State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

DEHNR

December 16, 1996

Mr. Gary Ahlberg, P.E.
1010 Saralyn road
Pittsboro, NC 27312

RE: Water Quality Monitoring System
Wilson County Sanitary Landfill
Permit #98-01

Fac/Perm/Co ID #	Date	Doc ID#
9801	7/29/2011	DIN 14608

Dear Mr. Ahlberg,

Based on our recent telephone conversations, following is the plan for upgrading the water quality monitoring system at the above referenced landfill, and for the initial work needed to assess the extent of contamination in the vicinity of well MW-3. This plan differs from, and supercedes any previous plans submitted by you in response to the Solid Waste Section's letter of August 23rd, 1996:

1. Two detection monitoring wells are to be installed to complete the upgrade of the detection monitoring system. These wells are to be located as shown on the attached map. Note that the locations are further downgradient than the locations originally proposed in the transition plan. Locations are to be as close as practicable to the drainage ditch, and need to be within the 250-foot compliance boundary of the landfill units. Ideally, their distance from waste will be less than 200 feet.

2. The above two wells are to be constructed with ten foot screens, set in the Yorktown Formation. The tops of screens need to be beneath the invert elevation of the drainage ditch, and at a depth sufficient to insure that the sand pack is adequately sealed from water in the surficial sand aquifer, but not any deeper than necesssary to meet the above two conditions.

3. The above two wells are to be part of the routine detection monitoring system, to be sampled semiannually, for the duration of the post-closure monitoring period.

4. A third well, to be installed near MW-3, will be a Type III well with a ten foot screen, set with its top approximately ten feet beneath the base of the surficial sand aquifer. This well is to be considered part of the investigation of groundwater contamination in the vicinity of MW-3, and is designed to determine the vertical extent of contamination in the area.

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Raleigh, North Carolina 27611-7687
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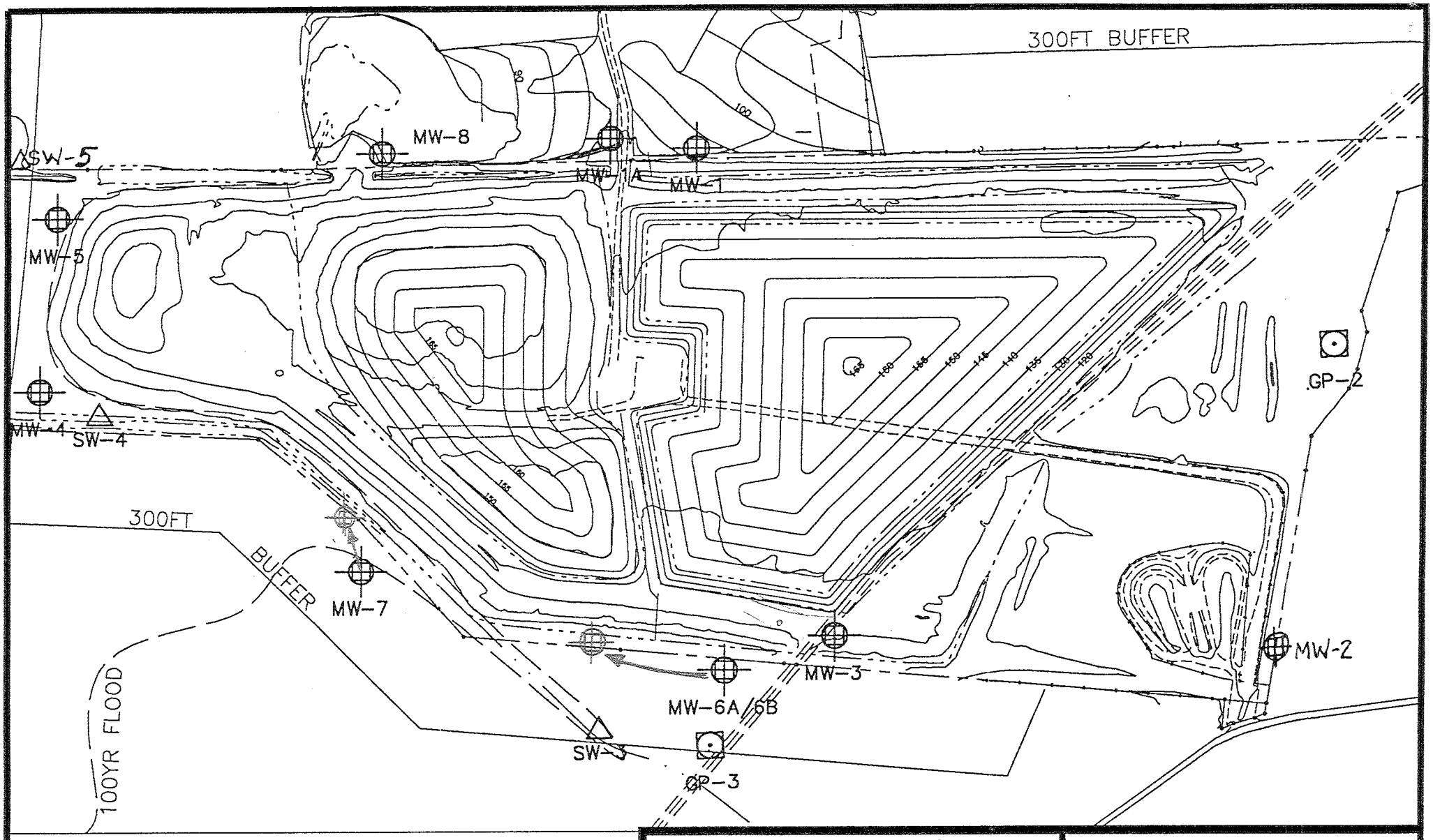
5. Detailed lithologic information needs to be recorded during the drilling of all three wells. Your suggestion of continuous sampling through the entire length of the type III well is a good idea.

If you have any additional questions before or during drilling, please call me at the Solid Waste Section, (919) 733-0692, ext. 342.

Sincerely,

Jim Bateson
Hydrogeologist,
Solid Waste Section

cc: Steve Clayton; Wilson County
Mark Poindexter; Solid Waste Section
Bobby Lutfy; "



SCALE : 1" = 400'

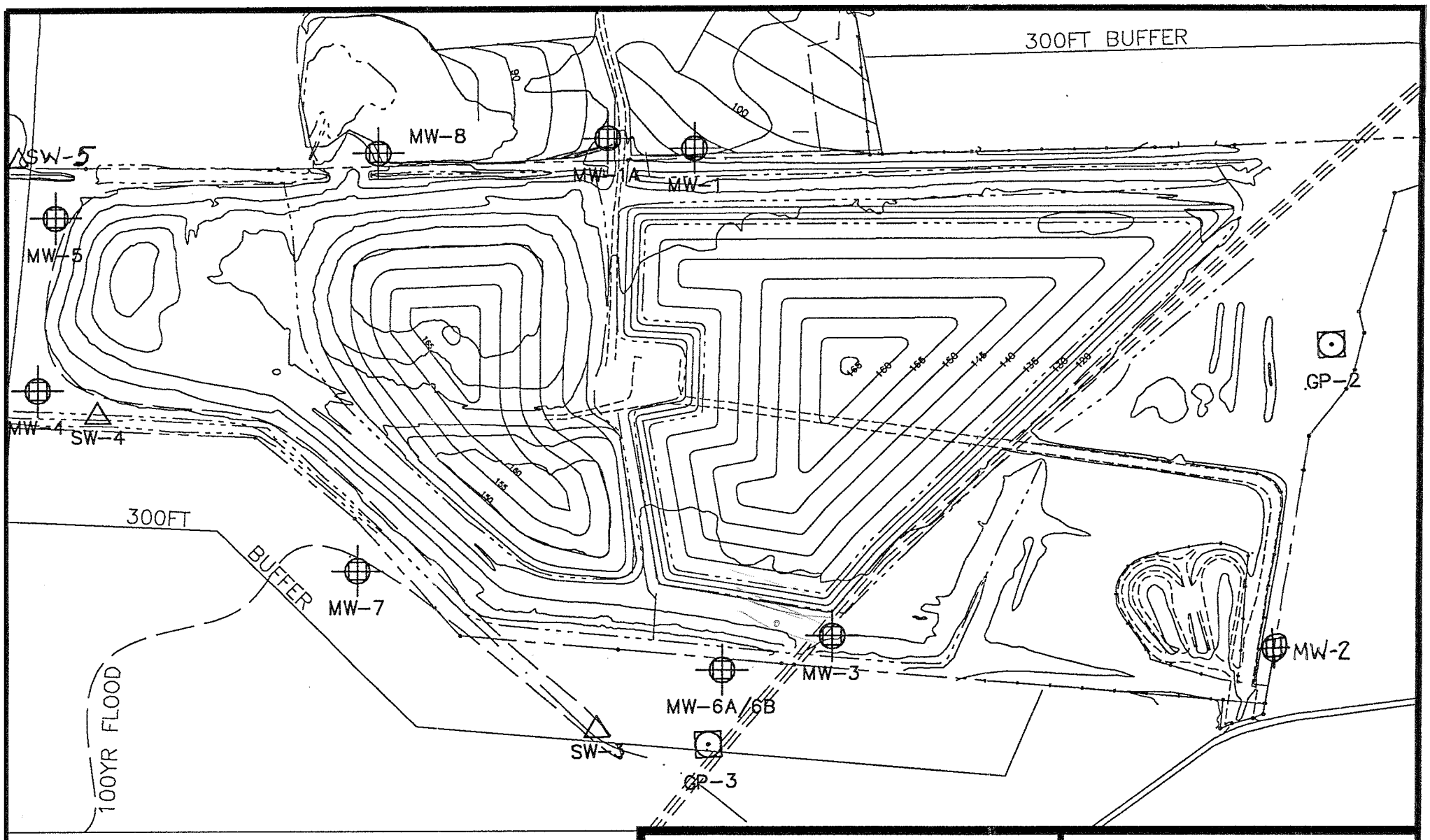
ENVIRONMENTAL INVESTIGATIONS P A

JOB NO. 14-401-667

FIGURE 6A

MONITORING PLAN

WILSON COUNTY MSWLF
WILSON COUNTY, NORTH CAROLINA



SCALE : 1" = 400'

ENVIRONMENTAL INVESTIGATIONS

JOB NO. 14-401-667

FIGURE 6A

MONITORING PLAN

WILSON COUNTY MSWLF
WILSON COUNTY, NORTH CAROLINA

MEMO

DATE: _____

TO: _____ SUBJECT: _____

AHLBERG 11/12

SHELBY TUBE GRAY CLAY

SLUG TESTS ALL WELLS

STREAM GUAGE

From: _____

North Carolina Department of Environment, Health, and Natural Resources

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1010 Saralyn Road
Pittsboro, North Carolina 27312
Phone/Telex: (919) 542-5286

Gary W. Ahlberg, P.E.

Fax

To: Jim Bateson, NC SWS **From:** GWA

Fax: (919) 733-4810 **Pages:** 5

Phone: **Date:** November 18, 1996

Re: WILSON Work Plan Draft **CC:** Mark Poindexter

☐ **Urgent** ☐ **For Review** ☐ **Please Comment** ☑ **Please Reply** ☐ **Please Recycle**

• **Comments:** Attached is the Draft Work Plan for the Wilson project. After you have reviewed the document, please call or fax me with your comments. Thanks.

5:15-6:00

TH 150.00

1-800 291 6522

24-25

28-29

Gary W. Ahlberg, P.E.
Engineering & Consulting Services

1010 Saralyn Road
Pittsboro, North Carolina 27312
Phone\Telex: (919) 542-5286

November 18, 1996

Mr. Jim Bateson
NC DEHNR Solid Waste Section
P.O. Box 27678
Raleigh, NC 27611-7687

RE: WILSON COUNTY LANDFILL
GROUNDWATER INVESTIGATION WORK PLAN
WILSON, NORTH CAROLINA

Dear Mr. Bateson:

We appreciated the opportunity to meet with you and Mr. Poindexter on site 14 Oct 96. From our perspective, the meeting included constructive discussions regarding the goals of the proposed subsurface investigation and provided the agency with a chance to view the field conditions described in previous submittals. Overall, the results of our meeting further defined the scope of the investigation and some of the issues outlined in your 23 Aug 96 correspondence. According to our discussions, the following scope of work is proposed to investigate groundwater properties and quality in the vicinity of existing MW-3.

OVERVIEW

In general, this phase of investigation focuses on localized groundwater contamination consistently detected in the shallow Type II monitoring well, MW-3, and defining the potential for off-site contaminant plume migration. The scope of investigation is based on historical monitoring data and general site observations. This investigation includes water table monitoring, a drilling plan, quantifying hydrogeologic properties, and report preparation.

Water level data from MW-3, drainage ditch construction, natural stream and drainage patterns, and topographic observations provide background hydrogeologic information in the area of investigation. The location of the waste boundaries for the MSW landfill unit, Area 1B, and the asbestos disposal area limit hydrogeologic data collection on the landfill side of the perimeter drainage channel. Based on the consistent stratigraphy observed in the drainage channel, hydrogeologic properties in undisturbed soils are anticipated to be relatively consistent within 150 feet of the drainage channel. Subsurface characteristics are likely to change in the vicinity of the intermittent stream located to the south of the drainage channel; this scope of investigation includes collecting water level data from this stream.

Across the entire site, regional groundwater flow potential in the water table aquifer is northeast to southwest, from the landfill entrance toward Toisnot Swamp. Due to landfill

construction and the adjacent drainage features, localized groundwater flow in the area of MW-3 is assumed to be radial in direction, from the center of the landfill toward the constructed and natural drainage features. This assumption is consistent with the contaminants detected at MW-3 and its location relative to these features. This flow regime focuses the subsurface investigation on the area around proposed well location MW-6.

Wilson County has purchased a 300-foot buffer zone that extends from the drainage ditch toward the intermittent stream located on the south-side of the ditch. The proposed location for a permanent detection monitoring well, MW-6, is within this buffer zone between the drainage channel and the intermittent stream. In addition to its role as a detection monitoring well, MW-6 should provide information regarding the potential for horizontal and vertical contaminant plume migration detected in MW-3. In order to effectively site and construct MW-6, permanent gauging locations will be established in the surrounding drainage features for water table data and a deep exploratory boring will be installed.

WATER TABLE MONITORING

Initially, a total of six permanent stream gauging locations will be established in the area of investigation. The proposed locations (SG-1 to 6) are shown on the attached site investigation drawing. The drainage features include the intermittent stream to the north of the asbestos unit, the drainage channel adjacent to MW-3 and MSW Area 1B, and the intermittent stream located on the southern boundary of the new buffer property. These gauges will be located by a NC Registered Land Surveyor (RLS) and are intended to provide water table elevation data that can be analyzed with existing well MW-3 and proposed well MW-6.

Water level data from MW-3 and the stream gauges will be obtained prior to the installation of the exploratory boring at the MW-6 location. Water table data will also be collected during the sampling event for MW-6, at least 7 days after well completion.

DRILLING PLAN

The MW-6 drilling location may be modified slightly based on an analysis of the water table data. One exploratory boring will be installed at the drilling location to characterize stratigraphy and hydrogeology. The boring will be drilled with 4.25 in. hollow stem augers (HSA) to a proposed maximum depth of 50 feet. Split spoon samples will be obtained continuously to an approximate depth of 25 feet, with 5-foot sampling continuing to the total depth. All samples will be field classified and logged. The drilling plan anticipates a fat clay unit at an approximate depth of 20 to 30 feet below land surface (bls); if this clay unit appears to be a confining or semi-confining layer, an undisturbed Shelby tube sample will be attempted for laboratory permeability testing. The exploratory boring will be grouted and abandon. If no distinct sand units are encountered below the clay unit, only one Type II monitoring well is proposed for the location. If the exploratory boring identifies a conductive sand unit at least 20 feet below the water table elevation observed at the time of drilling, an additional well shall be installed at the MW-6 location. The outer casing for the Type III well shall be installed at least 10 feet below the total depth of the shallow Type II well, and completed with a proposed

DRAFT 11/18/96

5-foot well screen. Shelby tube samples will be attempted within both well screen zones to provide porosity estimates.

New wells will be surveyed as required in 15A NCAC 13B .1632 (d), with horizontal location to the nearest 0.1 ft., and vertical control for the ground surface and top of casing elevations to the nearest 0.01 ft.

HYDROGEOLOGIC PROPERTIES & WATER QUALITY

Laboratory testing will be conducted to quantify porosity within the monitoring interval(s). Additionally, an undisturbed sample of a confining clay unit may be tested for laboratory hydraulic conductivity. In addition to laboratory testing, rising and falling head (slug) tests will be performed on the new wells and existing MW-4 and MW-5 to evaluate well hydraulic conductivity values. MW-3?

At least 7 days after well completion, all new monitoring wells will be sampled for water quality analysis. Laboratory testing will be consistent with the current monitoring program, including a full Method 8260, and metals analysis (with mercury).

REPORT

A report will be prepared following completion of the work. No statistical analysis of water quality data is proposed. The report will be signed by a NC Licensed Geologist, and will incorporate the following:

1. Monitoring Plan Drawing, locating the detection monitoring stations with coordinates, landfill areas, and property boundaries.
2. Boring Logs and Well Completion Records.
3. Laboratory Data and Reports.
4. Water Table Map and Potentiometric Data.
5. Description of field activities, hydrogeologic properties, and monitoring results.
6. Recommendations for compliance with monitoring requirements.

The proposed schedule for this investigation begins with the field work in December 1996 and should be completed with the report submittal in January 1997. In behalf of Wilson County, we appreciate your assistance in coordinating this investigation. Should you have any comments regarding this work plan, please call Gary Ahlberg at (919) 542-5286.

Sincerely,

Gary W. Ahlberg, P.E.
Project Manager

Richard E. Bolich, P.G.
Project Geologist

AREA 1B
ASSESSORS AREA
NEW PROPERTY LINE
MW-6A
MW-6B
MW-5
SS-1
SS-2
SS-3
SS-4
SS-5
SS-6
1" = 200'

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

DEHNR

MEMORANDUM

To: Greg Eades

Date: October 9, 1996

From: Jim Bateson

cc: Bobby Lutfy
Mark Poindexter

RE: Wilson County Transition Plan; Hydrogeology
Permit # 98-01

I have reviewed the amendments to the Transition Plan for theWilson County Landfill, submitted by Gary Ahlberg on October 7th. The amendments to the Water Quality Monitoring Plan satisfy the items listed in the "Completion of the Transition Plan" portion of the August 23, 1996 letter to Mr. Steve Clayton. I have also inserted copies of the March 27, 1995 *Groundwater Monitor Well and Methane Gas Probe Installation Report* prepared by Environmental Investigations, as an appendix to the Monitoring Plan, Section 6.

As currently amended, the Local Area Study and the Water Quality Monitoring Plan meet the requirements of the Solid Waste Management Rules, 15A NCAC 13B, sections .1629(b)(2)(A), .1617(d)(3), and .1623(b)(3).

Some of the details in the Water Quality Monitoring Plan concerning the location, design, and purpose of additional monitoring wells will be subject to the results of the groundwater investigation described in the Section's letter of August 23, 1996.

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Post-It™ brand fax transmittal memo 7671	# of pages ▸ 3
To STEVE CLAYTON	From JIM BATESON
Co.	Co. SOLID WASTE
Dept.	Phone # 919 733-0692 x 342
Fax # 399-0904	Fax #

October 9, 1996

Steve,

Greg Eades and I have reviewed the revisions to the Transition Plan, delivered by Gary Ahlberg yesterday evening. The Plan is ready for approval except for the following: Included in the Monitoring Plan were some details which can be settled upon only as part of the groundwater investigation described in the Section's letter of August 23rd.

In order to expedite approval, we would be able to stamp the thing right away if, given your permission, we could black out the phrases indicated on the attached pages from the revised Plan.

Give me a call after you've had a chance to look this over. (919) 733-0692 ext. 342.

groundwater monitoring system for the existing MSWLF unit.

Monitor well MW-1 is located to the northwest of the landfill and is separated from the filled area by a drainage ditch. MW-1 is located at the edge of the side slope and water level in the well is influenced by the presence of this ditch. This well periodically goes dry due to the effects of the drainage ditch. Monitor well MW-1 will be abandoned in accordance with 15 NCAC 2C **.0113**. This well will be replaced with a shallow well (uppermost aquifer) located away from the borrow operations and approximately forty feet from the drainage ditch so that groundwater conditions will not be adversely affected by the ditch.

Monitor well MW-2, located at the entrance to the landfill at State Road 1503, will continue to serve as the upgradient background Compliance Boundary Monitoring Point.

Monitor well MW-3 is located immediately adjacent to the asbestos area and on the landfill side of the drainage ditch (to the southeast). Based on its present location, groundwater quality at MW-3 may be influenced by several factors. Due to its close proximity to an area of the landfill with settlement problems and the asbestos area, monitoring results from MW-3 may not be representative of groundwater quality at the relevant compliance boundary. Still, MW-3 shall remain a component of the monitoring system until additional investigations are completed. In order to establish a representative compliance monitoring location for Area 1B, a well nest is proposed for the south/southeast side of the drainage ditch within the 300-foot buffer zone. Prior to well installation, an exploratory boring will be installed adjacent to the well location in order to identify the need for a deep monitor well. A truck-mounted drill rig equipped with hollow-stem augers will perform split-spoon sampling at five foot intervals to locate the next permeable zone. One Type II (shallow) well will be installed to monitor groundwater quality in the uppermost aquifer. If a deeper, conductive zone is identified, a Type III (deep well) well will be installed to monitor water quality deeper in the aquifer. The location of These wells will ~~be installed~~ define the review boundary within 250 150 feet of the fill area and will establish the relevant point of compliance for reconstruction of Area 1B.

~~and~~ will be determined in a forthcoming G.W. inv and shall establish the review body.

Monitor wells MW-4 and MW-5 are located to the southwest of the LCID area. These wells are presently greater than the 250 foot compliance boundary from the nearest MSWLF fill area. These wells will remain as compliance wells for the LCID and landfill area.

Review of topographic maps of the area containing the Wilson County landfill reveal that a major drainage feature was located in a portion of Area 2. This feature drained in a south/southwest direction. The localized groundwater flow direction is influenced by this geologic feature. One Type II (shallow) groundwater monitoring well will be installed near this past drainage feature to monitor water quality for the inactive MSWLF fill areas in the central portion of the landfill facility. Due to the close proximity of the fill area to the drainage ditch, this Compliance Monitoring Point well will be installed to the south of the ditch.

All wells will be constructed in accordance with 15A NCAC 2C **.0108**. The wells will be constructed of schedule 40 PVC and installed with hollow-stem augers in accordance with standard monitoring well installation procedures. Split spoon samples will be collected at five-foot intervals to document lithology. A general cross-section of the Type II (shallow) and TYPE III (deep) well construction detail are provided in Figures 9 and 10 respectively. Prior to establishing screened intervals for nested wells, the SWS Hydrogeologist or his representative will be contacted to discuss completion details.

All new and existing wells will be surveyed to a known datum to provide groundwater elevations to determine flow characteristics. Ground surface and top of casing elevations will also be surveyed to provide information for potentiometric maps of the uppermost aquifer at the facility

A determination of the rate of flow will be conducted by performing falling/rising head tests (slug test method) on all wells. For new well installations, a representative soil sample well be obtained and analyzed for porosity. These field tests will provide an indication of the aquifer permeability and an estimation of the rate of contaminant transport.

groundwater monitoring system for the existing MSWLF unit.

Monitor well MW-1 is located to the northwest of the landfill and is separated from the filled area by a drainage ditch. MW-1 is located at the edge of the side slope and water level in the well is influenced by the presence of this ditch. This well periodically goes dry due to the effects of the drainage ditch. Monitor well MW-1 will be abandoned in accordance with 15 NCAC 2C **.0113**. This well will be replaced with a shallow well (uppermost aquifer) located away from the borrow operations and approximately forty feet from the drainage ditch so that groundwater conditions will not be adversely affected by the ditch.

Monitor well MW-2, located at the entrance to the landfill at State Road 1503, will continue to serve as the upgradient background Compliance Boundary Monitoring Point.

Monitor well MW-3 is located immediately adjacent to the asbestos area and on the landfill side of the drainage ditch (to the southeast). Based on its present location, groundwater quality at MW-3 may be influenced by several factors. Due to its close proximity to an area of the landfill with settlement problems and the asbestos area, monitoring results from MW-3 may not be representative of groundwater quality at the relevant compliance boundary. Still, MW-3 shall remain a component of the monitoring system until additional investigations are completed. In order to establish a representative compliance monitoring location for Area 1B, a well nest is proposed for the south/southeast side of the drainage ditch within the 300-foot buffer zone. Prior to well installation, an exploratory boring will be installed adjacent to the well location in order to identify the need for a deep monitor well. A truck-mounted drill rig equipped with hollow-stem augers will perform split-spoon sampling at five foot intervals to locate the next permeable zone. One Type II (shallow) well will be installed to monitor groundwater quality in the uppermost aquifer. If a deeper, conductive zone is identified, a Type III (deep well) well will be installed to monitor water quality deeper in the aquifer. These wells will be installed within 250 feet of the fill area and will establish the relevant point of compliance for reconstruction of Area 1B.

Monitor wells MW-4 and MW-5 are located to the southwest of the LCID area. These wells are presently greater than the 250 foot compliance boundary from the nearest MSWLF fill area. These wells will remain as compliance wells for the LCID and landfill area.

Review of topographic maps of the area containing the Wilson County landfill reveal that a major drainage feature was located in a portion of Area 2. This feature drained in a south/southwest direction. The localized groundwater flow direction is influenced by this geologic feature. One Type II (shallow) groundwater monitoring well will be installed near this past drainage feature to monitor water quality for the inactive MSWLF fill areas in the central portion of the landfill facility. Due to the close proximity of the fill area to the drainage ditch, this Compliance Monitoring Point well will be installed to the south of the ditch.

All wells will be constructed in accordance with 15A NCAC 2C **.0108**. The wells will be constructed of schedule 40 PVC and installed with hollow-stem augers in accordance with standard monitoring well installation procedures. Split spoon samples will be collected at five-foot intervals to document lithology. A general cross-section of the Type II (shallow) and TYPE III (deep) well construction detail are provided in Figures 9 and 10 respectively. Prior to establishing screened intervals for nested wells, the SWS Hydrogeologist or his representative will be contacted to discuss completion details.

All new and existing wells will be surveyed to a known datum to provide groundwater elevations to determine flow characteristics. Ground surface and top of casing elevations will also be surveyed to provide information for potentiometric maps of the uppermost aquifer at the facility

A determination of the rate of flow will be conducted by performing falling/rising head tests (slug test method) on all wells. For new well installations, a representative soil sample well be obtained and analyzed for porosity. These field tests will provide an indication of the aquifer permeability and an estimation of the rate of contaminant transport.

1010 Saralyn Road
Pittsboro, North Carolina 27312
Phone/Telex: (919) 542-5286

Gary W. Ahlberg, P.E.

Fax

To:	Jim Bateson	**From:**	GWA
Fax:	(919) 733-4810	**Pages:**	3
Phone:	0692	**Date:**	October 14, 1996
Re:	WILSON TRANSITION PLAN	**CC:**	Greg Eades

☑ **Urgent** ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

• **Comments:** As we discussed today, attached are the revisions requested by the SWS. Please copy and insert these pages (43,44) in the report.

groundwater monitoring system for the existing MSWLF unit.

Monitor well MW-1 is located to the northwest of the landfill and is separated from the filled area by a drainage ditch. MW-1 is located at the edge of the side slope and water level in the well is influenced by the presence of this ditch. This well periodically goes dry due to the effects of the drainage ditch. Monitor well MW-1 will be abandoned in accordance with 15 NCAC 2C .0113. This well will be replaced with a shallow well (uppermost aquifer) located away from the borrow operations and approximately forty feet from the drainage ditch so that groundwater conditions will not be adversely affected by the ditch.

Monitor well MW-2, located at the entrance to the landfill at State Road 1503, will continue to serve as the upgradient background Compliance Boundary Monitoring Point.

Monitor well MW-3 is located immediately adjacent to the asbestos area and on the landfill side of the drainage ditch (to the southeast). Based on its present location, groundwater quality at MW-3 may be influenced by several factors. Due to its close proximity to an area of the landfill with settlement problems and the asbestos area, monitoring results from MW-3 may not be representative of groundwater quality at the relevant compliance boundary. Still, MW-3 shall remain a component of the monitoring system until additional investigations are completed. A well nest is proposed to establish a representative compliance monitoring location for Area 1B. Prior to well installation, an exploratory boring will be installed adjacent to the well location in order to identify the need for a deep monitor well. A truck-mounted drill rig equipped with hollow-stem augers will perform split-spoon sampling at five foot intervals to locate the next permeable zone. One Type II (shallow) well will be installed to monitor groundwater quality in the uppermost aquifer. If a deeper, conductive zone is identified, a Type III (deep well) well will be installed to monitor water quality deeper in the aquifer. The location of these wells will be determined in the forthcoming investigation (reference 23 Aug 96 SWS correspondence) and will establish the relevant point of compliance for reconstruction of Area 1B.

Monitor wells MW-4 and MW-5 are located to the southwest of the LCID area. These wells are presently greater than the 250 foot compliance boundary from the nearest MSWLF fill area. These wells will remain as compliance wells for the LCID and landfill area.

Review of topographic maps of the area containing the Wilson County landfill reveal that a major drainage feature was located in a portion of Area 2. This feature drained in a south/southwest direction. The localized groundwater flow direction is influenced by this geologic feature. One Type II (shallow) groundwater monitoring well will be installed near this past drainage feature to monitor water quality for the inactive MSWLF fill areas in the central portion of the landfill facility.

The location of all monitoring wells will meet the requirements for groundwater monitoring systems set forth in 15A NCAC 13B Rule .1631. All wells will be constructed in accordance with 15A NCAC 2C .0108. The wells will be constructed of schedule 40 PVC and installed with hollow-stem augers in accordance with standard monitoring well installation procedures. Split spoon samples will be collected at five-foot intervals to document lithology. A general cross-section of the Type II (shallow) and TYPE III (deep) well construction detail are provided in Figures 9 and 10 respectively. Prior to establishing screened intervals for nested wells, the SWS Hydrogeologist or his representative will be contacted to discuss completion details.

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1010 Saralyn Road
Pittsboro, North Carolina 27312
Phone/Telex: (919) 542-5286

Gary W. Ahlberg, P.E.

Fax

To: Jim Bateson **From:** GWA

Fax: (919) 733-4810 **Pages:** 2

Phone: (919) 733-0692 **Date:** October 18, 1996

Re: Transition Plan Revision P. 43 **CC:**

☐ **Urgent** ☑ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

• **Comments:** Attached is the revision to p. 43 as requested.

groundwater monitoring system for the existing MSWLF unit.

Monitor well MW-1 is located to the northwest of the landfill and is separated from the filled area by a drainage ditch. MW-1 is located at the edge of the side slope and water level in the well is influenced by the presence of this ditch. This well periodically goes dry due to the effects of the drainage ditch. Monitor well MW-1 will be abandoned in accordance with 15 NCAC 2C .0113. This well will be replaced with a shallow well (uppermost aquifer) located away from the borrow operations and approximately forty feet from the drainage ditch so that groundwater conditions will not be adversely affected by the ditch.

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State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

DEHNR

Mr. Steve Clayton
Wilson County Solid Waste Management
P.O. Box 1728
Wilson, N.C. 27894

August 23, 1996

RE: Wilson County Transition Plan; Permit #98-01

Dear Mr. Clayton,

After our meeting of August 21, 1996, I met with Bobby Lutfy and Mark Poindexter to discuss the issues concerning both the completion of the Transition Plan and the need for further investigation of contaminated groundwater in well MW-3. In order to facilitate the early and efficient completion of both processes, the two issues can to be separated.

In order to do this, MW-3 needs to remain as part of the detection monitoring system for the facility, until an investigation is complete, and the well replaced, if necessary. Monitoring wells MW-6a, 6b, and 7, (plus gas probe GP-3), or equivalent wells deemed necessary by the Solid Waste Section to insure an adequate detection monitoring system, will need to be installed in the near future. The number, location, and construction details of monitoring wells to be placed in the newly accquired buffer area, and the area adjacent to MW-3, will need to meet the requirements of a groundwater investigation to be approved by the Section.

GROUNDWATER INVESTIGATION IN THE VICINITY OF WELL MW-3:

Wilson County needs to obtain the services of a N.C. Licensed Geologist to prepare a proposal for a ground water investigation, to be submitted to the Solid Waste Section within a period of 90 days from the date of this letter. The proposed investigation needs to address the following:

1. Location of the waste boundary in the vicinity of MW-3.

2 The effect that the drainage ditch may have on groundwater flow in the surficial aquifer. Does flow in the surficial aquifer pass beneath the ditch?

3. Groundwater flow direction in the general area around MW-3.

4. The stratigraphic relationships and hydraulic properties of materials in the subsurface of the area of the investigation.

5. The location, design, and purpose of wells to be installed as part of the investigation.

6. In-situ hydraulic conductivity determinations need to be provided for monitoring wells MW-4 and MW-5. Total porosity and effective porosity values for the lithology at the screened depth for each monitoring well in the system need to be obtained. Computations of flow velocities at each well need to be computed, based on the effective porosity and hydraulic conductivity determinations specific to each well. This information will also need to be obtained for MW-6a, 6b, and 7 (or their equivalents) after they are installed.

COMPLETION OF THE TRANSITION PLAN:

Final Review of the Transition Plan can be completed by the Solid Waste Section after the following amendments to the original document have been completed by Wilson County and Gary W. Ahlberg, P.E.:

- The Transition Plan will need to contain an amended metes and bounds facility boundary description which reflects the addition of the newly accquired buffer area. Also, the application will need to contain copies of the deed documents recorded by Wilson County which show that the properties involved are part of a solid waste disposal facility.

- NCSP coordinates and elevations of the USGS benchmark used to establish survey control at the facility, the permanent onsite benchmark, and all of the monitoring wells at the facility need to be tabulated for insertion into the transition plan.

- The Water Quality Monitoring Plan needs to contain a statement about sampling frequency. After the baseline sampling is complete, sampling needs to be done semiannually.

- The water quality monitoring plan needs to contain the correct analytical procedures and PQL's for each of the Appendix I constituents. These are contained in the attached memorandum from the Section, dated January 18, 1995.

- The insertion of several items from the Baseline Water Quality Monitoring Report into the original Transition Plan document, as discussed during our meeting.

Please submit the amendments to the Transition Plan as soon as possible, since our rules require completion of the review of the Transition Plans by October 1996. If you have any questions about this letter, please contact me at the Solid Waste Section, (919) 733-0692.

Sincerely,

Bobby Lutfy, for

Jim Bateson
Hydrogeologist
Solid Waste Section

cc: Gary W. Ahlberg, P.E.; Engineering & Consulting Services
Greg Eades; Solid Waste Section
Mark Poindexter; "
Bobby Lutfy; "
Jim Coffey; "