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21 October 1992

Ms. Christine Purcell
Bureau of Federal Case Management
New Jersey Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, New Jersey 08625-0028

W.O. No. 06720-002-017

RE: L.E. CARPENTER FINAL SUPPLEMENTAL REMEDIAL INVESTIGATION; CORRECTION OF WATER LEVEL DATA TABLES AND MAPS.

Dear Ms. Purcell:

Subsequent to the submittal of the report entitled **"Final Supplemental Remedial Investigation for L.E. Carpenter and Company"** dated September 1992, modifications were requested for Tables 3-1, 3-2 and 3-3. Errors were found in the corrected water level elevations for monitor wells MW-6, MW-10 and MW-11S. In addition, the department requested that the data for MW-11S in Table 3-3 be averaged using actual readings and not corrected values. WESTON contends that use of the corrected values provides for a conservative bias regarding expected flow. However, the flow patterns are not significantly impacted. For your convenience, WESTON has enclosed revised versions of these tables and the corresponding equipotential maps. The changes can be summarized as follows:

Table 3-1. Corrected Water Level Elevation (FT. MSL).

	RI Report Version	Revised Version
MW-6	630.89	624.05
MW-10	624.20	624.67
MW-11S	631.76	624.41

345957

Table 3-2. Corrected Water Level Elevation (FT. MSL).

	RI Report Version	Revised Version
MW-6	631.10	625.56
MW-10	624.69	625.65

Table 3-2. Summary of Water Level Data for 1991, L.E. Carpenter Site, Wharton, NJ.

	RI Report Version Mean Annual Water Level	Revised Version Mean Annual Water Level
MW-11S	622.00	625.42

You will note that these changes made to Tables 3-1 and 3-2 have the effect of reducing the large mound in the equipotential surface near the central portion of the site. Furthermore, these changes do not affect the conclusions regarding the overall flow patterns at the site (i.e., the Rockaway River is still a recharge boundary and shallow groundwater discharge still occurs along the Air Products drainage ditch.

If you have any questions concerning these tables and maps please feel free to contact me at (908) 225-3990.

Very truly yours,

ROY F. WESTON, INC.

Martin O'Neill, C.H.M.M.
Senior Project Manager

Enclosures: three (3) tables and three (3) equipotential maps

cc: C. Anderson, L.E. Carpenter
R. Hahn, L.E. Carpenter
J. Josephs, USEPA-Region II

rr/ONEILL/PURC930.LTR

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MANAGERS DESIGNERS/CONSULTANTS

These Tables and Figures will replace Table 3-1, 3-2, 3-3 and Figures 3-13, 3-14, 3-15 in the L.E. Carpenter Final Supplemental Remedial Investigation dated September 1992.

TABLE 3-1. WATER LEVEL ELEVATION AND PRODUCT THICKNESS DATA
MEASURED ON FEBRUARY 27, 1992, L.E. CARPENTER SITE, WHARTON, NJ.

WELL	MEASURING PT. ELEVATION (FT MSL)	DEPTH TO PRODUCT (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS OR SHEEN OBSERVATIONS (FT)	OBSERVED WATER LEVEL ELEVATION (FT MSL)	CORRECTED WATER LEVEL ELEVATION (FT MSL)
MW-001	638.97	13.91	14.74	0.83	624.23	624.94
MW-002	633.39		9.32	0.00	624.07	624.07
MW-003	632.27		7.75	0.00	624.52	624.52
MW-004	632.31	7.60	7.85	0.25	624.46	624.68
MW-005	632.20		7.50	0.00	624.70	624.70
MW-006	632.00		7.95	0.00	624.05	624.05
MW-007	630.68		5.22	0.00	625.46	625.46
MW-008	628.79		2.95	0.00	625.84	625.84
MW-009	630.18		4.78	0.00	625.40	625.40
MW-010	633.65	8.90	9.45	0.55	624.20	624.67
MW-11S	632.96		8.55	0.00	624.41	624.41
MW-11I	632.82		8.21	0.00	624.61	624.61
MW-11D	632.42		5.25	0.00	627.17	627.17
MW-12S	633.18	7.88	ALL PRODUCT	6.53	ALL PRODUCT	ALL PRODUCT
MW-12I	633.06		8.62	0.00	624.44	624.44
MW-13S	631.23		6.55	0.00	624.68	624.68
MW-13I	630.66		6.20	0.00	624.46	624.46
MN-14S	628.51		4.16	0.00	624.35	624.35
MW-14I	628.23		3.91	0.00	624.32	624.32
MW-14D	628.53		1.90	0.00	626.63	626.63
MW-15S	636.77		11.79	0.00	624.98	624.98
MW-15I	636.66		11.62	0.00	625.04	625.04
MW-16S	634.47		8.93	0.00	625.54	625.54
MW-16I	634.96		9.92	0.00	625.04	625.04
MW-17S	634.74		9.90	0.00	624.84	624.84
MW-17D	634.86		9.80	0.00	625.06	625.06
MW-18S	631.26		6.41	0.00	624.85	624.85
MW-18I	631.04		6.00	0.00	625.04	625.04
MW-18D	630.77		4.92	0.00	625.85	625.85
MW-019	638.88		13.75	0.00	625.13	625.13
MW-020	636.77		11.26	0.00	625.51	625.51
MW-021	628.80		4.65	0.00	624.15	624.15
MW-022	628.74		4.40	0.00	624.34	624.34
MW-023	630.64		2.85	0.00	627.79	627.79
MW-024	629.03		3.45	0.00	625.58	625.58
MW-025	627.33		3.51	0.00	623.82	623.83
RW-001	637.38		13.25	0.00	624.13	624.13
RW-002	631.68		7.30	0.00	624.38	624.38
RW-003	631.99		7.06	0.00	624.93	624.93
GEI-1I	630.78		5.48	0.00	625.30	625.30
GEI-2S	637.27		11.94	0.00	625.33	625.33
GEI-2I	637.27		12.12	0.00	625.15	625.15
GEI-3I	639.85		14.38	0.00	625.47	625.47

* Estimated water level elevation calculated using a product specific gravity of 0.86.

** Measuring point elevation corrected to top of plastic cover casing.

TABLE 3-1 CONTINUED. WATER LEVEL ELEVATION AND PRODUCT THICKNESS DATA MEASURED ON FEBRUARY 27, 1992, L.E. CARPENTER SITE, WHARTON, NJ.

MEASURING PT.	ELEVATION OF MEASURING Pt. (FT. MSL)	DEPTH TO WATER (FT.)	WATER LEVEL ELEVATION (FT. MSL)
DC-P0	625.73	2.50	623.23
DC-P1	625.26	2.00	623.26
DC-P2	626.79	2.20	624.59
DC-P3	625.22	2.00	623.22
DC-P4	625.10	2.10	623.00
DC-P5	625.16	3.45	621.71
RP-01	629.65	2.85	626.80
RP-02	627.75	1.60	626.15
RP-03	627.11	2.50	624.61

TABLE 3-2. WATER LEVEL ELEVATION AND PRODUCT THICKNESS DATA
MEASURED ON APRIL 7, 1992, L.E. CARPENTER SITE, WHARTON, NJ.

WELL	MEASURING PT. ELEVATION (FT MSL)	DEPTH TO PRODUCT (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS OR SHEEN OBSERVATIONS (FT)	OBSERVED WATER LEVEL ELEVATION (FT MSL)	CORRECTED WATER LEVEL ELEVATION (FT MSL)
MW-001	638.97	12.64	14.40	1.76	624.57	626.08
MW-002	633.39		8.92	0.00	624.47	624.47
MW-003	632.27	6.90	7.20	0.30	625.07	625.07
MW-004	632.31	6.62	6.64	0.02	625.67	625.69
MW-005	632.20		6.18	0.00	626.02	626.02
MW-006	632.00		6.44	0.00	625.56	625.56
MW-007	630.68		4.84	0.00	625.84	625.84
MW-008	628.79		2.82	0.00	625.97	625.97
MW-009	630.18		5.62	0.00	624.56	624.56
MW-010	633.65	7.84	8.96	1.12	624.69	625.65
MW-11S	632.96	4.12	ALL PRODUCT	10.29	ALL PRODUCT	ALL PRODUCT
MW-11I	632.82		3.98	0.00	628.84	628.84
MW-11D	632.42		7.08	0.00	625.34	625.34
MW-12S	633.18	7.34	ALL PRODUCT	7.07	ALL PRODUCT	ALL PRODUCT
MW-12I	633.06		7.28	0.00	625.78	625.78
MW-13S	631.23		5.62	0.00	625.61	625.61
MW-13I	630.66		5.18	0.00	625.48	625.48
MW-14S	628.51		3.25	SHEEN	625.26	625.26
MW-14I	628.23		3.88	0.00	624.35	624.35
MW-14D	628.53		0.20	0.00	628.33	628.33
MW-15S	636.77		10.70	0.00	626.07	626.07
MW-15I	636.66		10.60	0.00	626.06	626.06
MW-16S	634.47		7.85	0.00	626.62	626.62
MW-16I	634.96		8.25	0.00	626.71	626.71
MW-17S	634.74		8.44	0.00	626.30	626.30
MW-17D	634.86		8.50	0.00	626.36	626.36
MW-18S	631.26		5.65	0.00	625.61	625.61
MW-18I	631.04		5.14	0.00	625.90	625.90
MW-18D	630.77		2.95	0.00	627.82	627.82
MW-019	638.88		11.90	0.00	626.98	626.98
MW-020	636.77		10.18	0.00	626.59	626.59
MW-021	628.80		3.72	0.00	625.08	625.08
MW-022	628.74		3.38	SHEEN	625.36	625.36
MW-023	630.64		3.48	0.00	627.16	627.16
MW-024	629.03		2.70	0.00	626.33	626.33
MW-025	627.33		2.12	0.00	625.21	625.21
RW-001	637.38		11.30	SHEEN	626.08	626.08
RW-002	631.68		6.30	SHEEN	625.38	625.38
RW-003	631.99		6.35	SHEEN	625.64	625.64
GEI-1I	630.78		4.78	0.00	626.00	626.00
GEI-2S	637.27		10.78	0.00	626.49	626.49
GEI-2I	637.27		10.75	0.00	626.52	626.52
GEI-3I	639.85		12.95	0.00	626.90	626.90

* Estimated water level elevation calculated using a product specific gravity of 0.86.

** Measuring point elevation corrected to top of plastic cover casing.

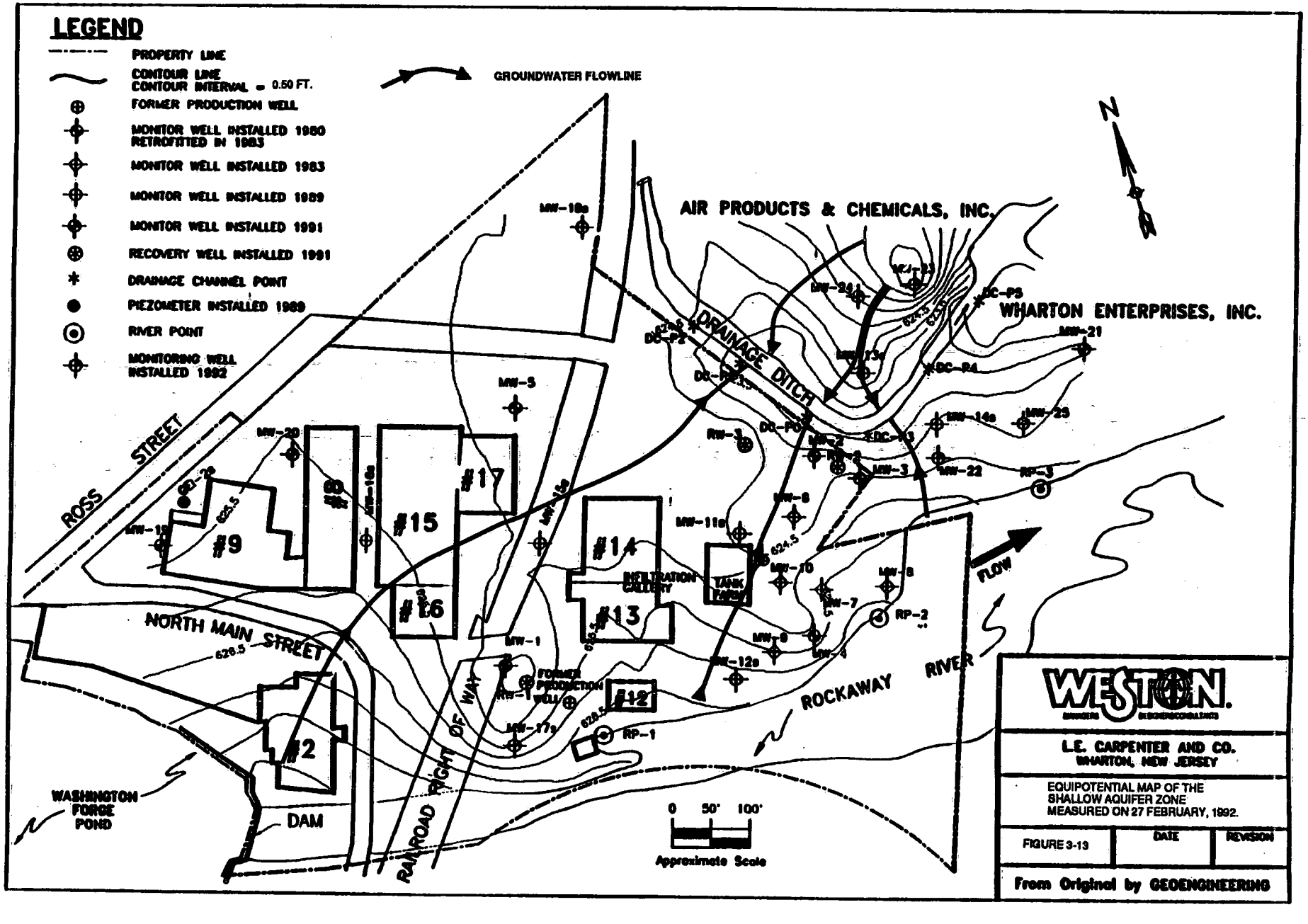
TABLE 3-2 CONTINUED. WATER LEVEL ELEVATION AND PRODUCT THICKNESS DATA MEASURED ON APRIL 7, 1992, L.E. CARPENTER SITE, WHARTON, NJ.

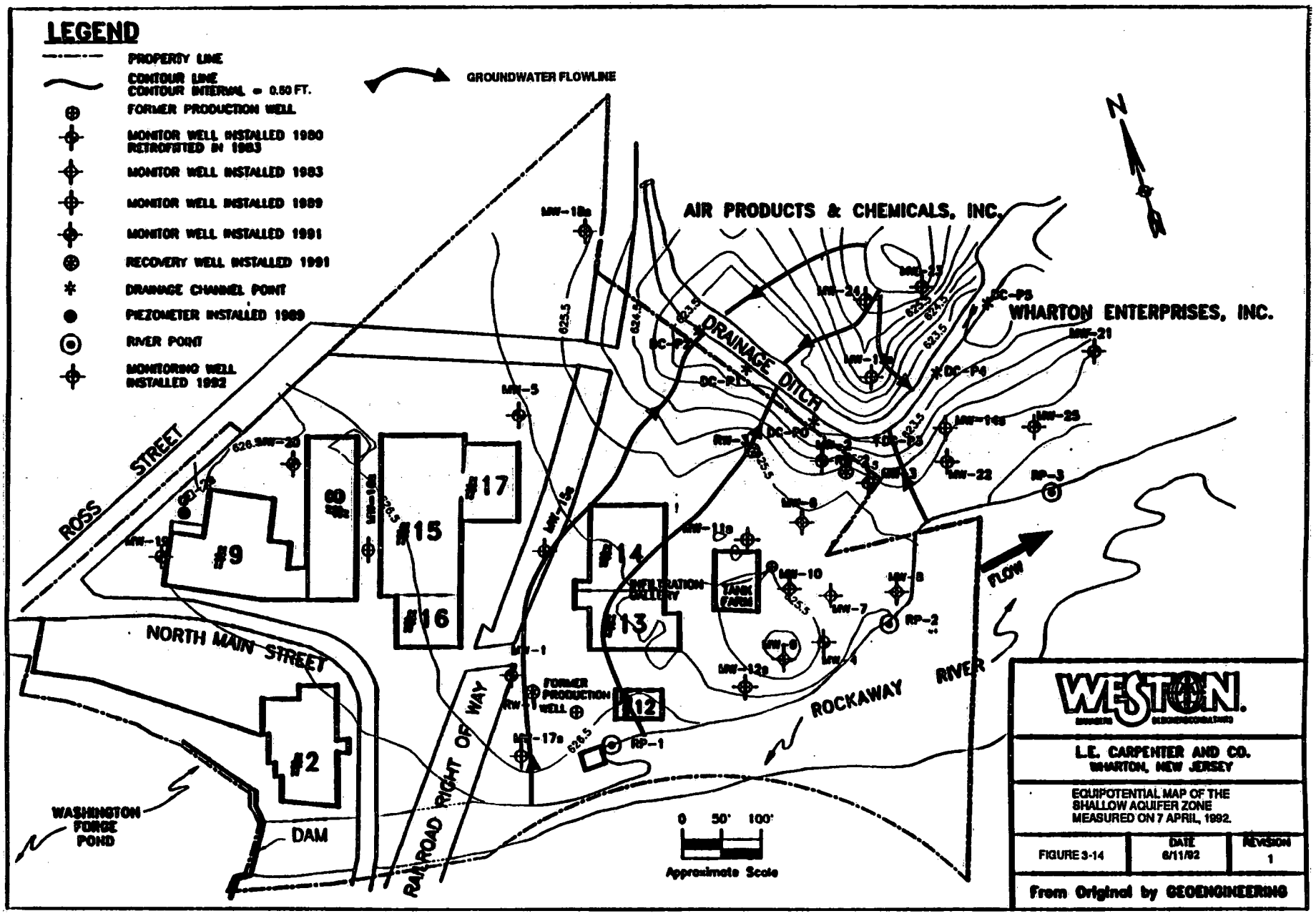
MEASURING PT.	ELEVATION OF MEASURING PT. (FT. MSL)	DEPTH TO WATER (FT.)	WATER LEVEL ELEVATION (FT. MSL)
DC-P0	625.73	2.50	623.23
DC-P1	625.26	1.83	623.43
DC-P2	626.79	3.33	623.46
DC-P3	625.22	2.08	623.14
DC-P4	625.10	2.00	623.10
DC-P5	625.16	2.17	622.99
RP-01	629.65	2.90	626.75
RP-02	627.75	1.72	626.03
RP-03	627.11	2.46	624.65

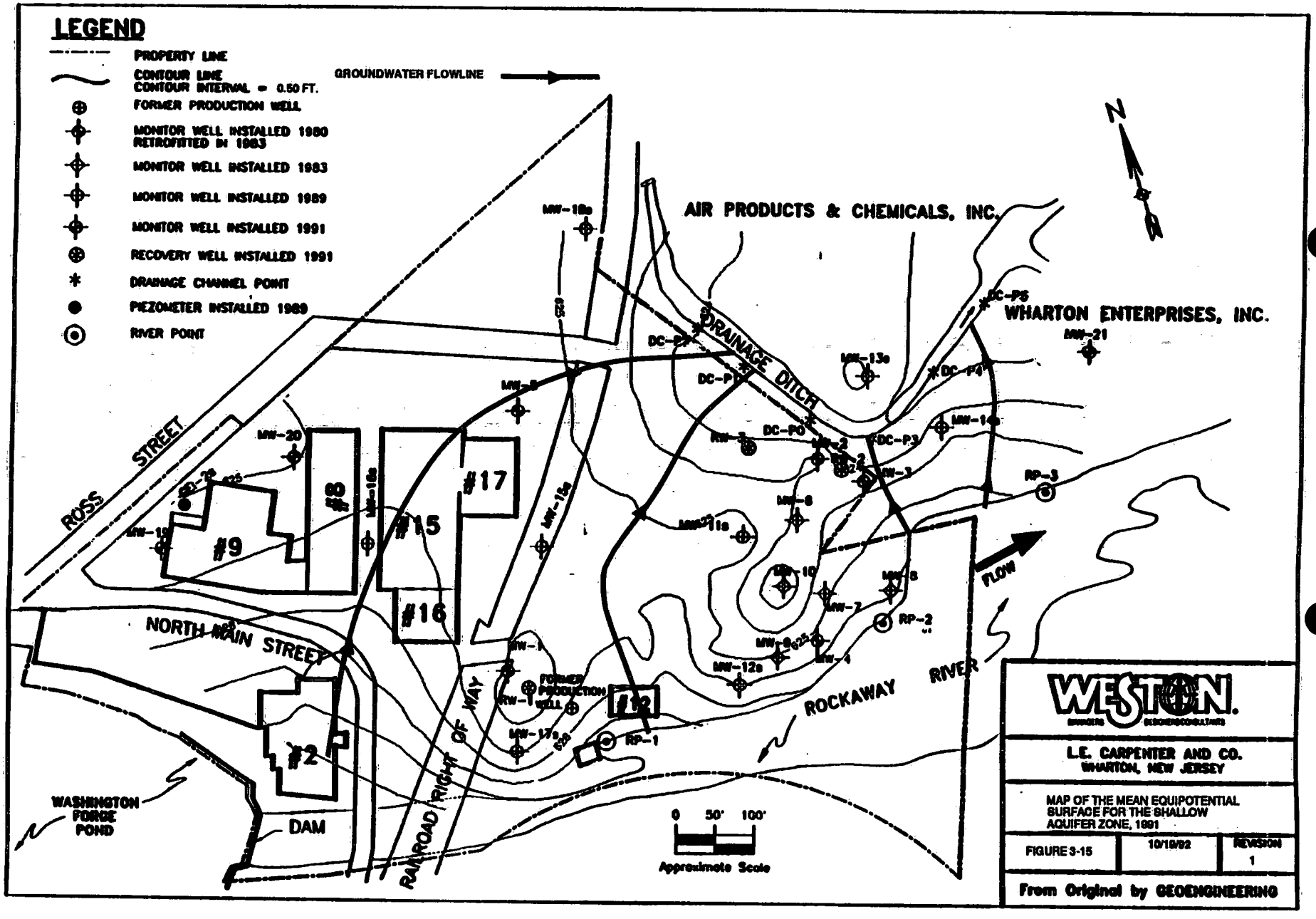
TABLE 3-3. SUMMARY OF WATER LEVEL DATA FOR 1991, L.E. CARPENTER SITE, WHARTON, NJ.

WELL NUMBER	2/4/91	3/4/91	4/15/91	5/13/91	7/17/91	8/14/91	9/15/91	10/30/91	11/15/91	12/18/91	MEAN ANNUAL WATER LEVEL *
MW-001	626.53	626.26	626.53	625.60	624.68	624.62	624.20	624.38	624.40	625.13	625.10
MW-002	625.57	626.15	625.72	626.07	624.37	624.11	623.73	623.87	623.89	623.69	624.74
MW-003	625.46	626.28	625.46	624.56	624.11	624.12	623.73	623.89	623.98	624.30	624.32
MW-004	625.82	626.40	625.88	626.33	624.40	624.10	623.72	623.92	624.05	ALL PR.	625.06
MW-005	626.17	626.89	626.20	626.67	624.91	624.66	624.17	624.42	624.90	624.90	625.39
MW-006	624.84	626.02	630.97	625.00	624.53	623.54	623.52	623.16	624.72	624.57	624.40
MW-007	625.47	627.05	625.83	625.62	623.98	623.82	623.90	623.60	624.56	ALL PR.	624.87
MW-008	626.01	625.65	625.87	625.99	624.83	624.87	625.53	623.59	625.64	625.65	625.36
MW-009	626.03	625.86	625.81	626.32	624.68	623.46	624.30	624.75	625.18	623.64	625.00
MW-010	622.31	622.87	624.18	622.88	623.32	623.77	623.33	623.39	624.03	624.47	623.33
MW-11S	625.4	626.06	625.16	626.46	ALL PR.	ALL PR.	ALL PR.	ALL PR.	ALL PR.	624.01	625.42
MW-11I	625.32	626.25	625.64	626.26	624.40	624.12	623.72	623.90	624.22	624.56	624.84
MW-11D	625.28	628.78	628.51	629.33	626.92	626.46	625.56	625.91	625.92	626.60	626.22
MW-12S	625.9	NO ACC	625.61	626.18	625.20	625.42	625.35	625.27	625.35	ALL PR.	625.51
MW-12I	625.92	626.24	625.67	626.33	624.41	624.41	623.62	623.84	625.96	624.54	625.09
MW-13S	NO ACC	NO ACC	NO ACC	NO ACC	624.23	623.73	623.73	623.73	624.93	624.73	624.18
MW-13I	NO ACC	NO ACC	NO ACC	NO ACC	624.15	623.95	623.56	623.66	623.86	624.34	623.92
MN-14S	625.34	625.71	625.15	625.65	624.01	623.80	623.41	623.59	623.81	624.21	624.47
MW-14I	625.45	625.82	625.23	625.79	624.05	623.79	623.35	623.29	623.83	624.27	624.49
MW-14D	ART.	ART.	ART.	ART.	626.77	626.34	625.41	625.83	626.13	626.49	626.16
MW-15S	626.25	626.36	625.92	626.56	624.67	624.38	623.97	623.87	624.47	624.01	625.05
MW-15I	626.21	626.62	625.92	626.58	624.70	624.41	623.98	624.17	624.41	624.81	625.18
MW-16S	626.75	627.63	626.50	627.16	625.13	624.91	624.09	624.64	625.07	625.37	625.73
MW-16I	626.82	627.11	626.48	627.24	625.21	624.46	624.10	624.64	624.76	625.34	625.62
MW-17S	626.45	626.96	626.13	626.93	624.82	624.54	624.15	624.29	624.44	624.98	625.37
MW-17D	626.55	626.86	627.22	626.96	624.88	624.61	624.16	624.32	624.56	625.04	624.55
MW-18S	625.66	626.07	625.45	625.83	NA	624.36	623.96	624.14	624.46	624.66	624.95
MW-18I	625.94	626.36	625.75	626.19	624.66	624.43	623.84	624.20	624.49	624.86	625.07
MW-18D	628.19	628.13	627.76	628.65	626.19	625.67	624.87	625.17	624.02	625.86	625.29
MW-19	NA	NA	NA	NA	625.50	625.22	624.56	624.97	625.18	625.78	625.20
MW-20	NA	NA	NA	NA	625.19	624.93	624.47	624.65	624.97	625.41	624.94
MW-21	NA	NA	NA	NA	623.82	623.56	623.19	623.37	623.70	624.02	623.61
RW-1	NA	NA	NA	NA	624.70	624.42	623.80	624.14	624.38	624.86	624.38
RW-2	NA	NA	NA	NA	623.98	623.88	623.47	623.65	623.98	624.35	623.88
RW-3	NA	NA	NA	NA	624.43	624.04	623.67	623.74	624.09	624.47	624.07
GEI-1I	626.04	626.43	625.80	626.28	NO ACC	625.20	625.20	623.87	624.08	624.92	625.31
GEI-2S	626.91	NO ACC	NO ACC	NO ACC	NO ACC	624.45	624.45	624.45	624.57	625.23	625.01
GEI-2I	627.50	NO ACC	NO ACC	NO ACC	NO ACC	624.90	624.90	624.29	624.52	625.07	625.20
GEI-3I	627.06	627.29	626.78	627.52	NO ACC	624.80	624.80	624.85	625.00	625.45	625.95
DC-P0	NA	NA	NA	NA	623.31	623.38	623.32	623.35	623.23	625.73	623.72
DC-P1	NA	NA	NA	NA	623.38	623.47	623.31	623.43	623.26	625.26	623.69
DC-P2	NA	NA	NA	NA	623.39	623.58	623.55	623.60	623.39	626.79	624.05
DC-P3	NA	NA	NA	NA	623.24	623.28	623.22	623.27	623.32	625.22	623.59
DC-P4	NA	NA	NA	NA	623.21	623.04	622.90	623.02	622.70	625.10	623.33
DC-P5	NA	NA	NA	NA	622.87	622.70	622.87	622.97	622.86	625.16	623.24
RP-1	626.44	627.55	626.55	627.59	626.15	625.99	626.20	626.23	626.50	629.65	626.89
RP-2	624.57	627.37	625.95	624.57	624.93	625.49	625.60	625.79	625.86	627.75	625.79
RP-3	626.78	625.01	624.49	624.57	623.94	624.13	624.20	624.28	624.46	627.11	624.90

ART. = ARTESIAN
ALL PR. = ALL PRODUCT
NA = DATA NOT AVAILABLE
NO ACC = NO ACCESS TO WELL
* = ARITHMETIC MEAN WATER LEVEL CALCULATED FOR NON-ARTESIAN CONDITIONS ONLY
ELEVATION DATA PRESENTED IN FT. MSL


LEGEND
PROPERTY LINE
CONTOUR LINE
CONTOUR INTERVAL = 0.50 FT.
FORMER PRODUCTION WELL
MONITOR WELL INSTALLED 1980 RETROFITTED IN 1983
MONITOR WELL INSTALLED 1983
MONITOR WELL INSTALLED 1989
MONITOR WELL INSTALLED 1991
RECOVERY WELL INSTALLED 1991
DRAINAGE CHANNEL POINT
PIEZOMETER INSTALLED 1989
RIVER POINT
MONITORING WELL INSTALLED 1992
GROUNDWATER FLOWLINE
AIR PRODUCTS & CHEMICALS, INC.
WHARTON ENTERPRISES, INC.
DRAINAGE DITCH
ROSS STREET
NORTH MAIN STREET
RAILROAD RIGHT OF WAY
ROCKAWAY RIVER
WASHINGTON FORGE POND
DAM
FLOW
INFILTRATION GALLERY
TANK FARM
FORMER PRODUCTION WELL
#2
#9
#12
#13
#14
#15
#16
#17
N
0 50' 100'
Approximate Scale
WESTON
L.E. CARPENTER AND CO.
WHARTON, NEW JERSEY
EQUIPOTENTIAL MAP OF THE SHALLOW AQUIFER ZONE MEASURED ON 27 FEBRUARY, 1992.
FIGURE 3-13
DATE
REVISION
From Original by GEOENGINEERING


LEGEND
PROPERTY LINE
CONTOUR LINE
CONTOUR INTERVAL = 0.50 FT.
FORMER PRODUCTION WELL
MONITOR WELL INSTALLED 1980 RETROFITTED IN 1983
MONITOR WELL INSTALLED 1983
MONITOR WELL INSTALLED 1989
MONITOR WELL INSTALLED 1991
RECOVERY WELL INSTALLED 1991
DRAINAGE CHANNEL POINT
PIEZOMETER INSTALLED 1989
RIVER POINT
MONITORING WELL INSTALLED 1992
GROUNDWATER FLOWLINE
N
AIR PRODUCTS & CHEMICALS, INC.
WHARTON ENTERPRISES, INC.
DRAINAGE DITCH
ROSS STREET
NORTH MAIN STREET
RAILROAD RIGHT OF WAY
ROCKAWAY RIVER
FLOW
WASHINGTON FORGE POND
DAM
#2
#9
#13
#14
#15
#16
#17
TANK FARM
FORMER PRODUCTION WELL
MW-1
MW-5
MW-6
MW-7
MW-8
MW-10
MW-11a
MW-12a
MW-14a
MW-15a
MW-16a
MW-17a
MW-18a
MW-19
MW-20
MW-21
MW-22
MW-23
MW-24
MW-25
RW-1
RP-1
RP-2
RP-3
DC-P1
DC-P2
DC-P3
DC-P4
DC-P5
0 50' 100'
Approximate Scale
WESTON
L.E. CARPENTER AND CO.
WHARTON, NEW JERSEY
EQUIPOTENTIAL MAP OF THE SHALLOW AQUIFER ZONE MEASURED ON 7 APRIL, 1992.
FIGURE 3-14
DATE 6/11/92
REVISION 1
From Original by GEOENGINEERING


LEGEND
PROPERTY LINE
CONTOUR LINE
CONTOUR INTERVAL = 0.50 FT.
GROUNDWATER FLOWLINE
FORMER PRODUCTION WELL
MONITOR WELL INSTALLED 1980 RETROFITTED IN 1983
MONITOR WELL INSTALLED 1983
MONITOR WELL INSTALLED 1989
MONITOR WELL INSTALLED 1991
RECOVERY WELL INSTALLED 1991
DRAINAGE CHANNEL POINT
PIEZOMETER INSTALLED 1989
RIVER POINT
N
AIR PRODUCTS & CHEMICALS, INC.
WHARTON ENTERPRISES, INC.
DRAINAGE DITCH
ROSS STREET
NORTH MAIN STREET
RAILROAD RIGHT OF WAY
ROCKAWAY RIVER
FLOW
WASHINGTON FORGE POND
DAM
#2
#8
#9
#15
#16
#17
#12
MW-20
MW-21
MW-13a
MW-14a
MW-18a
MW-15a
MW-17a
MW-12a
MW-11a
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
RW-1
RW-2
RW-3
RP-1
RP-2
RP-3
DC-P1
DC-P2
DC-P3
DC-P4
DC-P5
DC-PO
FORMER PRODUCTION WELL
0 50' 100'
Approximate Scale
WESTON
L.E. CARPENTER AND CO.
WHARTON, NEW JERSEY
MAP OF THE MEAN EQUIPOTENTIAL SURFACE FOR THE SHALLOW AQUIFER ZONE, 1991
FIGURE 3-15
10/19/92
REVISION 1
From Original by GEOENGINEERING