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

Date: November 2002

Project No.: D6WW7423.01  
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CORPORATE REMEDIATION GROUP  
*An Alliance between*  
*DuPont and URS Diamond*

Barley Mill Plaza, Building 27  
Wilmington, Delaware 19805

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## 10 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 monthly (September 2002) C-8 surface water sampling that was performed in September 2002 at the Washington Works facility, and the Local, Dry Run, and Letart 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<sub>2</sub>MHill 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<sub>2</sub>MHill 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.
- a** 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 September 24<sup>th</sup>, 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 the 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 September. Laboratory analytical data reports and the Chain-of-Custody records are included in Appendix A and B respectively.

## 4.0 LOCAL LANDFILL

Figure 2.0 shows the location of the Local Landfill. On September 30<sup>th</sup>, 2002, Outfall 101 was sampled for C-8. Outfalls 004(Old), 004(New), and 005(Old)/SS1 005(New) were not sampled due to no-flow conditions. Sampling of these five outfalls is required by the Consent Order and the WV **NPDES** permit No. WV0076538. These five outfalls collect stormwater runoff and process water. The locations of the outfalls are shown on Figure 2.1.

Table 2.0 presents the C-8 analytical results for the September surface water samples. The table includes the historic data available for each location sampled. The data is presented with the most recent data first. Figure 2.2 provides the C-8 concentration map for the outfalls. Laboratory analytical data reports and Chain-of-Custody records are provided in Appendices C and D, respectively.

## 5.0 LETART LANDFILL

Figure 3.0 presents the Letart Landfill location map. On September 27<sup>th</sup>, 2002, sampling was conducted at Outfall 002, Outfall 003, Stormwater Runoff, and the Rt. 33 stream. Sampling of Outfalls 002 and 003 (both containing stormwater runoff) is required by the Consent Order and WV NPDES permit No. WV0076066. Two non-required surface water sampling points, Stormwater Runoff and Rt. 33 stream, were sampled because flowing conditions were observed. (Stormwater Runoff is named "Stormwater Runoff Around Pipe" on the analytical data report and the chain-of-custody). A third non-required sampling location, Cap Runoff, was not sampled during this event. The locations of the outfall samples are shown on Figure 3.1. The location of the Rt. 33 stream sample is near the property boundary to the west and is not shown in this figure.

The C-8 results for the September surface water samples are presented in Table 3.0. For each sampling point listed in the table, historical data is summarized with the most recent results listed first. Figure 3.2 presents a C-8 concentration map for the outfalls for September. Appendices E and F present the laboratory analytical data reports and the Chain-of-Custody records, respectively.

## 6.0 DRY RUN LANDFILL

Figure 4.0 shows the location of the **Dry** Run Landfill. On September 30<sup>th</sup> 2002, sampling for C-8 was attempted but Outfalls 001, 003, and 004 were not sampled due to no-flow conditions. (Outfall 002 is a required outfall sampling location as stated in WV NPDES permit No. WV0076244. However, it was a temporary relocation of outfall 001 and no longer exists). Outfall 001 collects stormwater and leachate. Outfalls 003 and 004 collect stormwater only. Non-required sampling locations including Property Boundary, Stream Sampling Point #1, Stream Sampling Point #2, DR Leachate, and Pond Underdrain, were not sampled. The locations of the surface water sampling points and monitoring wells are shown on Figure 4.1.

The data in Table 4.0 includes historical C-8 data available for each surface water location. A C-8 concentration map for this sampling event, Figure 4.2, is provided that shows the no-flow conditions at the outlets. In addition, there are no laboratory analytical data reports or Chain-of-Custody records for this sampling event because no surface water was sampled.

## 7.0 REFERENCES

- DuPont. 2002a. *One-Mile Radius Survey and C-8 Sampling Report and Ohio River Public Water Supply Sampling, DuPont Washington Works (December 2001-February 2002)* January 2002. DuPont Corporate Remediation Group and URS Diamond.
- DuPont. 2002b. *Two-Mile Radius Survey and C-8 Sampling, DuPont Washington Works Facility/Local Landfill, West Virginia (March-May 2002)* August 2002. DuPont Corporate Remediation Group and URS Diamond.
- DuPont. 2002c. *Compilation of Historical C-8 Data, DuPont Washington Works Main Plant and Landfills* January 2002. DuPont Corporate Remediation Group and URS Diamond.
- DuPont. 2002d. *Proposed Groundwater Monitoring Plan for Washington Works Facility Plant and Landfills* January 2002. DuPont Corporate Remediation Group and URS Diamond.

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## TABLES

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**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	9/24/02	2.15
	8/27/02	2.94
	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	9/24/02	2.14
	8/27/02	2.56
	8/27/02 (dup) *	2.51
	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	9/24/02	0.317
	8/27/02	0.268
	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	

000073

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

Sample	Date	C-8 (ug/l)
OUTFALL 005	9/24/02	4.64
	9/24/02 (dup)	5.02
	8/27/02	12.4
	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	
OUTLET 007	9/24/02	NQ (<0.05)
	8/27/02	0.207
	7/23/02	0.597
	7/23/02 (dup) *	0.544
	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	9/24/02	3.69
	8/27/02	6.73
	7/23/02	34.7
	6/25/02	3.86
	5/20/02	6.27
	5/20/02 (dup) *	5.16
	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).

\* Analytical duplicates' values were previously inadvertently omitted from the tables.

**000074**

**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)	9/30/02	No-flow conditions
	8/26/02	No-flow conditions
	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)	9/30/02	No-flow conditions
	8/26/02	No-flow conditions
	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)	9/30/02	No-flow conditions
	8/26/02	No-flow conditions
	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	9/30/02	No-flow conditions
	8/26/02	No-flow conditions
	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	

000075

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

Sample	Date	C-8 (ug/l)
OUTLET 101	9/30/02	115.0
	8/26/02	70.3
	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).

**000076**

**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)	9/27/02	4.52
	8/30/02	2050
	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	9/27/02	0.170
	8/30/02	No-Flow Conditions
	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
	STORMWATER RUNOFF	9/27/02
RT 33 STREAM	9/27/02	2.24
	8/30/02	No-Flow Conditions
	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	8/30/02	No-Flow Conditions
	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.

**000077**

**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	9/30/02	No-flow conditions
	8/30/02	No-flow conditions
	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	9/30/02	No-flow conditions
	8/30/02	No-flow conditions
	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	9/30/02	No-flow conditions
	8/30/02	No-flow conditions
	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	8/30/02	No-flow conditions
	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	8/30/02	No-flow conditions
	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	

**000073**

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

Sample	Date	C-8 (ug/l)
STREAM SAMPLING POINT#2	8/20/02	No-flow conditions
	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
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).

**000079**

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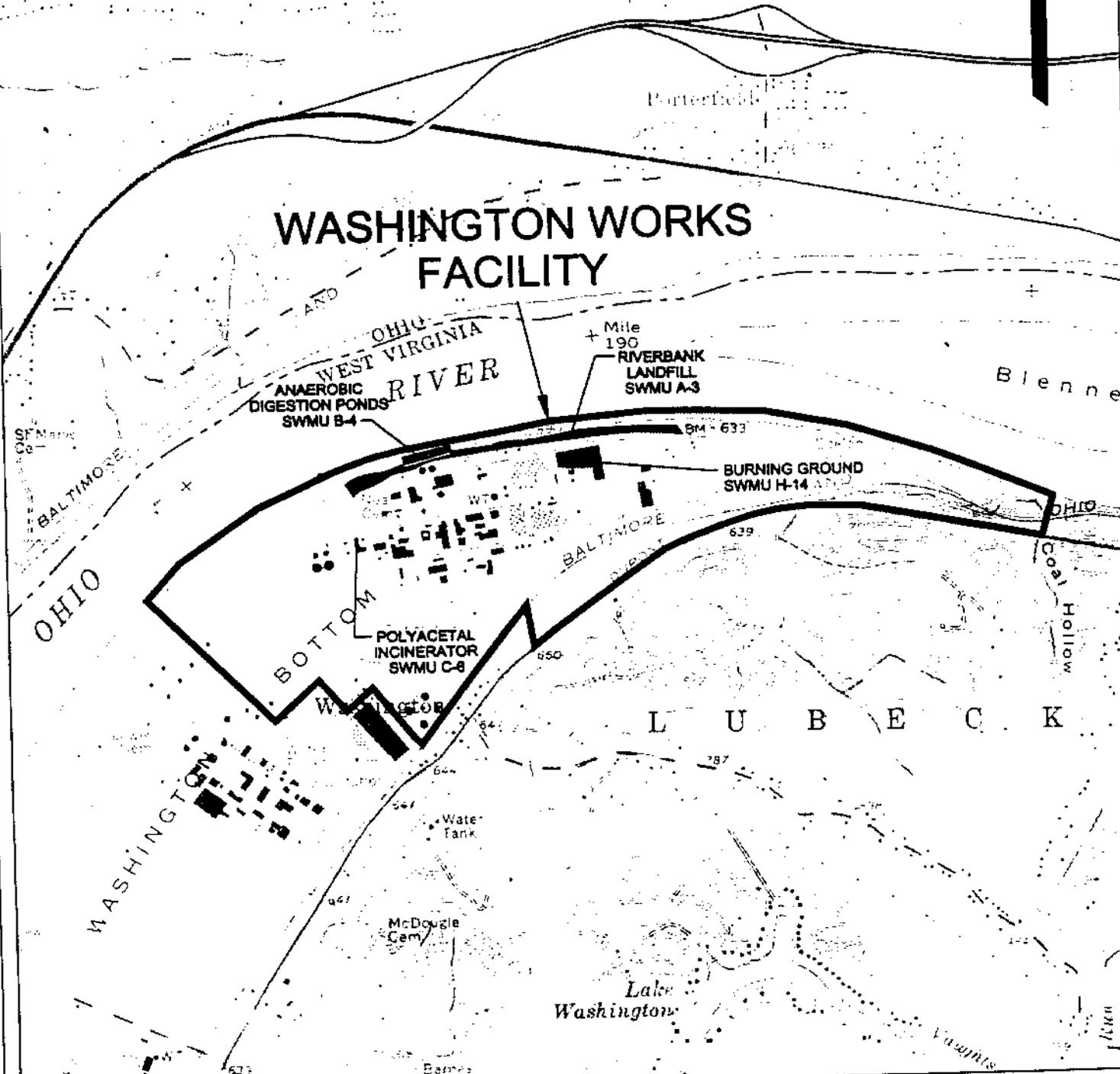
## **FIGURES**

**000081**

B E L P R E



# WASHINGTON WORKS FACILITY



Source: MAP TAKEN FROM THE LUBECK, WV USGS QUADRANGLE



**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

SCALE	DESIGNED	DRAWN	CAD FILE NO.
Not to scale	DEL	DEL	7422A001
DATE	CHECKED	APPROVED	SCALE
8/27/01	M. HOULDAY		1.0

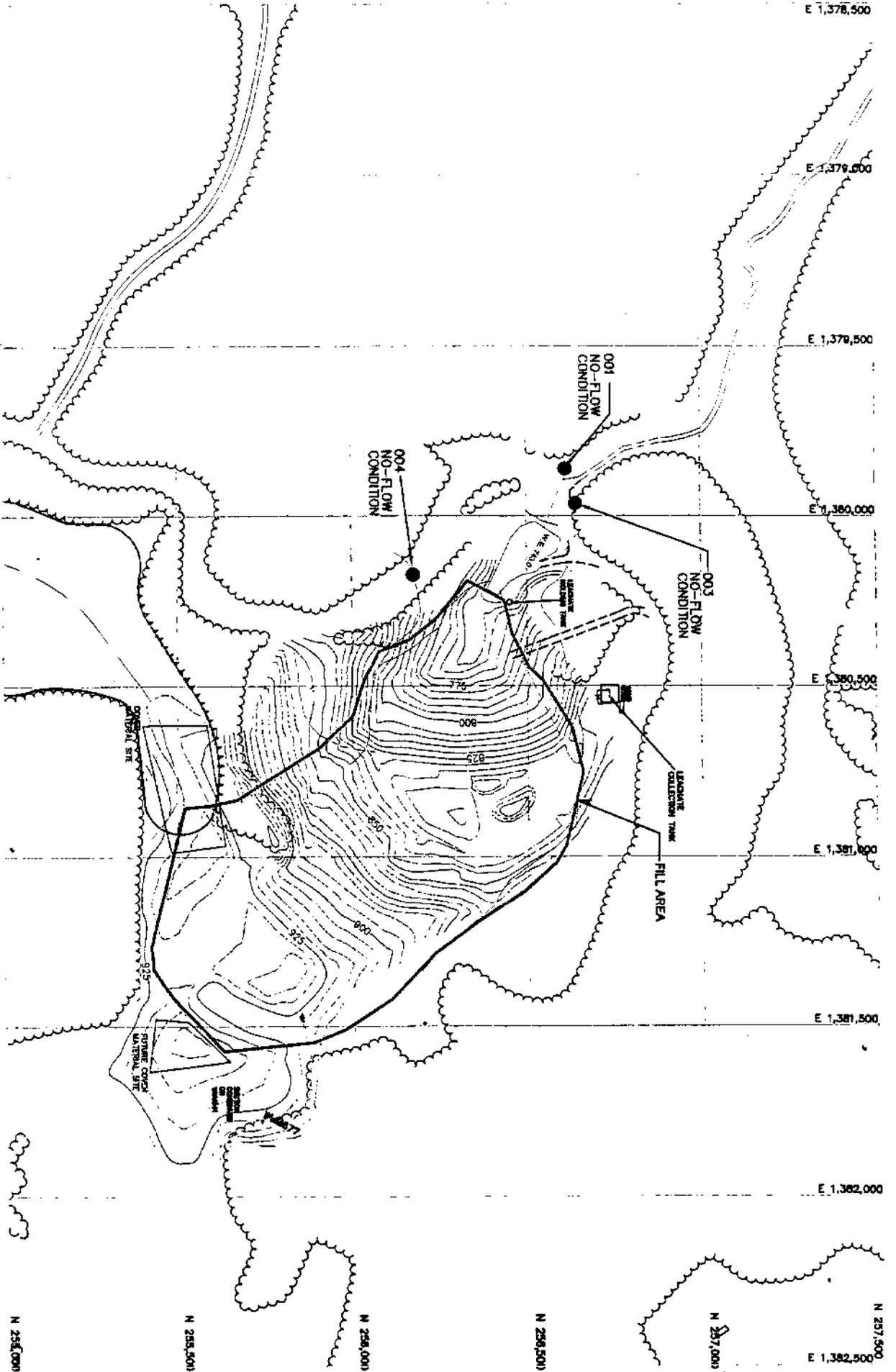
000082

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

**LEGEND**



**S C A L E**



**Corporate Remediation Group**

An Alliance between  
DuPont and URS | Diamond

Barley Mill Plaza, Building 27  
Wilmington, Delaware 19805



**C-8 IN SURFACE WATER  
SEPTEMBER 2002**

**Dry Run Landfill  
DuPont Washington Works  
Lubeck, West Virginia**

DATE	11/04/2002	BY	K. OWENS	APP. BY	K. OWENS	SCALE	4:2
PROJECT	C-8 IN SURFACE WATER	CLIENT	DU PONT	CONTRACT NO.	74324017	DATE	11/04/2002

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## APPENDICES

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**APPENDIX A**  
**LABORATORY ANALYTICAL DATA REPORTS**  
**WASHINGTON WORKS FACILITY**

**000086**

**Analytical Results Washington Works Sampling 9/02**

DuPont Sample Identification	APFO (ng/L)
WWK-Z-Outfall-001	2150
WWK-Z-Outfall-002	2140
WWK-Z-Outfall-003	317
WWK-Z-Outfall-005	4640
WWK-Z-Outfall-007	NQ
WWK-Z-Outfall-105	3690
WWK-Z-Outfall-005-2	5020
WWK-K-EQBLK-1	ND

Limit of Detection (LOD) for the procedure is approximately 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 than 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 B**

**CHAIN-OF-CUSTODY RECORDS**

**WASHINGTON WORKS FACILITY**

**000089**



# 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):  
 11004 Old ...  
 8000 ...  
 ...

Project Manager (Name & E-mail Address):  
 ...

Project Name:  
 ...

P.O. #:  
 ...

Quotation #:  
 ...

Phone:  
 ...

Fax:  
 ...

Sampler:  
 ...

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
133205-1	WASH-2-outfall-001	9/24/02	13:18	X		2	...	645205 / 645211
133205-2	WASH-2-outfall-002	9/24/02	13:55	X		2		645213 / 645217
133205-3	WASH-2-outfall-003	9/24/02	13:05	X		2		645211 / 645209
133205-4	WASH-2-outfall-004	9/24/02	12:24	X		2		645216 / 645208
133205-5	WASH-2-outfall-005	9/24/02	12:15	X		2		645215 / 645239
133205-6	WASH-2-outfall-006	9/24/02	13:40	X		2		645202 / 645210
133205-7	WASH-2-outfall-007	9/24/02	12:24	X		2		645210 / 645212
133205-8	WASH-2-outfall-008	9/24/02	12:24	X		2		645215 / 645219

### ANALYSES REQUESTED

Analysis	Requested
...	X

## CHAIN OF CUSTODY

Relinquished by	Date	Time
...	9-24-02	
...		
...		

Received by	Date	Time
...	9/23/02	08:00
...	9/23/02	16:45

### PROJECT REQUIREMENTS

Results Deadline: \_\_\_\_\_

Laboratory Report Options:

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

EXYGEN RESEARCH

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**APPENDIX C**

**LABORATORY ANALYTICAL DATA REPORTS**

**LOCAL LANDFILL**

**000092**

**Analytical Results Local Landfill C8 Sampling 9/02**

<b>DuPont Sample Identification</b>	<b>APFO (ng/L)</b>
LCL-Z-Outlet 101	115000

Limit of Detection (LOD) for the procedure is approximately 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 than 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**

**000055**



# CHAIN OF CUSTODY/ANALYSIS REQUEST FORM

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 T: 814.231.8032 • F: 814.231.1580 • exygenresearch.com

Page \_\_\_\_ of \_\_\_\_

## CLIENT INFORMATION

(name & address):

6320 E. ...  
 ...  
 ...  
 ...  
 ...  
 ...

Project Manager (Name & E-mail Address):

...  
 ...  
 Project Name: ...  
 PO. #: ...  
 Quotation #: ...

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

## ANALYSES REQUESTED

FC-143	Lot # 110014	PA 2.4H. 1	PA 2.4H. 2
--------	--------------	------------	------------

## SAMPLE ANALYSIS

ExyLIMS#	Client Sample Identification	Collection Date	Collection Time	Grab	Composite	Number of Containers	Specify Matrix	Comments
L35734-1	LC-2-outlet 101	7/30/02	0841	X		2	water	644204/644206

6000

LAB USE ONLY

## CHAIN OF CUSTODY

Relinquished by	Date	Time
...	9/12/02	1200
...	7/30/02	1400

Cooler ID # ... Cooler Temp. (°C) 0.8

Received by	Date	Time
...	7-30-02	0700
...	...	...

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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**APPENDIX E**  
**LABORATORY ANALYTICAL DATA REPORTS**  
**LETART LANDFILL**

**000098**

## Analytical Results LeTart Landfill C8 Sampling 9/02

DuPont Sample Identification	APFO (ng/L)
LTL-Z-Outlet 002	4520
LTL-Z-Outlet 003	170
LTL-Z-Stormwater Around Pipe	50900
LTL-Rt.33	2240

Limit of Detection (LOD) for the procedure is approximately 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 than 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 F**  
**CHAIN-OF-CUSTODY RECORDS**  
**LETART LANDFILL**

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