroethene**	**9/6/2001**	**11**	**ug/l**	**5**	**2.8**	**8.2**
MW-9R	**cis-1,2-Dichloroethene**	**9/6/2001**	**130**	**ug/l**	**5**	**70**	**60**
MW-9R	**Trichloroethene**	**1/3/2002**	**8.6**	**ug/l**	**5**	**70**	**5.8**
MW-9R	**cis-1,2-Dichloroethene**	**1/3/2002**	**130**	**ug/l**	**5**	**2.8**	**60**
MW-9R	**cis-1,2-Dichloroethene**	**7/16/2002**	**120**	**ug/l**	**5**	**70**	**50**
MW-9R	**Trichloroethene**	**7/16/2002**	**9**	**ug/l**	**5**	**700**	**6.2**
MW-9R	cis-1,2-Dichloroethene	1/21/2003	58	ug/l	5	70	
MW-9R	Acetone	7/15/2003	13	ug/l	10		
MW-9R	cis-1,2-Dichloroethene	7/15/2003	19	ug/l	5	70	
MW-9R	Carbon disulfide	7/15/2003	19	ug/l	10	70	
MW-9R	cis-1,2-Dichloroethene	1/13/2004	23	ug/l	5	70	
MW-9R	cis-1,2-Dichloroethene	8/04/2004	39	ug/l	5	70	
MW-9R	cis-1,2-Dichloroethene	1/25/2005	20	ug/l	5	70	
MW-9R	cis-1,2-Dichloroethene	7/19/2005	7	ug/l	5	70	
MW-9R	cis-1,2-Dichloroethene	1/30/2006	11.1	ug/l	5	70	
MW-9R	cis-1,2-Dichloroethene	7/10/2006	7	ug/l	5	70	
MW-9RR	cis-1,2-Dichloroethene	1/3/2002	27	ug/l	5	70	
MW-9RR	Carbon disulfide	1/3/2002	9.8	ug/l	5		
MW-9RR	cis-1,2-Dichloroethene	7/16/2002	13	ug/l	5	70	
MW-9RR	Acetone	7/15/2003	11	ug/l	10	700	
MW-9RR	cis-1,2-Dichloroethene	8/04/2004	12	ug/l	5	70	
MW-9RR	cis-1,2-Dichloroethene	1/25/2005	25	ug/l	5	70	
MW-9RR	cis-1,2-Dichloroethene	7/19/2005	20	ug/l	5	70	
MW-9RR	cis-1,2-Dichloroethene	1/30/2006	12.9	ug/l	5	70	
MW-9RR	cis-1,2-Dichloroethene	7/10/2006	12.2	ug/l	5	70	



TYPICAL MONITORING WELL

PLATE C



GRAPHICAL PLOT OF STANDING VOLUMES OF WATER

PLATE D

MW-25

WELL CONSTRUCTION RECORD

North Carolina – Department of Environmental and Natural Resources – Division of Water Quality – Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) MARK GETTYS CERTIFICATION # 2345

WELL CONTRACTOR COMPANY NAME GEOLOGIC EXPLORATION, INC. PHONE # (704) 872-7686

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ ASSOCIATED WQ PERMIT# (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐
Monitoring ■ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, list Use _____

2. WELL LOCATION:
Nearest Town: Statesville County Iredell
3260 Twin Oaks Road 28687
(Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

Topographic/Land setting
☐ Ridge ☐ Slope ☒ Valley ☐ Flat
(check appropriate box)
Latitude/longitude of well location
35.76362/80.82919
(degrees/minutes/seconds)
Latitude/longitude source: ☒ GPS ☐ Topographic map
(check box)

3. OWNER: Iredell Co. Landfill
Address 3260 Twin Oaks Road
(Street or Route No.)
Statesville NC 28687
City or Town State Zip Code
(704) 878-5430
Area Code – Phone Number

4. DATE DRILLED 12/08/04
5. TOTAL DEPTH: 24.93 FEET
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 20.22 FT.
(Use "+" if Above Top of Casing)
8. TOP OF CASING IS 3.35 FT. Above Land Surface*
*Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): 17.0'BGS

DEPTH From	DEPTH To	DRILLING LOG Formation Description
0.0	10.0	Orange silty clay
10.0	24.93	Brown silt

11. DISINFECTION: Type N/A Amount N/A
12. CASING:

	Depth			Diameter	Wall Thickness or Weight/Ft.	Material
From 0.0	To 9.93	Ft		2 INCH	SCH 40	PVC
From	To	Ft.				
From	To	Ft.				

13. Grout:

	Depth			Material	Method
From 0.0	To 5.0	Ft.		Portland Bentonite	Slurry
From	To	Ft.			

14. SCREEN:

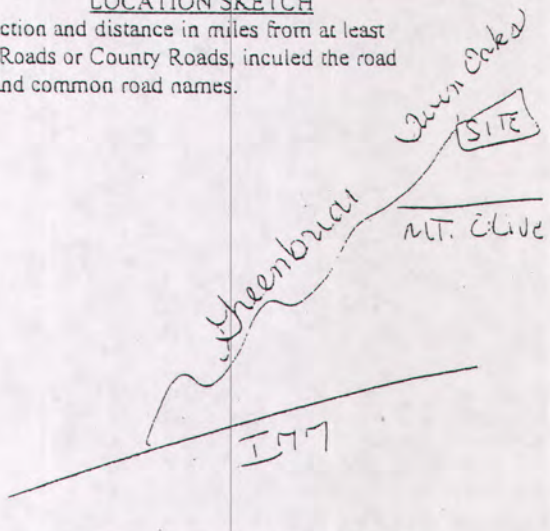
	Depth			Diameter	Slot Size	Material
From 9.93	To 24.93	Ft.		2.0 in.	0.01 in	PVC
From	To	Ft.		in.	in	

15. SAND/GRAVEL PACK:

	Depth			Size	Material
From 7.0	To 24.93	Ft.		#2	FINE SILICA SAND
From	To	Ft.			

16. REMARKS: BENTONITE SEAL FROM 5.0 TO 7.0 FEET

LOCATION SKETCH
Show direction and distance in miles from at least two State Roads or County Roads, inculed the road numbers and common road names.



I DO HEARBY 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

Mark K. Gettys 2/9/05
SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center – Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

GW-1 REV. 07/2001

MW-26D

WELL CONSTRUCTION RECORD

North Carolina – Department of Environmental and Natural Resources – Division of Water Quality – Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) MIKE MCCONAHEY CERTIFICATION # 2402

WELL CONTRACTOR COMPANY NAME GEOLOGIC EXPLORATION, INC. PHONE # (704) 372-7686

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ ASSOCIATED WQ PERMIT# (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐
Monitoring ■ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, list Use _____

2. WELL LOCATION:
Nearest Town: Statesville County Iredell
3260 Twin Oaks Road 28687
(Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

Topographic/Land setting
☐ Ridge ☐ Slope ☒ Valley ☐ Flat
(check appropriate box)
Latitude/longitude of well location
35.76340/80.82791
(degrees/minutes/seconds)
Latitude/longitude source: ■ GPS ☐ Topographic map
(check box)

3. OWNER: Iredell Co. Landfill
Address 3260 Twin Oaks Road
(Street or Route No.)
Statesville NC 28687
City or Town State Zip Code
(704) 878-5430
Area Code – Phone Number

4. DATE DRILLED 12/17/04
5. TOTAL DEPTH: 61.76 FEET
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 13.07 FT.
(Use "+" if Above Top of Casing)
8. TOP OF CASING IS 1.85 FT. Above Land Surface*
*Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): 60.0'BGS
11. DISINFECTION: Type N/A Amount N/A

DRILLING LOG

DEPTH From	DEPTH To	Formation Description
0.0	1.0	Tan silty sandy with stone
1.0	20.0	Red/brown silty sand
20.0	34.27	Brown/yellow/tan silty sand
34.27	61.76	Tan weathered rock

12. CASING:

	Depth From	To		Diameter	Wall Thickness or Weight/Ft.	Material
From	0.0	To 56.76	Ft	2 INCH	SCH 40	PVC
From	0.0	To 41.0	Ft.	4 INCH	SCH 40	PVC
From		To	Ft.			

13. Grout:

	Depth From	To		Material	Method
From	0.0	To 50.0	Ft.	Portland Bentonite	Slurry
From	0.0	To 41.0	Ft.	Portland Bentonite	Slurry

14. SCREEN:

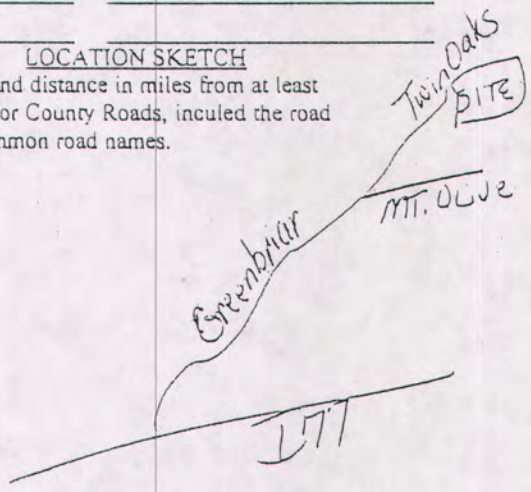
	Depth From	To		Diameter		Slot Size		Material
From	56.76	To 61.76	Ft.	2.0	in.	0.01	in	PVC
From		To	Ft.		in.		in	

15. SAND/GRAVEL PACK:

	Depth From	To		Size	Material
From	53.0	To 61.76	Ft.	#2	FINE SILICA SAND
From		To	Ft.		

LOCATION SKETCH

Show direction and distance in miles from at least two State Roads or County Roads, inculed the road numbers and common road names.



16. REMARKS: BENTONITE SEAL FROM 50.0 TO 53.0 FEET

I DO HEARBY 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

Mike McConahey 2/9/05

SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center – Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

GW-1 REV. 07/2001

MW-26S

WELL CONSTRUCTION RECORD

North Carolina – Department of Environmental and Natural Resources – Division of Water Quality – Groundwater Section

WELL CONTRACTOR (INDIVIDUAL) NAME (print) MIKE MCCONAHEY CERTIFICATION # 2402

WELL CONTRACTOR COMPANY NAME GEOLOGIC EXPLORATION., INC. PHONE # (704) 872-7686

STATE WELL CONSTRUCTION PERMIT# (if applicable) _____ ASSOCIATED WQ PERMIT# (if applicable) _____

1. WELL USE (Check Applicable Box): Residential ☐ Municipal/Public ☐ Industrial ☐ Agricultural ☐
Monitoring ■ Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, list Use _____

2. WELL LOCATION:
Nearest Town: Statesville County Iredell
3260 Twin Oaks Road 28687
(Street Name, Numbers, Community, Subdivision, Lot No., Zip Code)

Topographic/Land setting
☐ Ridge ☐ Slope ☒ Valley ☐ Flat
(check appropriate box)
Latitude/longitude of well location
35.76340/80.82789
(degrees/minutes/seconds)
Latitude/longitude source: ☒ GPS ☐ Topographic map
(check box)

3. OWNER: Iredell Co. Landfill
Address 3260 Twin Oaks Road
(Street or Route No.)
Statesville NC 28687
City or Town State Zip Code
(704) 878-5430
Area Code – Phone Number

DEPTH From	DEPTH To	DRILLING LOG Formation Description
0.0	1.0	Tan silty sandy with stone
1.0	20.25	Red/brown silty sand

4. DATE DRILLED 12/15-12/22/04
5. TOTAL DEPTH: 20.25 FEET
6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒
7. STATIC WATER LEVEL Below Top of Casing: 13.95 FT.
(Use "+" if Above Top of Casing)
8. TOP OF CASING IS 3.0 FT. Above Land Surface*
*Top of casing terminated at/or below land surface requires a variance in accordance with 15A NCAC 2C .0118.
9. YIELD (gpm): N/A METHOD OF TEST N/A
10. WATER ZONES (depth): 11.0'BGS
11. DISINFECTION: Type N/A Amount N/A
12. CASING:

	Depth			Diameter	Wall Thickness or Weight/Ft.	Material
From 0.0	To 5.25	Ft	2 INCH	SCH 40	PVC
From	To	Ft.			
From	To	Ft.			

13. Grout:

	Depth			Material	Method
From 0.0	To 1.0	Ft.	Portland Bentonite	Slurry
From	To	Ft.		

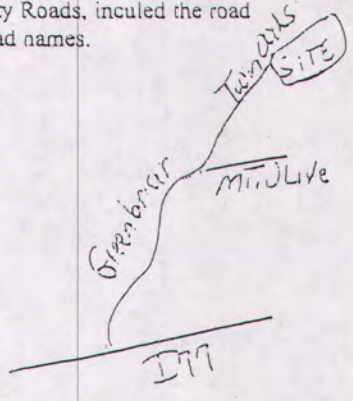
14. SCREEN:

	Depth			Diameter	Slot Size	Material
From 5.25	To 20.25	Ft.	2.0	in. 0.01	in PVC
From	To	Ft.		in.	in

15. SAND/GRAVEL PACK:

	Depth			Size	Material
From 3.0	To 20.25	Ft.	#2	FINE SILICA SAND
From	To	Ft.		

LOCATION SKETCH
Show direction and distance in miles from at least two State Roads or County Roads, inculed the road numbers and common road names.



16. REMARKS: BENTONITE SEAL FROM 1.0 TO 3.0 FEET

I DO HEARBY 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

Mike McConahey 2/9/05

SIGNATURE OF PERSON CONSTRUCTING THE WELL DATE

Submit the original to the Division of Water Quality, Groundwater Section, 1636 Mail Service Center – Raleigh, NC 27699-1636 Phone No. (919) 733-3221, within 30 days.

GW-1 REV. 07/2001

North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section - 1636 Mail Service Center - Raleigh, NC 27699-1639 - Phone No. (919) 733-3221

WELL ABANDONMENT RECORD
CD-1

WELL CONTRACTOR: Antler Environmental-Jonathan Pfohl

WELL CONTRACTOR CERTIFICATION #: 3301

1. WELL USE (Check Applicable Box): Residential ☐ Municipal ☐ Industrial ☐ Agricultural ☐ Monitoring ☐ Recovery ☐ Heat Pump Water Injection ☐ Other ☒ If Other, List Use: Temp. Piez. For Hydro Study

2. WELL LOCATION: (Show a sketch of the location on back of form.)
Nearest Town: Statesville County: Iredell
3260 Twin Oaks Rd.
(Road Name and Number, Community, Subdivision, Lot No.)
35080-G7
Quadrangle No.

3. OWNER: Iredell Co. C&D Landfill

4. ADDRESS: 3260 Twin Oaks Rd. Statesville, NC 28687

5. TOPOGRAPHY: ☐ draw, ☐ slope, ☐ hilltop, ☐ valley, ☒ flat (circle one)

6. TOTAL DEPTH: 32.7 FT DIAMETER 2 IN

7. CASING REMOVED:

feet	diameter
Just Stickup	2

8. DISINFECTION: N/A
(Amount of 70% hypochlorite used:)

9. SEALING MATERIAL:

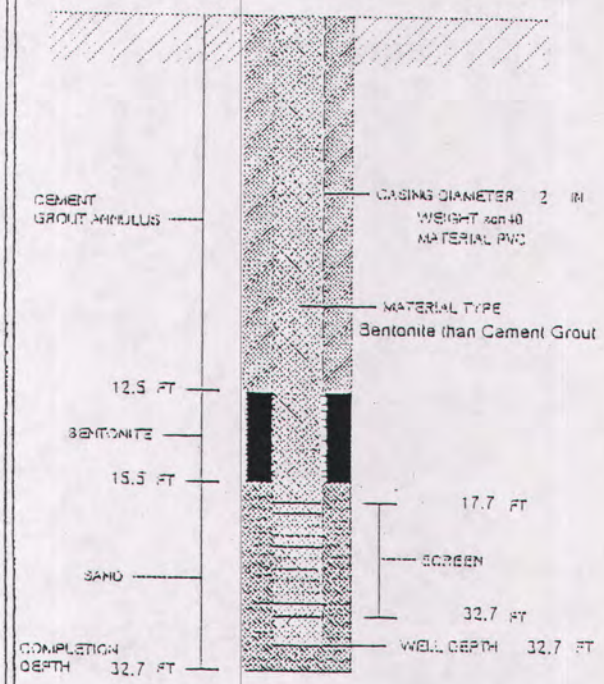
Neat Cement
bags of cement: 0.5
gallons of water: 3

Sand Cement
bags of cement:
gallons of water:

Other
Type material: Bentonite than Cement Grout
Amount: 3 gal. Slurry Weighing ~9.5 lbs./gal.

10. EXPLAIN METHOD EMPLACEMENT OF MATERIAL.
Tremie Grouted from Bottom Up

WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.



11. DATE WELL ABANDONED 03/27/04

I do hereby certify that this well was abandoned in accordance with 15A NCAC 2C, well construction standards, and that a copy of the record has been provided to the well owner.

Signature of person abandoning the well: [signature] Date: 4/10/04

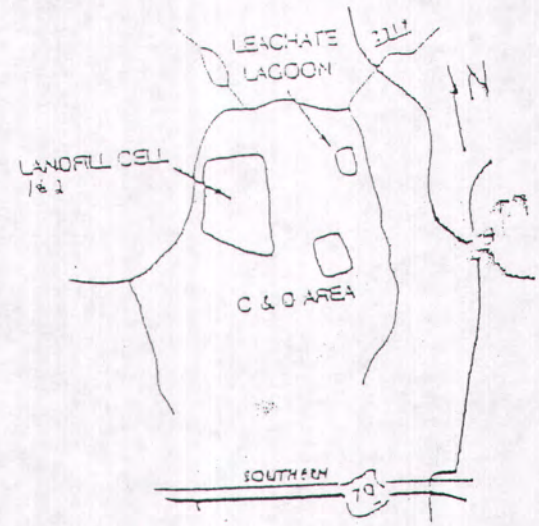
WELL LOCATION: Draw a location sketch on the reverse of this sheet, showing the direction and distance of the well to at least two (2) nearby reference points such as roads, intersections and streams. Identify roads with State Highway road identification numbers.

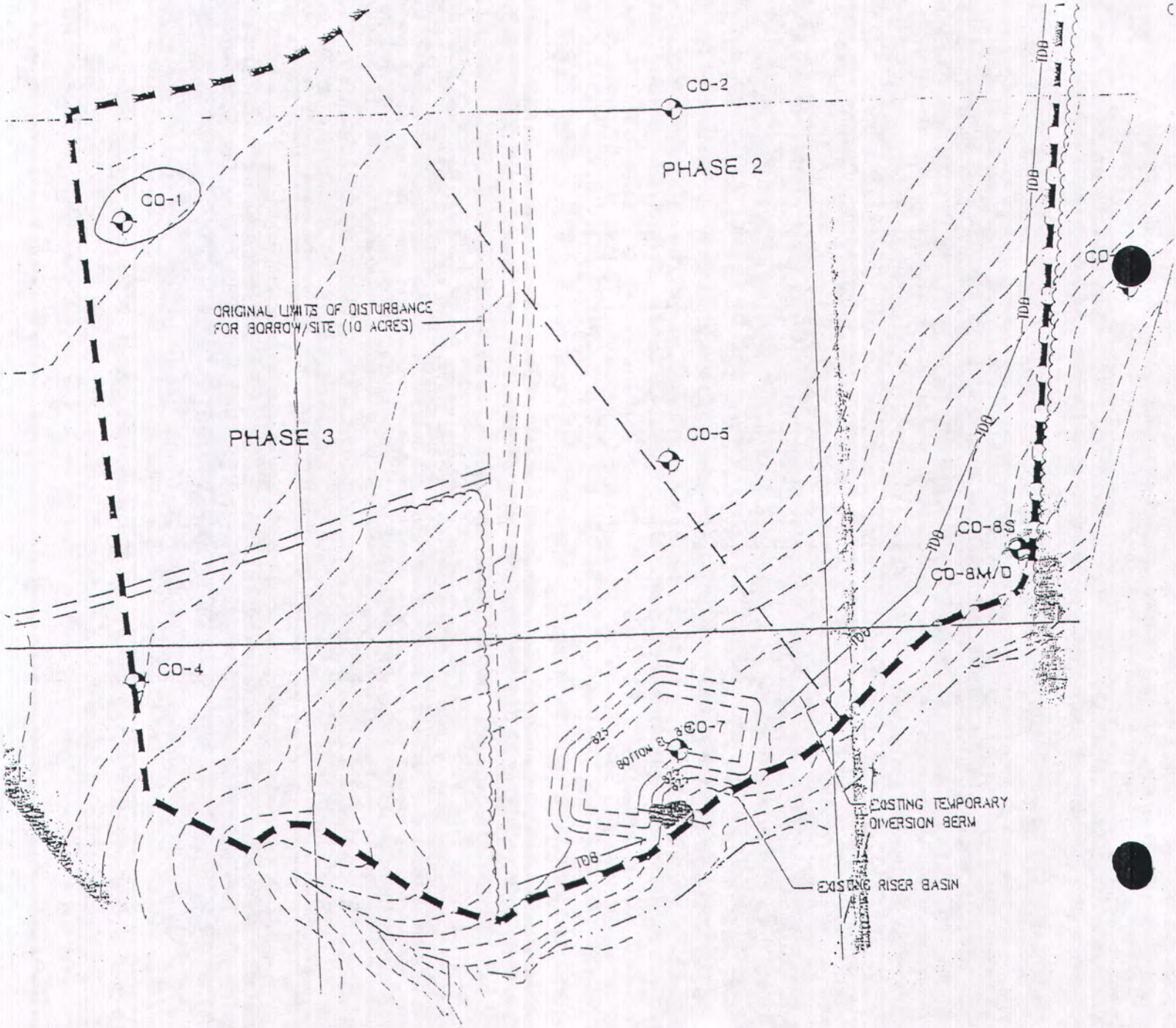
Submit original to the Division of Water Quality, Groundwater Section, one copy to the owner within 30 days from completion of abandonment.

GW-30 Revised 12/99

LOCATION SKETCH

(Show direction and distance from at least two State Roads, or other map reference points)





North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section - 1636 Mail Service Center - Raleigh, NC 27699-1639 - Phone No. (919) 733-3221

WELL ABANDONMENT RECORD
CD-2

WELL CONTRACTOR: Antler Environmental-Jonathan Pfohl

WELL CONTRACTOR CERTIFICATION #: 3301

1. WELL USE (Check Applicable Box): Residential ☐ Municipal ☐ Industrial ☐ Agricultural ☐ Monitoring ☐ Recovery ☐ Heat Pump Water Injection ☐ Other ☒ If Other, List Use: Temp. Piez. For Hydro Study

2. WELL LOCATION: (Show a sketch of the location on back of form.)
Nearest Town: Statesville County: Iredell
3260 Twin Oaks Rd. 35080-G7
(Road Name and Number, Community, Subdivision , Lot No.) Quadrangle No.

3. OWNER: Iredell Co. C&D Landfill

4. ADDRESS: 3260 Twin Oaks Rd. Statesville, NC 28687

5. TOPOGRAPHY: ☐ draw, ☐ slope, ☐ hilltop, ☐ valley, ☒ flat (circle one)

6. TOTAL DEPTH: 38.37 FT DIAMETER 2 IN

7. CASING REMOVED:

feet	diameter
Excav. 6.63 ft.	2

8. DISINFECTION: N/A
(Amount of 70% hypochlorite used:)

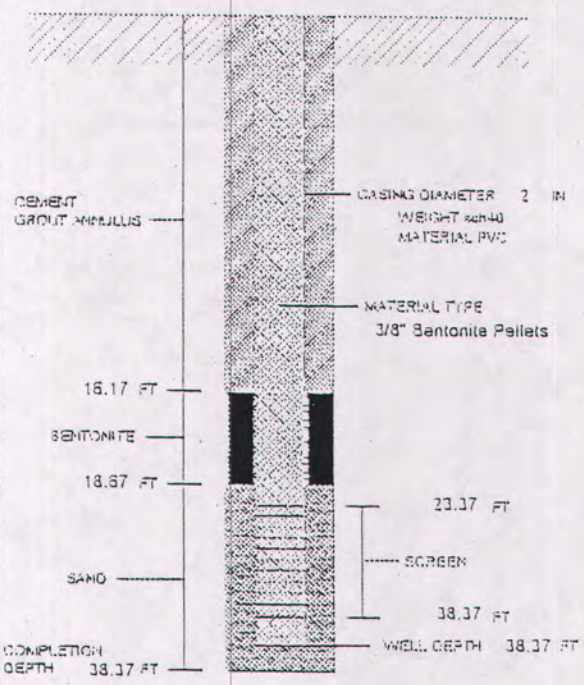
9. SEALING MATERIAL:

Neat Cement	Sand Cement
bags of cement	bags of cement
gallons of water	gallons of water

Other
Type material: 3/8" Bentonite Pellets
Amount: 62 lbs.

10. EXPLAIN METHOD EMPLACEMENT OF MATERIAL.
Slowly dropped pre-determined amount of pellets until gone

WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.



11. DATE WELL ABANDONED 10/22/03

I do hereby certify that this well was abandoned in accordance with 15A NCAC 2C, well construction standards, and that a copy of the record has been provided to the well owner.

Signature of person abandoning the well _____ Date 10/25/04

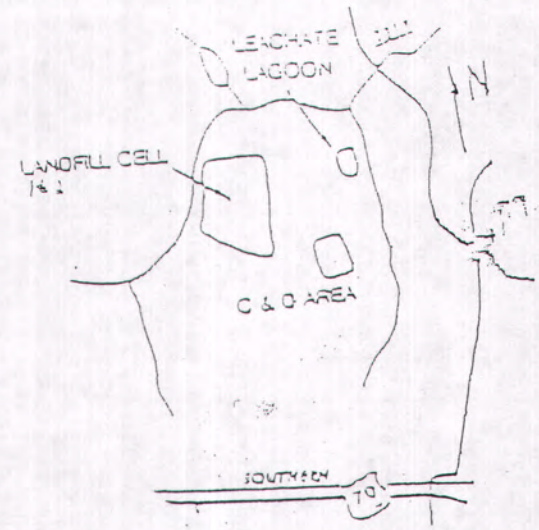
WELL LOCATION: Draw a location sketch on the reverse of this sheet, showing the direction and distance of the well to at least two (2) nearby reference points such as roads, intersections and streams. Identify roads with State Highway road identification numbers.

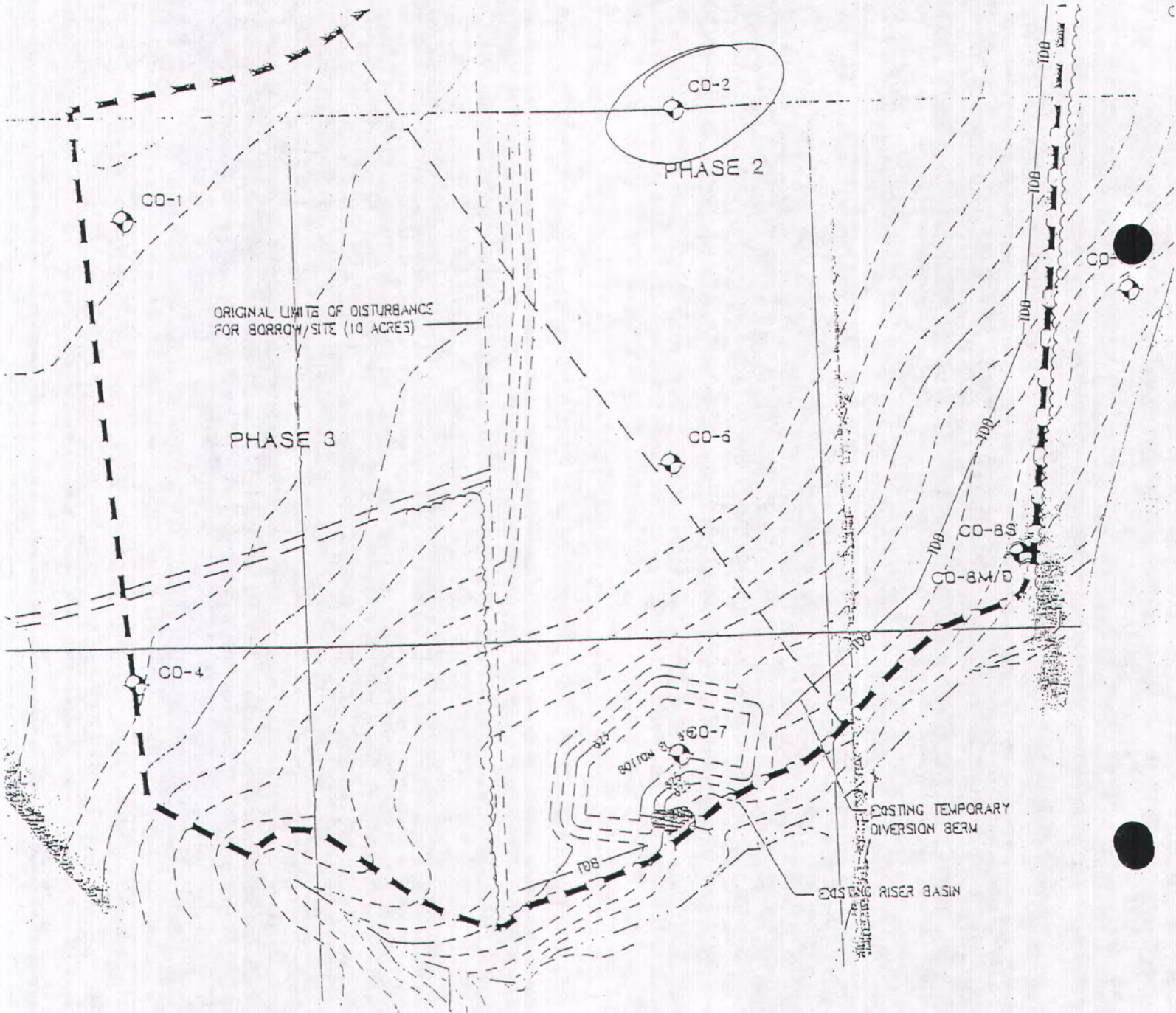
Submit original to the Division of Water Quality, Groundwater Section, one copy to the owner within 30 days from completion of abandonment.

GW-30 Revised 12/99

LOCATION SKETCH

(Show direction and distance from at least two State Roads or other map reference points)





North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section - 1636 Mail Service Center - Raleigh, NC 27699-1639 - Phone No. (919) 733-3221

WELL ABANDONMENT RECORD

CD-4

WELL CONTRACTOR Antler Environmental-Jonathan Pfohl

WELL CONTRACTOR CERTIFICATION # 3301

1. WELL USE (Check Applicable Box): Residential☐ Municipal☐ Industrial☐ Agricultural☐ Monitoring☐ Recovery ☐ Heat Pump Water Injection☐ Other☒ If Other, List Use: Temp. Piez. For Hydro Study

2. WELL LOCATION: (Show a sketch of the location on back of form.)
Nearest Town: Statesville County Iredell
3260 Twin Oaks Rd. 35080-G7
(Road Name and Number, Community, Subdivision , Lot No.) Quadrangle No.

3. OWNER: Iredell Co. C&D Landfill

4. ADDRESS: 3260 Twin Oaks Rd. Statesville, NC 28687

5. TOPOGRAPHY: ☐ draw, ☐ slope, ☐ hilltop, ☐ valley, ☒ flat (circle one)

6. TOTAL DEPTH: 44.45 FT DIAMETER 2 IN

7. CASING REMOVED:

feet	diameter
Just Stickup	2

8. DISINFECTION: N/A
(Amount of 70% hypochlorite used:)

9. SEALING MATERIAL:

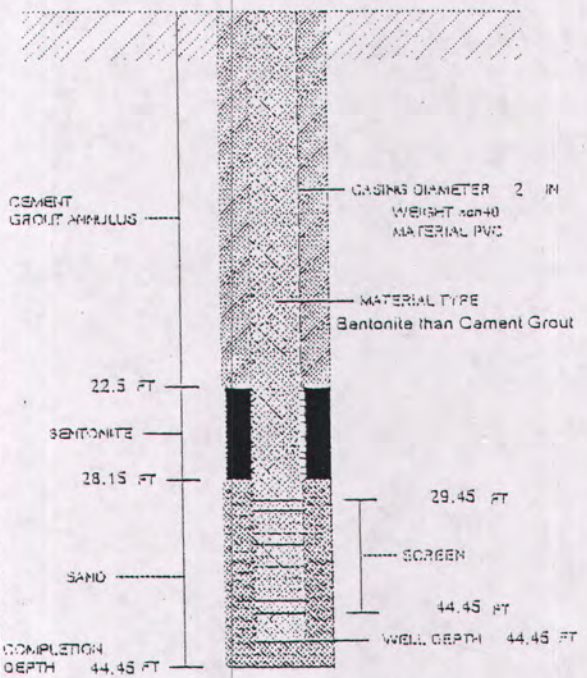
Neat Cement
bags of cement 1
gallons of water 6

Sand Cement
bags of cement
gallons of water

Other
Type material Bentonite than Cement Grout
Amount 3 gal. Slurry Weighing ~9.5 lbs./gal.

10. EXPLAIN METHOD EMPLACEMENT OF MATERIAL.
Tremie Grouted from Bottom Up

WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.



11. DATE WELL ABANDONED 03/27/04

I do hereby certify that this well was abandoned in accordance with 15A NCAC 2C, well construction standards, and that a copy of the record has been provided to the well owner.

Signature of person abandoning the well _____ Date 4/10/04

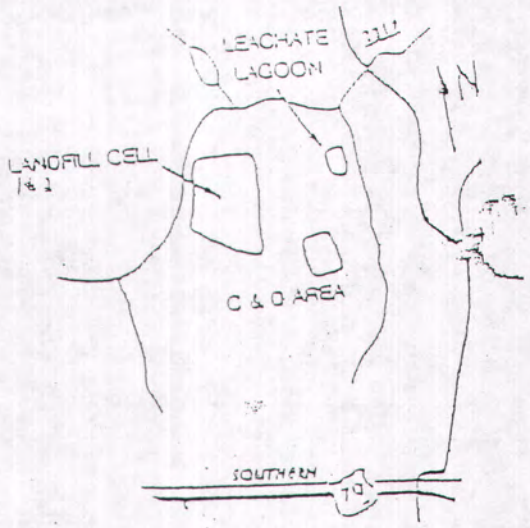
WELL LOCATION: Draw a location sketch on the reverse of this sheet, showing the direction and distance of the well to at least two (2) nearby reference points such as roads, intersections and streams. Identify roads with State Highway road identification numbers.

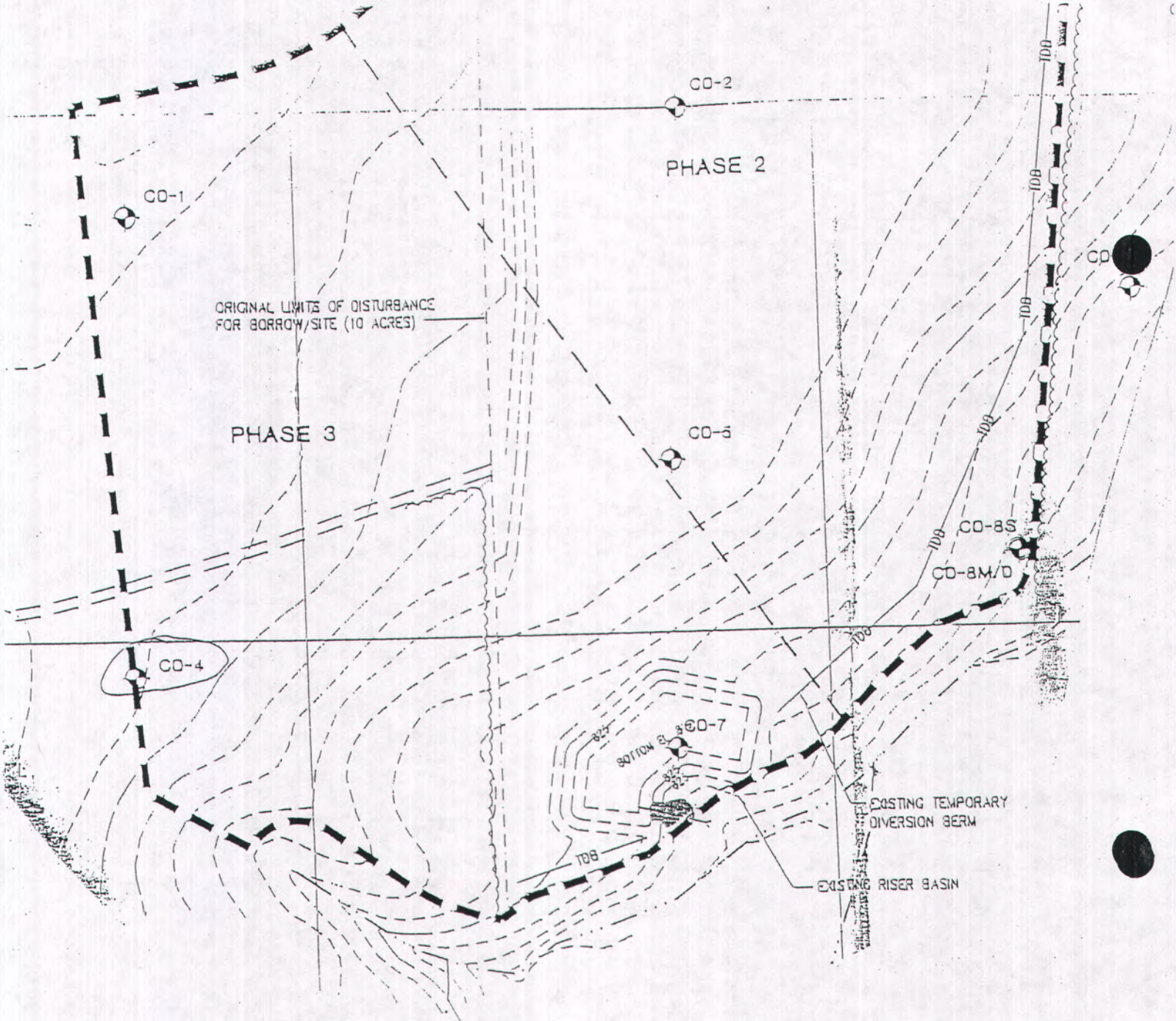
Submit original to the Division of Water Quality, Groundwater Section, one copy to the owner within 30 days from completion of abandonment.

GW-30 Revised 12/99

LOCATION SKETCH

(Show direction and distance from at least two State Roads, or other map reference points)





North Carolina - Department of Environment and Natural Resources - Division of Water Quality - Groundwater Section - 1636 Mail Service Center - Raleigh, NC 27699-1639 - Phone No. (919) 733-3221

WELL ABANDONMENT RECORD
CD-5

WELL CONTRACTOR: Antler Environmental-Jonathan Ptohl

WELL CONTRACTOR CERTIFICATION #: 3301

1. WELL USE (Check Applicable Box): Residential ☐ Municipal ☐ Industrial ☐ Agricultural ☐ Monitoring ☐ Recovery ☐ Heat Pump Water Injection ☐ Other ☒ If Other, List Use: Temp. Piez. For Hydro Study

2. WELL LOCATION: (Show a sketch of the location on back of form.)
Nearest Town: Statesville County: Iredell
3260 Twin Oaks Rd.
(Road Name and Number, Community, Subdivision , Lot No.)
35080-G7
Quadrangle No.

3. OWNER: Iredell Co. C&D Landfill

4. ADDRESS: 3260 Twin Oaks Rd. Statesville, NC 28687

5. TOPOGRAPHY: ☐ draw, ☐ slope, ☐ hilltop, ☐ valley, ☒ flat (circle one)

6. TOTAL DEPTH: 33 FT DIAMETER 2 IN

7. CASING REMOVED:

feet	diameter
Excav. 15 ft.	2

8. DISINFECTION: N/A
(Amount of 70% hypochlorite used:)

9. SEALING MATERIAL:

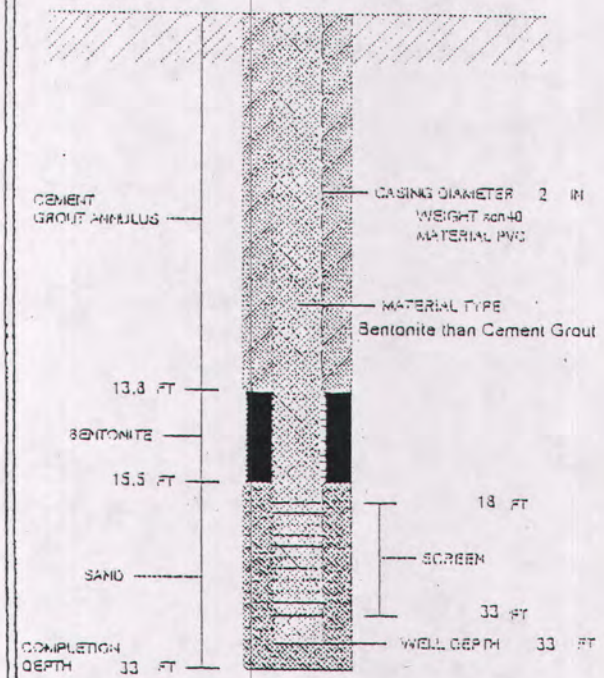
Neat Cement
bags of cement: 1
gallons of water: 6

Sand Cement
bags of cement:
gallons of water:

Other
Type material: Bentonite than Cement Grout
Amount: 2 gal. Slurry Weighing ~9.3 lbs./gal.

10. EXPLAIN METHOD EMPLACEMENT OF MATERIAL.
Tremie Grouted from Bottom Up

WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, depth and diameter of screens remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.



11. DATE WELL ABANDONED: 03/27/04

I do hereby certify that this well was abandoned in accordance with 15A NCAC 2C, well construction standards, and that a copy of the record has been provided to the well owner.

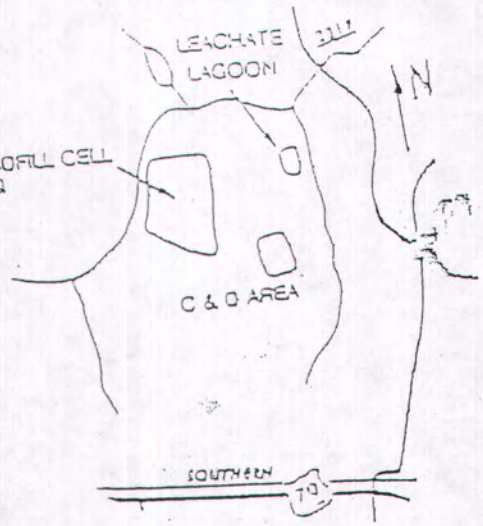
Signature of person abandoning the well: [signature] Date: 4/10/04

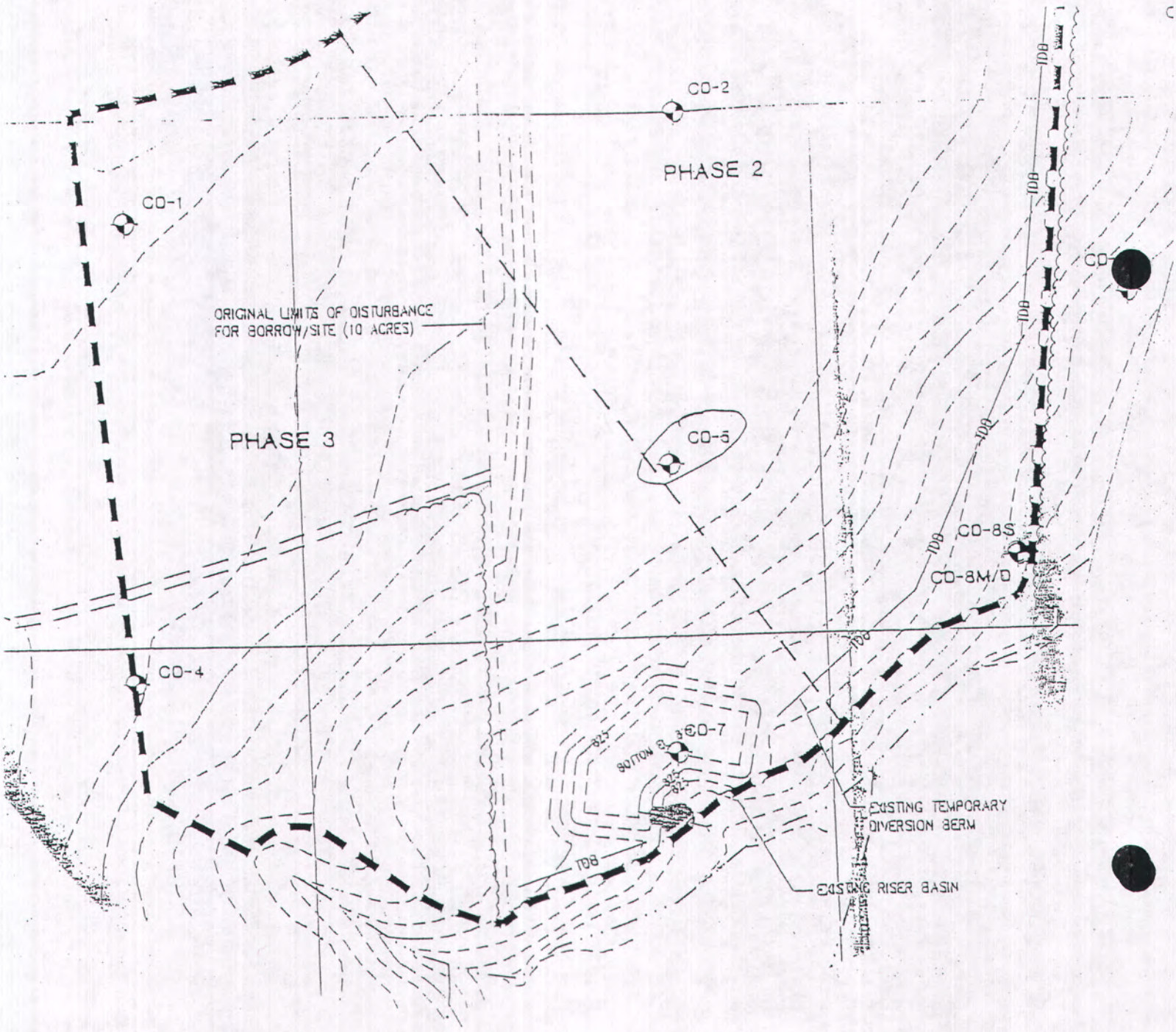
WELL LOCATION: Draw a location sketch on the reverse of this sheet, showing the direction and distance of the well to at least two (2) nearby reference points such as roads, intersections and streams. Identify roads with State Highway road identification numbers.

Submit original to the Division of Water Quality, Groundwater Section, one copy to the owner within 30 days from completion of abandonment.

LOCATION SKETCH

(Show direction and distance from at least two State Roads, or other map reference points)





CD-7

WELL ABANDONMENT RECORD

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

WELL CONTRACTOR CERTIFICATION # 2663

1. WELL CONTRACTOR:

Derry Huneycutt
Well Contractor (Individual) Name

Derry's Well Drilling
Well Contractor Company Name

STREET ADDRESS 44283-A NC 24/27/73

Albemarle | NC | 28607
City or Town | State | Zip Code

(704) 982-3070
Area code - Phone number

2. WELL INFORMATION:

SITE WELL ID # (if applicable)

STATE WELL PERMIT # (if applicable)

COUNTY WELL PERMIT # (if applicable)

DWQ or OTHER PERMIT # (if applicable)

WELL USE (Check applicable use): ☐ Monitoring ☐ Residential

☐ Municipal/Public ☐ Industrial/Commercial ☐ Agricultural

☐ Recovery ☐ Injection ☐ Irrigation

☑ Other (list use) Temp. piezometer for Hydro Study

3. WELL LOCATION:

COUNTY Iredell QUADRANGLE NAME 35080-G7

NEAREST TOWN: Statesville

3260 Twin Oaks Road
(Street/Road Name, Number, Community, Subdivision, Lot No., Parcel, Zip Code)

TOPOGRAPHIC / LAND SETTING:

☐ Slope ☑ Valley ☐ Flat ☐ Ridge ☐ Other
(Check appropriate setting)

LATITUDE 35.763739
LONGITUDE 80.827581

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)

NAME OF FACILITY Iredell County C&D Landfill

STREET ADDRESS 3260 Twin Oaks Road

Statesville | NC | 28687
City or Town | State | Zip Code

4b. CONTACT PERSON/WELL OWNER:

NAME Mr. David Lambert

STREET ADDRESS 3260 Twin Oaks Rd. Statesville, NC

5. WELL DETAILS:

a. Total Depth: 20 ft. Diameter: 2 in.

b. Water Level (Below Measuring Point): 11.34 ft.

Measuring point is 1.87 ft. above land surface.

6. CASING:

	Length	Diameter
a. Casing Depth (if known):	ft.	in.
b. Casing Removed:	Stickup ft.	2 in.

7. DISINFECTION: none

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

8. SEALING MATERIAL:

Neat Cement

Cement 50 lb.
Water 3.25 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:

Tremie grouted from bottom up.

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 1/28/06

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.

SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE 5/2/06

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.)

Derry L Huneycutt
PRINTED NAME OF PERSON ABANDONING THE WELL

Submit a copy to the owner and the original to the Division of Water Quality within 30 days.
Attn: Information Management, 1617 Mail Service Center – Raleigh, NC 27699-1617, Phone No. (919) 733-7015 ext 568.

Form GW-30
Rev. 5/06

CD-7

(Sample Point ID: 628)

Site Name: Iredell County Subtitle D Landfill
Date Installed: 2001-11-27
Date Abandoned: 2006-01-28

Type: Abandoned Piezometer
Well Driller: Geologic Explorations
Well Abandoned by: Derry's Well Drilling

Gradient: Other EDIT

North Carolina State Plane Coordinates EDIT

Northing: 737888.499 feet
Easting: 1457850.0572 feet
Date Measured: 2005-01-14
Source: Survey (G04100-6.CRS)

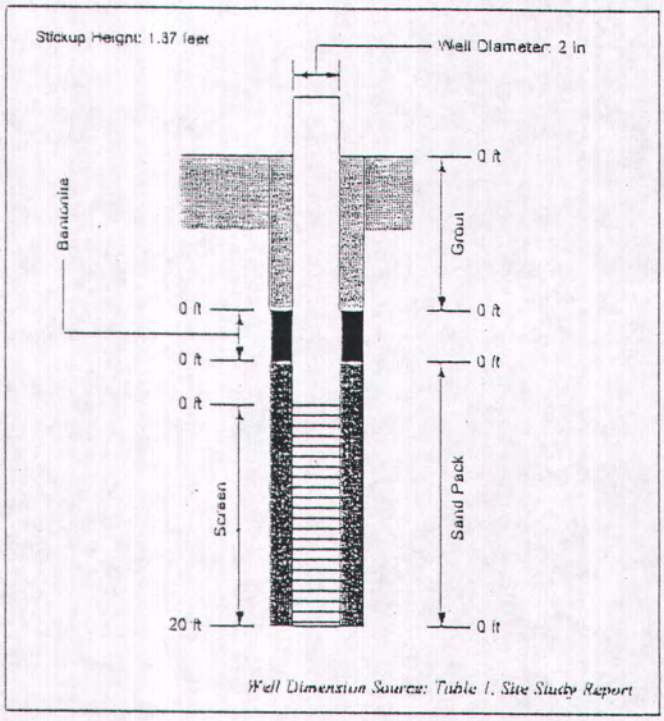
Ground Surface EDIT

Elevation: 829.61 feet
Date Measured: 2005-01-14
Source: Survey

Datum - Top of PVC Pipe EDIT

Elevation: 831.48 feet
Date Measured: 2005-01-14
Source: Survey

Well Dimension EDIT



Well Dimension Source: Table 1, Site Study Report

Note EDIT

Clasp flush w/ TOP.

Record last updated on 2006-0-2- 03: 1:0:

October 13, 2006

MEMORANDUM

To: Ed Mussler

From: Brian Wootton

Subject: Application for Permit to Construct,
Iredell County – C&D Landfill
Proposed Phase 3 Extension
Design Hydrogeologic Study - Final Comments
Water Quality Monitoring Plan – Additional Information Requested

I have reviewed the Permit to Construct Application (proposed addition of Phase 3) in-part for hydrogeologic concerns. I received the application on July 12, 2006 and subsequent supporting information was received on October 11, 2006. The hydrogeologic Site Suitability Report was approved for Phase 2 and 3 on January 28, 2004. According to that study, much of the hydrogeological site and design requirements have been met for Phase 3.

The revised surface and groundwater monitoring plan (revised October 10, 2006), explains that groundwater monitoring wells, MW-25, MW-26S, MW-26D, have been added to the monitoring plan. According to well construction records submitted, these new wells were constructed properly. The piezometers that were used for investigative purposes, within the footprint of Phase 3 have been abandoned (sealed) properly and well abandonment forms have been submitted. According to the revised surface and groundwater monitoring plan; page 1, condition 1.2 (Water Quality Monitoring Summary), 13 groundwater monitoring wells, (MW-1A, MW-1C, MW-9R, MW-9RR, MW-10R, MW-16, MW-22, MW-23, MW-24S, MW-24D, MW-25, MW-26S, MW-26D) and two surface water monitoring points , SW-3 and SW-6 are associated with C&D phases 1, 2, and 3.

In conclusion, standard Permit to Construct and Pre-Operational conditions shall apply with the exception, the new monitor wells (MW-25, MW-26S, MW-26D) have already been constructed and well completion forms submitted; however, initial sampling of the new groundwater wells will need to be required prior to Permit to Operate.

==========

Please contact me with any questions or comments. I can be reached at (919) 508-8524 or by e-mail.

Sincerely,

Brian Wootton

cc: Teresa Bradford, Solid Waste Section
Central File

NCDENR

North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

July 20, 2006

Jimmie D. Woodie, P.E.
Municipal Engineering Services Company, P.A.
PO Box 97
Garner, NC 27529

RE: Permit Application – Construction And Demolition Landfill – Phase 3
Iredell County
Permit No. 49-03

Dear Mr. Woodie

The above referenced permit application for the proposed Phase 3 expansion of the Construction and Debris Landfill, submitted by Municipal Engineering Services Company, P.A., on behalf of Iredell County is being reviewed by the Solid Waste Section (SWS) for hydrogeologic and engineering concerns. There are several items in the application that require clarification and/or revision before the review can be completed. Please respond to the following questions and comments:

Section 2- Written Report – (i)
Page 5

Part (i) of the Written Report states the following: *"A survey plat and deed for this property has been included in this section".*

A copy of the survey plat and deed could not be located in the application or I overlooked it during review of the application. Please provide copie(s) or clarification.

Also, depict on this map or an additional map the acreage of the footprint for Phase 3.

Section 3 – Operational Plan for Iredell County – 3
Page 12

Page 12 of the Operational Plan mentions, in part, the frequency of surface and ground-water sampling.

Additional ground-water well(s) and surface water sampling point(s) may be required to monitor any potential impacts to surface water and groundwater from Phase 3 landfill operations. Submit a written discussion and possible revised Water Quality Plan (that includes Phase 3) explaining the reasoning and possible necessity of additional ground-water wells and surface water sampling points.

Also, provide the most current map, depicting the location of existing and proposed locations of ground-water sampling wells and surface water sampling points associated with this phase, and adjacent phases.

If additional ground-water and surface sampling points are required, then installation of well(s) and sampling will be required before a Permit to Operate is issued.

The drawings submitted with the application do not depict locations of borings, piezometers/wells inside the waste boundary of proposed Phase 3. Please clarify by stating whether or not previous existing wells, piezometers, and borings have been abandoned (sealed) correctly within the proposed footprint of proposed Phase 3.

Please note the comments and questions stated above and provide additional information and revisions as needed. If you and your staff have any questions, or wish to schedule a meeting to discuss the items referenced in this letter, please call me at 919-508-8524.

Sincerely,

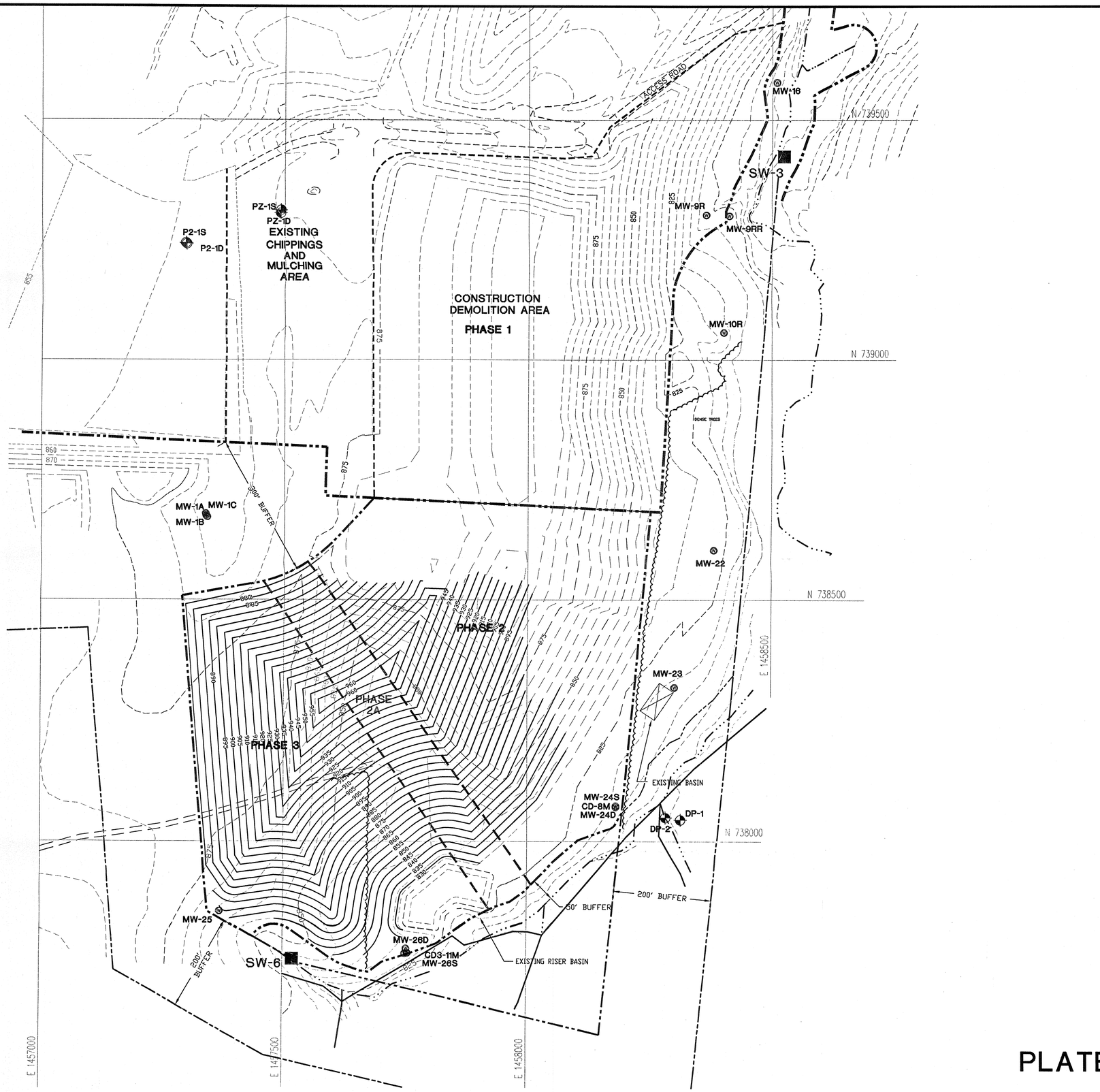
Brian Wootton

Brian Wootton
Hydrogeologist
Solid Waste Section

cc: Ed Mussler — Solid Waste Section
Ethan Caldwell, P.G. — Municipal Engineering
Central File

LEGEND:

- 875 EXISTING CONTOURS
- 875 PROPOSED CONTOURS
- PROPOSED LANDFILL AREA
- PHASE LINE
- PROPERTY LINE
- TDB EXISTING TEMPORARY DIVERSION BERM
- MW-9RR EXISTING MONITORING WELL
- BRANCH OR STREAM
- SW-6 SURFACE WATER SAMPLING LOCATION
- P2-1D PIEZOMETER LOCATION



MAGNETIC

Municipal Engineering Services Company, P.A.

P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393

P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767

P.O. BOX 278 MOREHEAD CITY, N.C. 28557 (252) 726-9481

IREDELL C&D
PHASE 3
IREDELL COUNTY
NORTH CAROLINA

DATE	BY	REV.	DESCRIPTION

PROPOSED MONITORING WELL AND SURFACE WATER LOCATION

Received JAN 20 Solid Waste Section

SCALE:	1" = 100'
DATE:	10/10/2006
DRWN. BY:	E. CALDWELL
CHKD. BY:	E. CALDWELL
PROJECT NUMBER	G04100
DRAWING NO.	PLATE A
SHEET NO.	1 OF 1

PLATE A

LEGEND:

- 875 — EXISTING CONTOURS
- 875 — PROPOSED CONTOURS
- PROPOSED LANDFILL AREA
- PHASE LINE
- PROPERTY LINE
- TDB — EXISTING TEMPORARY DIVERSION BERM
- MW-9RR — EXISTING MONITORING WELL
- BRANCH OR STREAM
- SW-6 — SURFACE WATER SAMPLING LOCATION
- P2-1D — PIEZOMETER LOCATION

NOTE

1. POTENTIOMETRIC SURFACE MAP BASED ON JANUARY 30, 2006 MEASUREMENT
2. NUMBERS SHOWN IN THIS PLATE ALL IN UNITS OF FEET UNLESS OTHERWISE INDICATED

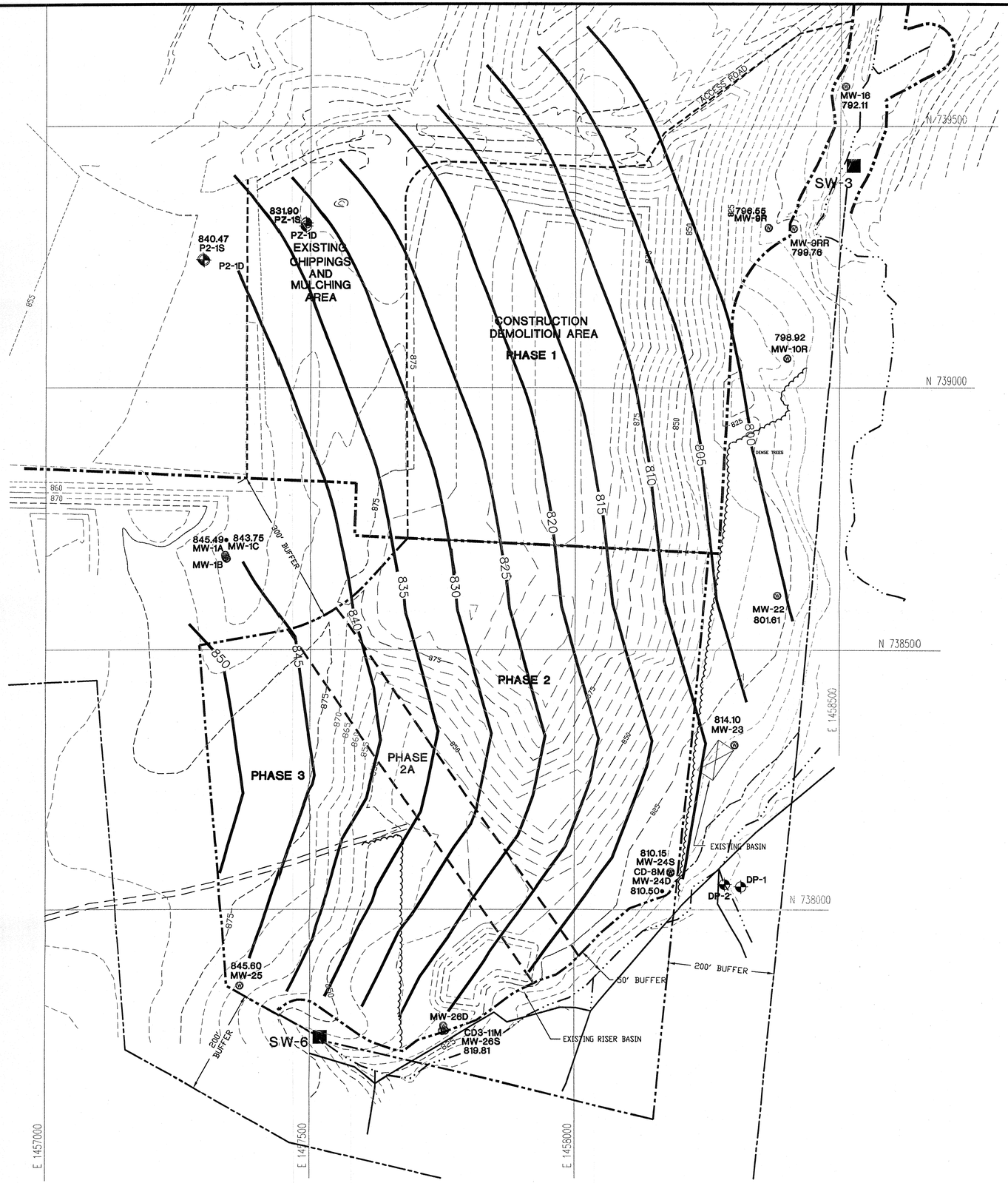


PLATE B

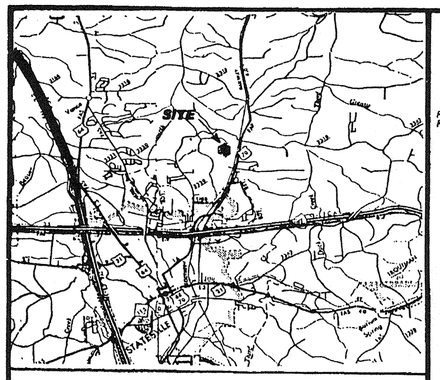
Municipal Services Engineering Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 278 MOREHEAD CITY, N.C. 28557 (252) 726-9481

IREDELL C&D
PHASE 3
IREDELL COUNTY
NORTH CAROLINA

SINGLE DAY POTENTIOMETRIC SURFACE

DATE	BY	REV.	DESCRIPTION

SCALE:	1" = 100'
DATE:	10/10/2006
DRWN. BY:	E. CALDWELL
CHKD. BY:	E. CALDWELL
PROJECT NUMBER	G04100
DRAWING NO.	PLATE B
SHEET NO.	1 OF 1



VICINITY MAP

LEGEND	
———	LINES SURVEYED
- - - -	LINES NOT SURVEYED
EIP	EXISTING IRON PIPE
NIP	NEW IRON PIPE SET
ECM	EXISTING CONCRETE MONUMENT
CM	CONCRETE MONUMENT SET
ELS	EXISTING LIGHTWOOD STAKE
PKN	P K NAIL
R/W	RIGHT OF WAY
DB	DEED BOOK
DMD	DOUBLE MERIDIAN DISTANCE
NIR	NEW IRON ROD SET
CP	CALCULATED POINT

NORTH CAROLINA
WATAUGA COUNTY

I, C. NEAL BARE, certify that this map was drawn under my supervision from an actual survey made under my supervision, deed and description recorded in Book AS Page SHOWN, that the ratio of precision as calculated by latitude and departures is 1/_____, that the boundaries not surveyed are shown as broken lines plotted from information found in books referenced, that this map was prepared in accordance with G.S. 47-30 as amended Witness my hand and seal this 2nd day of APRIL, A.D., 19 93

_____ Land Surveyor
Registration No. L-2425

SURVEYOR SEAL

NORTH CAROLINA
WATAUGA COUNTY

I, MORGAN A. REDMOND a Notary Public for said county and state do hereby certify that C. NEAL BARE, a Registered Land Surveyor, personally appeared before me this day and acknowledged the execution of the foregoing instrument. Witness my hand and official seal this 2nd day of APRIL 19 93.

_____ Notary Public

My commission expires OCTOBER 22 19 96.

NOTARY SEAL

NORTH CAROLINA
Iredell COUNTY

The foregoing certificate of Morgan A. Redmond Notary Public, is certified to be correct. This instrument was presented for registration and recorded in Plat Book 23 Page 96 This April 14, 1993 at 4:16 P M.

Brenda G. Bell by _____
Register of Deeds Assistant Reg. of Deeds

I, C. NEAL BARE, HEREBY CERTIFY THAT THIS SURVEY CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.

_____
C. NEAL BARE, RLS L-2425

Recorded in Book of Maps _____ Vol. _____ Pg. _____

TIE: S 03°14'39" W 23.44' EIP (2")

NIR — S 69°59'14" E 282.92'

NIR — S 32°38'24" E 177.36'

NIR — S 70°36'14" E 271.13'

NIR — N 85°10'10" E 143.33'

N 75°53'06" E 127.15'

EIP(2") — S 04°47'49" W 153.67'

EIP @ 30" ELM TREE

EIR

EIP

VERNON C. NEALL, INC.
TRACT 3 DEED BOOK 756, PAGE 09

DEED BOOK 756, PAGE 09
TRACT 3

EBONY ACRES SUBDIVISION
PLAT BOOK 12 PAGE 45

EBONY — EBONY TERRACE — CIRCLE E

EIP 9.47' — 103.81'
EIP 9.34' — 66.31'
60.13'
EIP 9.74' — 109.82'
EIP 7.36' — 125.07'
EIP 6.38'

(14) (15) (17) (18) (19)

* NOTE: EIP'S ARE NORMAL TO LINE AS SHOWN

N 03°14'38" E 1186.00' (TOTAL) 722.86'

APPROXIMATE LOCATION OF CREEK FLOW

ACTT CORPORATION
DEED BOOK 491, PAGE 345

REF:
DEED BOOK 567, PAGE 492
DEED BOOK 370, PAGE 559
TRACT 8A
DEED BOOK 150, PAGE 181
TRACT 1

IREDELL COUNTY
DEED BOOK 744, PAGE 750

EIR — 495.00' — N 53°50'07" E — NIR

N 04°10'07" E 214.50'

NIR — N 05°45'40" E 256.92'

EIR — N 79°51'02" W 20.56'

EIP — N 01°20'34" E 191.58'

NIR & BRANCH — N 28°46'34" E 23.07'

PAUL & HARRY TSUMAS
DEED BOOK 14, PAGE 318

N 01°44'26" W 354.71'

EIP (BOLT)
TIE: N 01°44'26" W 82.06'

710.85' — NIR — 606.52' — N 87°17'55" W

N.A.D. 1983
X = 444,089.1445m
Y = 225,131.3319m

POINT OF BEGINNING

NOM — 194.90' — 90° — 100' — CP

575.92' — NOM — 463.22' — NIR — 321.34' — NIR

2872.75 (TOTAL)

EIP — N 87°37'48" E 470.00'

N 03°55'48" E 1555.00'

J.C. STEELE & SONS INC.
DEED BOOK 574 PAGE 127

TIE: N 14°07'45" E 1813.90 (NORZ.) 1813.68 (GRID) COMB. FACTOR = 0.99988995

USGS "THIRD" CONTROL MONUMENT N.A.D. 1983 X=443,954.051m Y=224,594.659m

EXIST. P.K. NAIL @ SOUTHERN RAILWAY

JOY ACRES FARMS LTD.
DEED BOOK 567, PAGE 492

EIR — S 87°17'55" E — 1647.98'

REFERENCE:
DEED BOOK 567, PAGE 492
DEED BOOK 370, PAGE 559 (TRACT 11-A)
DEED BOOK 150, PAGE 267 (TRACT ONE)

REFERENCE:
DEED BOOK 567, PAGE 492
DEED BOOK 370, PAGE 537
DEED BOOK 147, PAGE 582

TIE: S 73°25'32" W 376.35' EIP

JEFFREY VINSON
EIP (DRIVE SHAFT) (22)

S 03°19'07" W 267.60'

EIP (2") — MRS. ROBY LACKEY SUBDIVISION
PLAT BOOK 7, PAGE 36

S 03°19'07" W 639.85'

NOTE: RANDOM FENCE FROM TREE TO TREE

(21)

TIE: S 12°34'07" W 183.63'

EIP — JOHNNY KIMBER HANELINE
DEED BOOK 384, PAGE 218

NIR

MERCHANTS METALS INC.
DEED BOOK 870, PAGE 918

NOTES:

ALL STREAMS SHOWN HEREON ARE APPROXIMATE. NO FIELD LOCATION PERFORMED.

ALL DISTANCES SHOWN HEREON ARE HORIZONTAL SURFACE UNLESS NOTED.

N.C.G.S. GRID NORTH

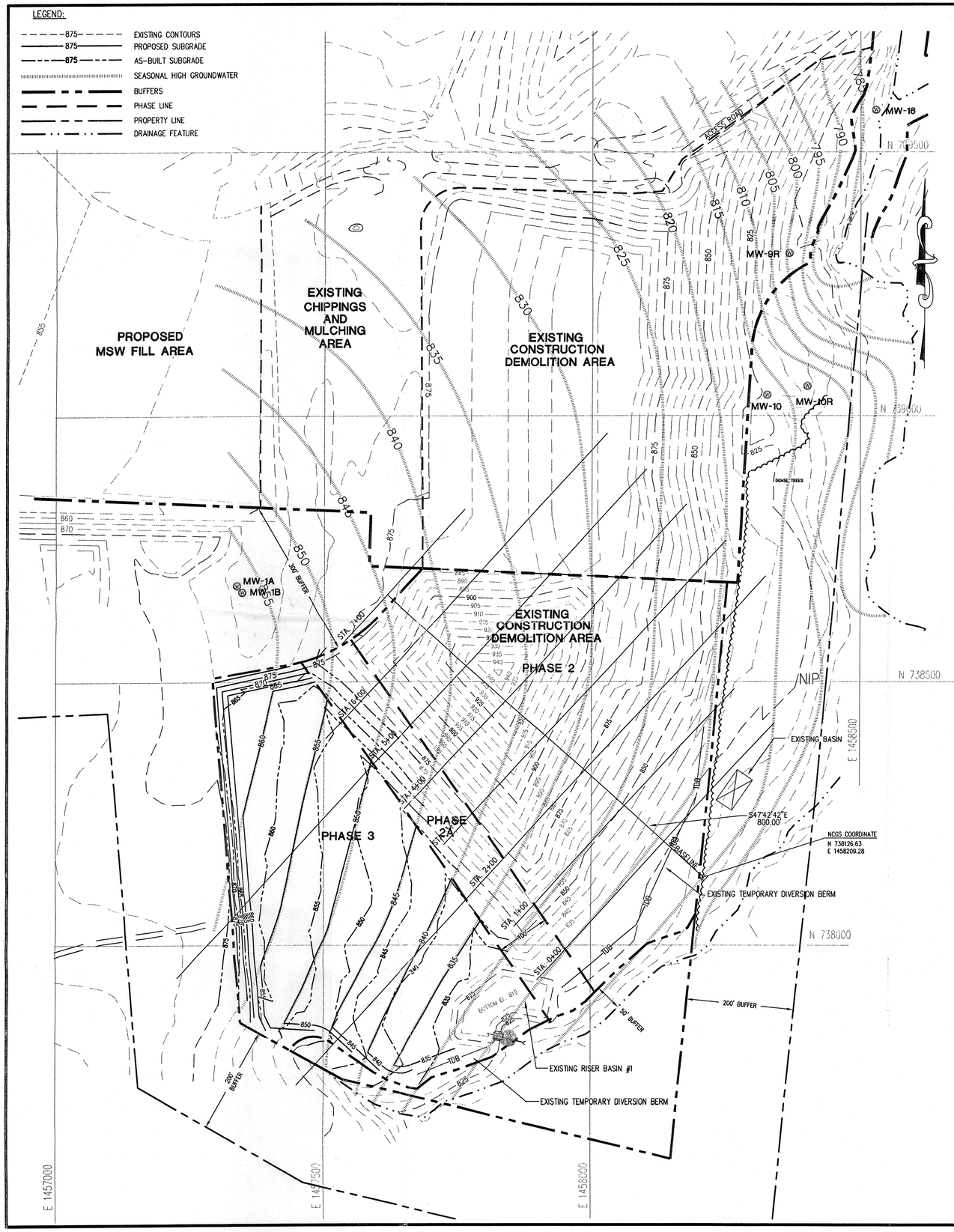
TOTAL AREA = 91.130 ACRES
BY COORDINATE GEOMETRY
REF: BOOK 816, PG. 155

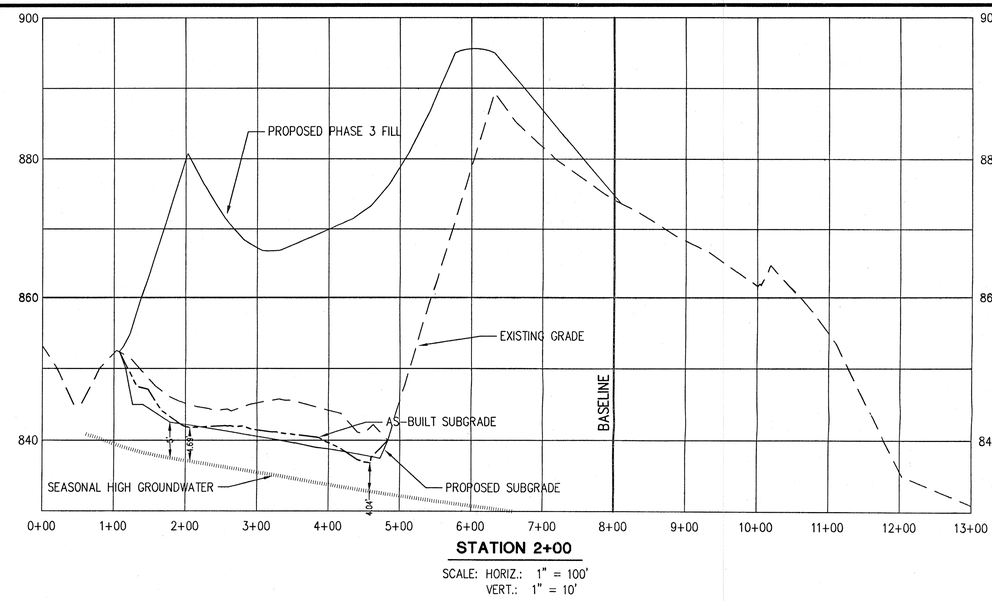
Unofficial

FILED
IREDELL COUNTY
93 APR 14 PM 4:16
Book 23 Page 96

REVISIONS	BOUNDARY SURVEY FOR		COMPANY	
1. 12-14-92 CNB RELOCATE SOUTHERN BOUNDARY AT OWNERS REQUEST	IREDELL COUNTY COMMISSIONERS		MUNICIPAL ENGINEERING SERVICES CO., P.A. CONSULTING ENGINEERS GARNER, N.C. BOONE, N.C.	
2. 02/03/93 CUT-OUT TRACTS A & B	TOWNSHIP: CHAMBERSBURG	COUNTY: IREDELL	DATE: NOV. 2, 1990	SURVEYED BY: CNB
3. PLAT RESTORED TO ORIGINAL FORM TO REVIEW AS TRACTS A & B ONLY	TOWN:	STATE: NORTH CAROLINA	SCALE: 1" = 200'	DRAWN BY: VCC
200' 100' 0 200' SCALE	ZONE:	TAX MAP: PARCEL:	CHECKED & CLOSURE BY: CNB	FIELD BOOK / DRAWING NO. B90-135

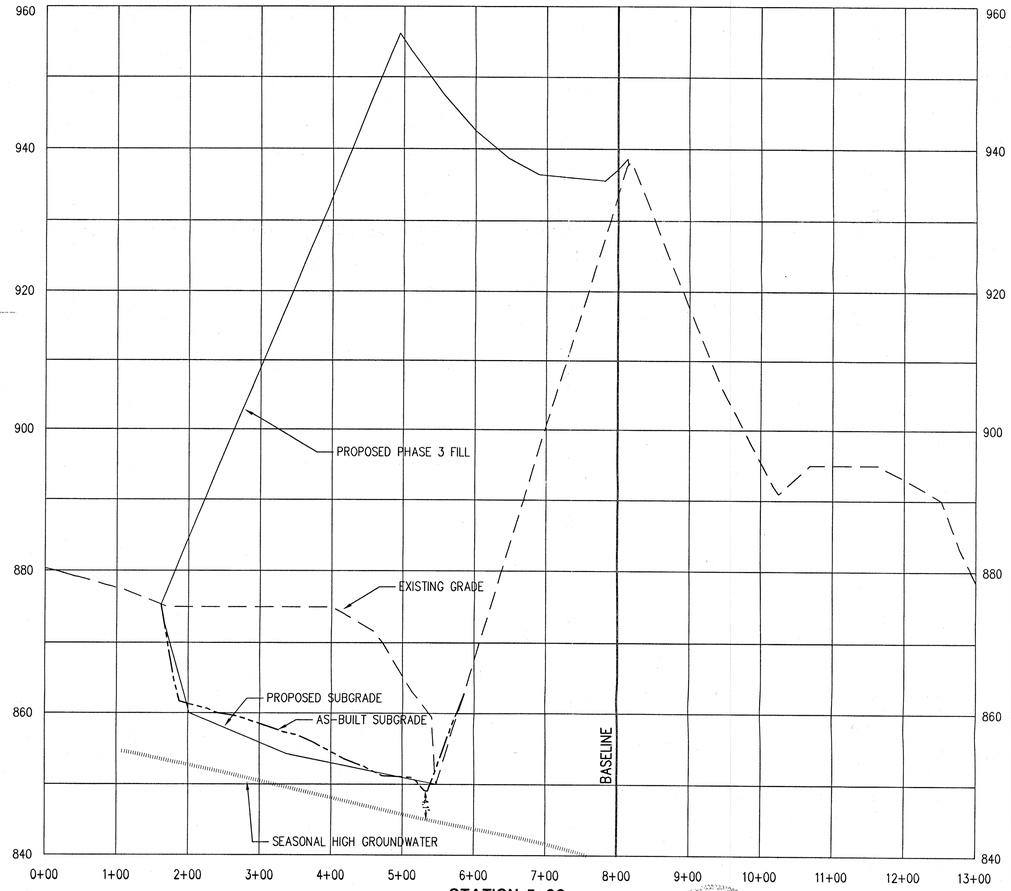
DUNCAN PARNELL INC RALEIGH NC 919 833 4877





STATION 2+00

SCALE: HORIZ.: 1" = 100'
VERT.: 1" = 10'



STATION 5+00

SCALE: HORIZ.: 1" = 100'
VERT.: 1" = 10'

2/7/07

NORTH CAROLINA PROFESSIONAL SEAL L-2525 LAND SURVEYOR D. WAYNE SULLIVAN

2/7/07

THIS IS A TOPOGRAPHIC SURVEY ONLY

Municipal Engineering Services Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 828 MOREHEAD CITY, N.C. 28557 (252) 726-9481

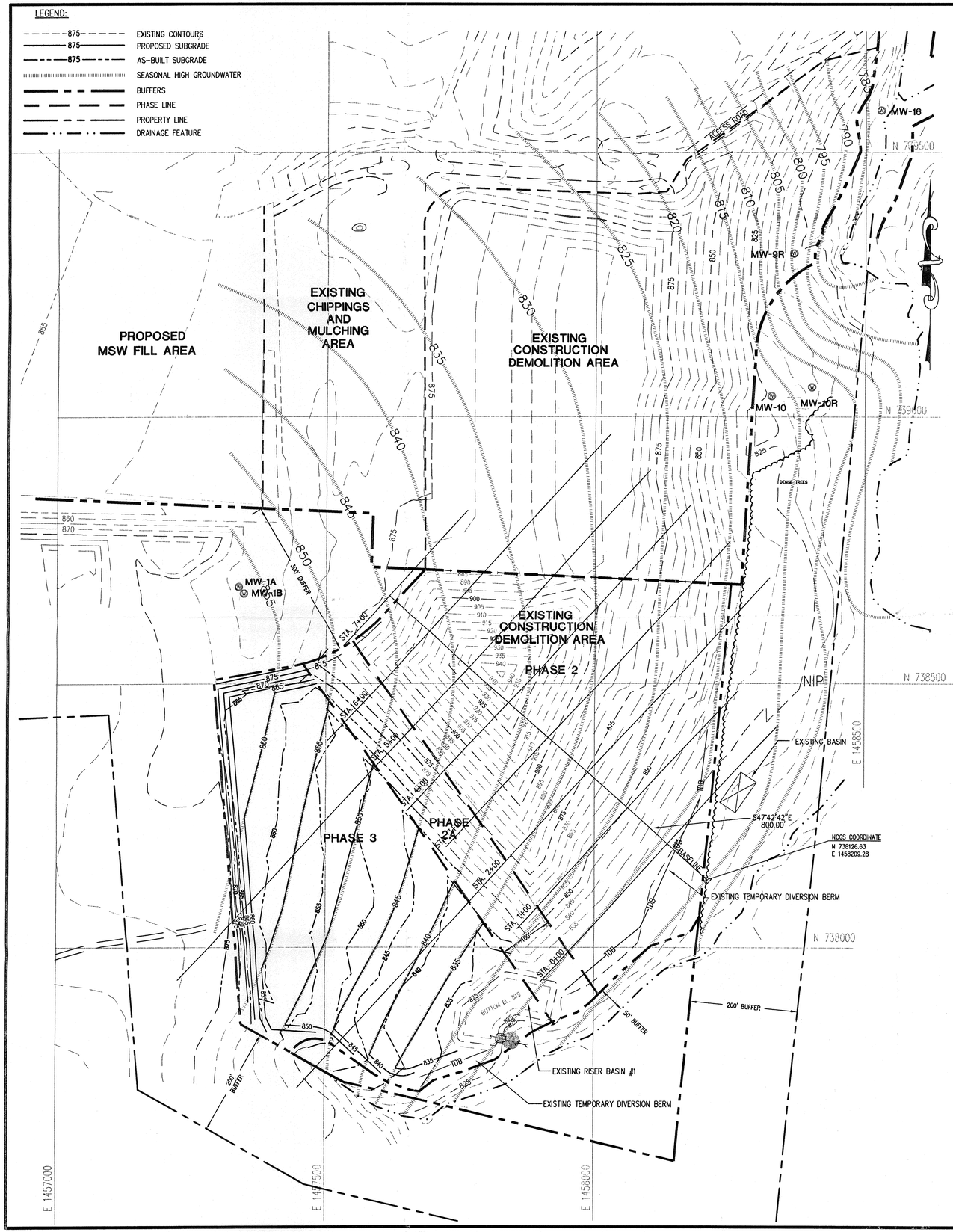
CONSTRUCTION AND DEMOLITION LANDFILL FACILITY
IREDELL COUNTY NORTH CAROLINA

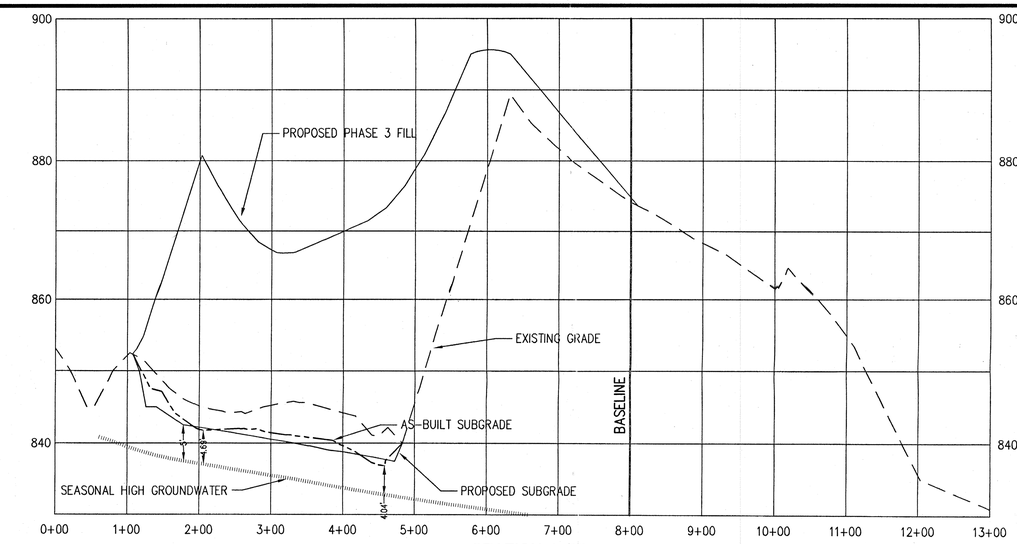
DATE	BY	REV.	DESCRIPTION

CONSTRUCTION PLAN – PHASE 3
AS-BUILT SUBGRADE

SCALE:	1" = 100'
DATE:	1/29/07
DRWN. BY:	L. HAMPTON
CHKD. BY:	J. WOODIE
PROJECT NUMBER	G04100
DRAWING NO.	C1
SHEET NO.	1 OF 1

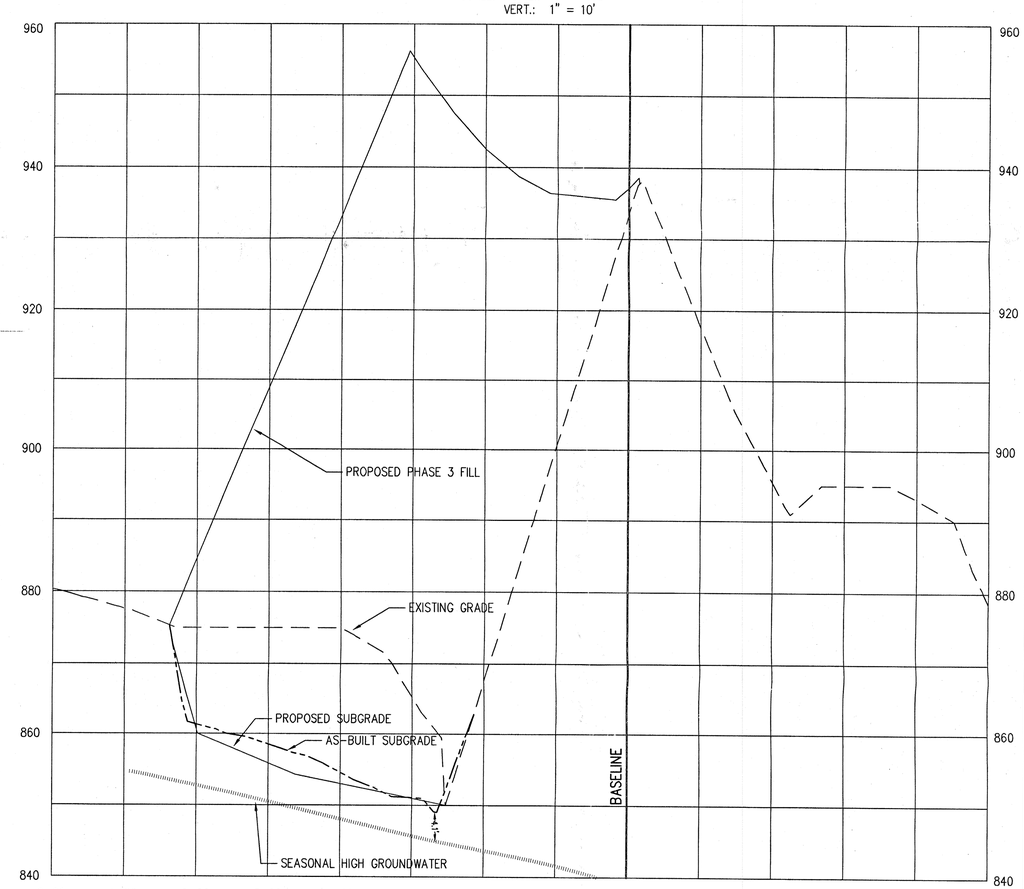
P:\SolidWaste\g04100-Iredell C&D Ph 3-construction\dwg\ASBUILT\04100-AS-BUILT.DWG, 2/7/2007 10:30:09 AM, lch





STATION 2+00

SCALE: HORIZ.: 1" = 100'
VERT.: 1" = 10'



STATION 5+00

SCALE: HORIZ.: 1" = 100'
VERT.: 1" = 10'

2/7/07

NORTH CAROLINA PROFESSIONAL SEAL L-2525 LAND SURVEYOR D. WAYNE SULLIVAN

2/7/07

THIS IS A TOPOGRAPHIC SURVEY ONLY

Municipal Engineering Services Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 828 MOREHEAD CITY, N.C. 28557 (252) 726-9481

CONSTRUCTION AND DEMOLITION LANDFILL FACILITY
IREDELL COUNTY NORTH CAROLINA

DATE	BY	REV.	DESCRIPTION

CONSTRUCTION PLAN – PHASE 3
AS-BUILT SUBGRADE

SCALE:	1" = 100'
DATE:	1/29/07
DRWN. BY:	L. HAMPTON
CHKD. BY:	J. WOODIE
PROJECT NUMBER	G04100
DRAWING NO.	C1
SHEET NO.	1 OF 1

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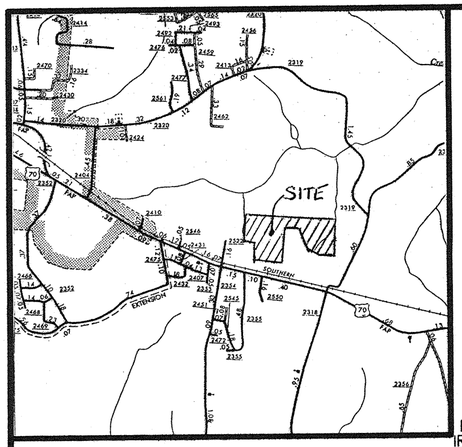


VICINITY MAP

LEGEND

- PROPERTY LINE
- LINES NOT SURVEYED
- CENTERLINES
- RIGHT OF WAY
- CREEK
- CHAIN LINK FENCE
- HOG WIRE FENCE
- ECM — EXISTING CONCRETE MONUMENT
- EIP — EXISTING IRON PIN
- NIP — NEW IRON PIN
- Ⓢ — SANITARY SEWER MANHOLE

North Carolina
WAKE County

I, D. WAYNE SULLIVAN, certify that this plat was drawn under my supervision from an actual survey made under my supervision, deed description recorded in Book 567 page 495, that the boundaries not surveyed are clearly indicated as drawn from information found in Book ____ page ____; that the ratio of precision as calculated is 1: 10,000 ; that this plat was prepared in accordance with G.S. 47-30 as amended. Witness my original signature, registration number and seal this 7 day of June, A.D., 2000.

SEAL OR STAMP

NORTH CAROLINA PROFESSIONAL SEAL L-2525 LAND SURVEYOR D. WAYNE SULLIVAN

D. Wayne Sull.
Professional Land Surveyor

L-2525
Registration Number

TYPE OF PLAT

I, D. WAYNE SULLIVAN, a Professional Land Surveyor, Reg. No. L-2525 certify to one or more of the following as checked below:

- ☐ A. That this plat is of a survey that creates a subdivision of land within an area of a county or municipality that has an ordinance that regulates parcels of land.
- ☐ B. That this plat is of a survey that is located in such portion of a county or municipality that is unregulated as to an ordinance that regulates parcels of land.
- ☒ C. That this plat is of a survey of an existing parcel or parcels of land.
- ☐ D. That this plat is of a survey of another category, such as the recombination of existing parcels, a court-ordered survey or other exception to the definition of a subdivision.
- ☐ E. That the information available to this surveyor is such that I am unable to make a determination to the best of my professional ability as to provisions contained in (A) through (D) above.

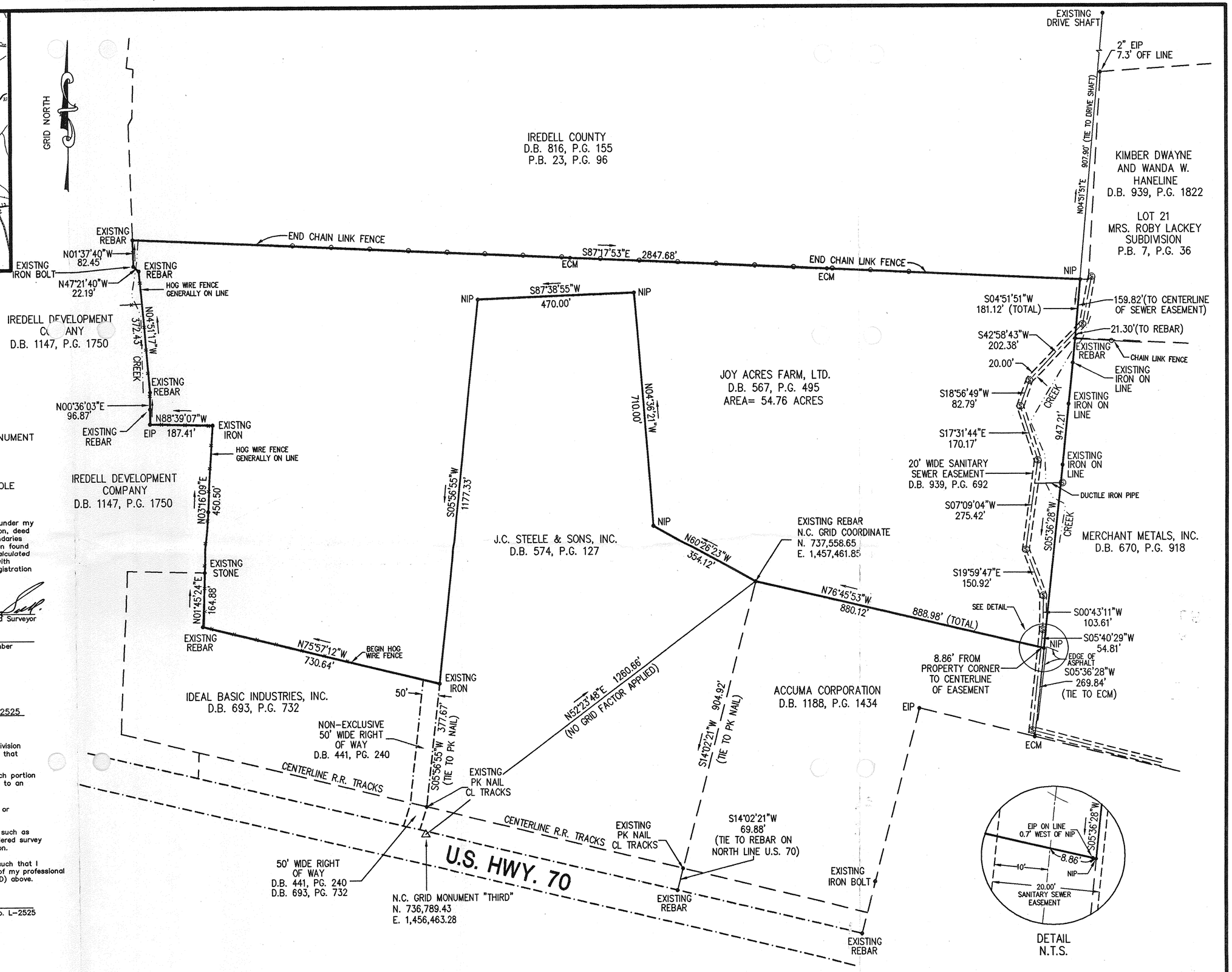
D. Wayne Sull.
D. Wayne Sullivan, Professional Land Surveyor, Reg. No. L-2525

State of North Carolina
County of _____

I, _____, Review Officer of _____ County, certify that the map or plat to which this certification is affixed meets all statutory requirements for recording.

_____ by _____
Date Review Officer

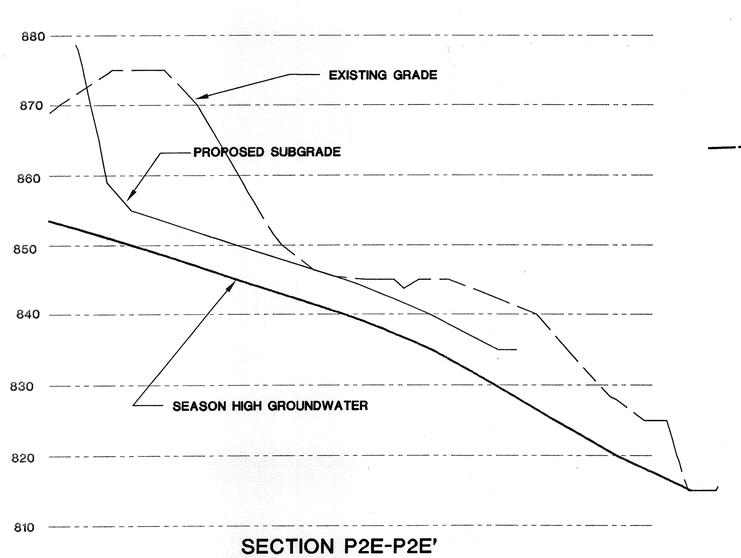
Recorded in Book of Maps _____ Vol. _____ Pg. _____



REVISIONS	SURVEY FOR		MUNICIPAL ENGINEERING SERVICES, CO., PA CONSULTING ENGINEERS		
	IREDELL COUNTY		GARNER, N.C. 919-772-5393 BOONE, N.C. 828-262-1767		
	TOWNSHIP: CHAMBERSBURG	COUNTY: IREDELL	DATE: 6/20/00	SURVEYED BY: C.H., C.H.	FIELD BOOK M-194
0 100 200 400 SCALE	TOWN: --------	STATE: NORTH CAROLINA	SCALE: 1"= 200'	DRAWN BY: B.M.B.	DRAWING NO.
	ZONE: --------	TAX MAP: 4753-78-5203	CHECKED & CLOSURE BY: B.M.B.		G00045

LEGEND:

- 875 EXISTING CONTOURS
- 875 PROPOSED CONTOURS
- PROPOSED LANDFILL AREA
- PHASE LINE
- PROPERTY LINE
- TDB EXISTING TEMPORARY DIVERSION BERM
- EXISTING MONITORING WELL
- EXISTING PIEZOMETER
- BRANCH OR STREAM
- ABANDONED PIEZOMETER
- SEASONAL HIGH CONTOUR
- ABANDONED MONITORING WELL LOCATION



SECTION P2E-P2E'

SCALE: HORIZ.: 1" = 100'
VERT.: 1" = 10'

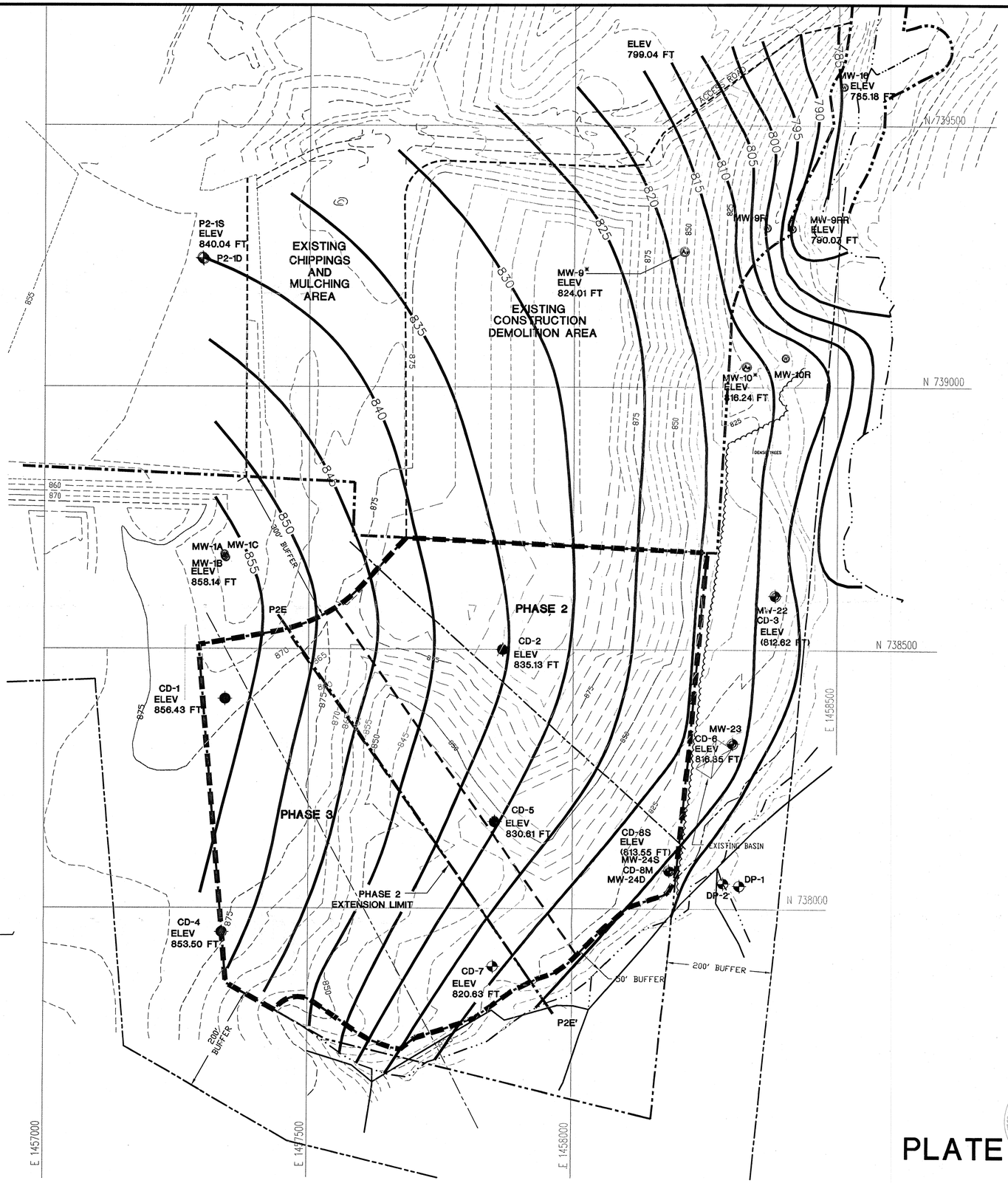


PLATE 1

Municipal Engineering Services Company, P.A.
P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393
P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767
P.O. BOX 278 MOREHEAD CITY, N.C. 28557 (252) 726-9481

IREDELL C&D PHASE 2 EXPANSION IREDELL COUNTY NORTH CAROLINA

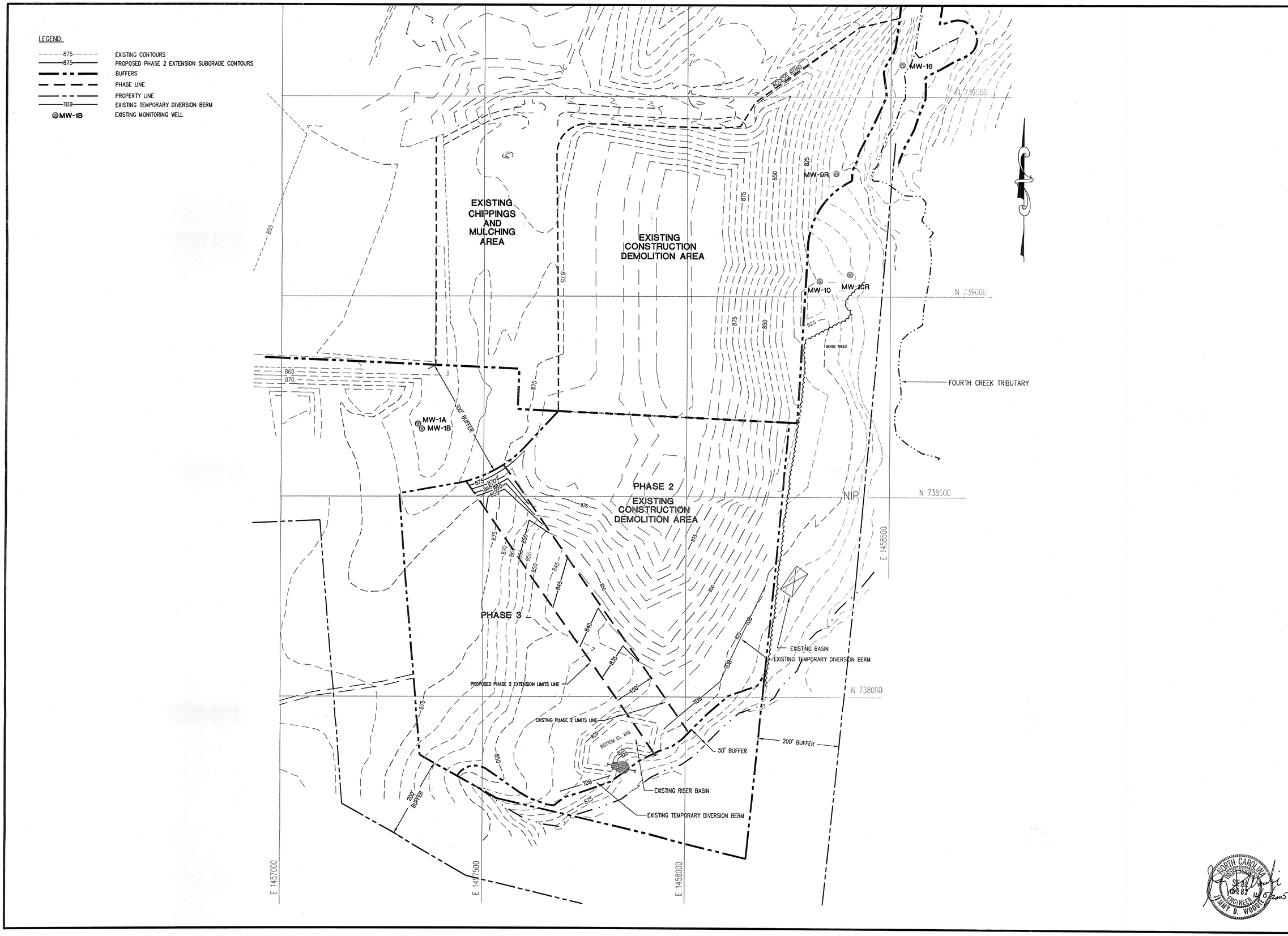
Received JAN 2006 Solid Waste Section

DATE	BY	REV.	DESCRIPTION

SITE MAP WITH SEASONAL HIGH GROUNDWATER

SCALE:	1" = 100'
DATE:	12/15/05
DRWN. BY:	E. CALDWELL
CHKD. BY:	E. CALDWELL
PROJECT NUMBER	G04100
DRAWING NO.	PLATE 1
SHEET NO.	1 OF 1

Received JAN 2006 Solid Waste Section



Municipal Engineering Services Company, P.A.

P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393

P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767

P.O. BOX 278 MOREHEAD CITY, N.C. 28557 (252) 726-9481

CONSTRUCTION AND DEMOLITION LANDFILL FACILITY
IREDELL COUNTY
NORTH CAROLINA

DATE	BY	REV.	DESCRIPTION

CONSTRUCTION PLANS – PHASE 2 EXTENSION
PROPOSED SUBGRADE PLAN

SCALE:	1" = 100'
DATE:	12/13/05
DRWN. BY:	L. HAMPTON
CHKD. BY:	J. WOODIE
PROJECT NUMBER	G04100
DRAWING NO.	C1
SHEET NO.	1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 0282 ENGINEER JIMMY D. WOODIE

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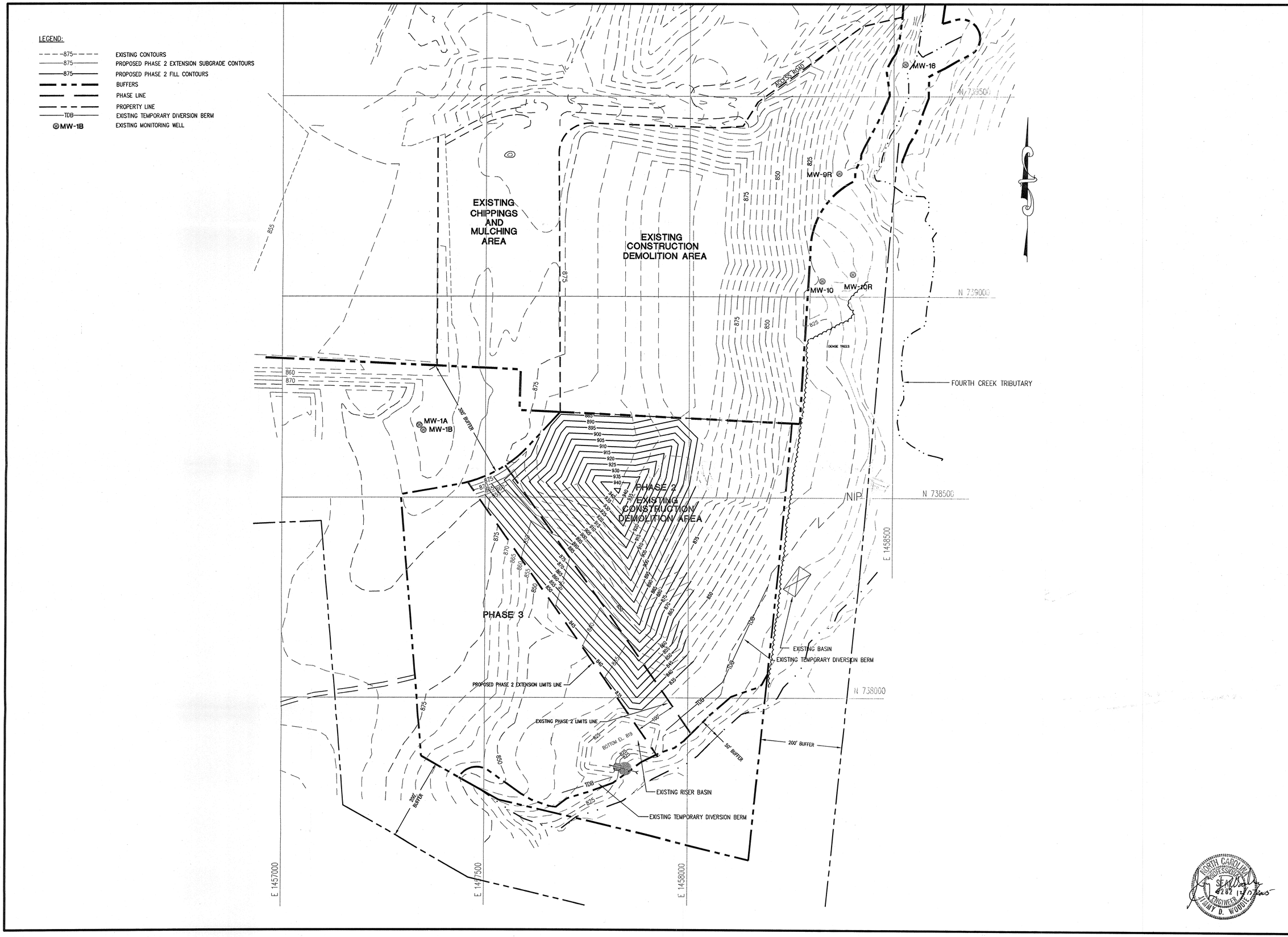

Municipal Engineering Services Company, P.A.

P.O. BOX 97 GARNER, N.C. 27529 (919) 772-5393

P.O. BOX 349 BOONE, N.C. 28607 (828) 262-1767

P.O. BOX 828 MOREHEAD CITY, N.C. 28557 (252) 726-9481

CONSTRUCTION AND DEMOLITION LANDFILL FACILITY
IREDELL COUNTY NORTH CAROLINA

DATE	BY	REV.	DESCRIPTION

CONSTRUCTION PLANS – PHASE 2 EXTENSION
PROPOSED FILL PLAN

SCALE:	1" = 100'
DATE:	12/13/05
DRWN. BY:	L. HAMPTON
CHKD. BY:	J. WOODIE
PROJECT NUMBER	G04100
DRAWING NO.	C2
SHEET NO.	2 OF 2

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 8282 JIMMY D. WOODIE 12/13/2005

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