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JULY 2002
SURFACE WATER MONITORING REPORT FOR WASHINGTON WORKS FACILITY AND LOCAL, LETART AND DRY RUN LANDFILLS WASHINGTON, WV

Date: September 2002

Project No.: D6WW7423.01
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REGULATORY PROGRAM

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1.0 INTRODUCTION

A multi-media consent order (Order No. GWR-2001-019) was entered into between the West Virginia Department of Environmental Protection (WVDEP), the West Virginia Department of Health and Human Resources – Bureau for Public Health (WVDHHR-BPH) and DuPont on November 15, 2001 (Consent Order). The Consent Order identified a series of requirements and tasks to be performed by the parties to determine whether there has been an impact on human health and the environment as a result of releases of ammonium perfluorooctanoate (C-8), CAS Number 3825-26-1, to the environment from DuPont operations at the Washington Works facility and the associated landfills (Local, Letart and Dry Run).

The Consent Order established the C-8 Groundwater Investigation Steering Team (GIST) to oversee investigations and activities that will be conducted to assess the presence and extent of C-8 in drinking water, groundwater, and surface water at and around the Washington Works facility and the Local, Letart and Dry Run Landfills.

An additional component of the Consent Order relates to the National Pollutant Discharge Elimination System (NPDES) permit sampling requirements. In this portion of the Consent Order, specific outfalls and outlets (outfalls) are to be sampled monthly for C-8 by DuPont.

Pursuant to Attachment A of the Consent Order, three tasks will be performed by DuPont and evaluated by the GIST, Tasks A, B, and C. Task A: Groundwater Use and Well Survey/Groundwater Monitoring has been completed (DuPont, 2002a; 2002b). Task B: Assessment of Existing Groundwater and Surface Water Monitoring Data includes the compilation of historical C-8 data, monitoring all wells at the landfills and the development of a Groundwater Monitoring Plan (GMP) for the Washington Works facility. The first part of the task, the historical C-8 data compilation report has been submitted to the GIST for evaluation (DuPont, 2002c). The second part of this task, monitoring C-8 in groundwater at the landfills, began in December 2001 and was performed monthly for four months and quarterly thereafter. The third part of the task, the proposed GMP for the Washington Works facility, was submitted to the GIST for evaluation (DuPont, 2002d) and groundwater sampling on the Washington Works facility began in January 2002. Groundwater sampling at the Washington Works facility was conducted monthly for four months and continues quarterly. Task C: Plume Identification/Groundwater Assessment is ongoing.

This report presents the results of the C-8 sampling that was performed in July 2002. Surface water results are presented for the Washington Works facility and the Local, Letart, and Dry Run Landfills.

2.0 C-8 ANALYTICAL REPORTING

The analytical method, method detection limit, and laboratory utilized for C-8 analysis has changed over time. Prior to 1991, DuPont performed C-8 analysis at the DuPont Experimental Station in Wilmington, Delaware. In 1991, when the RCRA Verification Investigation was conducted, the analysis was contracted to the CH_2MHill Laboratory in Montgomery, Alabama. Both labs used a Gas Chromatography/Electron Capture Detector (GC-ECD) based analytical method with detection limits for C-8 that ranged from 0.1 to 1.0 ug/l.

CH_2MHill conducted C-8 analysis for DuPont into the fall of 1998 when the laboratory ceased operation. At that time, DuPont had completed one round of analysis for the RCRA Facility Investigation (RFI). The analytical work was transferred to Lancaster Laboratories, Lancaster, PA, for the RFI second round analysis in March 1999. Lancaster Laboratories continued to conduct C-8 analysis using GC-ECD for DuPont until October 2001, when development and testing was completed on a new analytical method developed by Exygen Research, Inc. (Exygen; located in State College, PA) that utilizes Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). DuPont adopted the regular use of LC/MS/MS for C-8 analysis in water in November 2001 and Exygen was contracted to perform the analyses for DuPont.

Exygen reports C-8 results for the laboratory replicate of each field sample. These results are evaluated for precision by comparing the field sample result to the corresponding laboratory replicate result.

- If both results are less than the practical quantitation limit (PQL), the replicate sample for that analyte is considered to have passed the precision criteria.
- If one or both results are between one and five times the PQL, the replicate is considered to have met the precision criteria if the two results differ by less than the PQL.
- If one result is less than the PQL and the other is not, and if the two results differed by a value less than the PQL, the replicate is said to have met the acceptance criteria.
- Finally, if both results are at least five times the PQL, the replicate is considered to have met the criteria if the relative percent difference (RPD) between the two results is less than or equal to 20%. The RPD is the absolute value of the difference of two measurements divided by their average.

When the precision criteria outlined above are met, Exygen reports the average of the field sample and lab replicate results reported by the laboratory. If criteria for precision are exceeded, Exygen reports the higher of the sample and lab replicate results. Finally, when one result (from the sample/lab replicate pair) is above the PQL and one below, the result that is above the PQLs is reported. C-8 results are recorded in the Corporate Environmental Database (CED) and are reported as FC-143 for consistency with historical results.

3.0 WASHINGTON WORKS FACILITY

Figure 1.0 shows the location of the Washington Works facility. On July 23rd, 2002, six outfalls were sampled for C-8 (001, 002, 003, 005, 007, and 105). All of these outfalls collect process water and stormwater runoff. Sampling of these outfalls is required by the Consent Order and WV NPDES permit No. WV0001279. The locations of these outfalls are shown in Figure 1.1.

Table 1.0 provides the C-8 analytical results for surface water. For each sampling point listed in this table, historical data is summarized with the most recent results listed first. Figure 1.2 presents the C-8 concentration map for the outfalls sampled in July 2002. Laboratory analytical data reports and the Chain-of-Custody records are included in Appendix A and B, respectively.

TABLES

Table 1.0
Summary of Analytical Results:
C-8 in Surface Water
DuPont Washington Works Facility
Washington, WV

Sample	Date	C-8 (ug/l)
OUTLET 001	7/23/02	8.63
	6/25/02	17.9
	5/20/02	22.4
	4/16/02	19.7
	3/19/02	21.4
	2/5/02	9.43
	1/17/02	10.9
	12/20/01	3.720
OUTFALL 002	7/23/02	2.29
	6/25/02	3.86
	6/25/02 (dup)	3.81
	5/20/02	4.13
	4/16/02	2.45
	3/19/02	5.85
	2/5/02	4.66
	1/17/02	4.23
	12/20/01	1.980
	11/26/01*	4.84
	10/25/01	2.8
	9/19/01	0.118
	7/11/01	0.558
	6/14/01	0.594
	5/31/01	0.436
	4/11/01	1.5
	3/21/01	8.54
	2/14/01	1.74
OUTLET 003	7/23/02	0.291
	6/25/02	0.175
	5/20/02	0.503
	4/16/02	2.76
	3/19/02	2.91
	3/19/02 (dup)	2.81
	2/5/02	1.33
	1/17/02	0.956
	1/17/02 (dup)	3.99
	12/20/01	0.713
OUTFALL 005	7/23/02	19.2
	6/25/02	17.9
	5/20/02	98.6
	5/17/02	65.7
	4/16/02	3.8
	3/19/02	9.26
	2/5/02	141.0
	1/17/02	137.0
	12/20/01	31.40
	12/20/01(dup)	35.20
	11/26/01	915
	10/25/01	65.7
	9/19/01	2.86
	8/30/01	2.16
	7/11/01	120
	6/14/01	7.4
	5/31/01	1.43
	4/11/01	4.31
	3/21/01	199
	2/14/01	153

Table 1.0
Summary of Analytical Results:
C-8 in Surface Water DuPont Washington Works Facility Washington, WV

Sample	Date	C-8 (ug/l)
OUTLET 007	7/23/02	0.597
	6/25/02	0.284
	5/20/02	0.490
	4/16/02	0.567
	3/19/02	0.483
	2/5/02	0.320
	2/5/02(dup)	0.339
	1/17/02	0.871
	12/20/01	1.99
OUTLET 105	7/23/02	34.7
	6/25/02	3.86
	5/20/02	6.27
	4/16/02	15.9
	3/19/02	13.2
	2/5/02	14.6
	1/17/02	7.53
	12/20/01	9.78

Note: Analytical method changed as of November 2001 (see Section 2.0 for details).

Table 2.0
Summary of Analytical Results:
C-8 in Surface Water
Local Landfill
Washington, WV

Sample	Date	C-8 (ug/l)
OUTFALL 004 (New)	7/1/02	11.2
	6/13/02	9.29
	5/21/02	No-flow conditions
	4/29/02	14.5
	3/26/02	14.6
OUTFALL 004 (Old)	7/1/02	11.6
	6/13/02	10.0
	5/21/02	No-flow conditions
	4/29/02	15
	3/26/02	1.54
	2/20/02	10.9
	1/24/02	11.4
	12/13/01	No-flow conditions
	9/27/2000	4.73
	12/10/1999	7.1
	6/3/1999	3.06
	6/2/1998	12
	5/29/1997	13
	4/2/1996	13
	2/16/1994	11
OUTFALL 005 (New)	7/1/02	No-flow conditions
	6/13/02	No-flow conditions
	5/21/02	No-flow conditions
	4/29/02	34.3
	3/26/02	16.0
OUTFALL 005 (Old)/SS1	7/1/02	32.1
	6/13/02	27.3
	5/21/02	No-flow conditions
	4/29/02	40.9
	3/26/02	39.0
	2/20/02	46.0
	1/11/02	51.4
	12/13/01	No-flow conditions
	9/27/2000	13.3
	12/10/1999	34
	6/3/1999	6.8
	6/2/1998	39
	5/29/1997	41
	4/2/1996	39
	2/16/1994	35
OUTLET 101	7/1/02	63.0
	6/13/02	38.0
	5/21/02	40.0
	4/29/02	48.2
	3/25/02	36.4
	2/20/02	63.10
	1/23/02	81.4
	12/13/01	82.40
	9/14/2000	12
	6/3/1999	15
	6/2/1998	54

Note: Analytical method changed as of November 2001 (see Section 2.0 for details).

000453

Table 3.0
Summary of Analytical Results:
C-8 in Surface Water
Letart Landfill
Letart, WV

Sample	Date	C-8 (ug/l)
002(LEACHATE BASIN)	7/30/02	1410
	6/28/02	Not Analyzed*
	5/30/02	1630
	4/30/02	443
	3/28/02	131
	2/19/02	355
	1/25/02	50.1
	12/14/01	36.1
	11/27/2001	53.2
	7/20/01	159
	7/25/2000	1350
	4/3/2000	1900
	1/14/2000	920
	10/21/1999	3240
003	7/30/02	No-Flow Conditions
	6/28/02	Not Analyzed*
	5/30/02	0.282
	4/30/02	0.0653
	3/28/02	0.198
	2/19/02	No-Flow Conditions
	1/25/02	0.148
	12/14/01	0.390
RT 33 STREAM	5/30/02	1.570
	4/30/02	0.845
	3/28/02	1.26
	2/19/02	3.92
	1/25/02	1.9
	7/20/2001	2.01
	7/31/2000	0.573
	7/20/1999	2.23
	7/23/1997	2
	4/17/1996	1.8
CAP RUNOFF	6/28/02	Not Analyzed*
	5/30/02	371
	4/30/02	279
	3/28/02	Not Sampled
	2/19/02	No-Flow Conditions
	1/25/02	119

Note: Analytical method changed as of November 2001 (see Section 2.0 for details).

* Samples were taken at the respective surface water locations. However, due to an error by the courier, the samples arrived at the lab warm and were not analyzed.

Table 4.0
Summary of Analytical Results:
C-8 in Surface Water
Dry Run Landfill
Lubeck, WV

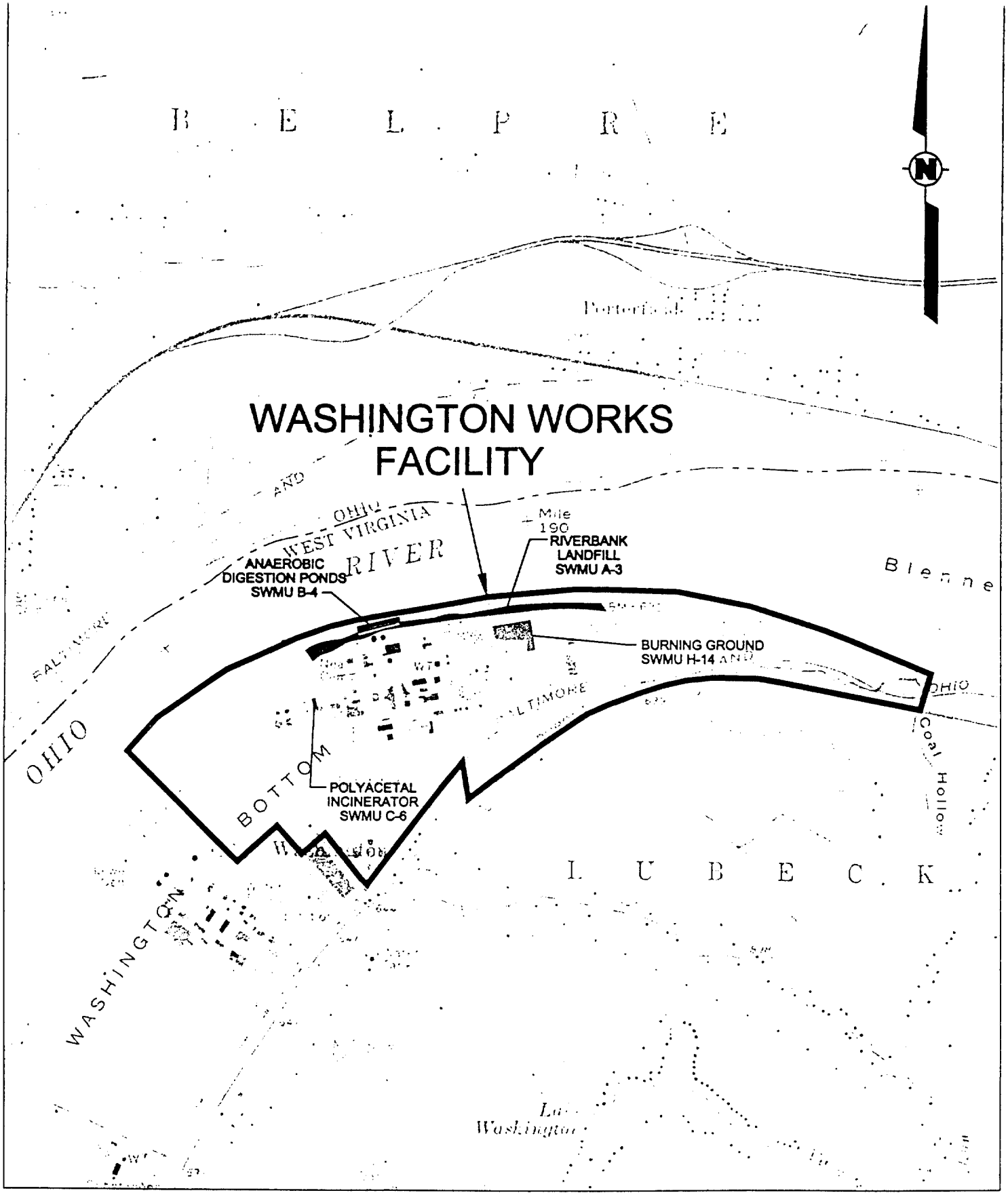
Sample	Date	C-8 (ug/l)
OUTLET 001	7/31/02	No-flow conditions
	7/1/02	No-flow conditions
	6/28/02	No-flow conditions
	5/28/02	30.9
	4/24/02	41
	3/25/02	71.6
	2/25/02	43.9
	1/28/02	41.6
	12/12/01	No-flow conditions
	10/3/2000	31.5
	12/29/1999	66
	5/19/1998	17
	4/9/1996	86
OUTLET 003	7/1/02	25.3
	6/28/02	No-flow conditions
	5/28/02	No-flow conditions
	4/29/02	20.1
	3/26/02	6.77
	2/25/02	No-flow conditions
	1/28/02	No-flow conditions
	12/12/01	No-flow conditions
OUTLET 004	7/1/02	0.70
	6/28/02	No-flow conditions
	5/28/02	No-flow conditions
	4/27/02	No-flow conditions
	3/26/02	158
	2/25/02	No-flow conditions
	1/28/02	No-flow conditions
	12/12/01	No-flow conditions
PROPERTY BOUNDARY	5/28/02	9.41
	4/24/02	6.69
	3/25/02	22.8
	2/25/02	3.81
	1/28/02	11.1
	12/12/01	3.99
	10/3/2000	10.3
	12/29/1999	39
	7/14/1998	0.88
	4/9/1996	9.9
STREAM SAMPLING POINT#1	5/28/02	1.63
	4/24/02	0.932
	3/25/02	1.06
	2/25/02	0.850
	1/28/02	0.893
	12/12/01	1.19
	10/3/2000	0.758
	12/29/1999	0.54
	5/19/1998	1
STREAM SAMPLING POINT#2	5/28/02	51.0
	4/24/02	28.9
	3/25/02	66.6
	2/25/02	24.3
	1/28/02	42.4
	12/12/01	20.5
	10/3/2000	27.6
	12/29/1999	87
	5/19/1998	4.6

Table 4.0
Summary of Analytical Results:
C-8 in Surface Water
Dry Run Landfill
Lubeck, WV

Sample	Date	C-8 (ug/l)
DRLEACHATE	5/28/02	150
	4/24/02	237
	3/25/02	334
	2/25/02	256
	1/28/02	398
	12/12/01	109
	10/3/2000	27.4
	12/29/1999	34
	5/19/1998	56
	7/22/1997	62
POND UNDERDRAIN	5/28/02	67.4
	4/24/02	33.4
	3/25/02	66.7
	2/25/02	37.1
	1/28/02	29.3
	12/12/01	35.4

Note: Analytical method changed as of November 2001 (see Section 2.0 for details).

FIGURES



Source: MAP TAKEN FROM THE LUBECK, WV USGS QUADRANGLE

DUPONT

Corporate Remediation Group

An Alliance between DuPont and URS Diamond

Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

SITE LOCATION MAP

DuPont Washington Works Facility
Washington, West Virginia

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DATE	CHECKED	APPROVED	FIGURE
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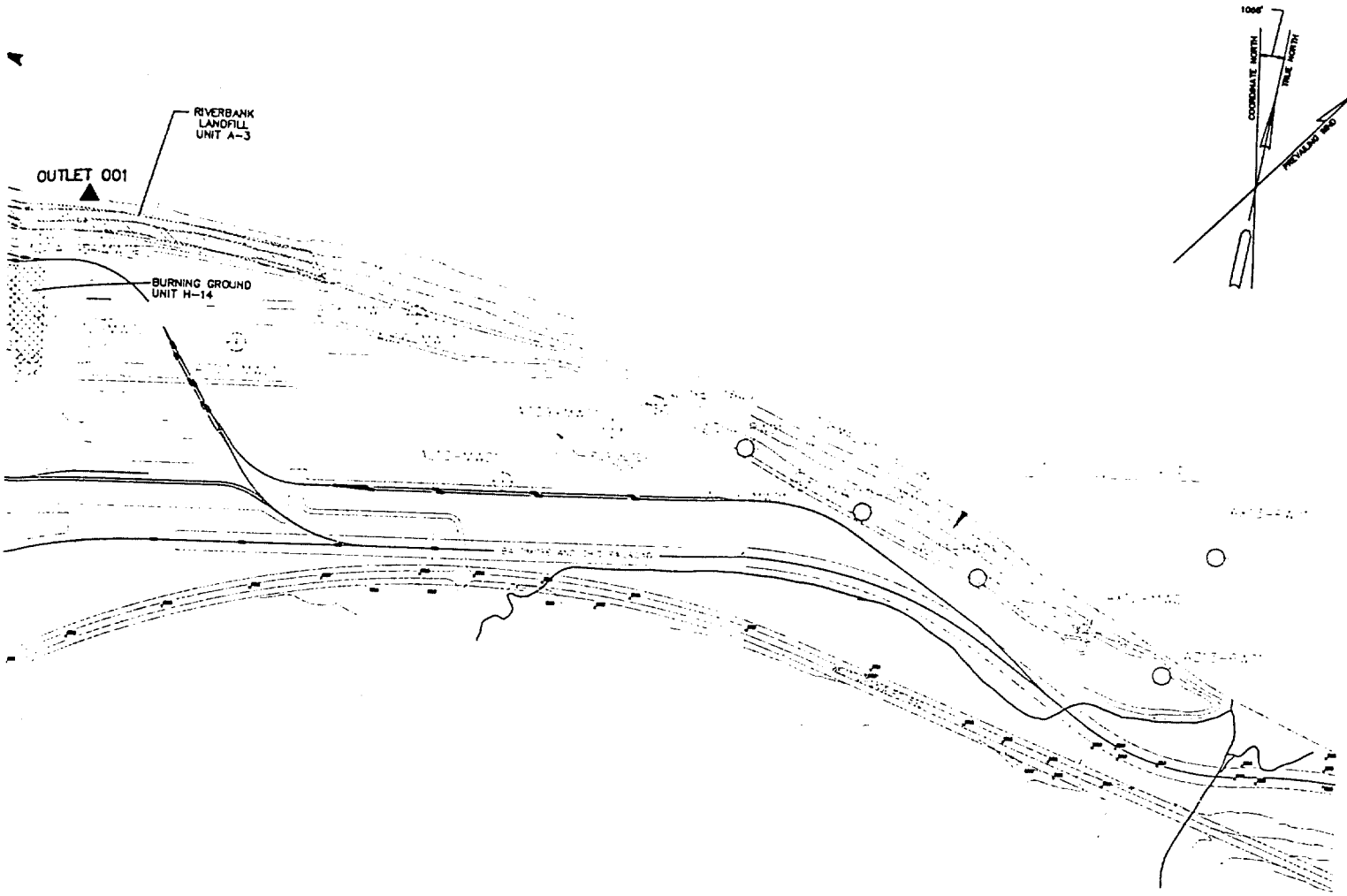

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DESIGNED K. DAVIS	INITIALS
DRAWN D.H. ENGLISH	
CHECKED K. DAVIS	
APPROVED(DESIGN)	
APPROVED(CONSTRUCTION)	

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Wilmington, Delaware 19805

SURFACE WATER SAMPLE LOCATION MAP

DuPont Washington Works Facility
Washington, West Virginia

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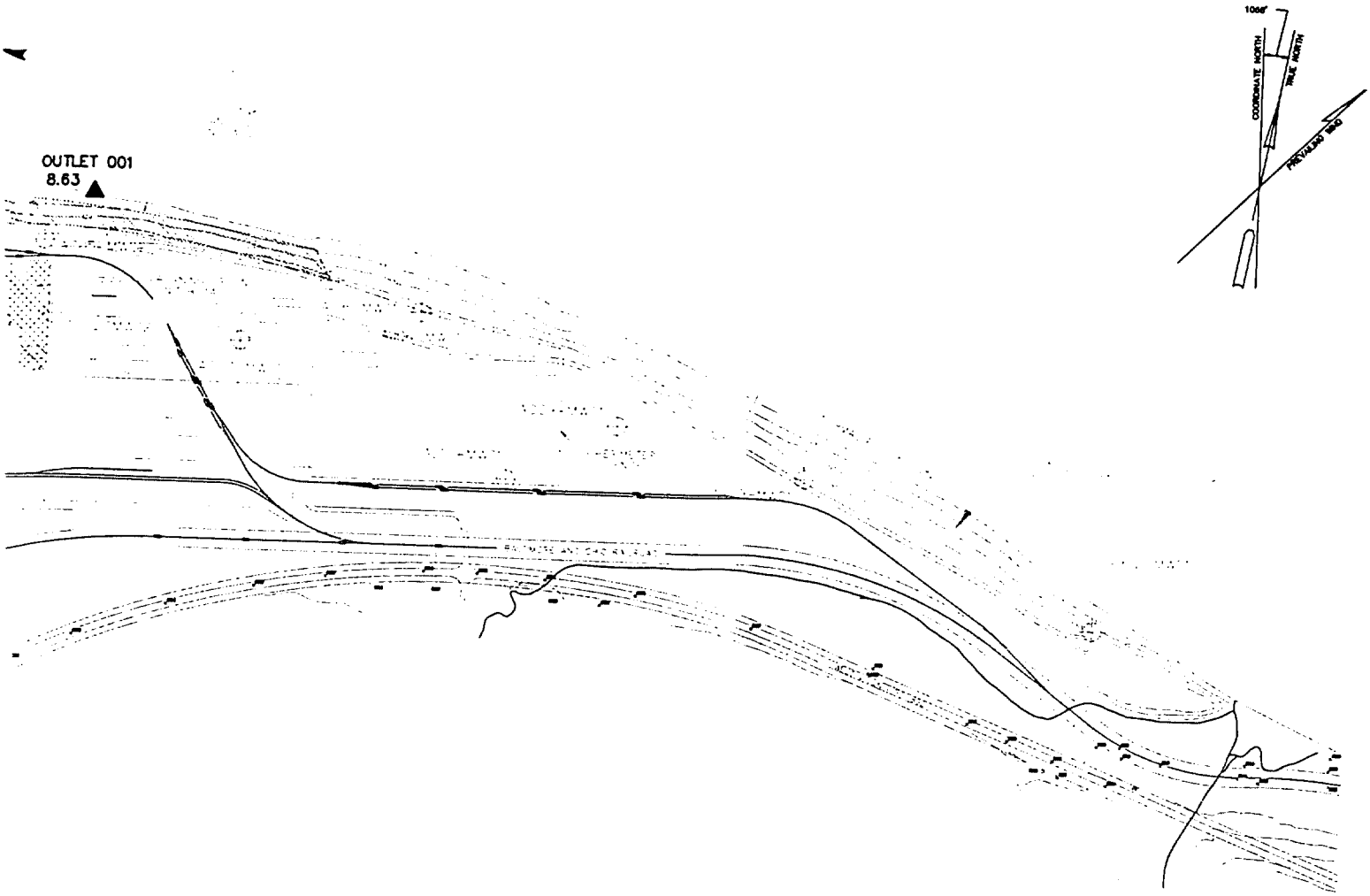
000460



SCALE

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DESIGNED	INITIALS
SJO	
DRAWN	
DEL	
CHECKED	
TDL	
APPROVED(DESIGN)	
ASH	
APPROVED(CONSTRUCTION)	

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Wilmington, Delaware 19805

C-8 IN SURFACE WATER JULY 2002

DuPont Washington Works Facility
Washington, West Virginia

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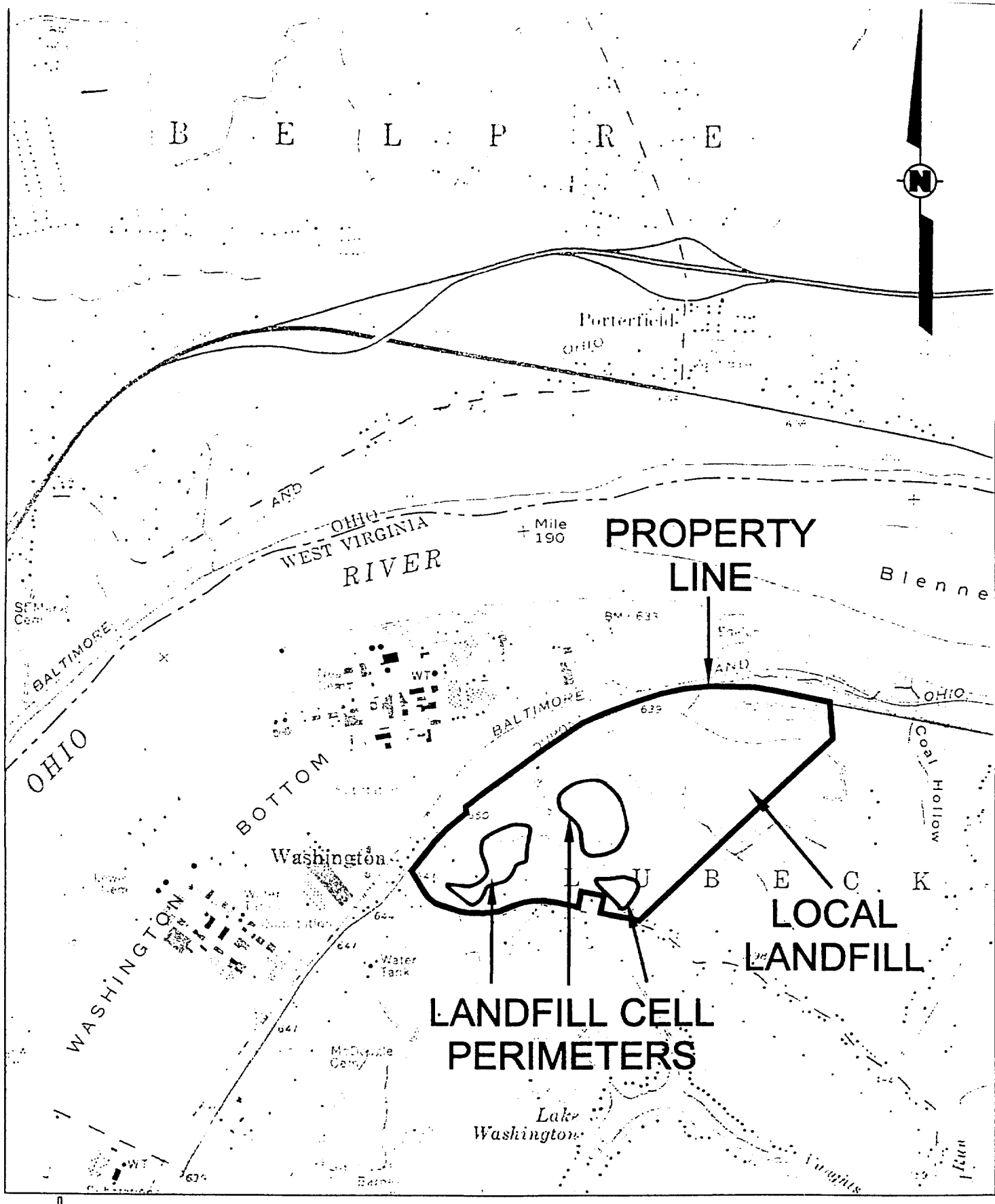

Source: USGS Little Hocking, Ohio – West Virginia Quadrangle

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Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

SITE LOCATION MAP

Local Landfill
Washington, West Virginia

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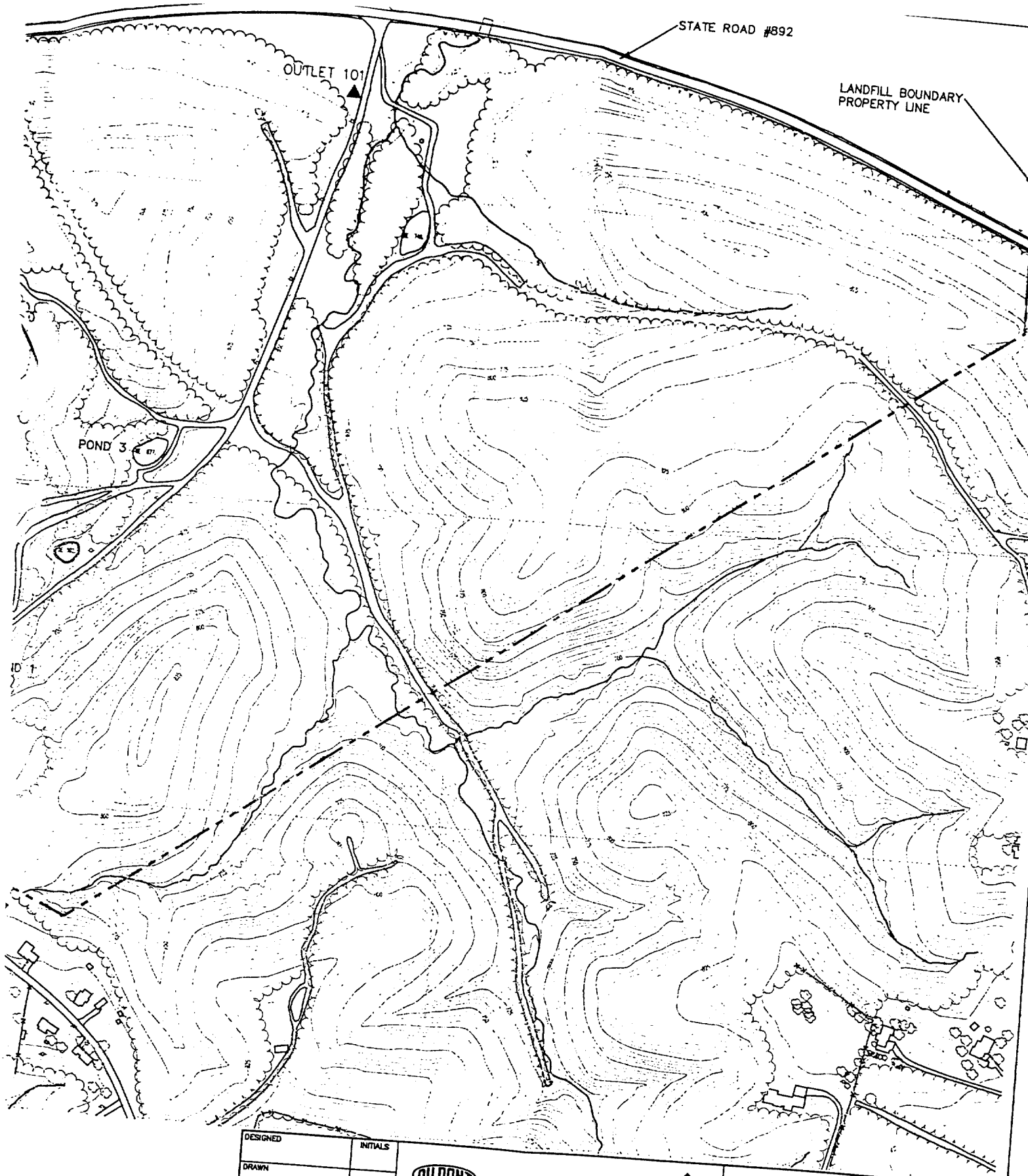

800'

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APPROVED(DESIGN)	
APPROVED(CONSTRUCTION)	

DUPONT

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Barley Mill Plaza, Building 27
Wilmington, Delaware 19805

SURFACE WATER SAMPLE LOCATION MAP

Local Landfill
Washington, West Virginia

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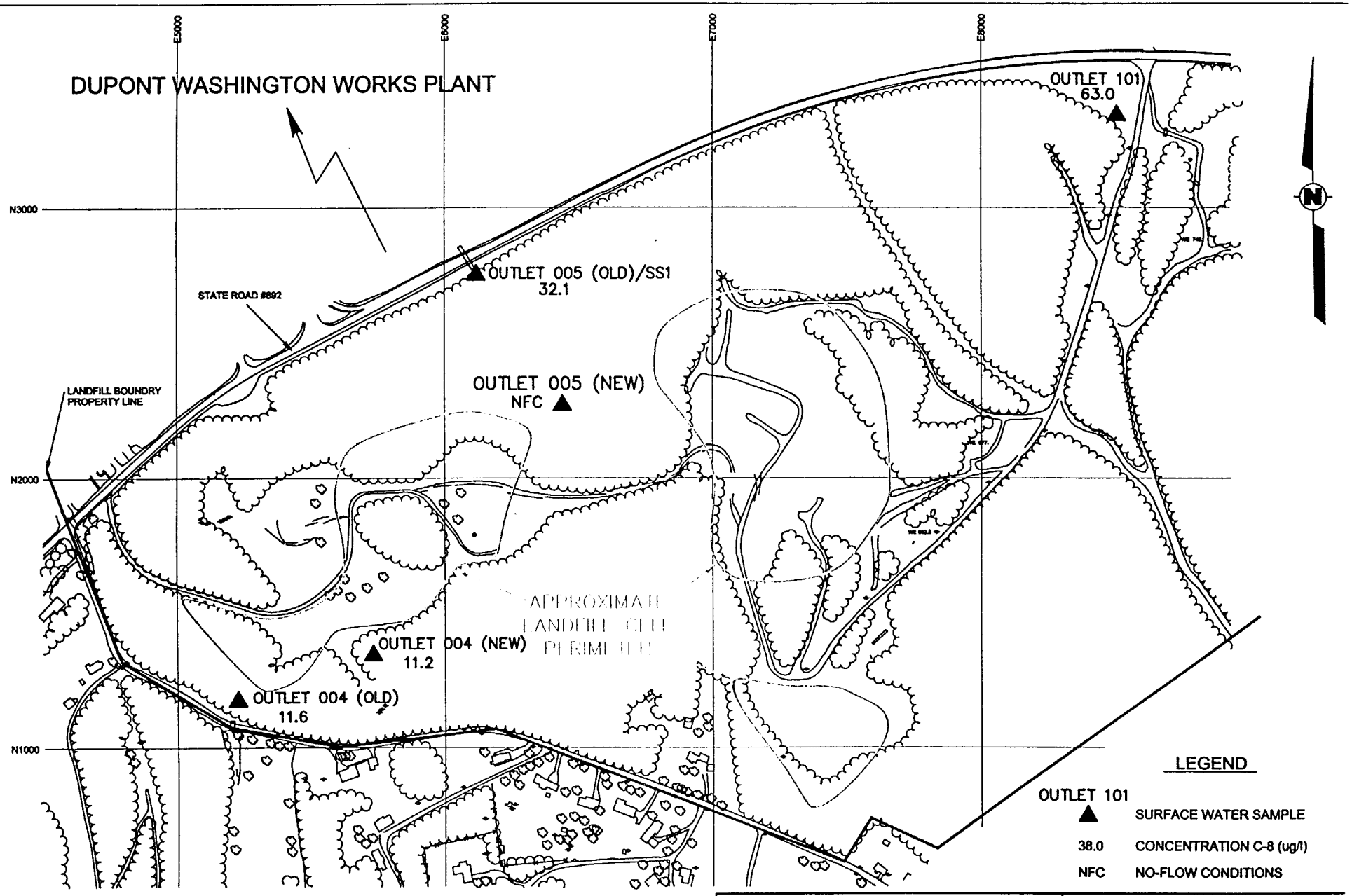

000464

SCALE

500 0 500'

DUPONT

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Barley Mill Plaza, Building 27

C-8 IN SURFACE WATER
JULY 2002

Local Landfill
Washington, WV

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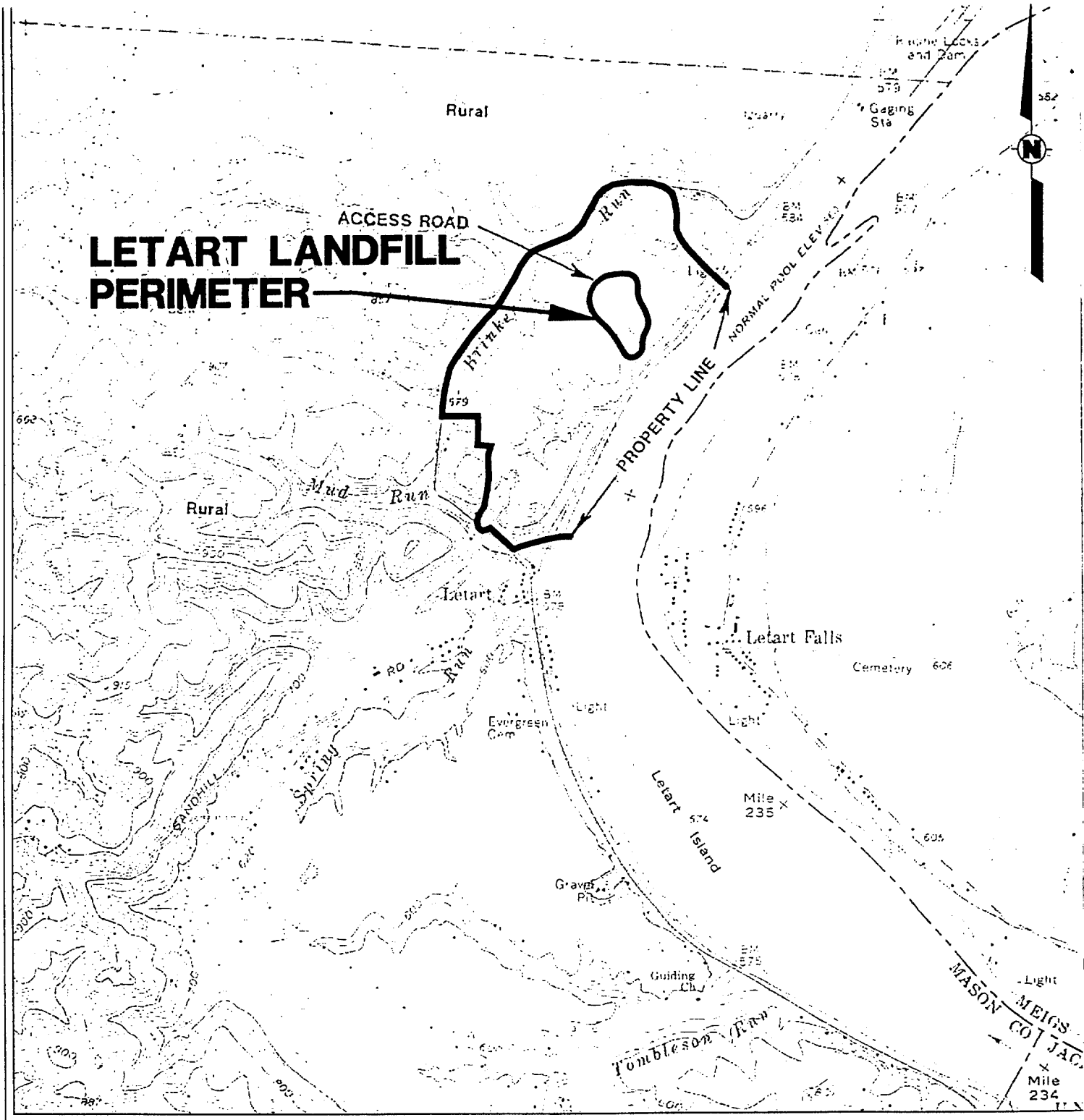
DATE	CHECKED	APPROVED	FIGURE



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SOURCE: NEW HAVEN, WV-OHIO QUADRANGLE 7.5' SERIES

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An Alliance between
DuPont and The W-C Diamond Group

Barley Mill Plaza, Building 27
Wilmington, Delaware 19880-0027

000465

SITE LOCATION MAP

Letart Landfill Site
Letart, WV

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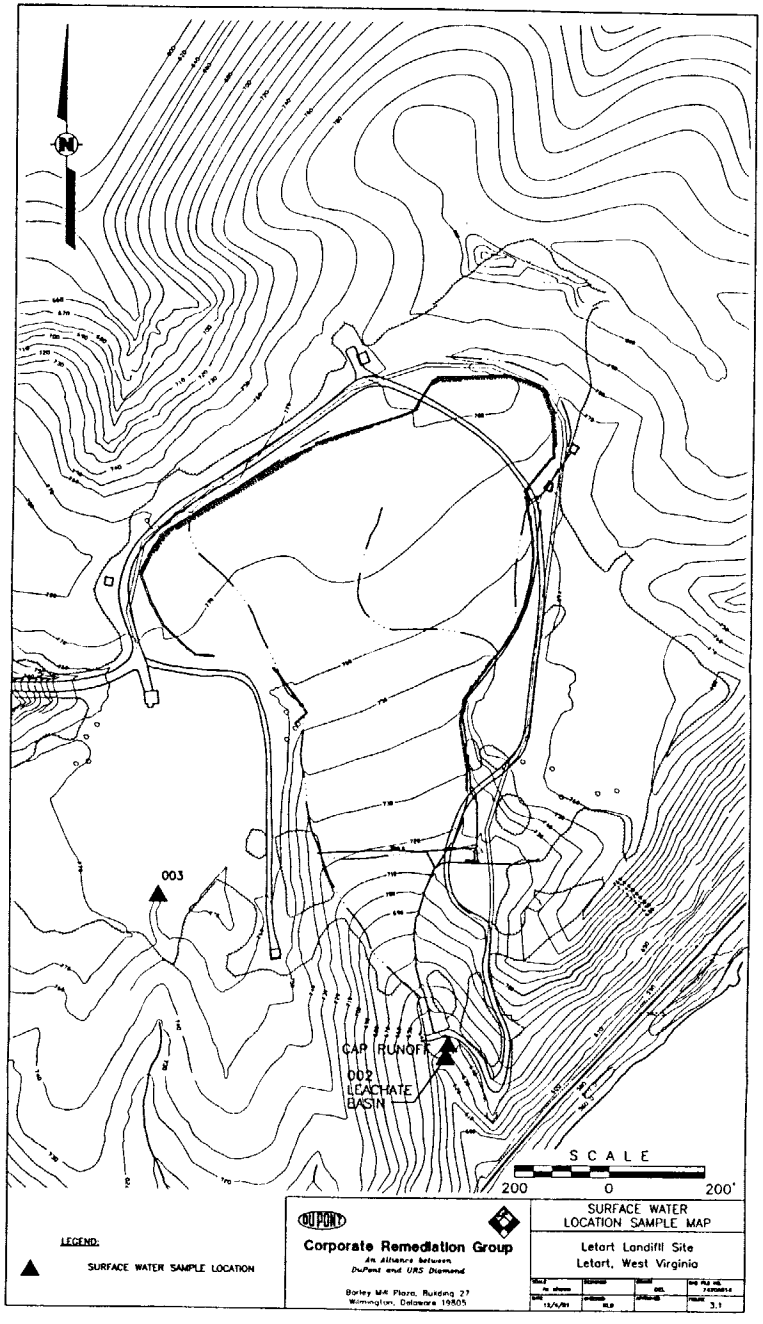
003
CAP RUNOFF
002
LEACHATE
BASIN
SCALE
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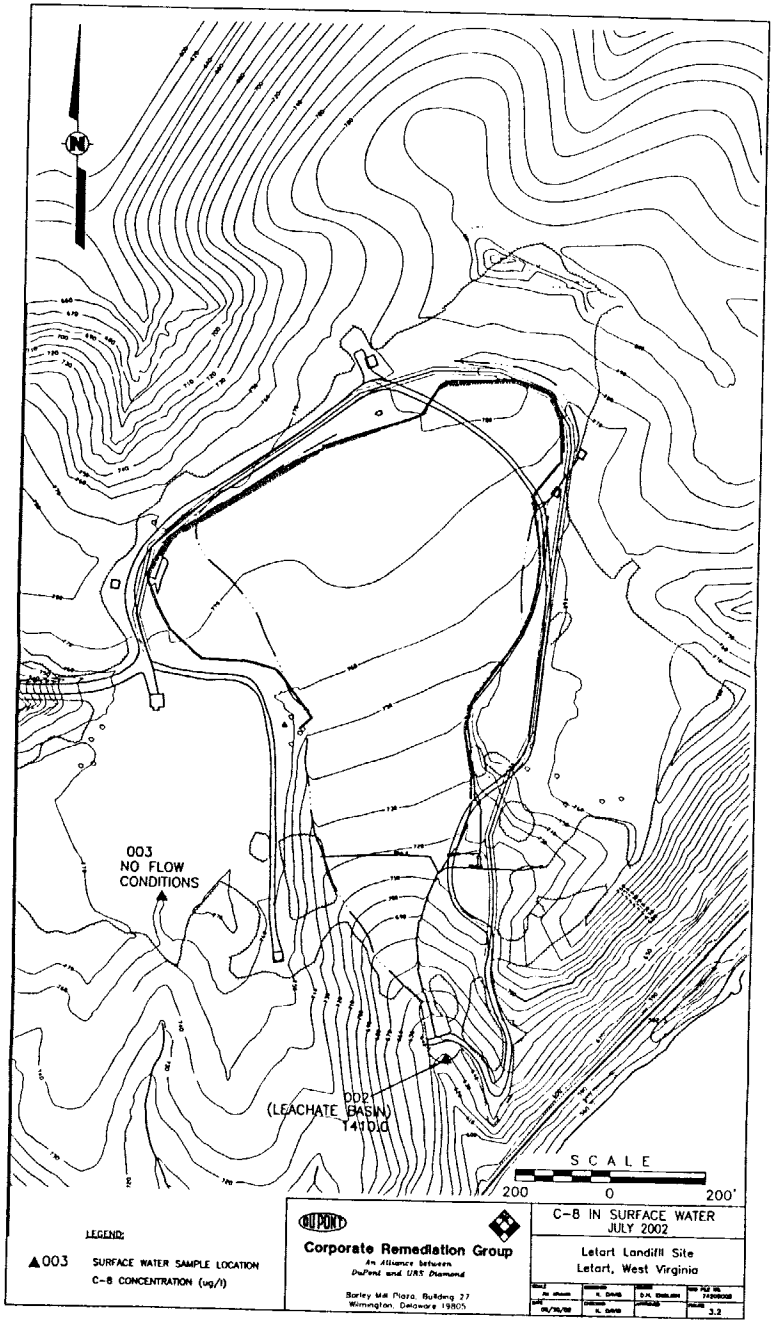
SURFACE WATER SAMPLE LOCATION
DUPONT
Corporate Remediation Group
An Alliance between DuPont and URS Diamond
Barley Mill Plaza, Building 27
Wilmington, Delaware 19805
SURFACE WATER LOCATION SAMPLE MAP
Letart Landfill Site
Letart, West Virginia

000456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NO FLOW
CONDITIONS
DD2
(LEACHATE BASIN)
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200'
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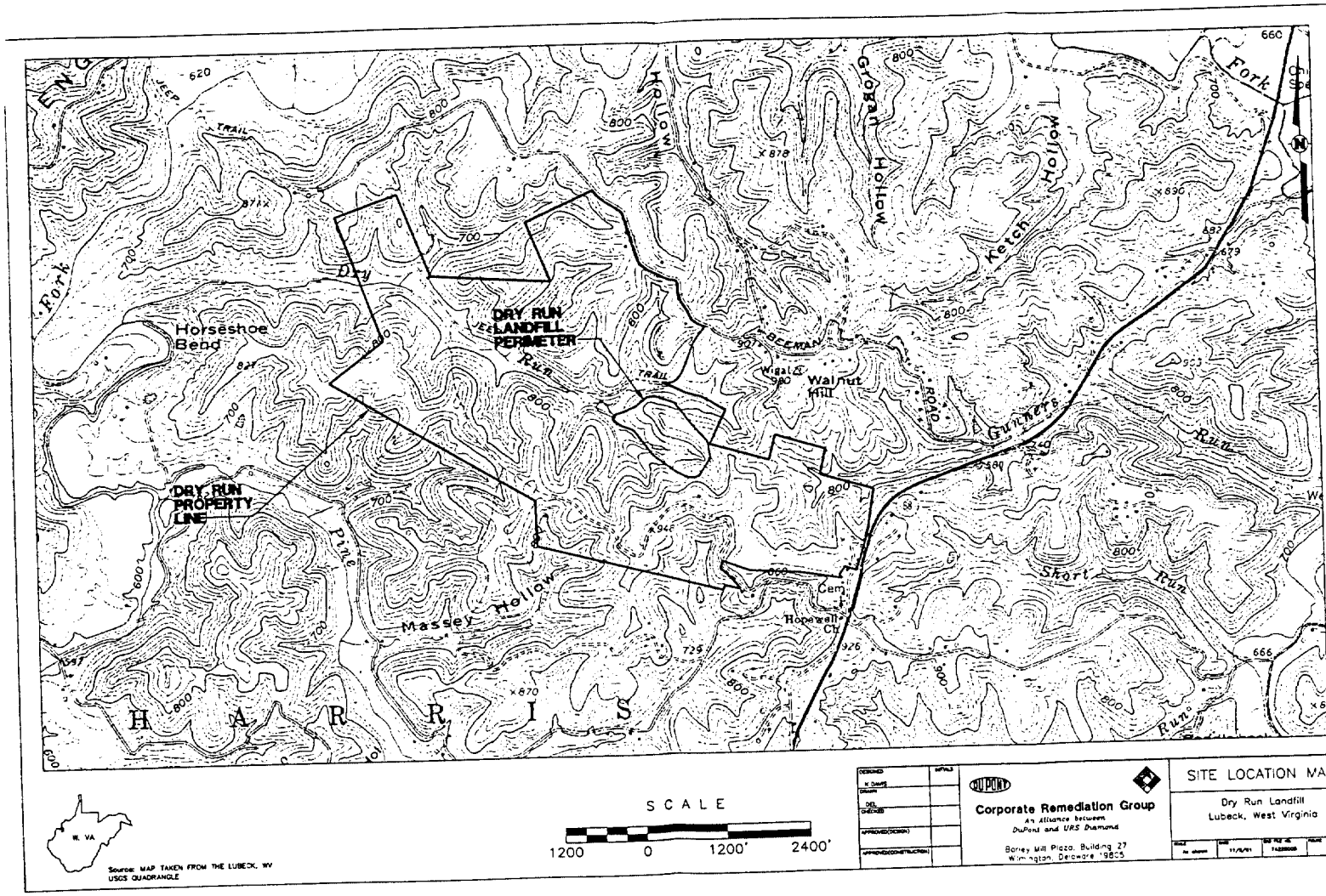
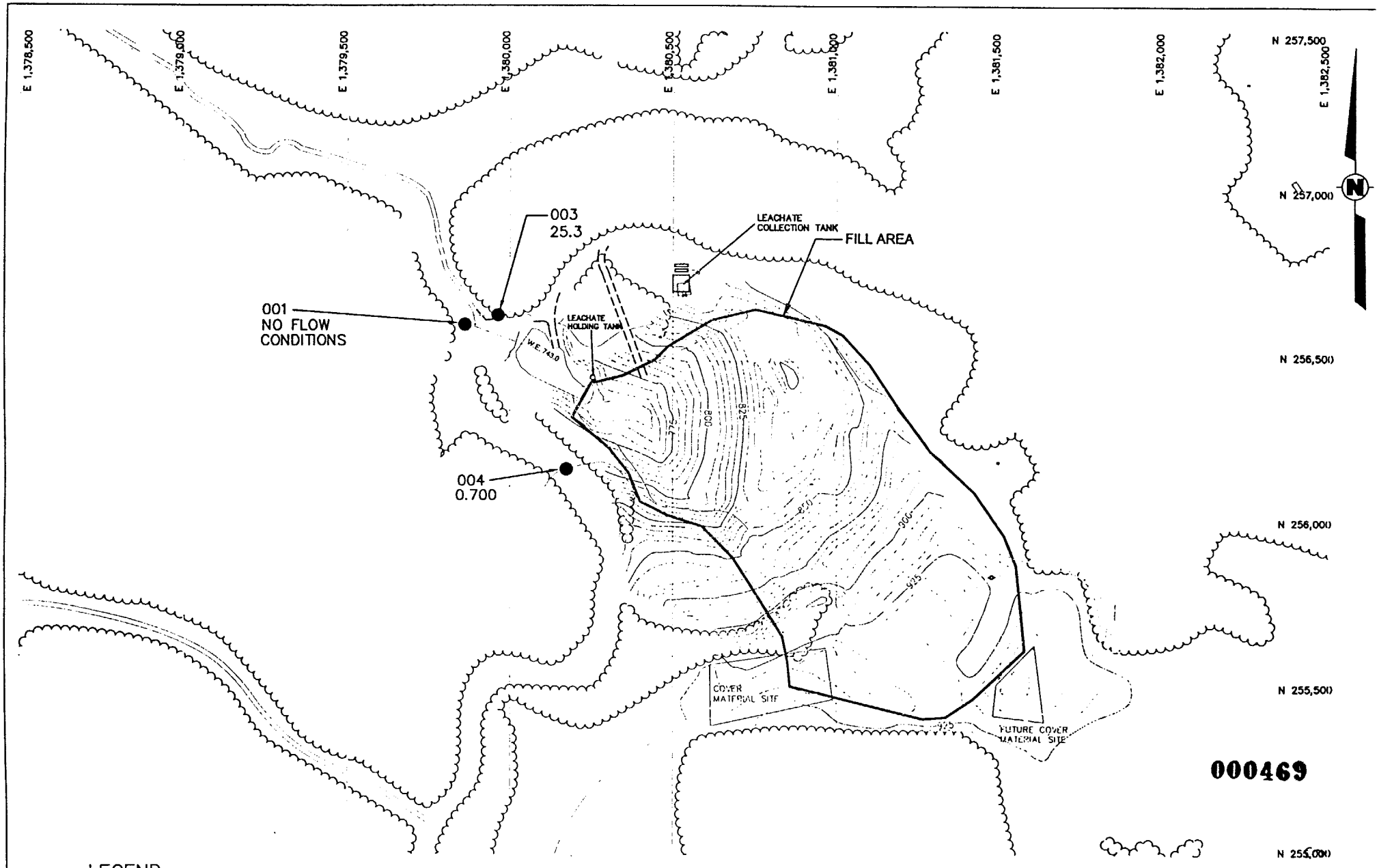
C-8 CONCENTRATION (ug/l)
DUPONT
Corporate Remediation Group
An Alliance between
DuPont and URS Diamond
Barley Mill Plaza, Building 27
Wilmington, Delaware 19805
C-8 IN SURFACE WATER
JULY 2002
Letart Landfill Site
Letart, West Virginia
3.2

000457


DRY RUN LANDFILL PERIMETER
DRY RUN PROPERTY LINE
Horseshoe Bend
Dry Run
Fork
Walnut Hill
Gunners Run
Short Run
Massey Hollow
Pine
Hopewell Ch
Cem
Grouse Hollow
Ketch Hollow
HARRIS
JEEP TRAIL
ROAD
W. VA
Source: MAP TAKEN FROM THE LUBECK, WV USGS QUADRANGLE
SCALE
1200 0 1200' 2400'
DESIGNED
DRAWN
CHECKED
APPROVED(DESIGN)
APPROVED(CONSTRUCTION)
INITIALS
K DAVIS
DEL
DUPONT
Corporate Remediation Group
An Alliance between DuPont and URS Diamond
Barley Mill Plaza, Building 27
Wilmington, Delaware 19805
SITE LOCATION MA
Dry Run Landfill
Lubeck, West Virginia



LEGEND

● SURFACE WATER SAMPLE LOCATION
66.6 CONCENTRATION C-8 (ug/l)

SCALE

400 0 400'

DUPONT

Corporate Remediation Group

An Alliance between DuPont and URS Diamond

Bailey Mill Plaza, Building 27

C-8 IN SURFACE WATER
JULY 2002

Dry Run Landfill
DuPont Washington Works
Lubeck, West Virginia

SCALE	DESIGNED	DRAWN	CAD FILE NO.
As shown	K. DAVIS	D.H. ENGLISH	7422A019

APPENDICES

APPENDIX A

LABORATORY ANALYTICAL DATA REPORTS

WASHINGTON WORKS FACILITY

Exygen™ RESEARCH
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Report

Analytical Results Washington Works C8 Sampling 7/02

DuPont Sample Identification	APFO (ng/L)
WWK-Z-Outfall-001	8630
WWK-Z-Outfall-002	2290
WWK-Z-Outfall-003	291
WWK-Z-Outfall-005	19200
WWK-Z-Outfall-007	597
WWK-Z-Outfall-105	34700
WWK-Z-Outfall-007-2	544
WWK-K-EQBLK-1	ND

Limit of Detection (LOD) for the procedure is appoximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less tha 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000472

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APPENDIX B

CHAIN-OF-CUSTODY RECORDS

WASHINGTON WORKS FACILITY

Exygen RESEARCH

CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

Exygen Research Sample Receiving • 3117 Research Drive • State College, PA 16801, USA
T: 814.231.8032 • F: 814.231.1580 • exygenresearch.com

Page ____ of ____

PROJECT INFORMATION

Client (name & address): Albert AP Services - Dupont / BAP Bldg 23 [illegible] Rt 141 / Wilmington, DE 19805

Phone: 302-892-1698

Fax:

Sampler: [signature]

Project Manager (Name & E-mail Address): Mike Huson / Michael.D.Huson@USA.dupont.com

Project Name: C8 Sampling 7/02

P.O. #: LBEO 64506 Release No. EX062

Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	FC-143	Lot # 1214012				pH Bottle 1	pH Bottle 2
L33506-1	WWK-2-outfall-001	7-23-02	1310	X		2	water	826025 / 826026	X	X				8.3	8.3
L33506-2	WWK-2-outfall-002	7-23-02	1145	X		2	↓	826031 / 826028	X	X				8.1	8.1
L33506-3	WWK-2-outfall-003	7-23-02	1157	X		2	↓	826029 / 826032	X	X				8.0	8.0
L33506-4	WWK-2-outfall-004	7-23-02	1123	X		2	↓	826030 / 826027	X	X				7.9	7.9
L33506-5	WWK-2-outfall-005	7-23-02	1135	X		2	↓	825821 / 825822	X	X				7.9	7.9
L33506-6	WWK-2-outfall-105	7-23-02	1325	X		2	↓	825824 / 825825	X	X				7.9	7.9
L33506-7	WWK-2-outfall-007-2	7-23-02	1135	X		2	↓	825830 / 825829	X	X				8.0	8.0
L33506-8	WWK-K-BLANK-1	7-23-02	1325	X		2	↓	825828 / 825823	X	X				8.5	8.5

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
[signature]	7/10/02	0900
[signature]	7-23-02	1400

Cooler ID # C[illegible] Cooler Temp. (°C) 0.8

Received by	Date	Time
[signature]	7-23-02	0736
[signature]	7/24/02	2113

LAB USE ONLY

OTHER INFORMATION

PROJECT REQUIREMENTS

Results Deadline:

Laboratory Report Options:
- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other ____

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APPENDIX C

LABORATORY ANALYTICAL DATA REPORTS

LOCAL LANDFILL

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Analytical Results Local Landfill C8 Sampling 7/02

DuPont Sample Identification	APFO (ng/L)
LCL-K-EQBLK-1	238
LCL-Z-Outfall 004 Old West Stream	11600
LCL-Z-Outfall 004 New West Stream	11200
LCL-Z-Outfall 005 Old Central Stream	32100
LCL-Z-Outlet 101	63000

Limit of Detection (LOD) for the procedure is appoximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less tha 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

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APPENDIX D

CHAIN-OF-CUSTODY RECORDS

LOCAL LANDFILL

Exygen RESEARCH

CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

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PROJECT INFORMATION

Client (name & address): ADQM APS Services - Dupont, BMP Bldg 27 Lab Rk Rt. 141, Wilmington, DE 19805

Phone: (302) - 892 - K698

Fax:

Sampler: Barbara J [signature]

Project Manager (Name & E-mail Address): Mike Arcon, Michael.D.Arcon@USA.dupont.com

Project Name: C8 Sampling S/Cr

P.O. #: LBIC-64566 Release NO Exxxx

Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	FC-143	lot # 12141R				Pit Bottle 1	Pit Bottle 2
L33437-1	LCL-K-EQBLK-1	7-1-02	0900			2	water	825993 / 825994	X	X				8.5	8.5

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
Barbara J [signature]	7-1-02	1400

Cooler ID # [illegible] Cooler Temp. (°C) [illegible]

Received by	Date	Time
B J [signature]	7-1-02	0730
[signature]	[illegible]	[illegible]

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline:

Laboratory Report Options:

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

OTHER INFORMATION

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CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

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PROJECT INFORMATION

Client (name & address):
ADam AP Services - Dynat
BMP Bldg 2nd Loc. Rt 141
Wilmington, DE 19805
Phone: (302) - 892 - 1698
Fax:
Sampler: Barbara J Adams

Project Manager (Name & E-mail Address):
Mike Avcin
Michael.D.Avcin@us.dynat.com
Project Name:
LB Sampling S/a
P.O. #: LBIO-6456b Exlcon No. EX046
Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments
1634752	LCL-2-outfall 004 old (west stream)	7/1/2010	0825			2	water	825992 / 826006

LAB USE ONLY

ANALYSES REQUESTED

FC-143	Lot # 12 HOUR	10H Bottle 1	10H Bottle 2
X	X	7.5	7.5

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CHAIN OF CUSTODY

Relinquished by	Date	Time
B. J Adams	6/30/10	1400

Cooler ID # CR0000160 Cooler Temp. (°C) 0.7

Received by	Date	Time
	7-1-10	0730
	N/A	

LAB USE ONLY

OTHER INFORMATION

PROJECT REQUIREMENTS

Results Deadline:

Laboratory Report Options:
- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

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PROJECT INFORMATION

Client (name & address):
ADAM APServices – Dupont
Blasl Bldg 27 Lanc. Pk Rt 141
Wilmington, DE 19805
Phone: (302) -892-1698
Fax:
Sampler:

Project Manager (Name & E-mail Address):
Mike Aucoin
Michael.D.Aucoin@USA.dupont.com
Project Name:
C8 Sampling Site
P.O. #: LBIO-64506 Release No. EY046
Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	PC-143	lot# 12140112				pH Grab 1	pH Grab 2
L-33429-1	LCL-2-outfall 004 New (West Stream)	7/1/02	0840			2	water	825521 / 825522	X	X				7.4	7.4

LAB USE ONLY

0011

CHAIN OF CUSTODY

Relinquished by	Date	Time
	07/14/02	
	7-1-02	1400

Cooler ID # CL0000060 Cooler Temp. (°C) 0.2

Received by	Date	Time
	7-1-02	1530

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline:

Laboratory Report Options:
- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

OTHER INFORMATION

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PROJECT INFORMATION

Client (name & address): Adam APS Services-Dupont, BMP Bldg 27 Lanc. Pk Rt 141. Wilmington, DE 19805

Phone: (302)-892-1698

Fax:

Sampler: Barbara J Nelson

Project Manager (Name & E-mail Address): Mike Aucan, Michael.P.Aucan@USA.dupont.com

Project Name: C8 Sampling Site

P.O. #: LBIO-64566 Release No. EX046

Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	FC-143	lot# 1214012				pH Bottle 1	pH Bottle 2
L33437-4	LCL-2-Outfall as old Central Stream	7/1/02	0850			2	water	825995 / 825996	X	X				8.1	8.1

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
	05/14/02	1000
BJ Nelson	7-1-02	1400

Cooler ID # C1000060 Cooler Temp. (°C) 0.7

Received by	Date	Time
BJ Nelson	7-1-02	0830
[illegible]	7/2/02	[illegible]

LAB USE ONLY

OTHER INFORMATION

PROJECT REQUIREMENTS

Results Deadline:

Laboratory Report Options:

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other ______

0012

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PROJECT INFORMATION

Client (name & address): Adam APS Services-Dupont, BMP Bldg 27 Lanc. Pk Rt 141, Wilmington, DE 19805

Phone: (302)-892-1698

Fax:

Sampler: B.J. Noom

Project Manager (Name & E-mail Address): Mike Aucoin, Michael.D.Aucoin@USA.dupont.com

Project Name: C8 Sampling 5/02

P.O. #: LBIO-64506 Release No. EX046

Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	FC-143	lot # 121402				pH Bottle 1	pH Bottle 2
L33473-5	LCL-R-Outlet 101	7-1-02	0900	X		2	water	825523/825524	X	X				8.7	8.2

LAB USE ONLY

CHAIN OF CUSTODY

Relinquished by	Date	Time
	5/14/02	1000
B.J. Noom	7-1-02	1400

Cooler ID # Cl00000060 Cooler Temp. (°C) 0.5

Received by	Date	Time
Barbara J. Noom	7-1-02	1430

LAB USE ONLY

OTHER INFORMATION

PROJECT REQUIREMENTS

Results Deadline:

Laboratory Report Options:

- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

0013

APPENDIX E

LABORATORY ANALYTICAL DATA REPORTS

LETART LANDFILL

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Report

Analytical Results LeTart Landfill C8 Sampling 7/02

DuPont Sample Identification	APFO (ng/L)
LTL-Z-Outlet 002	1410000
LTL-K-EQBLK-1	ND

Limit of Detection (LOD) for the procedure is appoximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less tha 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

000484

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APPENDIX F

CHAIN-OF-CUSTODY RECORDS

LETART LANDFILL

Exygen RESEARCH

CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

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PROJECT INFORMATION

Client (name & address): ADQM AP [illegible] - Dupont
[illegible] Rt 141
[illegible], DE 19805
Phone: 302-[illegible]-1698
Fax:
Sampler: [signature]

Project Manager (Name & E-mail Address): Mike [illegible]
Michael A. [illegible]@USA.dupont.com
Project Name: C8 Sampling 7/31
P.O. #: [illegible]
Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	[illegible]	[illegible]				PH bottle 1	PH bottle 2
L33531-1	LTL-2 outlet [illegible]	7-31-02	1215	X		2	Water	825828 / 825829	✓	✓				8.1	8.1
	LTL-2 outlet 003	No Sample [illegible]				2		825930 / 825831	✓	✓				—	—
	LTL-2-					2		825932 / 825729	✓	✓				—	—
L33531-2	LTL-K-[illegible]	7-31-02	1215			2		[illegible] / 825832	✓	✓				8.9	8.9

LAB USE ONLY

CHAIN OF CUSTODY

Cooler ID # [illegible] Cooler Temp. (°C) 0.2

Relinquished by	Date	Time
[signature]	7/30/02	0900
[signature]	~~7-31-02~~ 8-1-02	1400

Received by	Date	Time
[signature]	7-31-02	0900
[signature]	8/2/02	1220

LAB USE ONLY

OTHER INFORMATION

PROJECT REQUIREMENTS

Results Deadline: ____

Laboratory Report Options:
- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other ____

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APPENDIX G

LABORATORY ANALYTICAL DATA REPORTS

DRY RUN LANDFILL

Exygen™ RESEARCH
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Report

Analytical Results Dry Run Landfill C8 Sampling 7/02

DuPont Sample Identification	APFO (ng/L)
DRL-Z-Outlet 003	25300
DRL-Z-Outlet 004	700

Limit of Detection (LOD) for the procedure is appoximately 10 ng/L

Limit of Quantitation (LOQ) for the procedure is 50 ng/L

ND - Compound not detected

NQ - Compound detected at a level between the LOD and LOQ. Result is not quantifiable.

ND < LOD < NQ < LOQ

Results are calculated according to the following criteria

If the sample and laboratory duplicate are greater than 250 ng/L, and the relative percent difference (RPD) is less than 20, the average value is reported. If the RPD is greater than 20, the higher value is reported.

If the sample and laboratory duplicate are less tha 250 ng/L, and the absolute difference is less than 50, the average value is reported. If the absolute difference is greater than 50, the higher value is reported.

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APPENDIX H

CHAIN-OF-CUSTODY RECORDS

DRY RUN LANDFILL

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Page ____ of ____

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

PROJECT INFORMATION

Client (name & address):
ADM Ag Services - Agent
Bldg 27 Lane PK Rd 141
Wilmington, DE 19805
Phone: 302-892-1698
Fax:
Sampler: Barbara J Adam

Project Manager (Name & E-mail Address):
M W Adam
Michael.D.Adam@ADM.Agent.com
Project Name:
CS Sampling 6/02
P.O. #: 4820-64506 Release No. EX053
Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

ANALYSES REQUESTED

FC-143
Lot # 1214012

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	FC-143	Lot # 1214012					
E35438-1	DRL-2-outlet 003	7/1/2002	0925	X		2	water	826103/825779	X	X				7.3	7.8

LAB USE ONLY

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CHAIN OF CUSTODY

Relinquished by	Date	Time
	6/6/2002	1400
Barbara J Adam	7-1-02	1400

Cooler ID # Crawford 5 Cooler Temp. (°C) 0.5

Received by	Date	Time
S D Adam	7-1-02	0730
	7/2/02	

LAB USE ONLY

PROJECT REQUIREMENTS

Results Deadline:

Laboratory Report Options:
- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other

OTHER INFORMATION

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CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

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Page ____ of ____

PROJECT INFORMATION

Client (name & address): ADQM APServices - Dupont
BMP Bldg 27 Lane. PK RT 141
Wilmington, DE 19805

Phone: 302-892-1698

Fax:

Sampler: B.J. Nelson

Project Manager (Name & E-mail Address): Mike Aucoin
Michael.DeAucoin@USA.dupont.com

Project Name: C-8 Sampling 6/02

P.O. #: LBIO-64506 Release No. EX 053

Quotation #:

Please fill out this form *completely* to ensure correct analysis and proper handling of your samples.

SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments	ANALYSES REQUESTED: FC-143	Lot # 1214012				184 [illegible] 1	[illegible]
[illegible]	DRL-Z-Outlet 004	7/1/02	1000			2	water	826101/825780	X	X				8.1	8.1

LAB USE ONLY

CHAIN OF CUSTODY

Cooler ID # CR000075 Cooler Temp. (°C) 0.5

Relinquished by	Date	Time
[illegible]	6/5/2002	1400
Barbara J Nelson	7-1-02	1400

Received by	Date	Time
B.J. Nelson	7-1-02	0930
[illegible]	7/2/02	[illegible]

LAB USE ONLY

OTHER INFORMATION

PROJECT REQUIREMENTS

Results Deadline:

Laboratory Report Options:
- ☐ Sample results only
- ☐ Add case narrative
- ☐ Add quality control summary
- ☐ Add calibration summary
- ☐ Add raw data
- ☐ Other ______

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