

OPERATION/CONSTRUCTION MANAGERS

CIVIL/SANITARY ENGINEERS

**Municipal
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Company, P.A.**

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September 4, 2002

Ms. Cheryl Marks
Hydrogeologist
Solid Waste Section
Division of Waste Management
North Carolina Department of Environment and Natural Resources
401 Oberlin Road, Suite 150
Raleigh, NC 27605



Re: Groundwater Assessment and Corrective Measures
Alexander County Landfill, Taylorsville, North Carolina (Permit No. 02-01)
MESCO Project No. G02003.0

Dear Ms. Marks:

On behalf of Alexander County, Municipal Engineering Services Co., P.A. (MESCO) compiled this report in response to your letter dated July 16, 2002 regarding the ongoing effort on groundwater assessment and corrective measures for the Alexander County Landfill, located in Taylorsville, North Carolina. This report serves as an addendum to the recommendations made by MESCO in its initial report submitted to the Section dated October 31, 2001 (henceforth referred to as the "original report"), and address questions and comments included in your aforementioned letter.

Section Comment 1: Surface water sampling locations SW-1, and SW-2 have been graded out and are no longer viable sampling locations. The Solid Waste Section recognizes changes in topography are common for landfill sites. Please record the loss of these locations from the sampling plan. Either remove them from any drawings or change the symbol so it will be recognized as a permanent change in the sampling plan.

We acknowledge that two surface water monitoring locations SW-1 and SW-2 are no longer viable sampling locations due to topographical changes. This report includes revised Plate 3 that no longer includes references to SW-1 and SW-2.

Section Comment 2: Surface water sampling location SW-4 is currently located at the head of a drainage feature and is sometimes dry. Relocate SW-4 far enough downstream so that surface water is more available for sampling. Record the change of location in the sampling plan and on any associated drawings.

SW-4 has been relocated to farther downstream at a location indicated in the revised Plate 3. The location of the new sampling point will be labeled SW-4R to avoid naming conflict with its old location. Please note that the location of SW-4R is presently tentative, for its final location will need to be determined during the next site visit scheduled in December of this year (2002) to ensure availability of water under dry conditions. A revised plan showing the actual location of SW-4R will be submitted to the Section once its location is finalized.

An additional factor that we may need to take into consideration is the fact that the monitoring well previously proposed as MW-16 will be within close proximity of SW-4R after the relocation of the surface water monitoring point. Because of this, an installation of MW-16 at its current proposed location may be unnecessary as its role can be well replaced with SW-4R. We therefore recommends, with Section's approval, a withdrawal of the proposal of monitoring well MW-16 in order to reduce potential cost of monitoring without sacrificing the overall effectiveness of the monitoring capability.

Monitoring well MW-16 was originally proposed as a means to assess the current level of plume migration detected by MW-14—a monitoring well located up-gradient from the proposed location of MW-16. MW-14 has historically shown detections of three VOCs (1,1-DCA, cDCE and 1,4-DCB) at levels near their detection limits. Because there are no signs of increased levels of contaminants in MW-14, we believe that the withdrawal of proposed MW-16 will not affect the monitoring capability of the site provided SW-4R be placed at a location reasonably close to the proposed location of MW-16.

Section Comment 3: There are three groundwater-monitoring wells that may be removed from routine semi-annual sampling events. These three wells include MW-2, MW-3, and MW-15. Record the change in the sampling plan and change the symbol on the drawings to indicate that these wells are not to be sampled.

MW-2, MW-3, and MW-15 will be off the monitoring network for all future sampling events. Plates 1 and 2 have been revised to remove these monitoring wells from the map.

Section Comment 4: The background well MW-1A is dry. Replacement of this well is necessary, however, abandoning MW-1A is not required, and it may also be removed from service as outlined for the other wells listed above.

As described in the original report, monitoring well MW-1A, due to its consistent dryness, will be replaced with a new monitoring well proposed in its immediate vicinity, and will be removed from the monitoring network. The new monitoring well will be installed at a location specified on Plate 1, and will be labeled MW-1B. MW-1A will be retained for water level measurement purposes, but will not be sampled.

Section Comment 5: Two additional monitoring wells are required as part of the assessment for groundwater. Nest the new wells next to monitoring wells MW-11 and MW-12. The wells should be about 100 feet in depth, and should have a screen length no greater than ten feet. The actual well depth and screen length will be dependent on site conditions.

As you specified, two additional wells MW-11D and MW-12D will be installed to nest the existing monitoring wells MW-11 and MW-12, respectively. Upon installation, well construction records and boring logs for the new wells will be submitted to the Section.

As we discussed during our July meeting, the primary goal of installations of MW-11D and MW-12D is to establish, prior to planning additional down-gradient monitoring wells, a vertical profile of the suspected contaminant plume detected by MW-11 and MW-12, the previously proposed monitoring wells numbered MW-20 and MW-21 have been dropped for the time being.

Additional down-gradient monitoring wells may be proposed at a later date if data gathered from the new monitoring wells necessitates installations of such wells.

Plate 1 has been modified to show MW-11D and MW-12D at their proposed locations. Their actual locations may differ depending on field conditions at time of installation.

Section Comment 6: Provide the boring logs for monitoring well locations 9, 10, 11, 12, 13, 14, and 15.

The boring logs for the mentioned monitoring wells are enclosed herein.

Section Comment 7: The north arrow on Plate 1 is not properly positioned, correct the north arrow.

The enclosed Plate 1 shows the correct north arrow.

Section Comment 8: Rule .1630 (d) requires preparation of assessment and corrective action plans under the responsible charge of and bear the seal of a Licensed Geologist or Professional Engineer in accordance with 89E and 89C, respectively.

This submittal is sealed by a Licensed Geologist to satisfy the requirement.

Please find included in this submittal the following items which will either replace the previous items or be added to the previous report.

- Plate 1 – General Site Map with Potentiometric Contour
- Plate 2 – Aerial Photograph with Property Boundaries and Monitoring Well Locations
- Plate 3 – Topographical Map with Surface Water Sampling Locations
- Graphical boring logs for MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, and MW-15 (Appendix A)

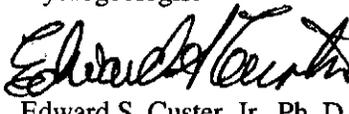
Feel free to contact us at (919) 772-5393 if you have any questions or require more information.

Sincerely,

MUNICIPAL ENGINEERING SERVICES CO., P.A.



Kohei Yoshida
Hydrogeologist



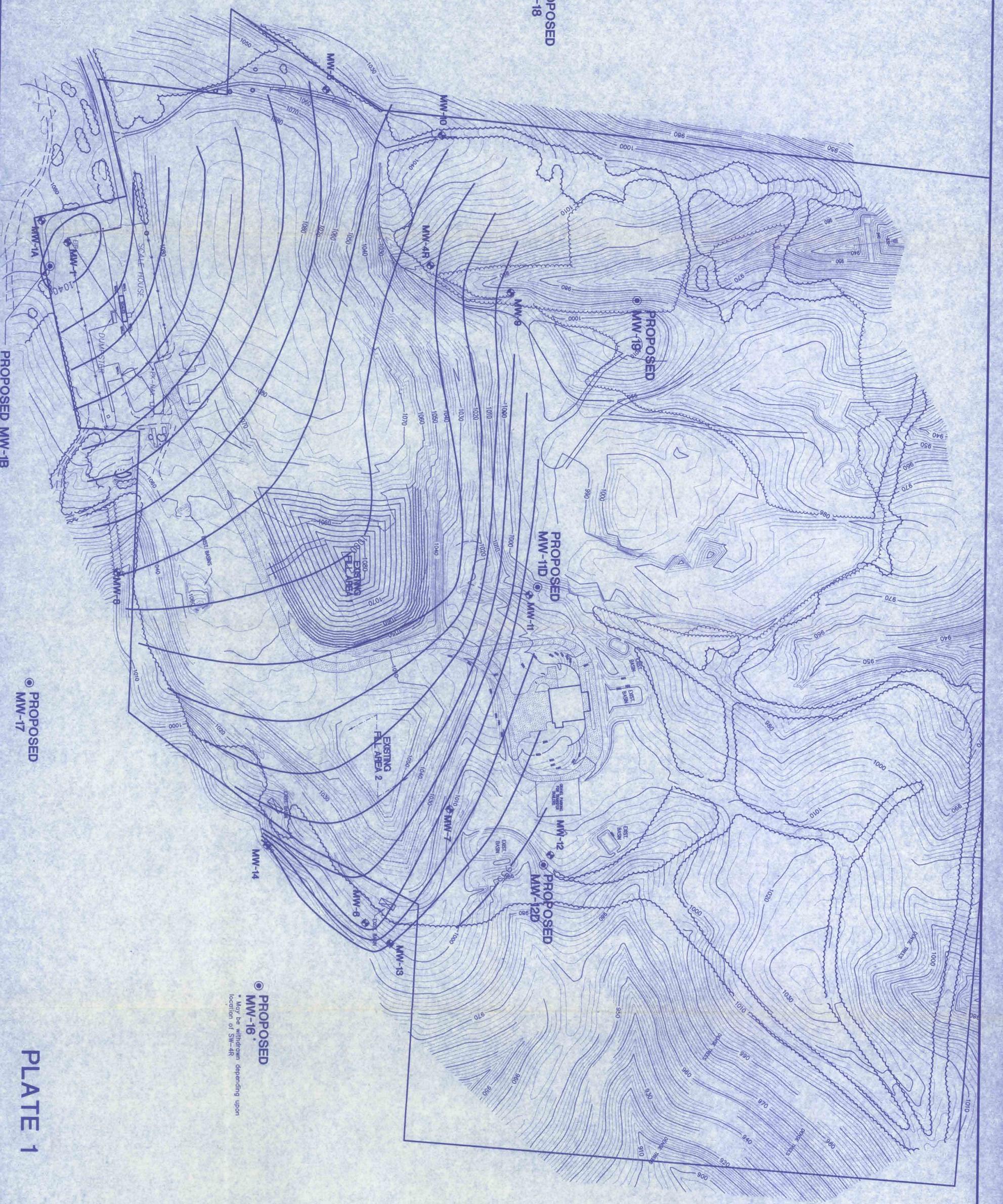
Edward S. Custer, Jr., Ph. D.
Professional Geologist



Enclosures

cc: Mr. John Byrd, Alexander County
Wayne Sullivan, Municipal Engineering Services

PROPOSED
MW-18



PROPOSED MW-1B

PROPOSED MW-17

PROPOSED MW-16
* May be withdrawn depending upon location of SW-4R

PLATE 1

DATE	BY	REV.	DESCRIPTION

SCALE: 1" = 100'

DATE: 8/27/2003

DRAWN BY: K. YOSHIDA

CHECK BY: K. YOSHIDA

PROJECT NUMBER: G02003.0

SHEET NO.:

GENERAL SITE MAP WITH POTENTIOMETRIC CONTOUR

**CONSTRUCTION AND DEMOLITION
LANDFILL FACILITY
ALEXANDER COUNTY
NORTH CAROLINA**

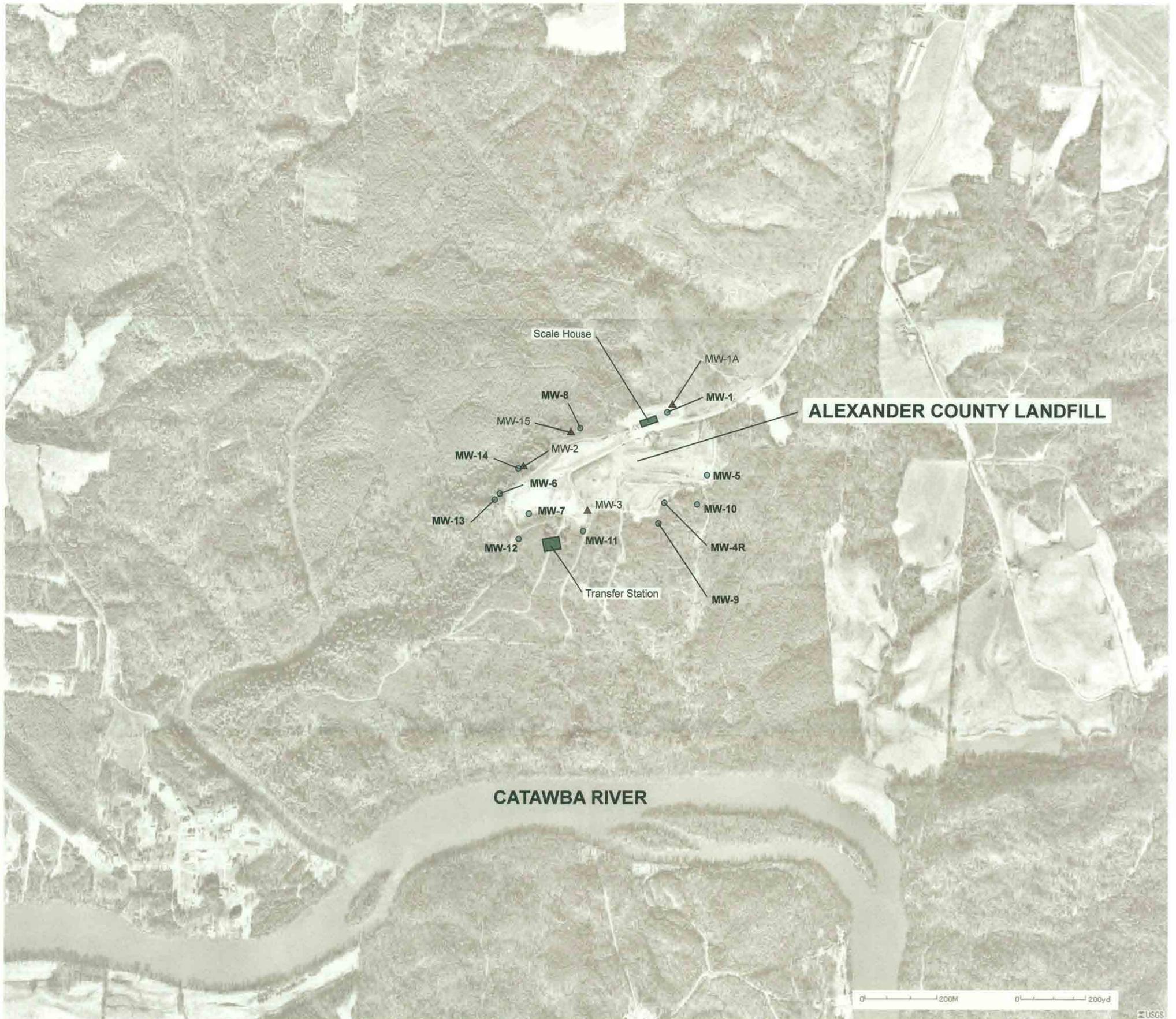
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NOTE

1. This aerial photograph is as of 1993, and does not show the transfer station that is presently located near the southwestern boundary of the landfill (approximately midway between MW-11 and MW-12 shown on this map).
2. The property boundaries shown in this map are approximate, thus should not be used for any other purposes than intended herein.
3. MW-1A, MW-2, MW-3 and MW-15 are no longer on the monitoring network, thus not to be sampled. But water levels should be measured in the aforementioned wells.

- MW-1 — Active Monitoring Well
- ▲ MW-3 — Inactive Monitoring Well (not to be sampled, and only to be used as piezometer)

**Aerial Photograph with Property Boundaries and Monitoring Well Locations
Alexander County Landfill, Taylorsville, North Carolina**



NOTE

1. The property boundaries shown in this map are approximate, thus should not be used for any other purposes than intended herein.
2. This quad map is provided courtesy of USGS.
3. The location of SW-4R as shown is tentative, and its final location will be determined after site inspection during the next sampling event.

**Topographical Map with Surface Water Sampling Locations
Alexander County Landfill, Taylorsville, North Carolina**