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DRAFT

FINDINGS AND CONCLUSIONS AND RECOMMENDATIONS SECTIONS

RESULTS OF THE PHASE 3 AND 4 INVESTIGATIONS REPORT

NCD 085 074 821

HOECHST CELANESE CORPORATION SOU-TEX PLANT MOUNT HOLLY, NORTH CAROLINA

March 1992

This document also includes plates related to Phase 3 and 4 investigation activities.

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Hydrogeologist

Mark A. Petermann, P.G.
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Senior Environmental Scientist

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Senior Project Manager

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APR 07 1992
HAZARDOUS WASTE SECTION

Scanned 4/21/92

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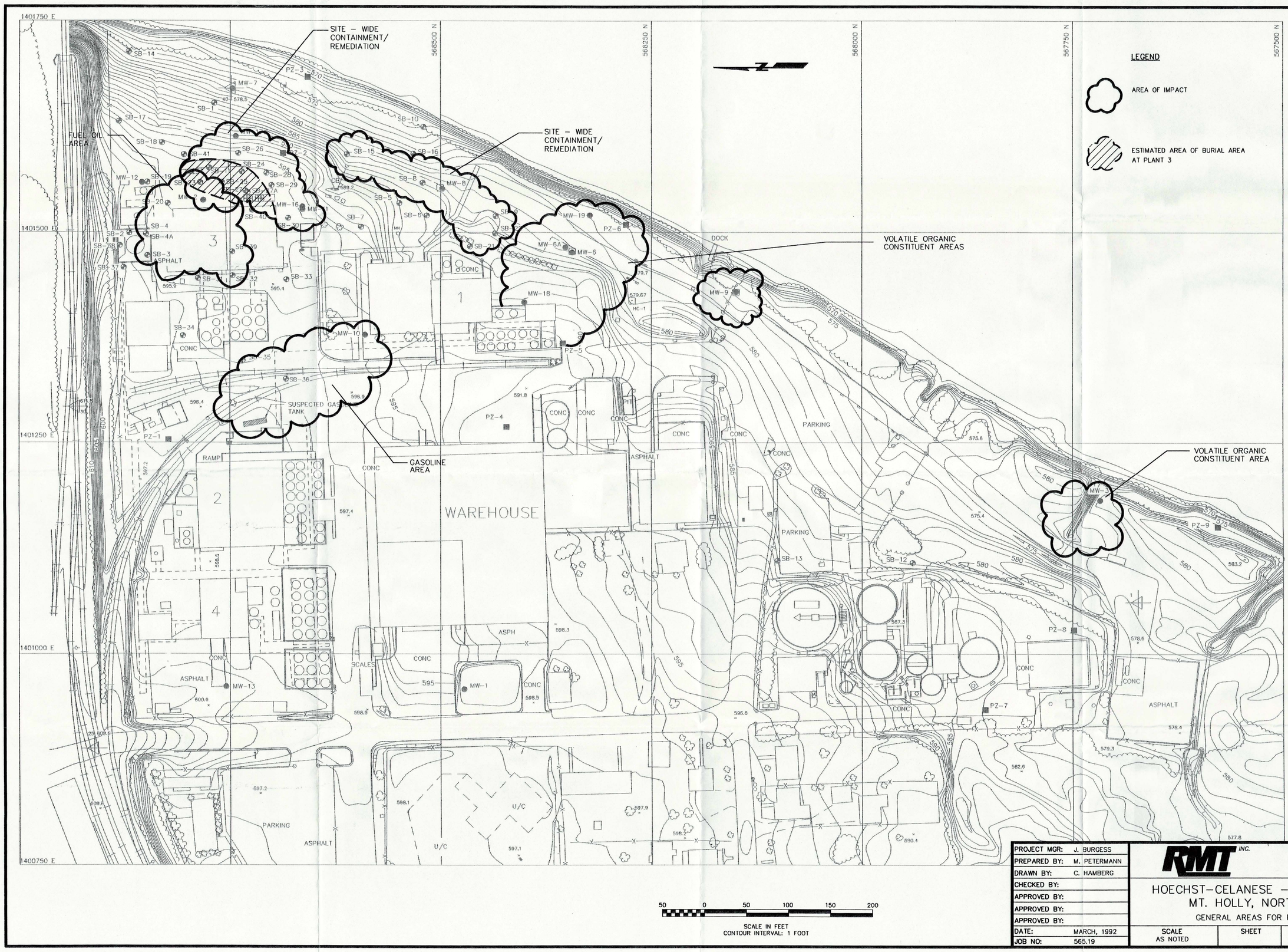

50 0 50 100 150 200

SCALE IN FEET
CONTOUR INTERVAL: 1 FOOT

DRAFT

PROJECT MGR:	J. BURGESS
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HOECHST-CELANESE – SOU TEX PLANT
MT. HOLLY, NORTH CAROLINA
GENERAL AREAS FOR REMEDIAL ACTION

SCALE	SHEET	PLATE NO.
AS NOTED		17

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LEGEND

- MW-1 — GROUNDWATER MONITORING WELL
- PZ-1 — PIEZOMETER NEST
- SB-1 — SOIL BORING
- SB-23 650 — CONCENTRATION OF TOTAL PETROLEUM HYDROCARBON PRESENT AS DIESEL SHOWN AS MILLIGRAMS PER KILOGRAM (mg/Kg)
- SB-20 ND — TOTAL PETROLEUM HYDROCARBON PRESENT AS DIESEL NOT DETECTED OR LESS THAN THE PRACTICAL QUANTITATION LIMITS
- SB-36 5300G — CONCENTRATION OF TOTAL PETROLEUM HYDROCARBON PRESENT AS GASOLINE SHOWN AS MILLIGRAMS PER KILOGRAM (mg/Kg)
- ESTIMATED AREA OF DIESEL IMPACT
- ESTIMATED AREA OF GASOLINE IMPACT

NOTES:

1. HIGHEST CONCENTRATION AT ANY SAMPLE INTERVAL IN EACH SOIL BORING IS DISPLAYED.
2. HYDROCARBON PRODUCT IS BEING PUMPED FROM GROUNDWATER MONITORING WELL MW-2.
3. CONCENTRATION OF TOTAL PETROLEUM HYDROCARBON AS LISTED IN TABLE 2 OF RMT REPORT 'RESULTS OF PHASE 2 INVESTICATION, OCTOBER 1990' AND TABLE 14 OF THIS REPORT.
4. SOIL SAMPLES WERE COLLECTED DURING INSTALLATION OF PZ-2 AND MW-17.

50 0 50 100 150 200

SCALE IN FEET
CONTOUR INTERVAL: 1 FOOT

DRAFT

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HOECHST-CELANESE
MT. HOLLY, NORTH CAROLINA
SOIL BORING ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBON
PHASE 2, 3 AND 4 SITE INVESTIGATIONS

SCALE	SHEET	PLATE NO.
AS NOTED		16

J:\CAD\GRAPHIC\565\56518H04.DWG

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HOECHST-CELANESE
MT. HOLLY, NORTH CAROLINA
SOIL BORING ANALYTICAL RESULTS
TOTAL BTEX COMPOUNDS
PHASE 2, 3 AND 4 SITE INVESTIGATIONS

SCALE	SHEET	PLATE NO.
AS NOTED		15

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LEGEND

- MW-1 — GROUNDWATER MONITORING WELL
- PZ-1 — PIEZOMETER NEST
- SB-1 — SOIL BORING
- SB-22 0.025 — TOTAL CONCENTRATION OF CHLORINATED VOCs SHOWN AS MILLIGRAMS PER KILOGRAM (mg/Kg)
- SB-14 ND — CHLORINATED VOCs NOT DETECTED OR LESS THAN THE PRACTICAL QUANTITATIVE LIMITS
- 1.0 — ESTIMATED ISOCONCENTRATION LINE

NOTES:

1. HIGHEST CONCENTRATION AT ANY SAMPLE INTERVAL IN EACH SOIL BORING IS DISPLAYED.
2. TOTAL CONCENTRATION OF CHLORINATED VOCs BASED ON SUM OF CONSTITUENTS LISTED IN APPENDIX E OF RMT REPORT 'RESULTS OF PHASE 2 INVESTIGATION, OCTOBER 1990' AND TABLES 11 AND 13 OF THIS REPORT.
3. SOIL SAMPLES WERE COLLECTED DURING INSTALLATION OF BORINGS PZ-2 AND MW-17.

50 0 50 100 150 200

SCALE IN FEET
CONTOUR INTERVAL: 1 FOOT

DRAFT

PROJECT MGR:	J. BURGESS
PREPARED BY:	S. CROWLEY
DRAWN BY:	C. HAMBERG
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APPROVED BY:	
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HOECHST-CELANESE
MT. HOLLY, NORTH CAROLINA
SOIL BORING ANALYTICAL RESULTS TOTAL CHLORINATED VOCs
PHASE 2, 3 AND 4 SITE INVESTIGATIONS

SCALE	SHEET	PLATE NO.
AS NOTED		14

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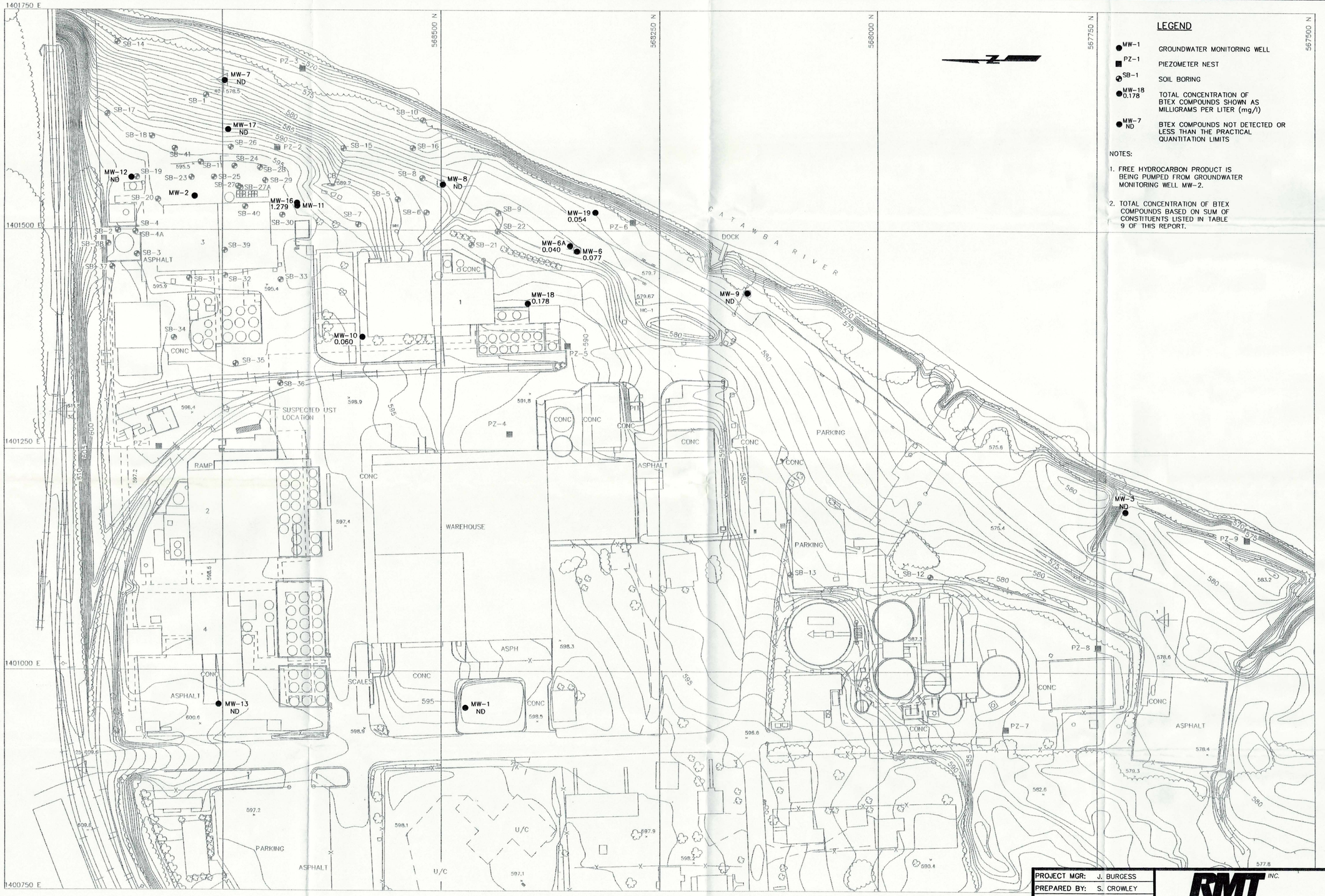

LEGEND

- MW-1 — GROUNDWATER MONITORING WELL
- PZ-1 — PIEZOMETER NEST
- SB-1 — SOIL BORING
- MW-18 0.178 — TOTAL CONCENTRATION OF BTEX COMPOUNDS SHOWN AS MILLIGRAMS PER LITER (mg/l)
- MW-7 ND — BTEX COMPOUNDS NOT DETECTED OR LESS THAN THE PRACTICAL QUANTITATION LIMITS

NOTES:

1. FREE HYDROCARBON PRODUCT IS BEING PUMPED FROM GROUNDWATER MONITORING WELL MW-2.
2. TOTAL CONCENTRATION OF BTEX COMPOUNDS BASED ON SUM OF CONSTITUENTS LISTED IN TABLE 9 OF THIS REPORT.

50 0 50 100 150 200

SCALE IN FEET
CONTOUR INTERVAL: 1 FOOT

DRAFT

PROJECT MGR:	J. BURGESS
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HOECHST-CELANESE
MT. HOLLY, NORTH CAROLINA
CONCENTRATION OF TOTAL BTEX COMPOUNDS IN GROUND WATER - OCTOBER 1991

SCALE	SHEET	PLATE NO.
AS NOTED		13

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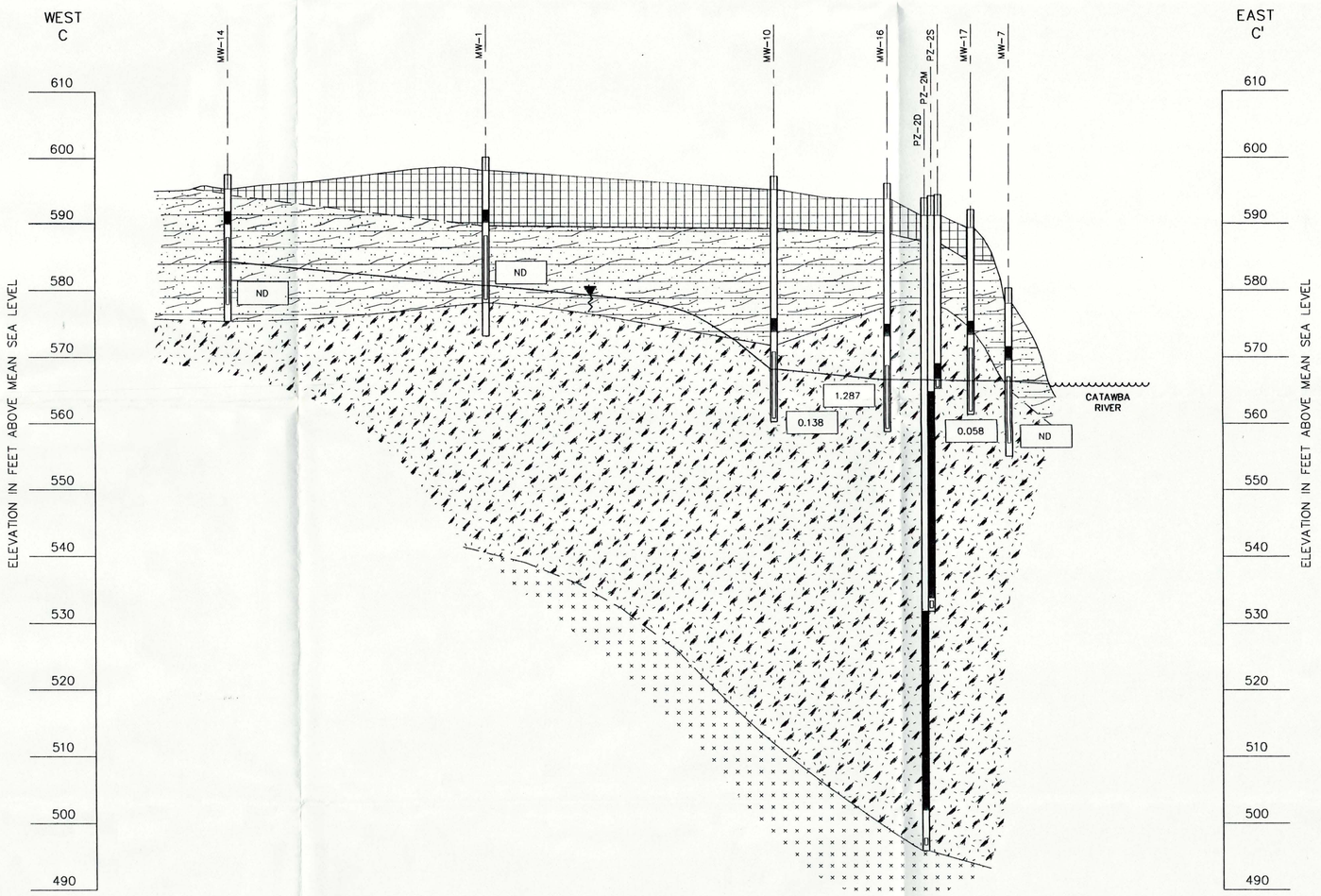

SECTION C–C'

HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'
VERTICAL EXAGGERATION: 10X

LEGEND

- FILL
- ALLUVIAL
- SAPROLITE
- BEDROCK
- WATER TABLE SURFACE – NOVEMBER, 1991
- GEOLOGICAL CONTACT – DASHED WHERE INFERRED
- WELL SCREEN AND BENTONITE SEAL
- 0.058 — TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATION IN MILLIGRAMS PER LITER (mg/l)
- ND — NO VOCs DETECTED OR CONCENTRATIONS WERE BELOW THE PRACTICAL QUANTITATION LIMITS

DRAFT

PROJECT MGR:	J. BURGESS
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APPROVED BY:	
APPROVED BY:	
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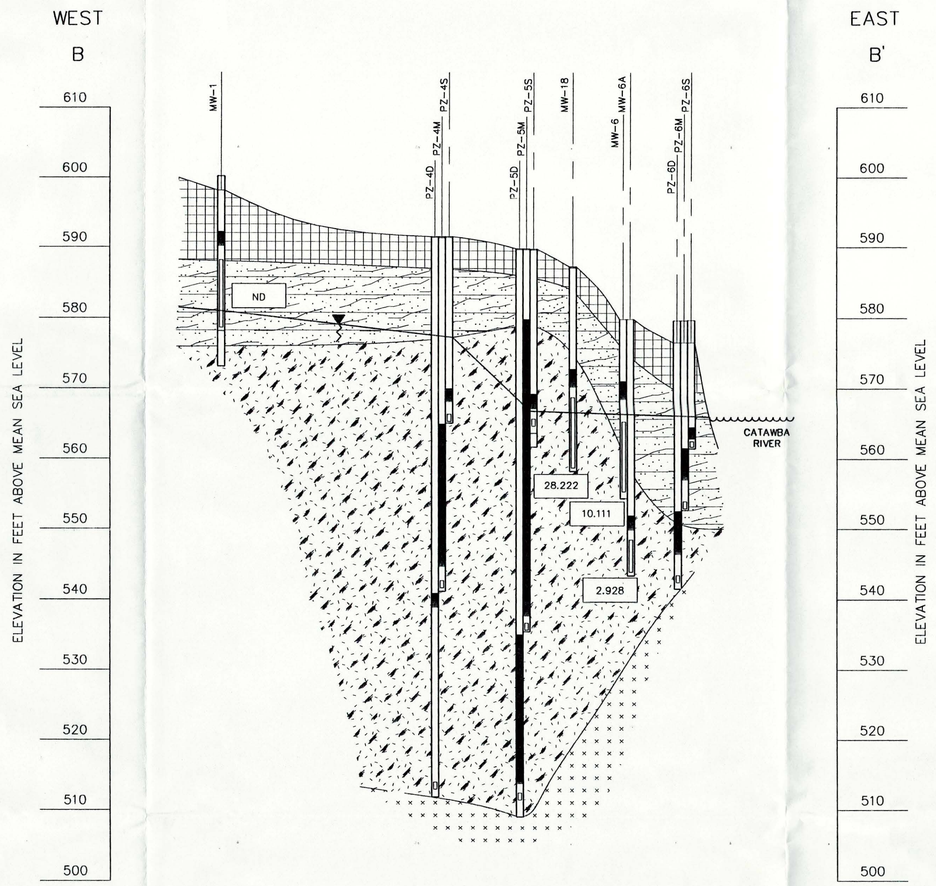
HOECHST CELANESE – MOUNT HOLLY, NC
CROSS-SECTION C – C' SHOWING TOTAL CONCENTRATION OF VOLATILE ORGANIC COMPOUNDS IN GROUND WATER
OCTOBER 1991

SCALE	SHEET	PLATE NO.
AS NOTED		12

56518H02.DWG



SECTION B–B'

HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'
VERTICAL EXAGGERATION: 10X

LEGEND

- FILL
- ALLUVIAL
- SAPROLITE
- BEDROCK
- WATER TABLE SURFACE – NOVEMBER, 1991
- GEOLOGICAL CONTACT – DASHED WHERE INFERRED
- WELL SCREEN AND BENTONITE SEAL
- 2.928 — TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATION IN MILLIGRAMS PER LITER (mg/l)
- ND — NO VOCs DETECTED OR CONCENTRATIONS WERE BELOW THE PRACTICAL QUANTITATION LIMITS

DRAFT

PROJECT MGR:	J. BURGESS
PREPARED BY:	S. CROWLEY
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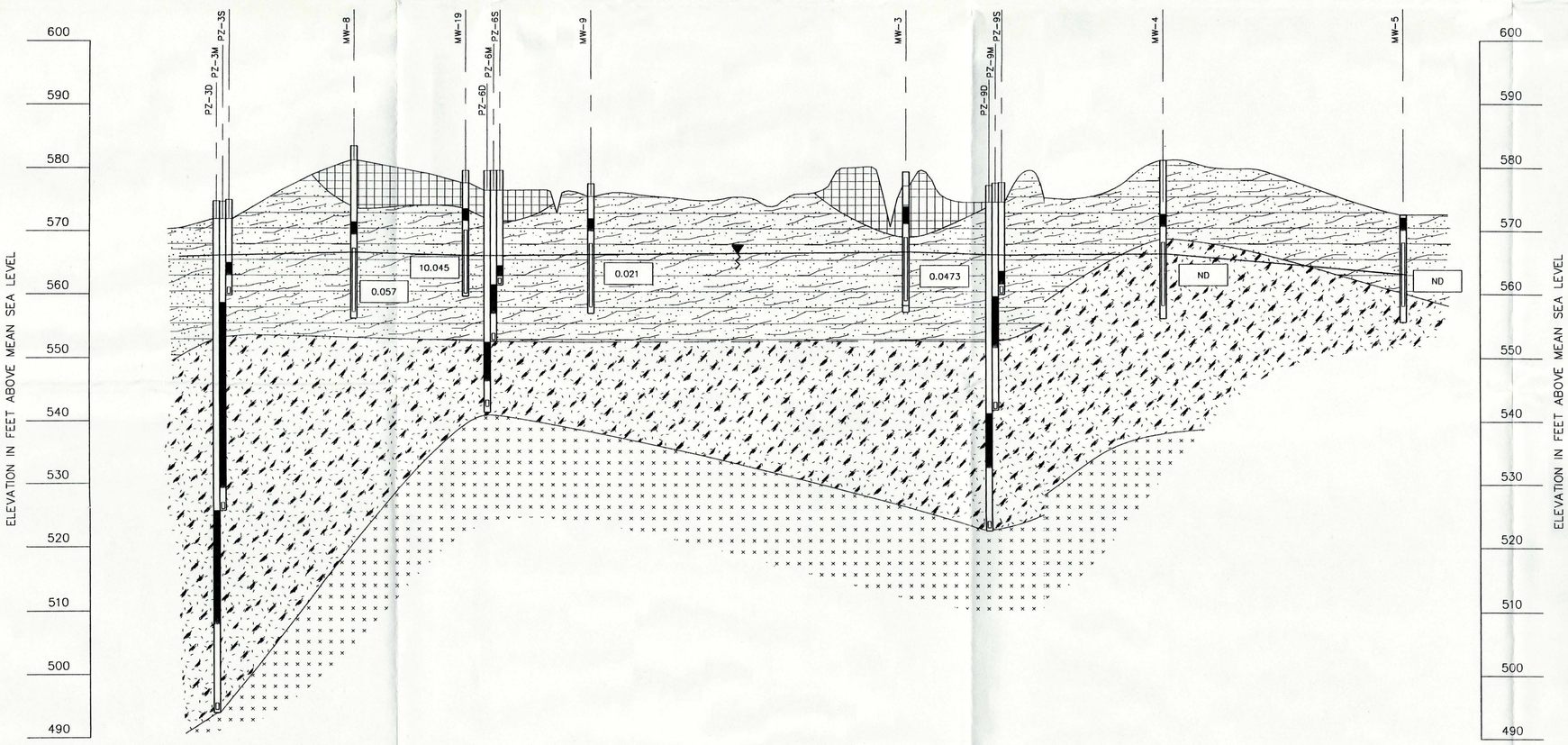
HOECHST CELANESE – MOUNT HOLLY, NC
CROSS-SECTION B –B' SHOWING TOTAL CONCENTRATION OF VOLATILE ORGANIC COMPOUNDS IN GROUND WATER
OCTOBER 1991

SCALE	SHEET	PLATE NO.
AS NOTED		11

56518H16

NORTH

A



SOUTH

A'

SECTION A–A'

HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'
VERTICAL EXAGGERATION: 10X

LEGEND

- FILL
- ALLUVIAL
- SAPROLITE
- BEDROCK
- WATER TABLE SURFACE – NOVEMBER, 1991
- GEOLOGICAL CONTACT – DASHED WHERE INFERRED
- WELL SCREEN AND BENTONITE SEAL
- 0.021 — TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATION IN MILLIGRAMS PER LITER (mg/l)
- ND — NO VOCs DETECTED OR CONCENTRATIONS WERE BELOW THE PRACTICAL QUANTITATION LIMITS

DRAFT

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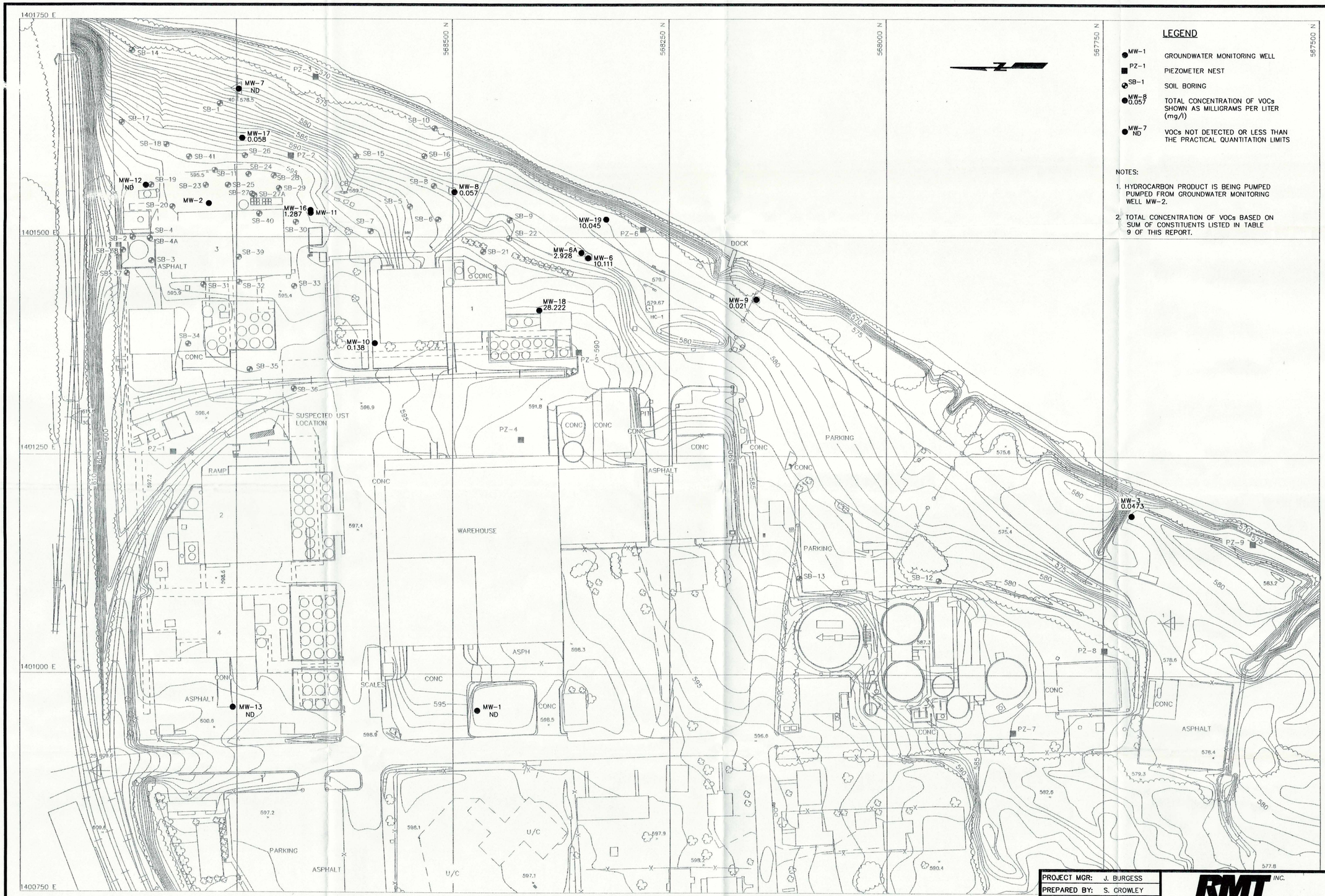
HOECHST CELANESE – MOUNT HOLLY, NC

CROSS-SECTION A – A' SHOWING TOTAL CONCENTRATION OF VOLATILE ORGANIC COMPOUNDS IN GROUND WATER OCTOBER 1991

SCALE	SHEET	PLATE NO.
AS NOTED		10

56518H15



LEGEND

- MW-1 — GROUNDWATER MONITORING WELL
- PZ-1 — PIEZOMETER NEST
- SB-1 — SOIL BORING
- MW-8 0.057 — TOTAL CONCENTRATION OF VOCs SHOWN AS MILLIGRAMS PER LITER (mg/l)
- MW-7 ND — VOCs NOT DETECTED OR LESS THAN THE PRACTICAL QUANTITATION LIMITS

NOTES:

1. HYDROCARBON PRODUCT IS BEING PUMPED PUMPED FROM GROUNDWATER MONITORING WELL MW-2.
2. TOTAL CONCENTRATION OF VOCs BASED ON SUM OF CONSTITUENTS LISTED IN TABLE 9 OF THIS REPORT.

50 0 50 100 150 200

SCALE IN FEET
CONTOUR INTERVAL: 1 FOOT

DRAFT

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DRAWN BY:	C. HAMBERG
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HOECHST-CELANESE
MT. HOLLY, NORTH CAROLINA

CONCENTRATION OF TOTAL VOLATILE ORGANIC COMPOUNDS IN GROUND WATER
OCTOBER 1991

SCALE	SHEET	PLATE NO.
AS NOTED		9

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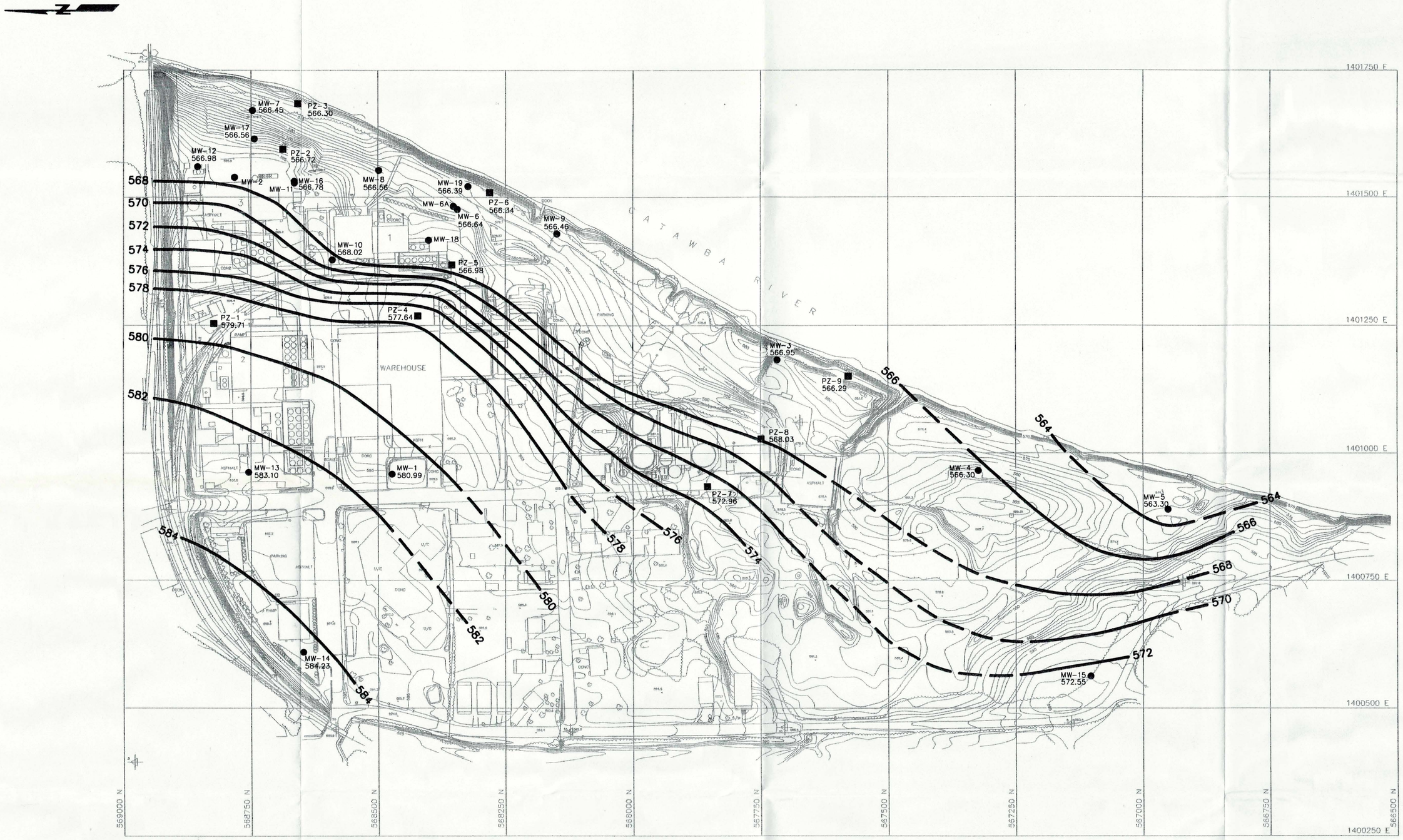

LEGEND

● MW-1 580.99	GROUNDWATER MONITORING WELL WATER LEVEL ELEVATION IN WELL IN FEET ABOVE MEAN SEA LEVEL
■ PZ-1 579.71	PIEZOMETER NEST WATER ELEVATION OF SHALLOW PIEZOMETER IN FEET ABOVE MEAN SEA LEVEL
— — 564	WATERTABLE CONTOUR IN FEET ABOVE MEAN SEA LEVEL, DASHED WHERE INFERRED. CONTOUR INTERVAL IS TWO FEET.

NOTE:
THE WATER LEVEL MEASUREMENT AT WELL MW-18 WAS BELIEVED TO BE ANOMALOUS AND NOT USED IN THE CONSTRUCTION OF THE MAP.

100 0 100 200 300 400
SCALE IN FEET
CONTOUR INTERVAL: 1 FOOT

DRAFT

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HOECHST-CELANESE
MT. HOLLY, NORTH CAROLINA
WATER TABLE CONFIGURATION NOVEMBER 1991

SCALE	SHEET	PLATE NO.
AS NOTED		8

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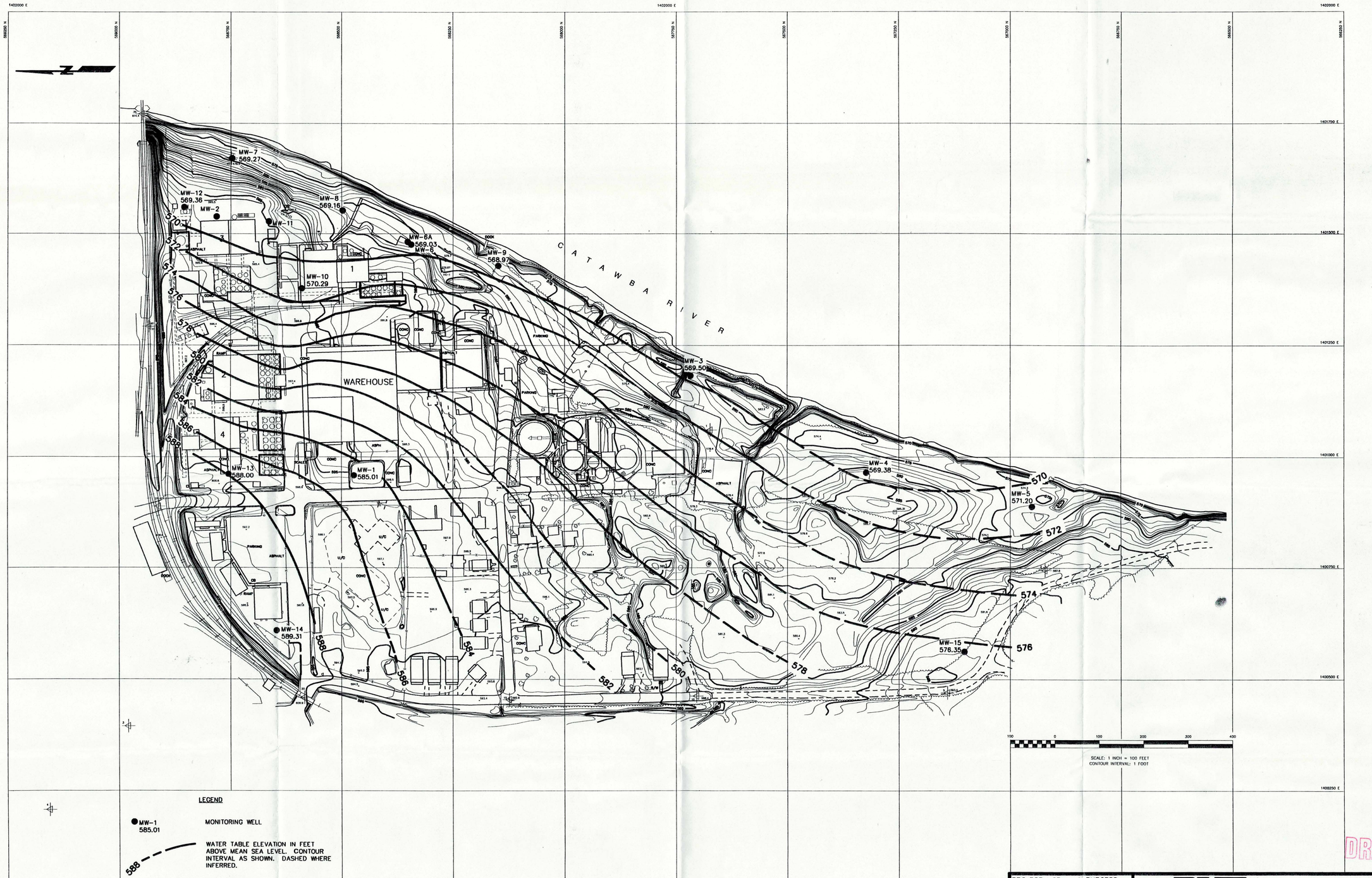

LEGEND

● MW-1 585.01 — MONITORING WELL

588 — WATER TABLE ELEVATION IN FEET ABOVE MEAN SEA LEVEL. CONTOUR INTERVAL AS SHOWN. DASHED WHERE INFERRED.

DRAFT

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APPROVED BY:	
APPROVED BY:	
APPROVED BY:	
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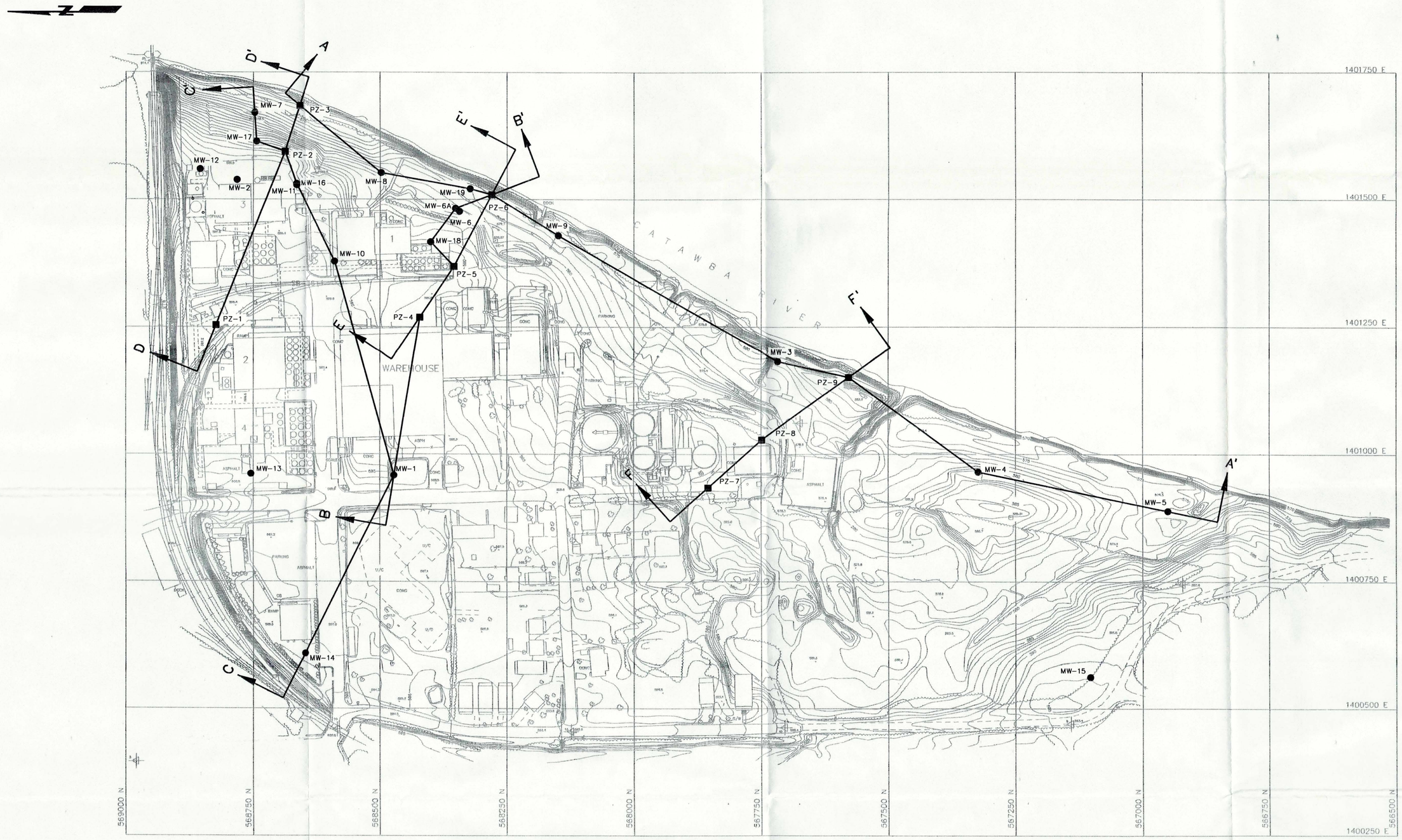
HOECHST-CELANESE
MT. HOLLY, NORTH CAROLINA
WATER TABLE CONFIGURATION
MARCH 1991

SCALE	SHEET	PLATE NO.
		7



DRAFT

LEGEND

MW-1 GROUNDWATER MONITORING WELL

PZ-1 PIEZOMETER NEST

A A' CROSS-SECTION LOCATION

100 0 100 200 300 400

SCALE: 1 INCH = 100 FEET
CONTOUR INTERVAL: 1 FOOT

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APPROVED BY:	
APPROVED BY:	
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HOECHST-CELANESE
MT. HOLLY, NORTH CAROLINA
LOCATIONS OF CROSS-SECTIONS

SCALE	SHEET	PLATE NO.
AS NOTED		6

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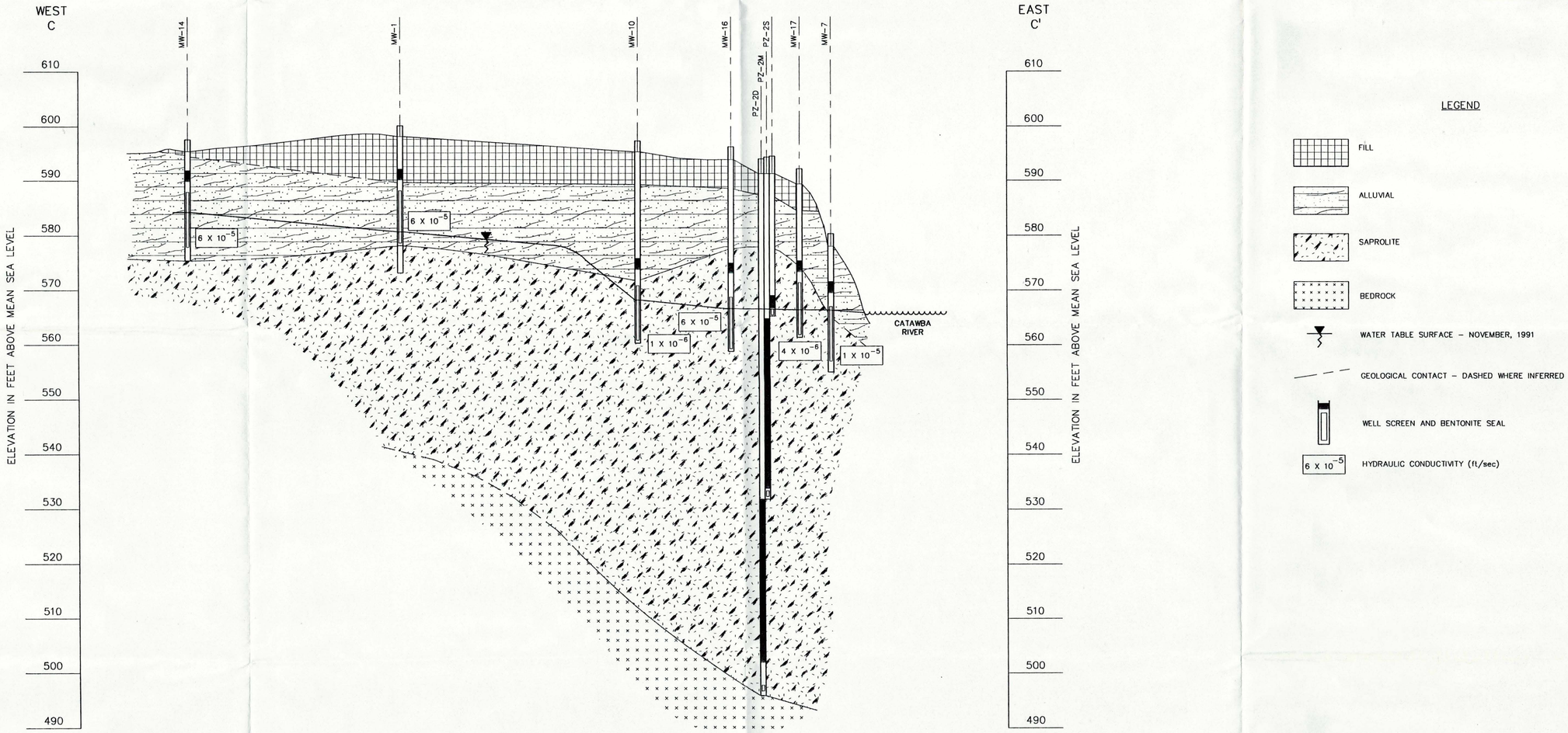

SECTION C–C'

HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'
VERTICAL EXAGGERATION: 10X

LEGEND

- FILL
- ALLUVIAL
- SAPROLITE
- BEDROCK
- WATER TABLE SURFACE – NOVEMBER, 1991
- GEOLOGICAL CONTACT – DASHED WHERE INFERRED
- WELL SCREEN AND BENTONITE SEAL
- 6×10^{-5} HYDRAULIC CONDUCTIVITY (ft/sec)

DRAFT

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APPROVED BY:	
APPROVED BY:	
APPROVED BY:	
DATE:	NOVEMBER, 1991
JOB NO:	565.18

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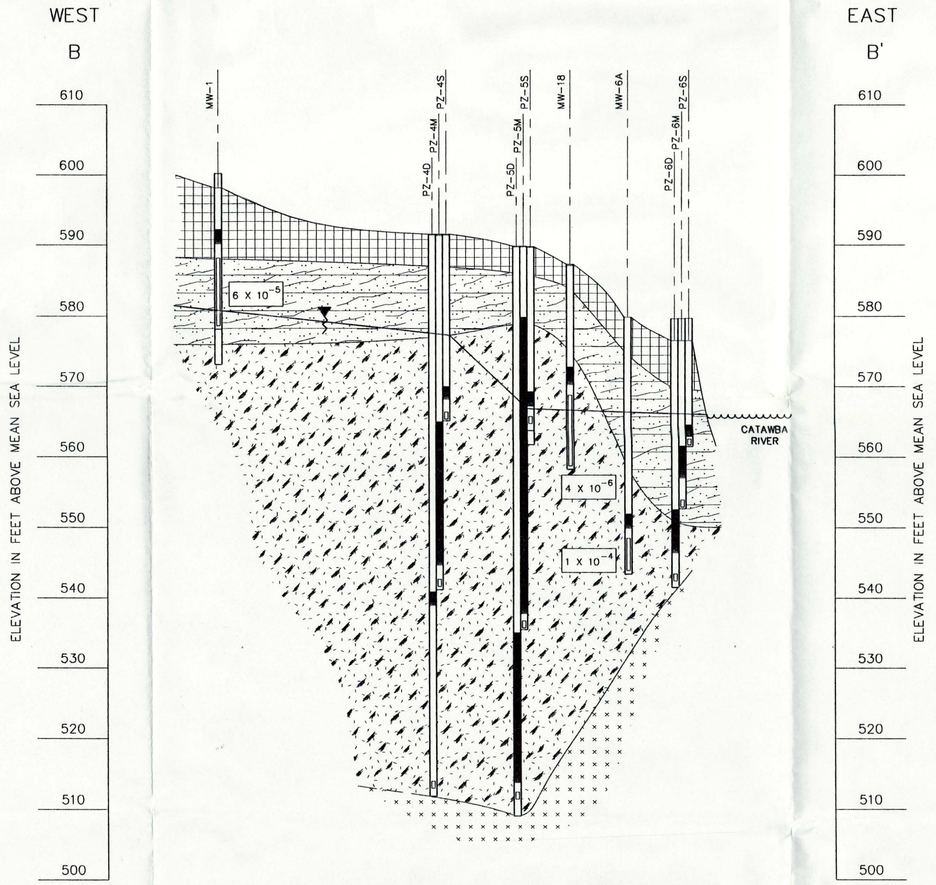
HYDROGEOLOGIC CROSS-SECTION C – C'

HOECHST CELANESE – MOUNT HOLLY, NC

SCALE	SHEET	PLATE NO.
AS NOTED		5

56518H13.DWG



SECTION B–B'

HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'
VERTICAL EXAGGERATION: 10X

LEGEND

- FILL
- ALLUVIAL
- SAPROLITE
- BEDROCK
- WATER TABLE SURFACE – NOVEMBER, 1991
- GEOLOGICAL CONTACT – DASHED WHERE INFERRED
- WELL SCREEN AND BENTONITE SEAL
- 6 X 10^{-5} HYDRAULIC CONDUCTIVITY (ft/sec)

DRAFT

PROJECT MGR:	J. BURGESS
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APPROVED BY:	
APPROVED BY:	
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HYDROGEOLOGIC CROSS-SECTION B – B'

HOECHST CELANESE – MOUNT HOLLY, NC

SCALE	SHEET	PLATE NO.
AS NOTED		4

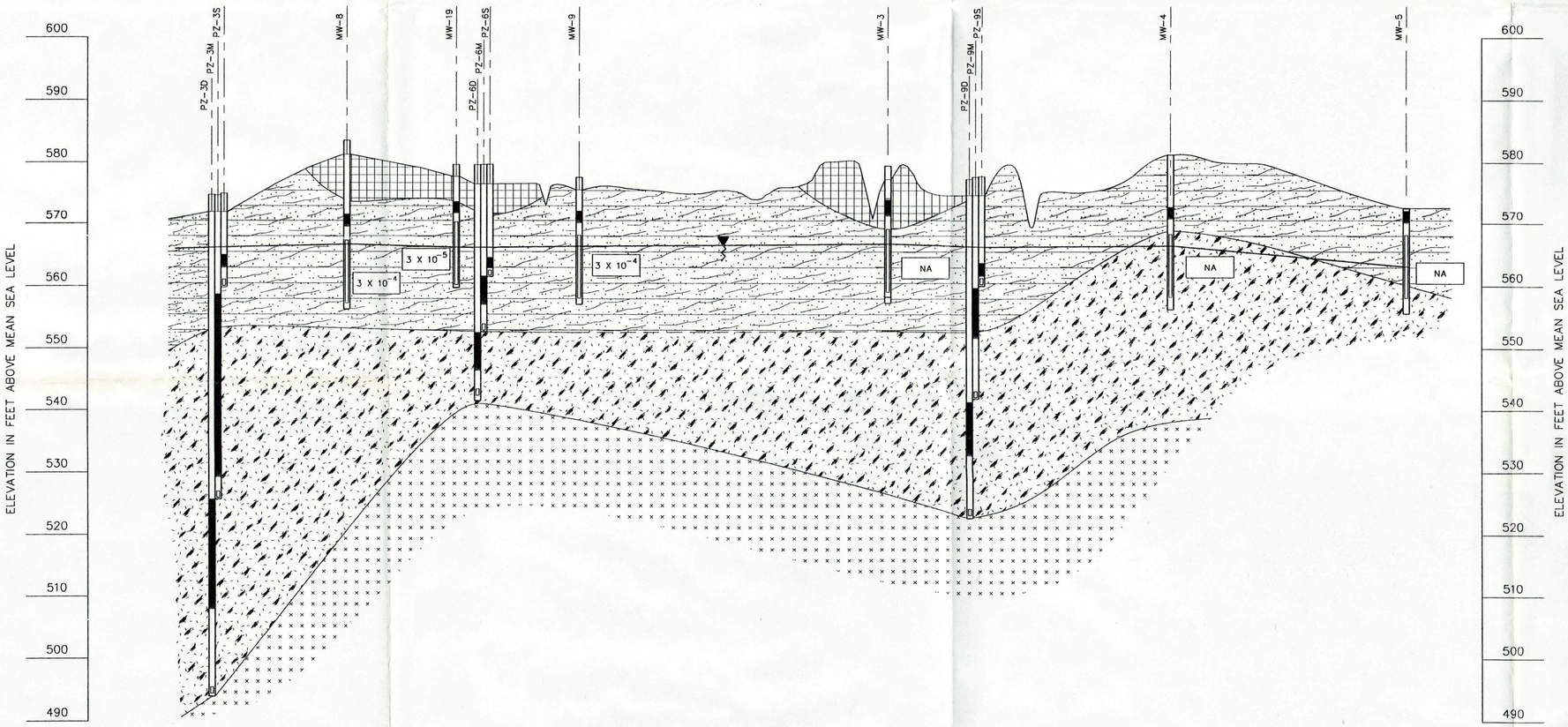
56518H12.DWG

NORTH

A

SOUTH

A'



SECTION A–A'

HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'
VERTICAL EXAGGERATION: 10X

LEGEND

- FILL
- ALLUVIAL
- SAPROLITE
- BEDROCK
- WATER TABLE SURFACE – NOVEMBER, 1991
- GEOLOGICAL CONTACT – DASHED WHERE INFERRED
- WELL SCREEN AND BENTONITE SEAL
- 3 X 10^{-4} HYDRAULIC CONDUCTIVITY (ft/sec)
- NA NOT AVAILABLE

DRAFT

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HYDROGEOLOGIC CROSS-SECTION A – A'

HOECHST CELANESE – MOUNT HOLLY, NC

SCALE	SHEET	PLATE NO.
AS NOTED		3

56518H11.DWG

DRAFT

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HOECHST-CELANESE
MT. HOLLY, NORTH CAROLINA
DATA POINT LOCATION MAP

SCALE	SHEET	PLATE NO.
AS NOTED		2

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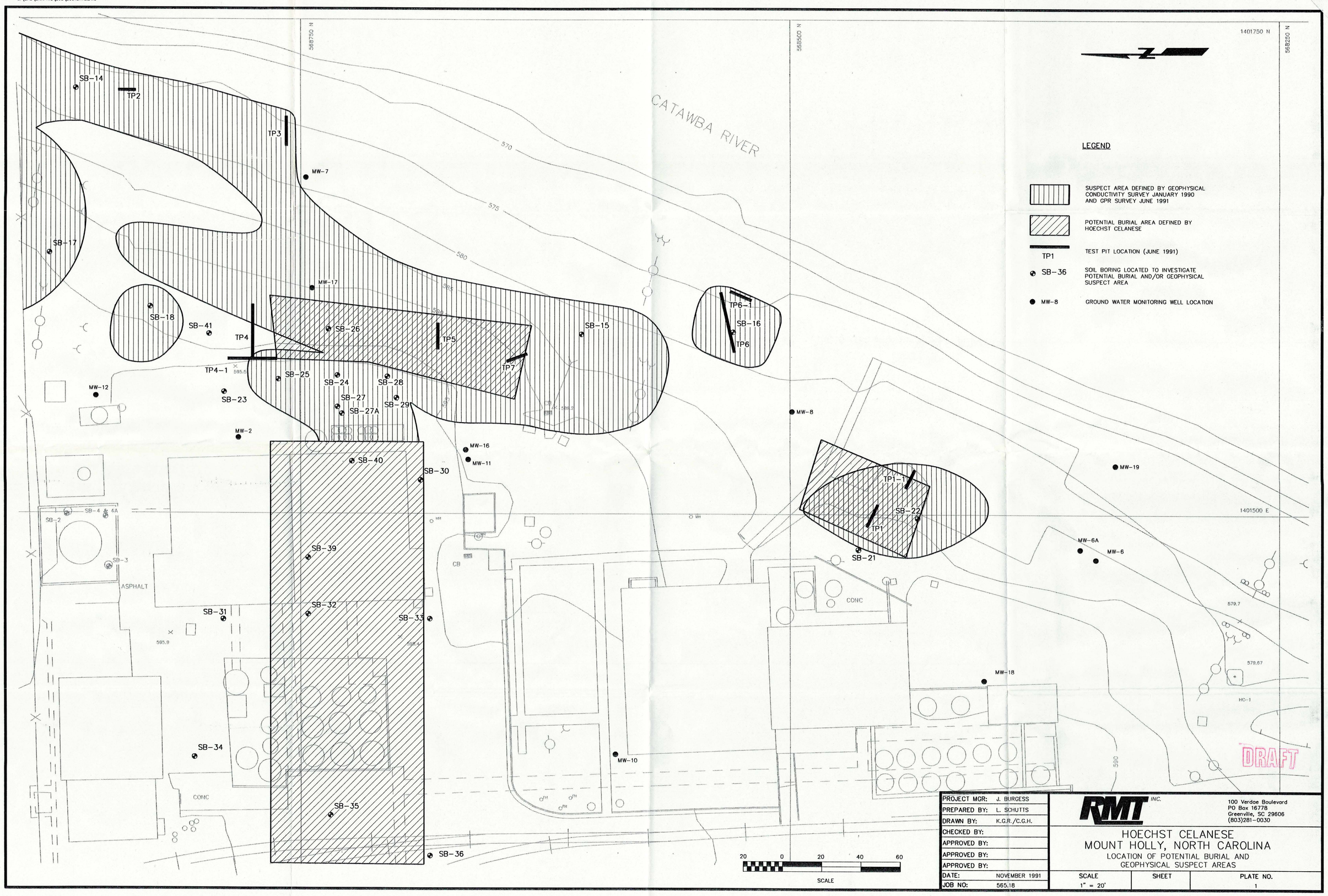

PROJECT MGR:	J. BURGESS
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DRAWN BY:	K.G.R./C.G.H.
CHECKED BY:	
APPROVED BY:	
APPROVED BY:	
APPROVED BY:	
DATE:	NOVEMBER 1991
JOB NO:	565.18

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HOECHST CELANESE
MOUNT HOLLY, NORTH CAROLINA
LOCATION OF POTENTIAL BURIAL AND GEOPHYSICAL SUSPECT AREAS

SCALE	SHEET	PLATE NO.
1" = 20'		1