HAZARD RANKING SYSTEM DOCUMENTATION PACKAGE
CIDRA GROUNDWATER CONTAMINATION
CIDRA, PUERTO RICO

CERCLIS ID NO.: PRN000204538

VOLUME 3 of 3

Contract No. 68-W-00-121
Work Assignment No. 047
Document Control No. SAT.20103.047.598

December 2003

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Prepared by:
Region II Site Assessment Team
Weston Solutions, Inc.
Edison, NJ 08837

160792

R2-0003635

REFERENCE 73

PRELIMINARY ASSESSMENT
SHELFOAM PRODUCTS, INC.
STATE ROAD #171, KM. 0.5
SUD WARD, CIDRA
PUERTO RICO

PUERTO RICO
ENVIRONMENTAL QUALITY BOARD
SUPERFUND PA/SI PROGRAM

JULY 29, 1992

Prepared By

Enid V. Villegas Henríquez
Project Manager

Reviewed and Approved By

Johanna Padró Irizarry
PA/SI Section Chief

1/174

R2-0003637

OMB Approval Number: 2050-0095
Approved for Use Through: 1/92

EPA Potential Hazardous Waste Site Preliminary Assessment Form

Identification

State: P.R. | CERCLIS Number: PRD987377264

CERCLIS Discovery Date:

1. General Site Information

Name: Shelfoam Products, Inc. | Street Address: State Road #171 Km. 0.5, Sudw

City: Cidra | State: P.R. | Zip Code: 00739 | County: | Co. Code: 041 | Cong. Dist:

Latitude: 18° 10' 26" N | Longitude: 66° 9' 40" W

Approximate Area of Site: 0.0367 Acres / 16 Square Ft

Status of Site: ■ Active ☐ Not Specified ☐ Inactive ☐ NA (GW plume, etc.)

2. Owner/Operator Information

Owner: Puerto Rico Industrial Development | Operator: Shelfoam Products, Inc.

Street Address: Roosevelt Ave #355 Hato Rey | Street Address: State Road #171 Km 0.5 Sud Ward

City: San Juan | City: Cidra

State: P.R. | Zip Code: 00936 | Telephone: 809 758-4747 | State: P.R. | Zip Code: 00739 | Telephone: 809 739-1333

Type of Ownership:
☐ Private ☐ County
☐ Federal Agency ☐ Municipal
Name ☐ Not Specified
☐ State ☐ Other Government Agency (PRIDCO)
☐ Indian

How Initially Identified:
■ Citizen Complaint ☐ Federal Program
☐ EPA Petition ☐ Incidental
☐ State/Local Program ☐ Not Specified
☐ RCRA/CERCLA Notification ☐ Other

3. Site Evaluator Information

Name of Evaluator: Enid Y. Villegas-Henriquez | Agency/Organization: P.R. Env. Quality Board | Date Prepared: June 9, 1992

Street Address: Ponce de Leon Ave. #431 | City: San Juan | State: P.R.

Name of EPA or State Agency Contact: Eng. Francisco Claudio Rios | Street Address: Ponce de Leon #431 Hato Rey

San Juan | State: P.R. | Telephone: (809)-764-8824

4. Site Disposition (for EPA use only)

Emergency Response/Removal Assessment Recommendation:
☐ Yes
☐ No
Date: _____

CERCLIS Recommendation:
☐ Higher Priority SI
☐ Lower Priority SI
☐ NFRAP
☐ RCRA
☐ Other _____
Date: _____

Signature:

Name (type or print):

Position:

2

R2-0003638

EPA **Potential Hazardous Waste Site**
Preliminary Assessment Form - Page 3 of 4

CERCLIS Number: PRD987377264

7. Ground Water Pathway

Is Ground Water Used for Drinking Water Within 4 Miles:
■ Yes
☐ No

Is There a Suspected Release to Ground Water:
☐ Yes
■ No

List Secondary Target Population Served by Ground Water Withdrawn From:

0 - ¼ Mile	7,528.2
> ¼ - ½ Mile	—
> ½ - 1 Mile	725.9
>1 - 2 Miles	2,957.5
>2 - 3 Miles	—
>3 - 4 Miles	2,419.8
Total Within 4 Miles	13,631.4

Type of Drinking Water Wells Within 4 Miles (check all that apply):
■ Municipal
☐ Private
☐ None

Have Primary Target Drinking Water Wells Been Identified:
☐ Yes
■ No
If Yes, Enter Primary Target Population:
— People

Depth to Shallowest Aquifer:
40 Feet

Karst Terrain/Aquifer Present:
☐ Yes
■ No

Nearest Designated Wellhead Protection Area:
☐ Underlies Site
☐ >0 - 4 Miles
■ None Within 4 Miles

* Eng. González told me that use U.S. Census Population for Cidra Lorce (Not in the Target Distance Limit. with a Population served about 34,952.

8. Surface Water Pathway

Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply):
■ Stream ■ River ☐ Pond ☐ Lake
☐ Bay ☐ Ocean ☐ Other _____

Shortest Overland Distance From Any Source to Surface Water:
30 Feet
0.0056 Miles

Is There a Suspected Release to Surface Water
☐ Yes
■ No

Site is Located in:
☐ Annual - 10 yr Floodplain
☐ >10 yr - 100 yr Floodplain
☐ >100 yr - 500 yr Floodplain
■ >500 yr Floodplain

Drinking Water Intakes Located Along the Surface Water Migration Path:
☐ Yes
■ No

Have Primary Target Drinking Water Intakes Been Identified:
☐ Yes
■ No

If Yes, Enter Population Served by Primary Target Intakes:
_____ People

List All Secondary Target Drinking Water Intakes:

Name	Water Body	Flow (cfs)	Population Served
	N/A		

Total within 15 miles _____

Fisheries Located Along the Surface Water Migration Path:
■ Yes
☐ No

Have Primary Target Fisheries Been Identified:
■ Yes
☐ No

List All Secondary Target Fisheries:

Water Body/Fishery Name	Flow (cfs)
Río Arrovata	10 cfs
Río de la Plata	273 cfs

3

R2-0003639

PRELIMINARY ASSESSMENT
NARRATIVE REPORT

Date : July 31, 1992

Prepared by : Enid Y. Villegas Henríquez
PR Environmental Quality Board
Region II, Hato Rey, Puerto Rico

Site : Shelfoam Products, Inc.
State Road #171 km. 0.5 Sud Ward
Cidra, Puerto Rico

EPA ID No. : PRD987377264

* * *

I. INTRODUCTION

Under authority of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Superfund Amendment and Reauthorization Act of 1986 (SARA), the PR Environmental Quality Board conducted a Preliminary Assessment (PA) at Shelfoam Products, Inc., Road #171 km. 0.5, Sud Ward, Cidra, Puerto Rico. The purpose of this investigation was to collect information concerning conditions at the site to assess the threat posed to human health and environment and to determine the need for CERCLA/SARA or other appropriate action. The scope of the investigation included review of available file information, a Comprehensive Target Survey and an Off-Site Reconnaissance (May 14, 1992).

R2-0003640

SITE LOCATION MAP

Shelfoam Products, Inc.

Cidra County, Puerto Rico

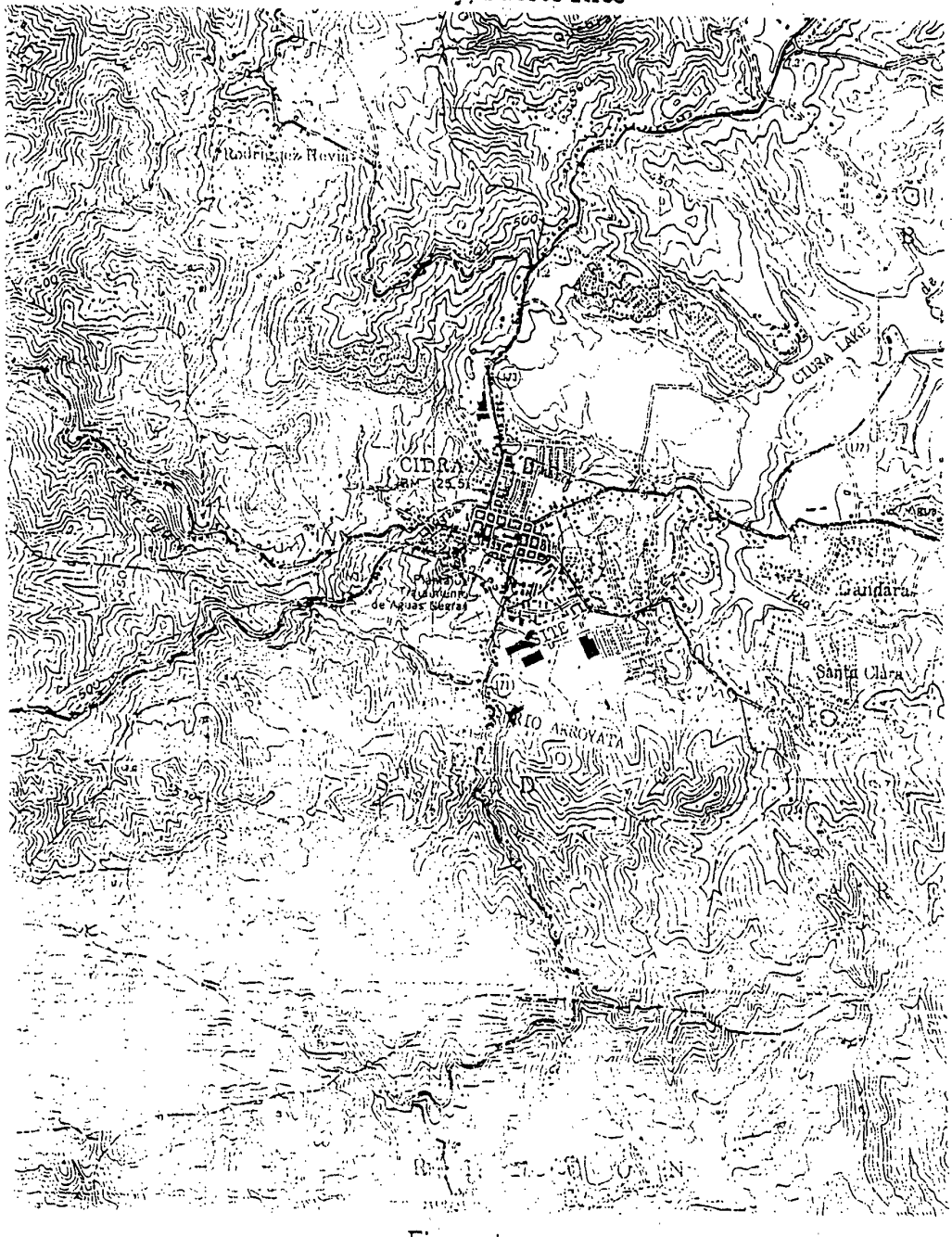


Figure 1

R2-0003641

SHELFOAM PRODUCTS, INC.

Cidra Industrial Park, Cidra, PR

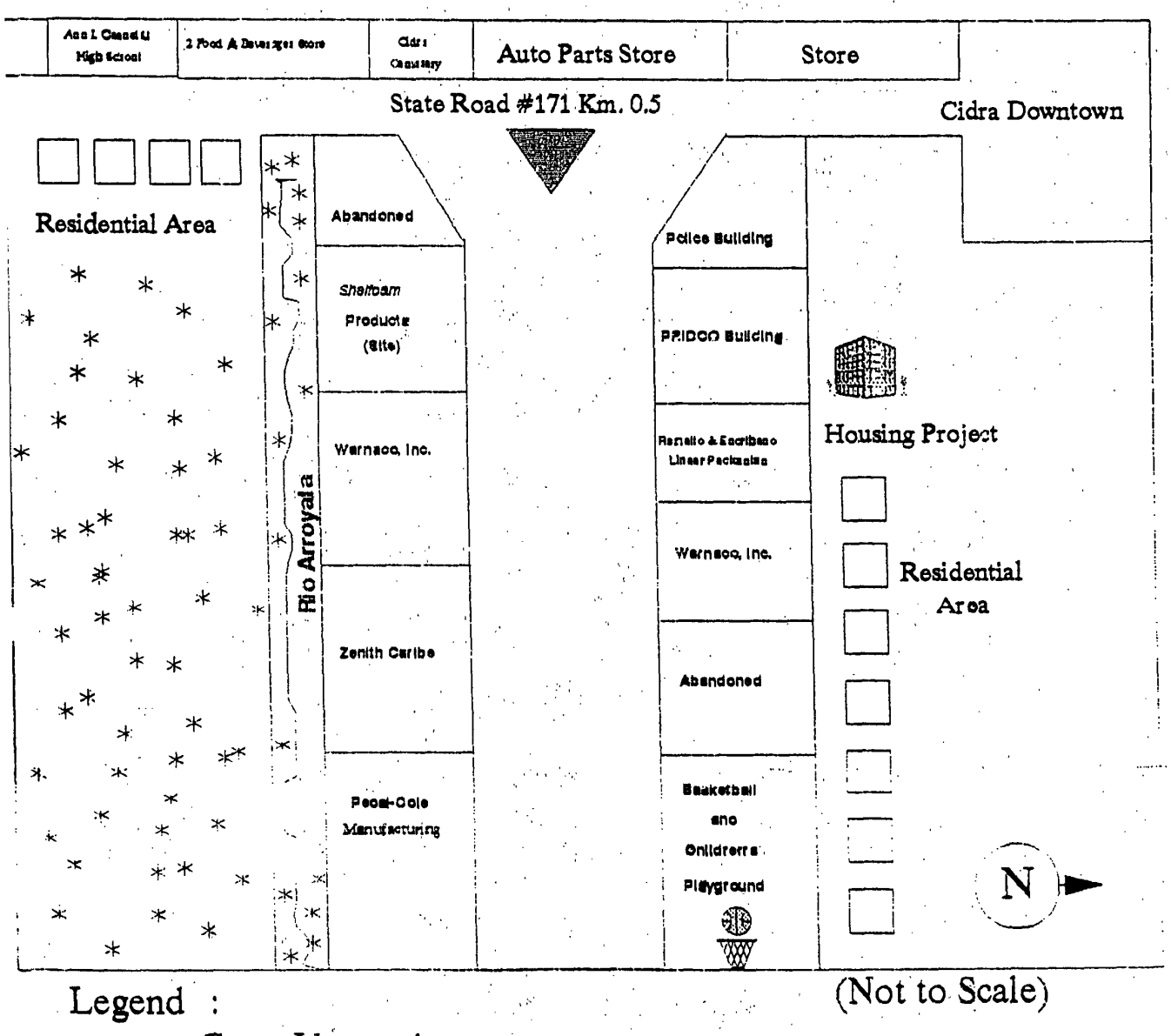


Figure 2

R2-0003642

2. SITE DESCRIPTION, OPERATIONAL HISTORY, AND WASTE CHARACTERISTICS

2.1 Location

Shelfoam Products, Inc. is located at State Road #171 km. 0.5, Sud Ward, Cidra, Puerto Rico. The geographic coordinates are 18° 10' 26" N latitude and 66° 9' 40" W longitude. To reach the site, travel the south by State Road #52. Turn to right at Road #172 and continue until reach Cidra county. Once on the downtown area turn left and get access to Road #171 were the site is located (Reference 1, 2).

Cidra county is characterized by a mild, temperate climate. Summers are warm and humid with daily temperatures reaching 80° F or higher. Mean annual precipitadon is 67.20 inches, while net precipitation for the area is 5.60" approximately (Reference 3).

2.2 Site Description

The site is located at Cidra Industrial Park, Cidra, PR. Shelfoam manufactures foam containers like coolers, contact lenses protective covers, furniture and electric appliances protectors. The site is being operating since 1968 (Reference 4, 5).

The main building shelter the principal offices and the manufacturing area of 36,000 ft^2. The land property including the building has an area of two (2) acres. The manufacturing area has three chambers: the first one is were the polystyrene is expanded, then the aging chamber and finaily the molding chamoer. in the backside, is found the boiier with two air tanks. The bunker fuel (petroleum #5) tank is found in the backyard (combusubie for where the boiler). At the left side of the building is found a channel ditch that collects used cooling water under the moldinu machines (Reference 5-7).

R2-0003643

2.3 Operational History and Waste Characteristics

The owner of Shelfoam's property is Puerto Rico Industrial Development (PRIDCO) and the facility is directed by a Corporadon (Board of Directors) presided by Mr. Marcelino García and its Vicepresident Mr. Jorge Ramírez de Arellano. Before this industry was established, a shoe maker's facility was operating this property (Reference 6, 7).

As said before, this industry is dedicated to the manufacture of foam products. Specifically, the raw material is "Expandable Polystyrene", manufactured from benzene and ethylene in the presence of aluminum chloride. The synthesis starts with 1-phenylethanol and leading to polystyrene. When heated to 200°C it is converted into the polystyrene polymer, which is a clear plastic having excellent insulating properties even at ultra high radio frequencies (Reference 8, 9).

The polystyrene come in a gaiior (1,000 lbs.) packed in cardboard boxes. It comes like "pellets" of tiny size. The manufacturing process starts when this pellets increase dieir size (5 times) with the water vapor of application. This process is known as a pre-expansion stage. Then, they are transported and stored at great quantities in rubber bags, where they are "aged or healed" for a period of time. Following this, a certain quantity is suctioned to fill-up the molds in a press diat use water vapor. Next, the final expansion takes place when the polystyrene is exposed to a high temperature caused by water vapor. The industry possesses a boiler system that provides the water vapor used by the molding machines during the orocess (Reference 6, 7). At this moment the "pellets" suffer a deformation compressing each other, assuming the moid shape (Reference 6, 7).

The water used to cooi tne molding machines is recycled through the cooling system. Consequently, the water that comes from the process is not discarded any where outside the plant (Reference 6, 7). Generally, no wastes are generated during the manufacturing process. Basically, the cooling system of the molding machines generates water and foam particles. The water is recycled to be reused in the next process. The foam particles are

R2-0003644

sold to garden shops to be used by gardeners to add moisture and texture to the soil and as a fertilizer (Ref. 6).

Shelfoam had been inspected by three agencies with frequency. Those are: PRIDCO, Puerto Rico Aqueduct and Sewer Authority and PR Environmental Quality Board (Complaint Division and the Air Quality Program). The first one inspects the boiler operation and the land property which they own (Reference 6). PRASA inspect they because they are applying for a discharge permit. The attorney at law/PRASA Pretreatment Technician, Monserrate Santiago, esq. visited the site on July 11, 1990 (Reference 7). The PREQB Complaint Division visited Shelfoam twice to asses a complaint made by Mrs. Delia Rosa Santos, a neighbor of this industry. The technician visited the industry and found a discharge of wastewaters into the stream that is adjacent to Shelfoam. The Air Quality Program gave them an Emission Permit for the boiler that generates water vapor for the manufacturing process (Reference 4, 6).

3. GROUND WATER PATHWAY

3.1 Hydrogeologic Setting

The rocks exposed in the Comerio Quadrangle are mainly of volcanic origin composed of extrusive igneous rocks and tuffaceous debris. Sedimentary rocks that consist almost entirely of volcanic fragments are interstratified with these igneous and pyroclastic and are the principal rock type in the northwestern parts of the quadrangle (Reference 12).

The stratified rocks in this quadrangle have been divided into four formations three of which have been temporarily assigned letter symbols J, K, and L designating respectively younger formations. The fourth formation, whose stratigraphic position is between formation K and formation L, has been formally named Robles Formation (Reference 12).

Shelfoam is located on top of alluvial deposits - terraces, sand and gravel deposits, and silt including large cobbles and boulders of volcanic rocks; restricted to deposits generally

R2-0003645

above the level of present stream action. Underlying this deposits we found Formation K mostiy composed of chiefly crudely stratified coarsely clastic volcanic breccia; intercalated with lava flows, volcanic conglomerate, massive tuff and a few layers of bedded fine grained rocks; thin lenticular hodies of impure limestone, tuff and limestone breccia. Formation K overlies formation J and in most places the depositional relationship appears to be essentially conformable although formation J toward the south east, and local angular unconformities have been observed (Reference 12, 13).

The main local aquifer is the alluvial aquifer which is mostiy composed of clay, silt, sand and gravel. Groundwater flows to Río Arroyata which finally ends at Río de La Plata (Reference 1, 12, 13). The shallow aquifer, according to the groundwater levels, generally found at 40-70.5 feet of depth. At the artesian aquifer, mostiy composed of volcanic breccia, water is found between 70 to 125 ft of depth (Reference 13).

3.2 Ground Water Targets

The majority of the Cidra population within a 4 miles radius relies on municipal water supplies taken oy six (6) wells. The other and principal source for drinking water is an intake located at 1.4 miles northeast from the site called Lago de Cidra and it is connected to a blended system. This system serves a combine population of 35,494 inhabitants (Reference 14-18). Those wells are:

Wells	Pumpage (MGD)	Distance (miles)	Status
Alcantarillado	6.5×10^{-5}	1.24	Active
Coilecturia	35.5	0.06	Active
La Baldorioty	35.7	0.28	Active
Treasury Valley	75.5	1.08	Active
Ceiba	30.3	2.0	Active
Bayamoncito	25	3.4	Active

R2-0003646

Intake	Pumpage (MGD)	Distance (miles)	Status
Cidra Lake	360.7	1.4 northeast	Active

(Reference 17-19)

3.3 Ground Water Conclusions

A release of hazardous substance from Shelfoam Products to the aquifer is not suspected because no wastes are produced in this industry. In addition, even though there are residents and a surface water stream near the site the likelihood for a discharge of hazardous wastes is low because the site is located on top of volcanic rocks.

4. SURFACE WATER PATHWAY

4.1 Hydrologic Setting

Shelfoam Products is located on areas of minimal flooding. The nearest surface body of water is a small stream called Rio Arroyata located just behind the site (at the end of a 45° slope) (Reference 20).

This stream has an average discharge of approximately 10cfs. Río Arroyata flows to the northwest until it reaches Río de la Plata at 2 miles from the site. It then flows to Lago La Plata which eventually discharge in the Atlantic Ocean (Reference 21).

No potential run off route exists. During the onsite reconnaissance only a channel ditch was observed where the water from the cooling system is directed to the recycling unit.

4.2 Surface Water Targets

There is a drinking water intake located at 3 miles from the site in the Río Arroyata. This intake is not operating at this moment. The Arroyata river ends in Río de La Plata.

11

R2-0003647

6 miles downstream from the site. The Cidra population is served by 6 wells (as discussed in the Groundwater Pathway) and a Filter Plant located two miles to northeast and called Lago de Cidra. This intake is not located within the target distance limit of the site (Reference 21, 22).

Río Arroyata and specially Río De La Plata and Lago La Plata are used for commercial and recreational fishing. From Río Arroyata untd die point it reaches Río La Plata, there are many fishing spots but they are not legally designated as fisheries (Reference 20, 21). Two species commonly caught are snooks and tarpons; scientific names of Micropterus salmoides (Lobina) and Lepomirs madochirus (Chopa Criolla) (Reference 20, 23). The area from Dos Hermanos Bridge to Dorado has a variety of ecosystems types such as bays, estuaries, rocky shores, sandy beaches, and islets. From Isla de Cabras to Dorado, the access to the shoreline is fairly good since Road #165 is parallel to the shore. The most popular fishing spots along this area are the Palo Seco Area, the bridges over Río Hondo and Rio Bayamón and several abandoned structures in the Levittown beach, no sensitive environments along the 15 miles downstream (Reference 25).

4.3 Surface Water Conclusions

A release of hazardous substance is not suspected because even though there is a stream adjacent to die site, no wastes are produced. Consequentiy no discharge to this surface water body is in potentiai to occur.

5. SOIL EXPOSURE AND AIR PATHWAYS

5.1 Physical Conditions

Shelfoam Products, Inc. as discussed in groundwater pathway, is on top of alluvial and refill deposits. Basically, the soil that outcrops is mainly what the soil survey calls Uv (Urban-land-Vega Alta Complex). In undisturbed areas, the Vega Alta soil complex have a surface layer of dark yellowish brown, friable clay-loam about 8 inches thick. The

R2-0003648

subsoil, from 8 inches to a depth of 52 inches and to a depth of 84 inches, is dark red brownish yellow, and light gray friable clay. Urban land consists of sites for houses, industrial buildings, parking lots, streets, and other structures that a company development. The landscape has been altered in places by cutting, filling or grading and shaping. The site is active since 1968 and is totally fenced around the perimeter (Reference 6, 26).

5.2 Soil and Air Targets

The site has 30 employees that work in two time shifts. At 200 ft from there are four neighboring sites called: Warnaco, Inc., Ramallo and Escribano Linear Packaging (at 74 ft) and the Police Headquarters Building! The nearest school is at 0.1 mile from the site: called Ana I. Candelas High School. There are also 6 houses, a housing project and a basketball and children's playground at 0.1 mile from the site (Reference 6). The total population within a 4 mile radius is 44,781.6 inhabitants as determined by the US Department of Commerce 1992 Census Population (Reference 27).

5.3 Soil Exposure and Air Pathway Conclusions

The soil exposure pathway appears to pose no threat from Shelfoam Products because all the manufacturing areas are covered by 2-3 foot of concrete floor that protects the soil of any spills or contamination. Since no wastes are generated; no discharge to the soil is produced. The foam particles that are generated at the manufacturing area are used for gardening purposes (Reference 6). A release to air is not suspected because no odors were detected during the onsite reconnaissance and there was no indication of dusty conditions.

6. SUMMARY AND CONCLUSIONS

Mr. Marcelino Garcia is the president of the Board of Directors that manages Shelfoam Products, Inc. (Reference 6). The owner of the land property is the Puerto Rico Industrial

R2-0003649

Development Corporation. This industry was established in 1968 on Sud Ward, Cidra, PR and produces container (coolers), contact lenses protective covers and furniture covers. The major concern for this site, is where they discharge the water and foam particles that come from the molding area. These foam particles (Expandable Polystyrene) are sold for gardening purposes. The water and foam particles are drained through a channel ditch and some is of reused subsequent manufacturing process. A release to groundwater is not suspected since the site produce no hazardous wastes. The same situation applies to the surface water and soil pathways (Reference 6, 25). A release to the air is not suspected because no odors were felt during the site reconnaissance. In addition,no indications of dusty conditions were noticed during the site reconnaissance. PA Scoresheets were not done on this case because no hazardous wastes are generated at the site as observed and assess during the PA investigation. Due to all of the above the site is recommended for NFRAR

R2-0003650

REFERENCES

1. US Geological Survey, 7.5 minute topographic quadrangle map of Comerío 1957; photorevised 1982
2. US Environmental Protection Agency, "Standard Operating Procedures to determine Site Latitude and Longitude Coordinates", 1991
3. US Department of Commerce, Climatological Data for Puerto Rico, August 1989 Vol. 35.
4. Telecon Note
5. Personal Interview
6. Off Site Reconnaissance
7. PRASA - Pretreatment Area - Shelfoam Inspection 1991
8. The Merck Index, Encyclopedia of Chemical Drugs, and Biologicals, 1989, Page 8833.
9. Hazardous Chemicals Desk Reference, N. Irvin Sax/Richard J. Lewis, Page 3127.
10. Polystyrene - MSDS Boiler Softener - HCl - MSDS
11. PRIDCO - "Letter soliciting Shelfoam Products, Inc. File".
12. US Geological Survey; Geologic Map of Comerío Quadrangle, PR; 1977
13. US Geological Services; Water Resources Data PR and the US Virgin Islands, "Water Year 1990 - "Groundwater Levels".
14. Puerto Rico Aqueduct and Sewer Authority Water Supply System Map, Comerío Quadrangle January 1983, Map #44; Cayey, January 1983; Caguas 1983 - Map #49
15. Telecon Note
16. Telecon Note
17. PRASA - Water Resources Office, Well System
18. US Geological Survey. Open-File Data Report 84-126, Public Water Supplies in PR 1984
19. Commonwealth of PR; Federal Emergency Management Agency; Flood insurance Rate Map, "Map Revised April 3, 1984, Panel #174.
20. River's Index, Water Quality Program
21. US Geological Survey, Water Data Report PR, and US Virgin Island, Water Year 1990.
22. PRASA - Filter and Intakes in Puerto Rico
23. Department of Natural Resources, PR Sportfishing; 1989
24. Department of Natural Resources "Scientific Research Area, Final Report Project 7-5-6

R2-0003651

"Marine Sport Fisheries Coil Survey".

25. Water Bodies Inventory - Water Quality Program, PR Environmental Quality Board.

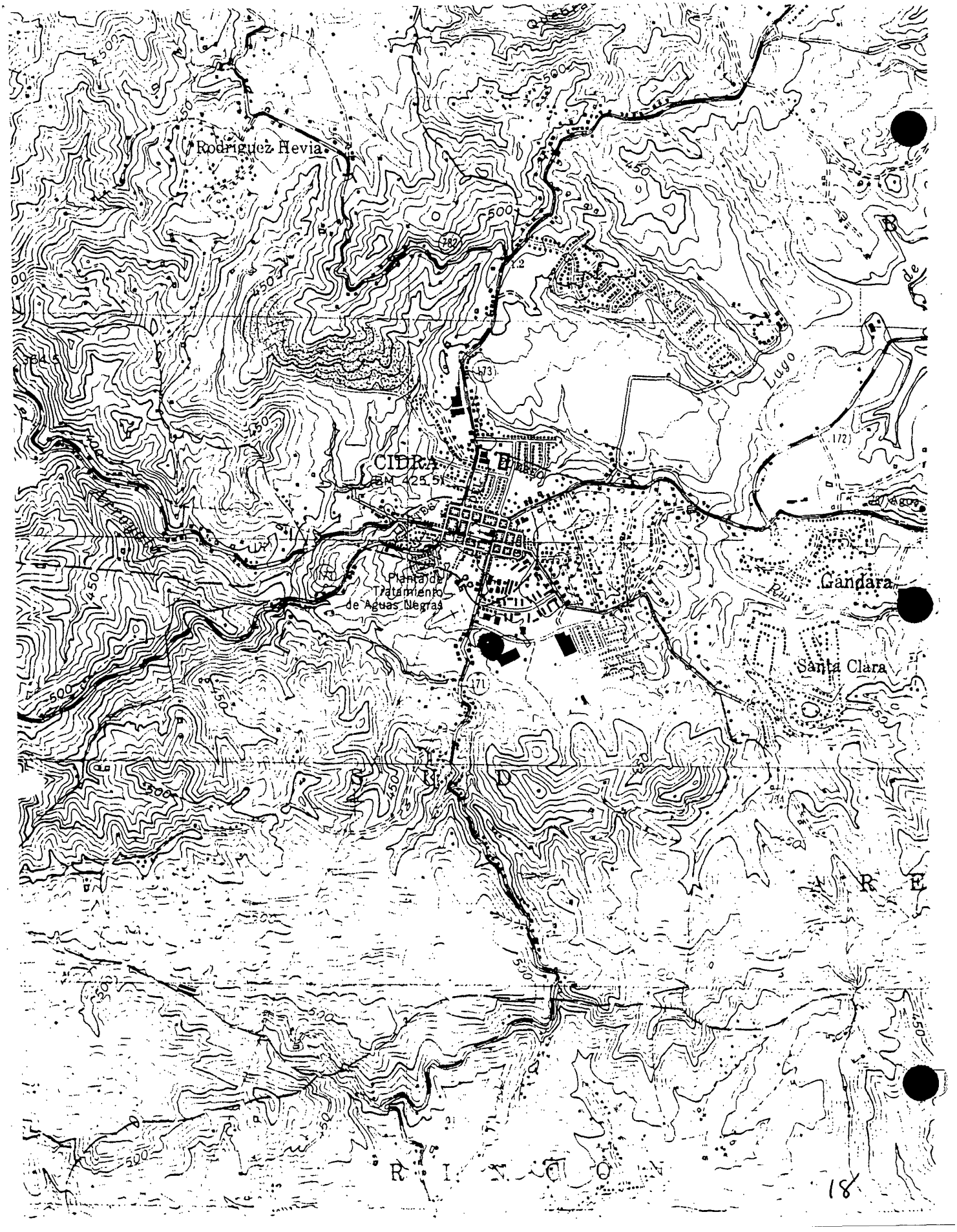
26. US Department of Agriculture Soil Conservation Service; Soil Survey of Water in PR 1986

27. US Department of Commerce Bureau of the Census 1980 Census of Population and Housing

R2-0003652

REFERENCE 1

R2-0003653


Rodriguez Hevia
CIDRA
(EM 425.5)
Planta de
Tratamiento
de Aguas Negras
Lago
Gandara
Santa Clara
R I N C O N
18

R2-0003654

REFERENCE 2

R2-0003655

REF: 2

LATITUDE AND LONGITUDE CALCULATION WORKSHEET WHEN USING THE COORDINATE GRID CELL

SITE NAME: Shelfoam Products, inc. CERCLIS #: PRD 987377264

AKA: _____ SSID: _____

ADDRESS: State Road #171 km. 0.5, Sud Ward

CITY: Ciara STATE: PR ZIP CODE: 00739

SITE REFERENCE POINT: Center of the site

USGS QUAD MAP NAME: Comerio TOWNSHIP: --- N/S RANGE: --- E/W

SCALE: 1:20,000 MAP DATE: 1957 SECTION: --- ¼ --- ¼ --- ¼

MAP DATUM: 1940 PHOTOREVISED: 1982 MERIDIAN: ---

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 7.5' MAP (ATTACH PHOTOCOPY):

LONGITUDE: 66° 07' 30" W LATITUDE: 18° 07' 30" N

COORDINATED FROM LOWER RIGHT (SOUTHEAST) CORNER OF 2.5' GRID CELL:

LONGITUDE: __° __' __" W LATITUDE: __° __' __" N

CALCULATIONS: LATITUDE (7.5' QUADRANGLE MAP)

A) ALIGN THE GRID CELL (7.5' WIDE X 2.5' HIGH) WITH THE NEAREST LATITUDE REFERENCE POINT TO THE SITE.

B) ADD TO THE REFERENCE LATITUDE POINT THE CORRESPONDING INCREMENTS OF 1 SECOND UNTIL THE SITE LOCATION.

C) WRITE DOWN THE CORRESPONDING LATITUDE COORDINATE OF THE SITE IN DEGREES, MINUTES AND SECONDS.

SITE LATITUDE: 18°10'26" N

CALCULATIONS: LONGITUDE (7.5' QUADRANGLE MAP)

A) WITHOUT DISPLACING THE GRID CELL, LOOK FOR THE LONGITUDE THAT APPEARS ON THE NORTH-EAST CORNER OF THE QUADRANGLE.

B) ADD TO THIS LONGITUDE THE CORRESPONDING INCREMENTS OF ONE SECOND UNTIL THE SITE LOCATION

C) WRITE DOWN THE CORRESPONDING LONGITUDE COORDINATE OF THE SITE IN DEGREES, MINUTES AND SECONDS.

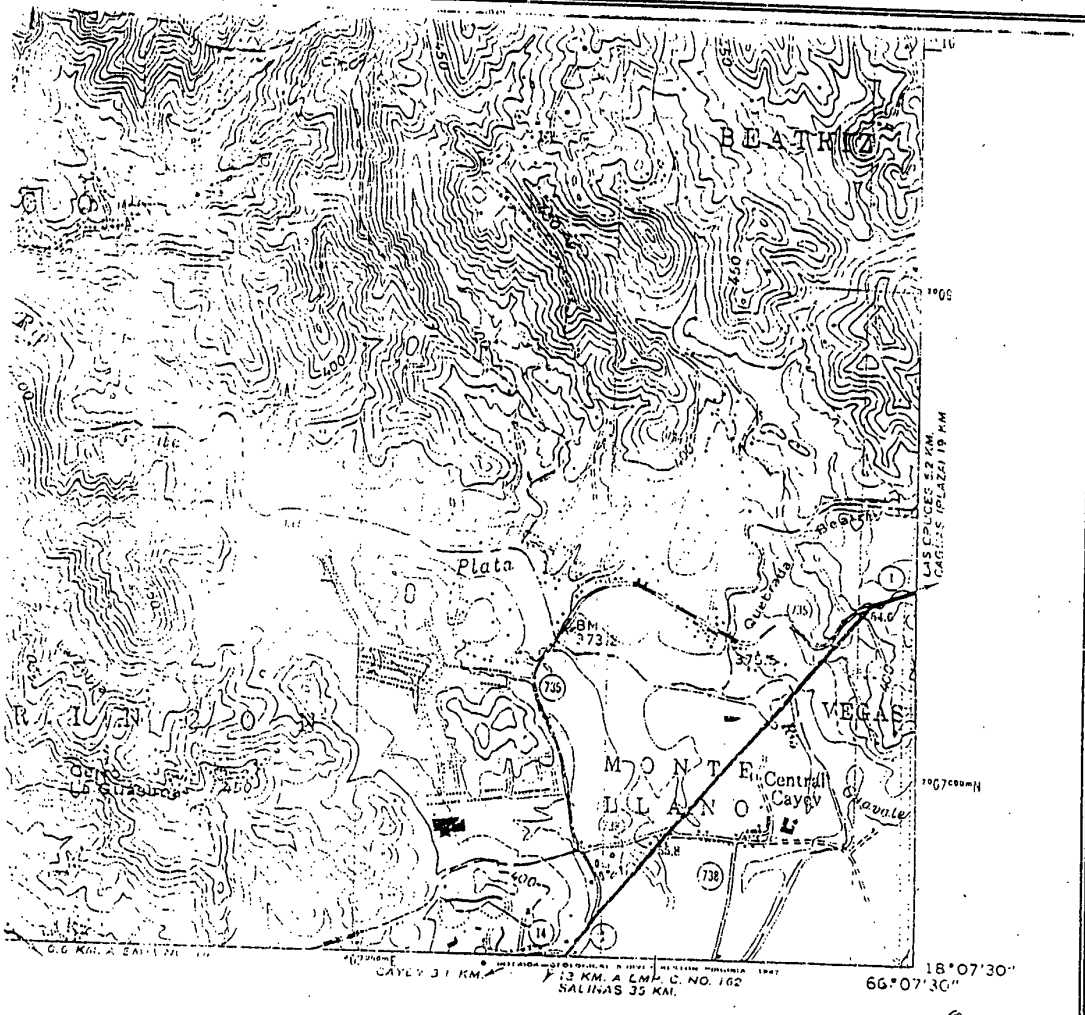
SITE LONGITUDE: 66°09'40" W

PREQR INVESTIGATOR: Enid Y. Villegas Henríquez DATE: June 1, 1992

20

R2-0003656

SITE NAME: Shell Gas Products, Inc NUMBER: _____



TOPOGRAPHIC MAP QUADRANGLE NAME: Comerío SCALE: 1:20,000
COORDINATES OF LOWER RIGHT-HAND CORNER OF 2.5-MINUTE GRID:
LATITUDE: 18 °07'30" N LONGITUDE: 66 °07'30" W

21

R2-0003657

REFERENCE 3

R2-0003658

ISSN 0090-2191

HOURLY PRECIPITATION DATA

PUERTO RICO AND VIRGIN ISLANDS

SEPTEMBER 1988

VOLUME 18 NUMBER 9

RECEIVED
APR 26 1989
U.S. Geological Survey, WRD
San Juan, P.R.

I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA). IT IS COMPILED USING INFORMATION FROM WEATHER OBSERVING SITES SUPERVISED BY NOAA/NATIONAL WEATHER SERVICE AND RECEIVED AT THE NATIONAL CLIMATIC DATA CENTER (NCDC), ASHEVILLE, NORTH CAROLINA 28801."

DIRECTOR
NATIONAL CLIMATIC DATA CENTER

noaa

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

R2-0003659

DAILY PRECIPITATION TOTALS

SEPTEMBER 1989
PUERTO RICO AND VIRGIN ISLANDS

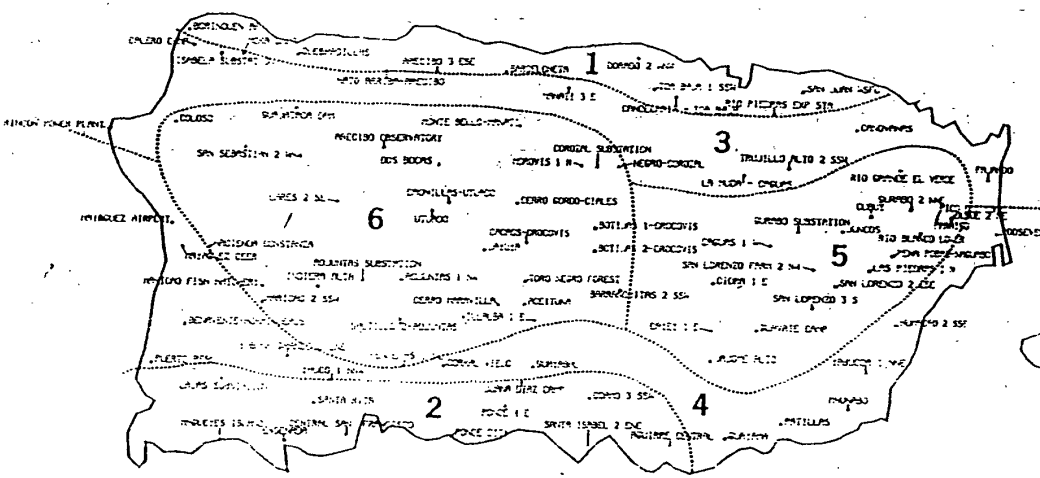
GAGE	STATION	TOTAL	DAY OF MONTH																												
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	PUERTO RICO																															
F	ABJURTAS SUBSTATION	12.10			.10				.40		.10	.50	1.90	.20	.10		.80	.70	.60	.70			2.10	.20	1.90	.20	1.10	.20		.10			
F	BENAVENTE-HORMIGUEROS	12.20	.60			.10		.10					1.30				.90		.10	.50				2.10	.60	.30	1.40	.30					
F	BOTIJAS 1-OROCOVIS	3.20							.10	.10	.10	1.60	1.00	.10			.10	.20	.20	.10				1.50	.20		.10				.10	.70	
F	BOTIJAS 2-OROCOVIS	1.70	.10	.10				.10	.40	.10	.10	1.10	1.20	.10		.30	.10						.10	.50	.40							.10	
F	CAFEI I E	5.60	.10						.10	.20	.50	1.40	1.80	.30	.10	.60	.20																
F	CERRO MARAVILLA	-																				.10	.30	.20	.90	.20		.10		.20	.60		
F	COROZAL SUBSTATION	7.50	.10		.10				.10	.20	.90	1.00	1.20	.10				.20		.30		1.30	.20	.10	.90	.10					.20	.60		.50
F	CUBUY	12.00							.10	.70	1.50	1.20	2.10	.80	.60	.90	.10							.10	.50								
F	DOS BOCAS	8.50		2.90						.20	.80	1.10	.10	.30			.10	.10				.80	.20	.10	.50	.10	.20						
F	DUGUE 2 NE	10.10E						.10	.30	1.30	1.50	.60	.30	.20	1.50	.10	.20					.10	.10	.10	.50	.10							
F	EBJARDO	5.50							.10	.90	1.50	.30	.70		.10	.10	.10	.10						.10	.50		.10						
F	SURABO 2 NNE	-								.80	1.20	.50	-	-	-	-	-		-		-	-	-	-	-	-	-	-	-	-	-	-	
F	GUGABO SUBSTATION	7.40						.10		.30	1.10	.50	2.90	.60	.10	.30	.70				.10	.10					.10					.10	
F	LAS PIEDDAS 1 W	8.10						.10	.10	.50	1.20	.60	2.60	.70	.10	.30	.60															.10	
F	MARICAO 2 SSW	19.12E		.10				.70	.20		.10	.20	1.30	.10			.30	.30	.30	.50			.10	.70	3.80	.90	2.30	.10					
F	ABSRO-CUROZAL	5.80	.10					.10		.20	.60	1.40	1.10	.10				.10	.10			.10	.20	.20	.90	.10			.10	.20	.10	.10	
F	PEAR POBRE-HAGUABO	8.30	.20	.10					.10	.10	1.10	.70	2.30	.10	.10	.50	.20	.20				.10		.70	.90								
F	PICO DEL ESTE	12.20					.10	.10	.60	.10	1.10	.90	1.60	.60	2.30	.70	.50	.10	.10			.10		.50	.90		.30				.30		
F	POUEE 4 I	2.00										.10	.60	.10		.20						.10	.10		.20			.10					
U	SAN JUAN P.R. USO AP	5.49	.12	.04					.02	.87	1.82	.48	.84	.11	.07	.19		.04				.28	.24	.03	.30		.04						
F	SAB LORENZO 2 LSE	8.90	.10				.10	.10	.20	.30	1.10	.50	3.90	1.30	.50	.20	.30				.10												
F	SAN SEBASTIAN 2 NNW	11.60	.90	2.10					.10	.10	.10	.70	.80			.80					.10	2.70	.50	1.30	.10			.10		.30		
F	YABUCOA 1 NNE	1.20							.10		1.00	.80	2.80	.30		.20	.10				.20			.10	1.20		.10						
	VIRGIN ISLANDS																																
F	BEIN UPPER NEW HORAS	3.80								.20	.70	.50	.80	.30	.30											.10							
F	CANCEL BAI PLANTATION	8.50						.10		.20	6.50	.60		.20			.10	.20	.10							.20							
F	DOROTHEA AES	8.80						.10	.10	.10	6.90	.80	.20					.30	.10							.10			.10				

24

R2-0003660

66 - PUERTO RICO

10 20 30 STATUTE MILES



18.5

18.0

17.5

68.0

STATION LEGSND

DATA PUBLISHED IN:

- CLIMATOLOGICAL DATA
- HOURLY PRECIPITATION DATA
- CLIMATOLOGICAL DATA AND HOURLY PRECIPITATION DATA

For further information, refer to the station index and references notes.

DIVISIONS

1 NORTH COASTAL
2 SOUTH COASTAL
3 NORTHERN SLOPES
4 SOUTHERN SLOPES
5 EASTERN INTERIOR
6 WESTERN INTERIOR
7 OUTLYING ISLANDS

25

R2-0003661

REFERENCE 4

R2-0003662

PR ENVIRONMENTAL QUALITY BOARD		Ref. 4
SUPERFUND PA/SI PROGRAM		TELECON NOTE
CONTROL NO: PRD 987377264	DATE: May 8, 1992	TIME: 0930
DISTRIBUTION:	Shelfoam Products, Inc.	
BETWEEN: Ottoniel Rodríguez	OF: Complaint Technician	PHONE: (809) 767-8159
AND:	Enid Y. Villegas - Superfund PA/Inspector	

DISCUSSION:

Mr. Rodríguez explained that Shelfoam Products had been discharging chemical substances to a channel ditch that finally ends to a stream called Río Arroyata. The Complaint Division of the Environmental Quality board had the file from this company were two inspections had been realized as said by Mr. Rodríguez. The file number is QAG-91-21-0421.

27

R2-0003663

JUNTA DE CALIDAD AMBIENTAL
DIVISION DE RADICACIONES - QUERELLAS

Información General y Seguimiento

Querella Núm. CAD-91-21-0421 Fecha Rad: 15/julio/91

Teléfono ✓ Personal ___ Carta ___ JCA ___

Querellante: [illegible] Teléfono: [illegible]

Dirección Residencial: [illegible]

Dirección Postal: [illegible]

Querellado: Fabrica Chelfoam 739-2433

Teléfono: _____ Dirección Postal: Box - 326 Cidra 00739

Dirección de Ubicación: Cerr. Cidra Cayey Km 0.6 Cam M1 [illegible] Cidra PR

Asunto: Aguas con grasa y quemas depositando el terreno y hay malos olores. Las aguas ganan acceso al río Arroyo de Cidra

Recibida por: [illegible]

Informe de Progreso

FECHA	ACCION	INICIALES
JUL 1991	Acuse de Recibo	[illegible]
23-VIII 91	Consulté con Dio Permiso Agua y me informan que no tiene permiso	

28

R2-0003664

OFICINA DE QUERELLAS

NOTIFICACIÓN DE DEFICIENCIAS
Y SEÑALAMIENTO DE MEDIDAS

Querellado: SR JORGE RAMIREZ
Dirección Postal: SHELFOAM MANUFACTURING BOX 326 CIDRA PR

RE: Caso Núm: QAg-91-21-0421
Título: SHELFOAM MANUFACT.
Localización: CIDRA PR

Fecha de envío: 27-septiembre-91
Fecha inspección: 14-agosto-91

Estimado señor Ramirez:

En inspección realizada por personal técnico de la Oficina de Querellas al caso de referencia, se encontró que usted incurre en las deficiencias y violaciones señaladas a continuación:

___ Ag-1 descarga de aguas usadas ☐ a. sanitarias, ☐ b. no-sanitarios (grises) ☐ c. sobre el terreno, ☐ d. ganando acceso a un cuerpo de agua (Artículos 6.1.1 y 6.1.2 del Reglamento de Estándares de Calidad de Agua),

___ Ag-2 carece de un permiso para ☐ a. construir y ☐ b. operar un pozo séptico, el cual es otorgado por la División de Permisos de Ingeniería del Programa de Agua (Reglas 302 y 303 del Reglamento para el Control de la Inyección Subterránea),

___ Ag-3 carece de un ☐ a. Certificado de Plan de Manejo, de un ☐ b. Certificado de Cumplimiento, otorgado por la División de Fuentes Dispersas del Programa de Agua,

__X__ Ag-4 carece de un permiso de descarga, el cual es otorgado por la División de Permisos de Agua.

___ Ai-1 carece de un permiso ☐ a. de construcción y ☐ b. de operación de una fuente de emisión, el cual es otorgado por el Programa de Aire de esta Agencia (Regla 203 y 204 del Reglamento para el Control de la Contaminación Atmosférica-RCCA),

___ Ai-2 el equipo de control de contaminación atmosférica no cumple con las condiciones requeridas por la Agencia en el Permiso (Regla 108-A del RCCA),

___ Ai-3 quema a campo abierto ☐ a. de desechos (Regla 402-A del RCCA, ☐ b. para recuperar material (Regla 402-B del RCCA), ☐ c. de sobrante agrícola sin autorización (Regla 402-CC del RCCA),

___ Ai-4 olores objetables en la atmósfera (Regla 420 del RCCA),

___ DS-1 quema de desperdicios sólidos (Regla 303 del Reglamento para el Control de los Desperdicios Sólidos Peligrosos y No-Peligrosos-RCDSPNP),

___ DS-2 uso del terreno como vertedero clandestino (Regla 302-E del RCDSPNP),

___ DS-3 almacenamiento inadecuado de desperdicios sólidos no-peligrosos (Regla 404 del RCDSPNP),

___ DS-4 carece de un permiso para actividad generadora de desperdicios sólidos no-peligrosos (Regla II-906 del RCDSPNP),

__X__ DS-5 disposición inadecuada de los desperdicios sólidos no-peligrosos (Regla 302 del RCDSPNP),

___ DS-6 acumulación de chatarra (Regla 302-C del RCDSPNP),

___ J-1 no cumple con el Artículo 4C de la Ley Núm. 9 de junio de 1970,

R2-0003665

INFORME SOBRE QUERELLA INVESTIGADA

1. Número de querella: [illegible]
2. Nombre de la querella: Fábrica Shelfoam Manufacturing
3. Fecha de investigación: 14/8/91 4. Fecha del Informe: 23/8/91
5. Investigada por: [illegible]
6. Personas interrogadas:
Sr. Jorge Ramírez (gerente gdo.)

7. Declaraciones: En inspección realizada al caso en referencia declaró el señor Ramírez que las aguas que allí se descargan son procedentes de las máquinas; éstas trabajan con vapor. Los residuos de "foam", materia prima utilizada, sobre el terreno obedece a la rotura en el filtro de la trampa para retener los mismos. Declaró estar en la mejor disposición para corregir las deficiencias notificadas.

30

ESTADO LIBRE ASOCIADO DE PUERTO RICO / OFICINA DEL GOBERNADOR

Junta de Calidad Ambiental

JUL 19 1991

Sra. Delia Rosa Santos
RR-01 Buzón 3799
Cidra, P.R. 00739-7632

Número: QAG-91-21-0421

Título: Fábrica Chelfoam
Carr. 171 km. 0.0
Bo. Sud (Carr. de Cidra a Cayey)
Cidra

Fecha de Recibo: 15 de julio de 1991

Estimada señora Santos:

La querella sometida por usted a esta Junta, ha sido codificada bajo el número y título de referencia y será investigada por nuestros técnicos.

Una vez se realice la inspección inicial de su caso, procederemos a enviarle una comunicación, informándole el resultado de la misma.

Es importante que en cualquier futura ocasión que le sea necesario comunicarse con relación a su querella, favor de llamar al teléfono 767-8181 extensiones 2761, 2762 y 2740, utilizando el número asignado para poder localizar el expediente de su caso.

Aprovechamos la ocasión para agradecerle su interés por mejorar el ambiente que nos rodea.

Cordialmente,

Clara Perdomo Guzmán
Jefe
División de Radicaciones

CPG/clg

31

R2-0003667

HOJA DE GESTION REALIZADA

____Teléfone ____Personalmente

RE: QAG-91-21-0421

Fecha

29-VIII-91 Me comuniqué con Jorge Ramírez, (Vice Presidente Sheltfoam) Indica instaló un screen para evitar que papitas lleguen a cuerpo de agua o zanja y limpió los que habían llegado ahí.

Me informó que las aguas de retorno de las máquinas de vapor, utilizadas para expandir el styro-foam, van a la canal contigua a la fábrica.

La fábrica hace moldes de foam para empacar productos.

17-IX-91 Se debe requerir NPDES según me informa Ing. Justino Ferrer

RECIBIDA POR: _____

32

R2-0003668

Junta de Calidad Ambiental

27 de septiembre de 1991

Sra. Delia Rosa Santos
PR-01, Buzón 3799
Cidra PR

RE: QAg-91-21-0421--- FABRICA SHELFOAM--- CIDRA PR

Estimada señora Rosa:

Recientemente, personal técnico de la Oficina de Querellas realizó una ___ evaluación, XXX inspección del caso de referencia. Durante ésta...

XXX 1. se encontró que la parte querellada incurre en violaciones a el Reglamento sobre Estándares de Calidad de Agua y el Reglamento para el Control de los Desperdicios Sólidos Peligrosos y No-Peligrosos, vigentes de esta Junta,

___ 2. se encontró que la problemática no es de ingerencia de esta Agencia,

___ 3. se encontró que la parte querellada había resuelto el problema, objeto de esta querella,

___ 4. se encontró que no hay violación a los reglamentos vigentes de esta Junta,

___ 5. se encontró que para continuar la investigación del asunto es necesario que nos provea la siguiente información:

_____

_____,

___ 6. _____

_____.

R2-0003669

ESTADO LIBRE ASOCIADO DE PUERTO RICO / OFICINA DEL GOBERNADOR

Junta de Calidad Ambiental

JUL 19 1991

Sra. Delia Rosa Santos
RR-01 Buzón 3799
Cidra, P.R. 00739-7632

Número: QAG-91-21-0421

Título: Fábrica Chelfoam
Carr. 171 km. 0.0
Bo. Sud (Carr. de Cidra a Cayey)
Cidra

Fecha de Recibo: 15 de julio de 1991

Estimada señora Santos:

La querella sometida por usted a esta Junta, ha sido codificada bajo el número y titulo de referencia y será investigada por nuestros técnicos.

Una vez se realice la inspección inicial de su caso, procederemos a enviarle una comunicación, informándole el resultado de la misma.

Es importante que en cualquier futura ocasión que le sea necesario comunicarse con relación a su querella, favor de llamar al teléfono 767-8181 extensiones 2761, 2762 y 2740, utilizando el número asignado para poder localizar el expediente de su caso.

Aprovechamos la ocasión para agradecerle su interés por mejorar el ambiente que nos rodea.

Cordialmente,

Clara Perdomo Guzmán
Jefe
División de Radicaciones

CPG/clg

34

R2-0003670

ESTADO LIBRE ASOCIADO DE PUERTO RICO / OFICINA DEL GOBERNADOR

Junta de Calidad Ambiental

1 de octubre de 1990

Sr. Edwin Santiago Rivera
Controlador
SHELFOAM PRODUCTS INC.
Apartado 33[illegible]
Cidra, Puerto Rico 0063[illegible]

ASUNTO: SHELFOAM PRODUCTS, INC.
CIDRA, PUERTO RICO
PFE-LC-21-0390-0317-II-0

Estimado señor Santiago:

Me refiero a la autorización de operación fechada el dia 1 de octubre de 1990 relacionada con la fuente de emisión de epigrafe.

Con el propósito de acelerar todos los trámites administrativos relacionados con la referida autorización, hemos procedido a enviarle el mencionado documento para su aceptación y firma correspondiente. Mucho agradeceremos firme todas y cada una de las copias aqui incluidas reteniendo el original para sus archivos y enviándonos el resto de las copias a nuestras oficinas. Las copias en cuestión deberán ser recibidas en un plazo de tiempo no mayor de diez (10) dias a partir del recibo de esta comunicación.

Le informamos además, que de usted no estar en completo acuerdo con las condiciones indicadas en la referida autorización. de operación, deberá solicitar una reunión con el que suscribe dentro del plazo de tiempo antes indicado.

Es importante señalar que de ho recibir contestación alguna de usted, procederemos a denegar la autorización de operación para la fuente de emisión que usted representa.

Cordialmente,

Francisco Claudio Rios
Director
Area Calidad de Aire

AI-JE-msa

35

R2-0003671

REFERENCE 5

R2-0003672

PR ENVIRONMENTAL QUALITY BOARD Ref. 5

SUPERFUND PA/SI PROGRAM PERSONAL INTERVIEW NOTE

CONTROL NO: PRD 987377264	DATE: May 4, 1992	TIME: 0900
DISTRIBUTION:	Sheifoam Products, Inc.	
BETWEEN: William Diaz	OF: PR EQB Water Quality Division	PHONE: (809) 767-8181
AND:	Enid Y. Villegas - Superfund PA/Inspector	

DISCUSSION:

Mr. Diaz, Environmental Inspector from the Water Quality Program, explained that Shelfoam Products located in Cidra Industrial park was inspected in October 1982. The receptor stream is Río Arroyata that ends in the Río De La Plata. The industry manufactures foam products. The raw material used for this products is Expandable Polystyrene. This division found no discharge to the stream near the site. They (Shelfoam) only produced water from the cooling system of the molding machines.

This company has a PRASA Permit.

37

R2-0003673

REFERENCE 6

R2-0003674

ONSITE/OFFSITE RECONNAISSANCE
STUDY PLAN

Site Name: Shelfoam Products, Inc. CERCLIS #: PRD987377264

Site Address: State Road # 171 Km. 0.5
Sabana Seca, Puerto Rico

Coordinates: 18° 15' 26" N 66° 9' 40" W

For the Shelfoam Products site, one or both of the following, will be performed on May 14, 1992, by Enid Y. Villegas:

- ☑ Off-Site Reconnaissance
- ☑ On-Site Reconnaissance

A. Off-Site Reconnaissance

During the off-site reconnaissance, the EQB's Superfund PA/SI personnel will perform a perimeter survey of the site of concern, in order to verify previous information, or collect new data. Most observations will be obtained through a windshield survey or walking around the out-site area but without trespassing private property. Permission from legal owners will be obtained previous to any site entry. All the information gathered during the reconnaissance will be recorded on the field notebook.

The specific tasks scheduled for this reconnaissance are as follow:

R2-0003675

Field Observations

Items	Data to be evaluated	Data to be obtained	N/A (Data already available)
Site Access	X		
Site Address			X
Nearest Residence		X	
Nearest School/Day Care Center	X		
Location of Wells	X		
Location of Surface Water Bodies		X	
Potential Overland Flow Pattern		X	
Land Uses		X	
Evidence of Hazardous Waste Migration		X	
Urban Development		X	
Estimate Local Population	X		
Sensitive Environments	X		
Others:			

Field Documentation

- ☑ Location Sketches
- ☐ Photographs
- ☑ Interviews
  - ___ Local Residents
  - ___ School Authorities
  - ___ Municipal Authorities
  - ___ Puhhc Water Authorities
  - ___ Soil Survey Office
  - ___ Health Department
  - ___ Local Workers

B. On-Site Reconnaissance

During the Onsite Reconnaissance, the EQB's Superfund PA/SI personnel will conduct a site entry which will include activities such as interviews with the site operators and workers, as well as a file search and survey of all main areas and sources within. Site access will be arranged previous to each site entry. Each and

R2-0003676

every on-site related activity will be conducted based on the previously approved Generic Health and Safety Plan.

Photographic evidence will be collected during the reconnaissance and recorded in a photo log. In addition to the photo log, all site sketches and observations will be registered on the field logbook.

Field observations/documentation

- [x] Site history
- [x] Number of workers
- [x] Environmental Permits
- [ ] Previous spills/releases
- [x] Manufacturing processes
- [x] Raw materials
  - ___ type
  - ___ quantity
  - ___ containment
- [ ] Sources
  - ___ type
  - ___ location
  - ___ dimensions
- [ ] Waste types
- [ ] Disposal methods
- [ ] Migration pathways
- [ ] Others:

C. Equipment

- [x] Field Logbook
- [x] Topographic Map
- [x] Public Water System Maps
- [x] Geologic Map
- [x] 35mm Camera & accessories
- [x] Instamatic Camera & accessories
- [x] Compass
- [x] Binoculars
- [x] Range Finder
  - ___ 100'-600'
  - ___ 0' -150'
- [ ] Safety Glasses
- [ ] Tyvek
- [ ] Helmet
- [x] Safety Shoes
- [ ] Ear Protectors
- [ ] Gloves
- [ ] HNu
- [ ] OVA
- [ ] Radiation Meter
- [ ] pH Paper
- [ ] Others:

R2-0003677

OFF SITE/ON SITE RECONNAISSANCE INFORMATION REPORTING FORM

Date: May 14. 1992

Site Name: Shelfoam Products. Inc.

Site Address: State Road #171 km. 0.5
Industrial Park, Sud Ward, Cidra

EQB Personnel:	**Name**	**Discipline**
	Enid Y. Villegas	Environmental Inspector
	Denise V. Soto	Senior Environmental Inspector

Weather Conditions (clear, cloudy, rain, snow, etc.):

Sunny Day

Estimated wind direction and wind speed:

South to southwest.

Estimated temperature:

80° F

Signature: Enid Y. Villegas **Date:** May 15, 1992

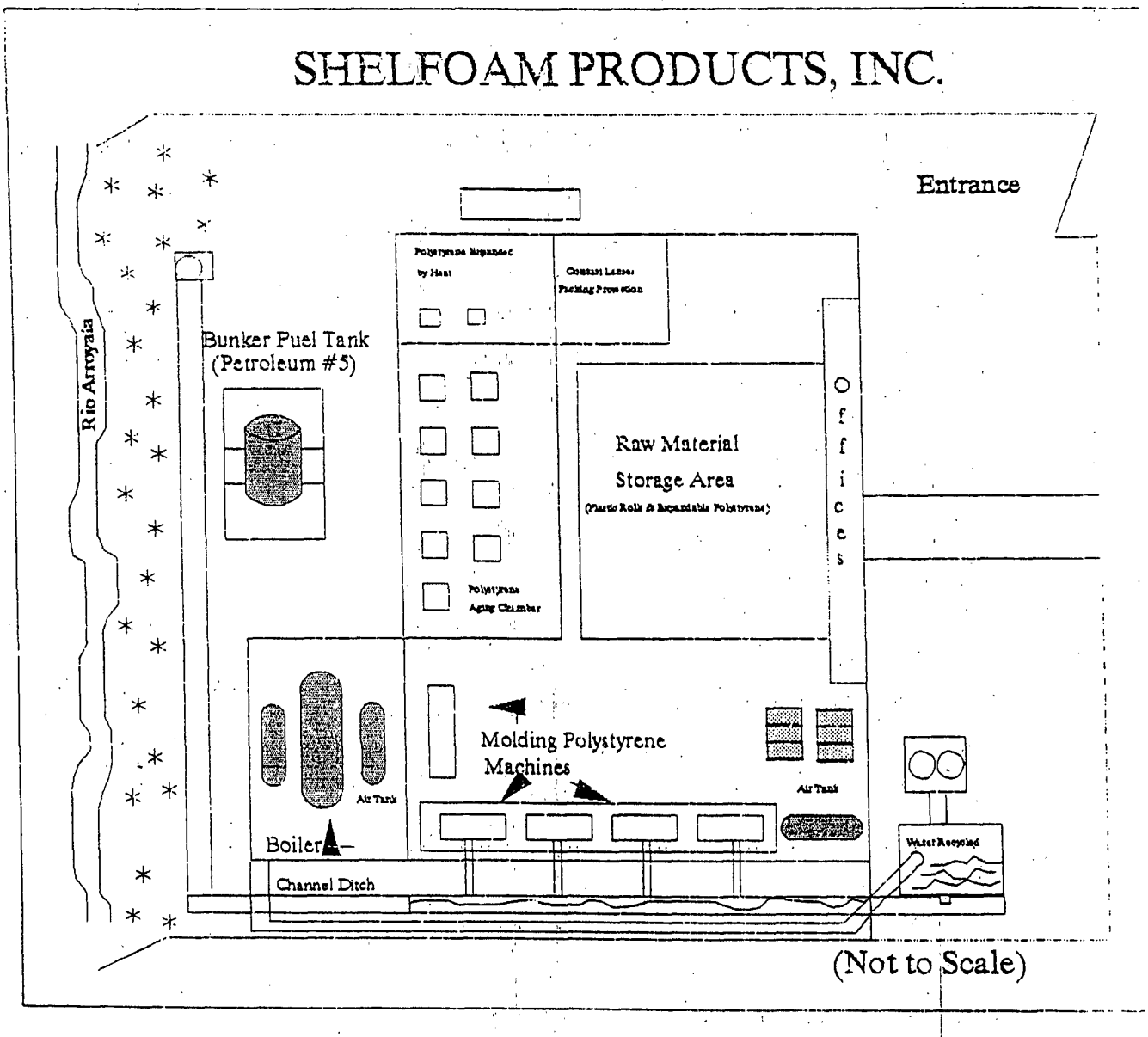
42

R2-0003678

OFF SITE/ON SITE RECONNAISSANCE INFORMATION REPORTING FORM

Date: May 14 1992

Site Name: Shelfoam Products, Inc.



43

R2-0003679

OFF SITE/ON SITE RECONNAISSANCE INFORMATION REPORTING FORM

Date: May 14. 1992

Site Name: Shelfoam Products. inc.

* * *

1000 - Superfund PA/SI inspectors. Enid Y. Viilegas and Denise Soto went to Cidra Industrial Park to visit Shelfoam Products, Inc. Immediately we asked for Mr. Jorge Ramirez de Arellano, Vicepresident in charge of this industry. He wasn't there but Mr. Edwin Santiago, Company Controller gave us all the information that we asked for. He said that since 1968 this industry has been operating continuously. Mr. Santiago explained the manufacturing process ahd said that it begins with the "Expandable Polystyrene" (raw material). This product is bought to Areo Chemical an industry that produces Petroleum Products. Mr. Santiago said that all the power need for their processes came from a boiler that has a heating capacity of 8 millions BTU. He gave us the MSDS of HCl, the bbiler softener. The Expandable Polystyrene comes in gaiior quantities or 1,000 pds. and packed in cardboard boxes. It cames in very tiny size or pallets after that, which they proceed to increase five times its size. This stage is called pre-expansion.

A blower system then transports the expanded pellets to a chamber where they are aged in rubber bags for a required period of time. Finally, they are suctioned to iill out the molding machines that work with water steam. Is here where the final expansion occurs, when the polystyrene is submitted to high temperatures produce from the boiler's steam.

Mr. Edwin Santiago explained that all the wastes produced by this manufacturing process are water and foam particles that came from the nine molding machines. These particles are swept and gain access to a channel ditch and finally to the sewer system, he explained. As we noticed neither contaminants or wastes are generated because this foam particles are sold to be reused as fertilizer for gardening purposes.

R2-0003680

Many agencies visited this industry for monitoring purposes. Those are: PRIDCO, Puerto Rico Industrial Development Corporation; PRASA, Puerto Rico Aqueduct and Sewer Authority, and finally PR Environmental Quality Board. For the last one, the following are the divisions that monitored this industry: the Air Quality Program and the Complaints Division. This monitoring is basically to inspect the boiler conditions and complaints received from neighbors of this industry.

Mr. Santiago said that the building has an approximate area of 36,000 ft² and the land property has an area of two (2) acres approximately. The owner of the land property is PRIDCO and the operator is a Board of Directors with Mr. Marcelino Garcia as its President and Mr. Jorge Ramírez de Arellano as Vicepresident.

We finished the meeting with Mr. Santiago and then the Maintenance Supervisor guided us to the storage room, boiler and manufacturing areas. At the south site of the facility, we saw the drainage ditch were the water and foam residuals are discharged.

Adjacent to the boiler (east side), is the bunker fuel tank (the combustible liquid for the boiler). Behind this tank is a PVC-9' long pipe were they said goes the water from the drainage ditch. Down a 45° slope, is a stream that ends in the Rio Arroyata.

1130 - We proceeded to do the Off Site. At 0.1 (west side) there are eight (8) neighboring sites including the Pollce building, Ramallo and Escribano Linear Packaging, Warnaco, Inc., Zenith Caribe, Pepsi-Cola and a basketball and children's playground. Behind the playground area there all eight (8) houses (residential area) and a housing project. At 0.1 mile to the south east are four (4) residences and a high school called Ana I. Candelas. Also at 0.1 mile but to the north east is the Cidra downtown area.

1230 - Finished the Off Site.

R2-0003681

OFF SITE/ON SITE RECONNAISSANCE INFORMATION REPORTING FORM

Date: May 14, 1992

Site Name: Shelfoam Products, Inc.

Camera: Canon 35mm

Film: Kodak Gold 100 - 12 exp.

Photographer: Denise V. Soto

PHOTO LOG

ROLL/PHOTO NUMBER	TIME	DESCRIPTION
1	1020	Aging chamber
2	1021	Molding machines
3	1022	Molding machine - foam particles
4	1026	Waste water collecting ditch
5	1031	Waste water with foam particles
6	1037	Front view of Shelfoam Products

R2-0003682

PHOTO 1

R2-0003683

PHOTO 2

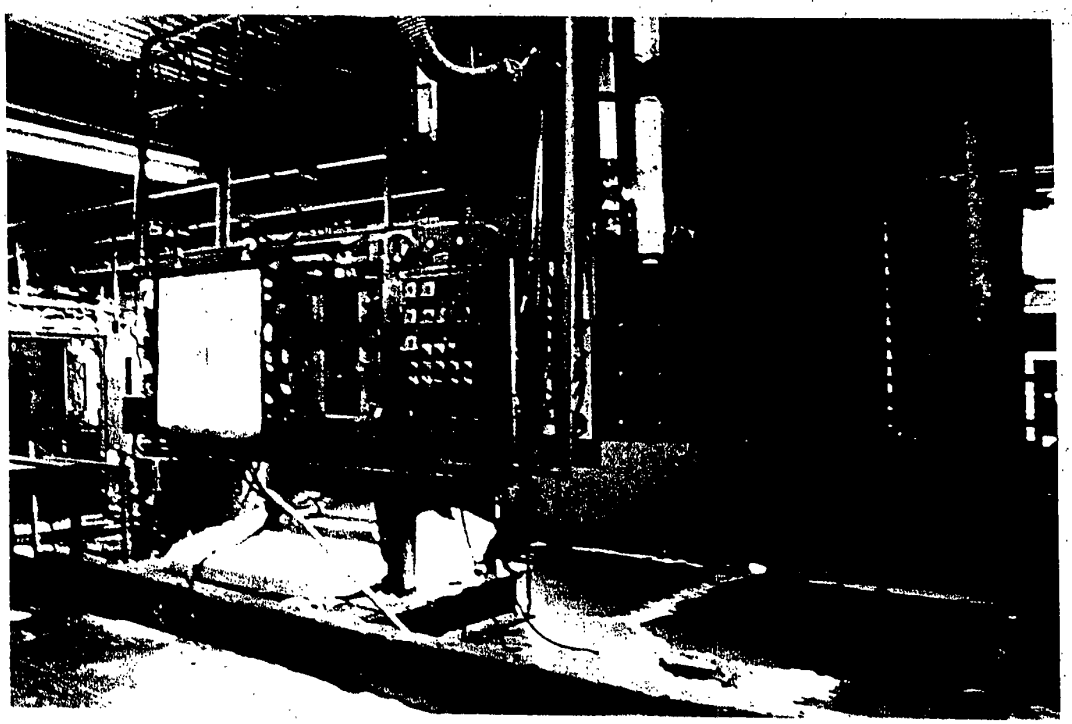


PHOTO 3

48

PHOTO 4

PHOTO 5

R2-0003685

PHOTO 6

R2-0003686

REFERENCE 7

R2-0003687

Estado Libre Asociado de Puerto Rico
AUTORIDAD DE ACUEDUCTOS I ALCANTARILLADOS

14 de octubre de 1988

Ing. José Torres
Sup. Bachiller de Ingeniería

Sr. José M. Ramos
Técnico de Pretratamiento

VISITA A INPECCION A INDUSTRIA SHEALFOAM EN CIDRA

Fecha:	19 de septiembre de 1988
Representantes PRASA:	José M. Ramos Rivera Técnico de Pretratamiento Ramón A. Ríos Técnico de Pretratamiento
Representante Industria:	Ing. Fernando Crespo Manager

El día 19 de septiembre de 1988, se efectuó la visita a Shealfoam Products Inc., en donde el ingeniero Crespo nos atendió cordialmente. La industria en cuestión produce artículos en polyestireno.

A continuación se precede a describir las partes envueltas en el proceso.

Proceso:

1. Se utiliza como materia prima el polyestireno en cantidades de un gaiior ó 1,000 libras empacadas en cajas de cartón. Esta viene en forma de perlas o "pellets" de tamaño diminuto.

2. Se procede a aumentar el tamaño al aplicársele vapor de agua aumentando a razón de cinco (5) veces su tamaño original. Esto se conoce como una pre-expansión.

3. A partir de aquí, se transportan y almacenan una cantidad considerable de estas en sacos de hule donde proceden a "curarse o envejecer" por un lapso de tiempo. Luego, son succionadas oierta cantidad para llenar los moldes en unas prensas que hacen uso de vapor de agua.

52

R2-0003688

4. Es aquí, donde ocurre una expansión final al ser sometido dicho polyestireno a alta temperatura causada por el vapor de agua. En este momento sufre una deformación el "pellet" ccmprimiéndose unos con otros y asumiendo la forma sugerida en el molde.

   Otro prceso mucho menos elaborado que el descrito arriba se realiza en una prensa que hace uso de una hornilla eléctrica para calentar y debido a que el raro material consiste en plástico P.V.C. o H.P.S.I. (este método consíste en un "Thermal Guttlíng") este se deforma y se corta obteniéndose el artículo deseado (tapas, cucharas, bandejas, etc.).

Desperdicios generados

Existe un "contact water" en nueve (9) prensas, habiendo dos (2) que son nuevas y operan automáticas y las mismas no usan vapor de agua en contacto con el polyestireno. Las primeras, ocasionan desperdicios sólidos, el mismo foam en perlas y aceite por motivo a constante goteo. Estas se barren y recogen o ganan acceso al pluvial o finalmente al alcantarillado (esto en menor cuantía según el Ingeniero Crespo).

Observaciones:

1. En el lugar de almacenaje de los productos a ser utilizados en maquinarias y equipos, no presentan un área que garantice que cualquier derrame que ocurra contamine el terreno o agua en el área adyacente.

2. Algunos de los productos se mencionan aquí con sus nombres comerciales tales como:

   a. Chevron GST oil 32
   b. Fuel oil TMT
   c. Shell Tells lis 32
   d. Selling (uso en calderas) no combustible
   e. Harmony 46 oil

3. Estos cuentan con un S.I.C. número 3279 clasificadas como "miscellaneous plastic products".

4. Según C.F.R. esta industria no seria categórica, pues este foam seria un producto intermedio (veáse 463.1 (b).

JMR/mro
cc: Ing. Soderberg
Ing. Santiago
Exp. Industria

53

R2-0003689

SEA HORSE INC.

ALBERTO A. DAPENA, SR.
PRESIDENT

ANALYTICAL REPORT

FUEL OIL NO. 5

SAMPLE IDENTIFICATION:

SOURCE: TK 516 DATE: 2/14/92 TIME: 13.25 HRS.

REMARKS:

	METHOD	SPECIFICATIONS MIN	SPECIFICATIONS MAX	DATA
GRAVITY, API	D-287	17.0	24.0	19.2
SULFUR, WT. %	D-4294		2.0	1.24
VISCOSITY, SFS/122 ºF	D-88		25	23
ASH, WT. %	D-482		.10	0.015
CARBON RESIDUE, WT. %	D-4530		10.0	9.8
HEATING VALUE, NET, BTU/LB.	*	17000	19000	17,728
WATER & SEDIMENT, VOL. %	D-96		1.0	0.05
POUR POINT, ºF	D-97		60	-5
FLASH POINT, ºF, PMCC	D-93	150		214

* CALCULATED/BUREAU OF MINES METHOD.

P.O. BOX 8849, PONCE, PUERTO RICO 00732 / TEL. (809) 836-3000 FAX 836-3106
MAIN OFFICE AT OIL TERMINAL: BATTERY "B" TALLABOA/RD. 127 CORNER ROAD 386, PEÑUELAS, PUERTO RICO 00724

● MARINE & INDUSTRIAL FUELS ● SERVICING ALL PORTS IN PUERTO RICO AND THE CARIBBEAN

R2-0003690

POTENTIAL HAZARDS

FIRE OR EXPLOSION

Flammable/combustible material; may be ignited by heat, sparks or flames.
May burn rapidly with flare-burning effect.

HEALTH HAZARDS

Fire may produce irritating or poisonous gases.
Contact may cause burns to skin and eyes.
Runoff from fire control or dilution water may cause pollution.

EMERGENCY ACTION

Keep unnecessary people away; isolate hazard area and deny entry.
Stay upwind; keep out of low areas.
Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide limited protection.
CALL CHEMTREC AT 1-800-424-9300 FOR EMERGENCY ASSISTANCE.
If water pollution occurs, notify the appropriate authorities.

FIRE

Small Fires: Dry chemical, sand, earth, water spray, or regular foam.
Large Fires: Water spray, fog or regular foam.
Move container from fire area if you can do it without risk.
Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Stay away from ends of tanks.
For massive fire in cargo area, use unmanned hose holder or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
Magnesium Fires: Use dry sand, Met-L-X® powder or G-1 graphite powder.

SPILL OR LEAK

Shut off ignition sources; no flares, smoking or flames in hazard area.
Do not touch or walk through spilled material.
Small Dry Spills: With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.
Large Spills: Wet down with water and dike for later disposal.

FIRST AID

Move victim to fresh air; call emergency medical care.
In case of contact with material, immediately flush skin or eyes with running water for at least 15 minutes.
Removal of solidified molten material from skin requires medical assistance.
Remove and isolate contaminated clothing and shoes at the site.

R2-0003691

Estado Libre Asociado de Puerto
AUTORIDAD DE ACUEDUCTOS

25 de enero de 1989

Ing. Fernando Crespo
Gerente
Shealfoam Inc. # 2
P. O. Box 326
Cidra, P.R. 00639

Estimado ingeniero Crespo:

Durante la visita efectuada a sus facilidades el día 21 de octubre de 1988, solicitamos de usted los siguientes documentos los cuales aún no hemos recibido.

a. Site Plan de las facilidades.

b. Permiso calidad ambiental para descarga agua pluvial al terreno.

c. Permiso de conexión a PRASA.

d. Cuestionario triple A-715.

Estos documentos son necesarios para la evaluación de su industria y redacción de su permiso de descarga de aguas usadas. Solicitamos nos someta los mismos en o antes del 10 de febrero de 1989.

Cordialmente,

José M. Ramos
Técnico de Pretratamiento
Depto. Permisos e Ingeniería

56

R2-0003692

AUTORIDAD DE ACUEDUCTOS ...

28 de octubre de 1988

Ing. Fernando Crespo
Gerente
Shealfoam Inc. No. 2
P.O. Box 326
Cidra, P.R. 00639

Estimado señor Crespo:

Durante la visita efectuada a sus facilidades el día 21 de octubre de 1988 solicitamos de usted los siguientes documentos los cuales aún no hemos recibido.

a. Site plan (que ilustre líneas sanitarias)

b. Permiso de la Junta de Calidad Ambiental (para descargar al pluvial).

c. Permiso de conexión sanitaria a PRASA.

d. Cuestionario forma AAA-715 completato.

Estos documentos son necesarios para la evaluación de su industria y redacción de su permiso de descarga de aguas usadas. Solicitamos nos someta los mismos en o antes del 4 de noviembre de 1988.

Agradecemos su atención al respecto.

Atentamente,

José M. Ramos Rivera
Técnico de Pretratamiento
Área de Permisos e Ingeniería

*NOTA: De ser necesario se podrá coordinar reunión en persona para discutir estos documentos al momento de su entrega, en la planta o en esta oficina.

57

R2-0003693

A C E P T A C I O N

Yo, Edwin Santiago ACEPTO esta autorización y las condiciones indicadas en la misma después de haberla leido en su totalidad.

Hoy dia 11 de octubre de 1990

FIRMA

AI-JE-msa

58

ESTADO LIBRE ASOCIADO DE PUERTO RICO
AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS

11 de julio de 1990

Sra. Lizette Lugo, MEH
Supervisora, Asuntoa de Pretratamiento

Lcda. Monserrate Santiago
Técnico de Pretratamiento

VISITA: SHELFOAM PRODUCTS INC., CIDRA

El 22 de junio de 1990 visité Shelfoam Products Inc. en Cidra, en Cidra, me atendió el Sr. Jorge Ramirez, Vicepresidente.

La industria produce neveras portátiles de styrofoam. El proceso consiste en llenar la moldeadora con la resina, calentar y enfriar el molde con agua, esto es automático.

El agua utilizada para enfriar los moldes es recirculada al sistema de enfriamiento, por lo tanto el agua de proceso no descarga al alcantarillado.

La pérdida de agua que toca el molde va al drenaje que se une al agua del pluvial y descarga al rio que se encuentra detrás de la estructura.

La industria posee un sistema de caldera que provee el vapor utilizado por las moldeadoras, esta funciona con petróleo crudo.

El tanque de petróleo crude se encuentra en un dique el cual tiene residuos de éste y agua, estas son acarreados como desperdicios líquidos. Junto a la caldera están los compresores que producen el aire a presión que envia el vapor a las calderas y la resina a la llevadora de la moldeadora.

Esta industria emplea 30 personas en turnos de 7:00 - 3:00 pm y de 3:00 - 10:30 pm. Se pidió copias de "Site Plan", plano de plomeria, "Material Safety Data Sheets" y factura del acarreador de los desperdicios de petróleo crudo.

Tiene SIC No. 3086.

A dicha industria se le emitirá un contrato.

59

R2-0003695

AAA 588 (REV. 9/88)

Estado Libre Asociado de Puerto Rico
AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS
P.O. BOX 14580
BO. OBRERO STATION
SAN JUAN, P.R. 00916-4580

SCOMPAÑE ESTE TALON CON SU CHEQUE O GIRO

VER AL DORSO

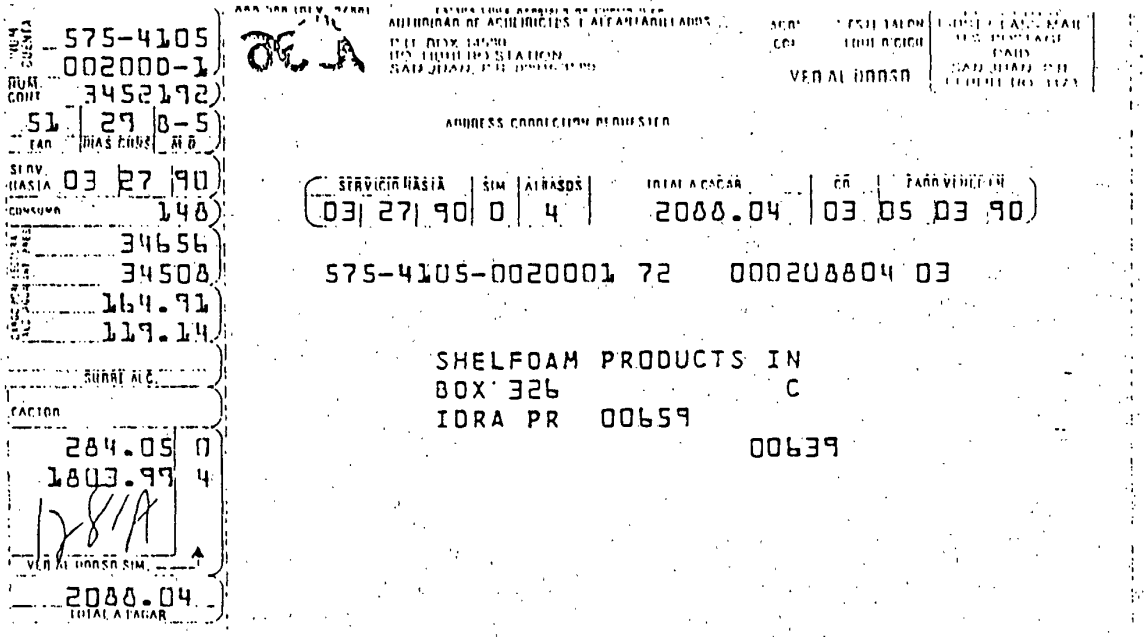
PRESORTED FIRST CLASS MAIL U.S. POSTAGE PAID SAN JUAN, P.R. PERMIT NO. 1173

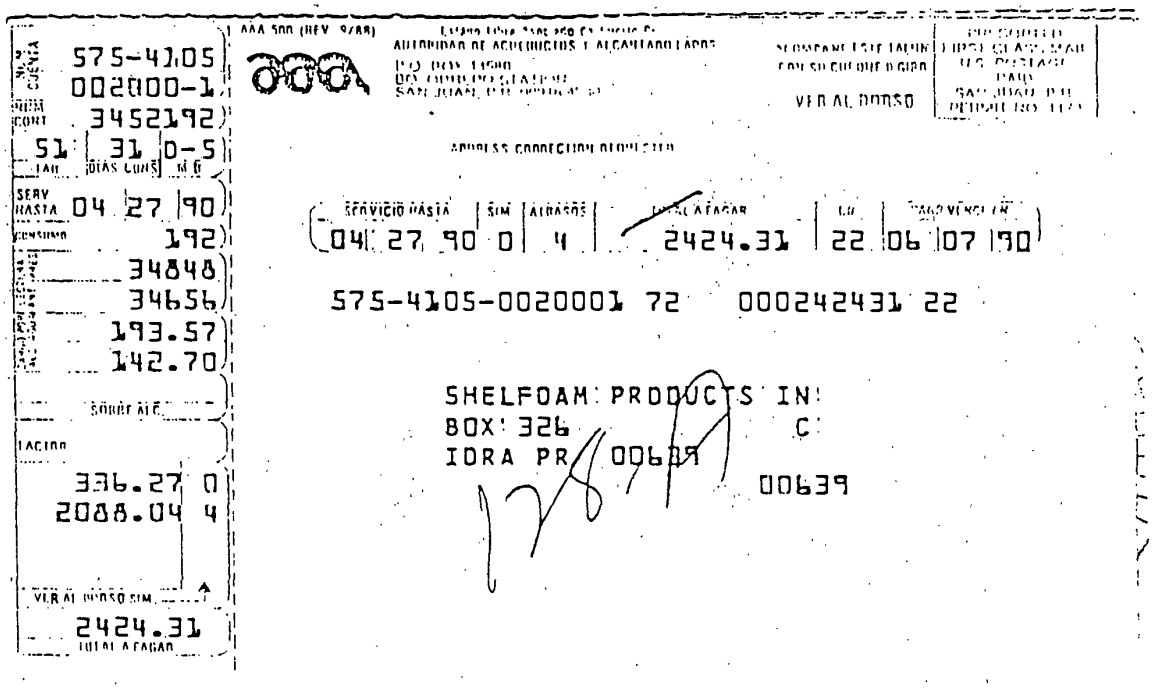
ADDRESS CORRECTION REQUESTED

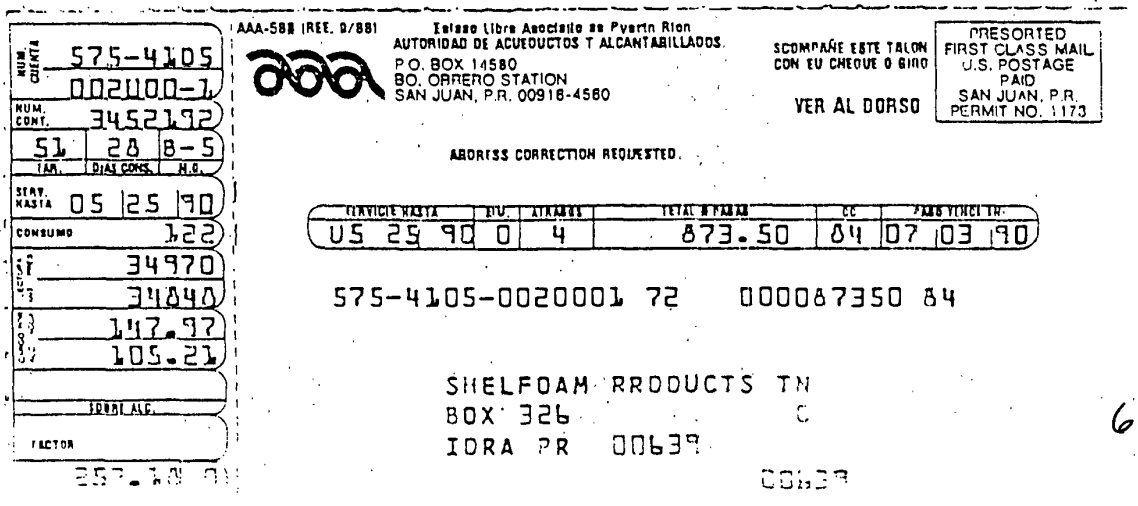
SERVICIO HASTA	SIM	ATRASOS	TOTAL A PAGAR	CC	PAGO VENCE EN
03 27 90	0	4	2088.04	03	05 03 90

575-4105-0020001 72 000208804 03

SHELFOAM PRODUCTS IN
BOX 326 C
IDRA PR 00659
00639







NUM. CUENTA 575-4105
002000-1
NUM. CONT. 3452192
51 | 29 | 8-5
TAR. | DIAS CONS. | M.D.
SERV. HASTA 03 27 90
CONSUMO 148
34656
34508
164.91
119.14
SOBRE ALC.
FACTOR
284.05 0
1803.99 4
128/A
VER AL DORSO SIM.
2088.04
TOTAL A PAGAR

AAA 588 (REV. 9/88)

Estado Libre Asociado de Puerto Rico
AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS
P.O. BOX 14580
BO. OBRERO STATION
SAN JUAN, P.R. 00916-4580

SCOMPAÑE ESTE TALON CON SU CHEQUE O GIRO

VER AL DORSO

PRESORTED FIRST CLASS MAIL U.S. POSTAGE PAID SAN JUAN, P.R. PERMIT NO. 1173

ADDRESS CORRECTION REQUESTED

SERVICIO HASTA	SIM	ATRASOS	TOTAL A PAGAR	CC	PAGO VENCE EN
04 27 90	0	4	2424.31	22	06 07 90

575-4105-0020001 72 000242431 22

SHELFOAM PRODUCTS IN
BOX 326 C
IDRA PR 00639
128/A
00639

NUM. CUENTA 575-4105
002000-1
NUM. CONT. 3452192
51 | 31 | 0-5
TAR. | DIAS CONS. | M.D.
SERV. HASTA 04 27 90
CONSUMO 192
34848
34656
193.57
142.70
SOBRE ALC.
FACTOR
336.27 0
2088.04 4
VER AL DORSO SIM.
2424.31
TOTAL A PAGAR

AAA-588 (REV. 9/88)

Estado Libre Asociado de Puerto Rico
AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS
P.O. BOX 14580
BO. OBRERO STATION
SAN JUAN, P.R. 00916-4580

SCOMPAÑE ESTE TALON CON SU CHEQUE O GIRO

VER AL DORSO

PRESORTED FIRST CLASS MAIL U.S. POSTAGE PAID SAN JUAN, P.R. PERMIT NO. 1173

ADDRESS CORRECTION REQUESTED.

SERVICIO HASTA	SIM	ATRASOS	TOTAL A PAGAR	CC	PAGO VENCE EN
05 25 90	0	4	873.50	84	07 03 90

575-4105-0020001 72 000087350 84

SHELFOAM RRODUCTS TN
BOX 326 C
IDRA PR 00639
00639

NUM. CUENTA 575-4105
002000-1
NUM. CONT. 3452192
51 | 28 | 8-5
TAR. | DIAS CONS. | M.D.
SERV. HASTA 05 25 90
CONSUMO 122
34970
34848
147.97
105.21
SOBRE ALC.
FACTOR
257.18 0

60

R2-0003696

AUTORIZACION DE USO DE FACILIDADES DE ALCANTARILLADOS DE LA AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS PARA USUARIOS COMERCIALES E INDUSTRIALES

90 SEP 11 AM 9:04
RECIBIDO
DIVISION LEGAL

Shelfoam Products, Inc. representado por Sr. Jorge Ramírez en su carácter de Vice-Presidente solicita autorización para descargar aguas residuales en las facilidades de alcantarillados de la Autoridad de Acueductos y Alcantarillados de Puerto Rico (la Autoridad) y se compromete a cumplir con las siguientes condiciones:

A. CONDICIONES GENERALES:

1. Cumplir con el Reglamento de la Autoridad de Acueductos y Alcantarillados sobre los Servicios de Agua y Alcantarillado (el Reglamento), según sea y pueda ser enmendado.
2. Someter una solicitud de Permisos de Descargas de Aguas Residuales, cuando sea requerido por la Autoridad.
3. Realizar muestreos y análisis de las descargas residuales y someterlos a la Autoridad cuando sean requeridos.
4. Instalar, operar y dar mantenimiento adecuado a un sistema separador o retenedor para el recogido y remoción de manteca, grasas, aceite y/o materias sedimentables, tales como arena u otras sustancias que puedan obstruir el sistema de alcantarillado. Esta condición es aplicable a puestos de gasolina, restaurantes, hospitales, supermercados, talleres, negocios o industrias que produzcan las sustancias aquí señaladas y no posean ya un sistema de pretratamiento.
5. Dicho sistema separador o retenedor deberá limpiarse con la frecuencia adecuada para su buen funcionamiento, los desperdicios de su limpieza no podrán descargarse en el sistema de alcantarillados y se dispondrá de estos según provisto por las leyes correspondientes.

R2-0003697

6. El usuario no podrá descargar ni permitir descargar contaminantes, sustancias o aguas residuales prohibidas por el Reglamento de la Autoridad de Acueductos y Alcantarillados y/o por la reglamentación federal aplicable.

7. El usuario no podrá descargar en las lineas de alcantarillado de la Autoridad, un volúmen mayor al autorizado por el Departamento de Servicios Técnicos de Ingeniería y el Programa de Pretratamiento. También deberá notificar expresamente y por escrito al Programa de Pretratamiento de la Autoridad cualquier cambip planificado que pueda ocasionar una descarga en exceso del limite autorizado.

8. En caso de incumplimiento o violación del usuario con cualesquiera de las condiciones o de esta Autorización y/o el Reglamento de la Autoridad, ésta a su disereción, podrá notificar la resolución de la presente Autorización y/o imponerle al usuario multas administrativas de hasta cinco mil dólares (5,000.00) diarios por violación, sin necesidad de más pruebas que la existencia del incumplimiento o violación. Además, la Autoridad podrá recuperar del usuario todos los costos operacionales, de mantenimiento, de capital y otros que en este momento o al momento de ocurrir una violación o incumplimiento, si ocurriese, no podrían ser determinados con exactitud.

9. En caso de resolución de la presente autorización, la Autoridad podrá suspender o desconectar el servicio de alcantarillado con tan sólo notificar al usuario con quince dias de anticipación.

10. La Autoridad brindará un servicio al usuario según dispongan las leyes y reglamentos vigentes.

62

R2-0003698

11. El usuario suscribiente se somete a la jurisdicción primaria de la Autoridad y conviene en agotar los remedios y procedimientos admlnistrativos en casos de conflicto con la presente Autorización y Acuerdo.

12. Este documento eonstituye el acuerdo entre las partes, el cual entrará en vigor a partir de la fecha de aprobación y estará vigente mientras se cumpla con las condiciones aqui establecidas. El usuario es responsable de someter a la Autoridad una solicitud de renovación y reevaluación en case de ocurrir cualquier cambio en la empresa. Esta deberá estar acompañada por cualquier información adicional que sea necesaria para poner al dia aquella que ya posee la Autoridad, incluyendo futures planes que puedan afectar la calidad de las aguas. La Autoridad evaluará toda la información provista por el usuario y determinará si este requiere un Permiso de Descarga de Aguas Residuales o una nueva Autorización de Uso.

Nombre del Usuario : Shelfoam Products, Inc.

Dirección Fisica : P.R. No. 171, Km. 0.5, Cidra, PR 00639

Dirección Postal : P.O. Box 326
Cidra, Puerto Rico 00639

Sr. Jorge Ramirez
Nombre Representante Autorizado

Firma

Vice-Presidente
Posición

8-30-90
Fecha

Aprobado por: Carl-Axel P. Soderstrom
Nombre

Firma

Director Area de Tratamiento
Título/Posición

18/9/90
Fecha

63

R2-0003699

INDUSTRIAL WASTEWATER DISCHARGE PERMIT APPLICATION

I General Information and Attestments

A. Facility Name: SHELFOAM PRODUCTS INC
Mailing Address: BOX 326 CIDRA PR 00639
Location of Facility: CARR 171 KM 0.5 CIDRA PR

B. Facility Official (Owner, Partner or Officer) Responsible for the Environmental Information:

Name: JORGE RAMIREZ DE ARELLANO
Title GENERAL MANAGER
Telephone Number: 739-2433

C. Attestment:

The information contained in this application is familiar to me and to the best of my knowledge and belief, such information is true, complete and accurate.

July 11, 1990
Date

Jorge Ramirez
Signature (Owner/Partner/Officer)

II Facility Information

A. Brief description of all manufacturing or service activities performed at this facility:

POLYSTERENE BEADS IS EXPANDED TO BE USED IN FOAM PACKAGING MANUFACTURING.

B. List raw materials used in manufacturing processes, and amount processed per day
47,000 POUNDS OF POLYSTERENE BEADS APPROX. MONTHLY EXPANDED WITH A DAILY PRODUCTION OF 6000 UNITS APPROX.

C. List of finished products or units produced per day
ABOUT SIX DIFFERENTS MODELS OF FINISHED GOODS ON PACKAGING TYPES PER DAY.

D. Number of working hours 16 HOURS A DAY / 5 DAYS ON WEEK

E. Total number of employees 26

R2-0003700

III Water Usage and Wastewater Information

A. Types of wastewater discharges to municipal sewerage system: SANITARY SERVICE AND THE OTHER REGULAR USE OF A NORMAL BUILDING.

B. Estimate the percent of wastewater discharge of actual flow values.

Water Use	% of Total Water Intake	Discharged to: (i.e. storm or sanitary sewer, septic, surface water, etc.
Blowdown	20%	RECYCLED / EVAPORATES
Cooling (non-contact)	30%	" "
Sanitary	50%	SANITARY SEWER
Other		

C. If available, attach a copy of a recent typical wastewater analytical report and a diagram of your facility layout.

D. Is wastewater pretreatment* being used or planned? Indicate parameters treated and describe method of treatment.

NO

E. Is this faciiity subject to Federal Categoricai Pretreatment Standards?
Yes _____ No X

If so, which one(s) _____

F. Are any wastewater discharged to a Bulk Hauler?
Yes _____ NO X

If yes: Why and where is discharged _____

Include also copy of the permit or authorization

*Pretreatment include oii, traps, neutralization sedimentation, filtration, etc.

R2-0003701

DYLITE® EXPANDABLE POLYSTYRENE

The True Facts

ARCO Chemical

FACT SHEET

1 What is DYLITE?

DYLITE is ARCO Chemical's trade name for expandable polystyrene resin.

2 What is Expandable Polystyrene (EPS)?

EPS is a rigid, closed cell/cellular plastic made from petrochemicals derived from crude oil.

3 Is molded EPS the same as extruded?

No, extruded polystyrene (liks blueboard) uses a different blowing agent and a different manufacturing process. Molded EPS, unlike extruded, is available in many different densities and thicknesses. On a tapered roof it permits many different cuts and degrees of slope.

4 Does DYLITE Expandable Polystyrene contain CFC's?

No. We do not use any CFC's in our product. There are no CFC's used in our production. The closed cells contain dead air space which provides excellent insulating properties. There are no CFC's to escape to the ozone layer.

5 Does DYLITE Expandable Polystyrene exhibit thermal drift?

No. Since there are no CFC's in DYLITE EPS, only dead air space, the R value stays the same indefinitely. According to a study conducted by Structural Research, Inc. (Sponsored by NRCA, MRCA, and SPI) EPS roofs sampled after 15 years showed no change in R value. ARCO Chemical even offers a warranty program for 20 years at 100% of its original R value.

6 Is Expandable Polystyrene being recycled and what effect does it have on landfills?

A. DYLITE Expandable Polystyrene is recyclable and is being recycled today at a number of locations in the U.S.

B. According to Dr. W. J. Rathje, Professor of Anthropology at University of Arizona, who has been digging up landfills; foam plastics account for *only ¼ of 1%* (.25%) of the volume of landfills.

NOTE: Biodegradation is not a uniform process. In landfill layers lacking moisture, there is no real sign of biodegradation. Readable newspapers have been excavated from 1962.

7 Does DYLITE Expandable Polystyrene meet code requirements?

Yes. DYLITE EPS meets or exceeds the following codes or standards: ASTM C-578, BOCA, Factory Mutual, ICBO, Underwriters Laboratories, and SBCCI.

8 How toxic is Expandable Polystyrene?

According to the National Bureau of Standards Combustion Test, data collected from seven labs concluded that under the worst case fire scenario, EPS was considered to be no more toxic than wood (Douglas Fir).

9 Is water absorption a problem with Expandable Polystyrene?

No. Water absorption is low. The non-interconnecting cell structure prevents capillary absorption into the interior of a molded piece. Testing by the State of Minnesota in foundation wall insulation found EPS samples 7 years old with 0.13% moisture. The Structural Research study took samples of roofs ranging in age from 6 to 15 years old. Moisture content was found to be very low—a maximum of 0.04% by volume.

10 What other product uses DYLITE Expandable Polystyrene?

Many of the white foam coffee cups are made from CFC-free DYLITE EPS. They provide a safe, excellent insulating material.

66

R2-0003702

1 Introduction

Expanded polystyrene is a rigid, closed cell, cellular plastic with density dependent properties. Physical properties increase with increasihg density, but cushioning properties decrease. Many properties are influenced by molded product quality (degree of fusion).

Flexural strength, tensile strength, water vapor transmission, and water absorption properties are adversely affected by poor fusion. Thermal conductivity and compressive strength are relatively unaffected by fusion quality.

The data reported in this bulletin were obtained from specimens molded under optimum conditions. The density of molded specimens was accurately measured prior to testing, and property values reported are the averages of a series of tests run over a period of years.

Optimum molding conditions cannot always be utilized in commercial plants, nor can density always be as accurately controlled as in a laboratory. In recognition of this, the values reported in this bulletin should not be regarded as specification or minima. Should a property be critical in a particular application, then that property should be determined on specimens molded at production conditions at the appropriate density. Laboratory testing should be followed by extensive field testing. The edgewise compression and compressive creep data (Figures 7, 8, and 9) were developed, and utilized in field tests, for particular packaging applications.

Tests were run according to the ASTM test methods or Military Specifications listed. All charts and graphs are based on English units; also shown are approximate values in the International System of Units (S.I.), recommended in ASTM E-380-79, Metric Practice Guide; selected S.i. units are listed in Appendix A.

CAUTION: The foamed polystyrene described in this bulletin is combustible and should not be exposed to open flame or other ignition sources.

R2-0003703

Mechanical Strength Properties*

The stress-strain curve for a ductile material up to the proportional limit is a straight line (the ratio of stress to strain is constant). Beyond the proportional limit a ductile material will develop additional strain without additional stress (yield point). Beyond the yield point, the stress will again increase until the maximum, the ultimate strength, is reached. A ductile material will continue to deform beyond the ultimate strength while a brittle material will fail at ultimate strength.

A material that has been stressed to the yield point will undergo permanent deformation and with the release of all stress, retain some permanent set. Many structural materials can be stressed to the yield point without seriously sacrificing their load bearing capabilities. For materials with well defined yield points, it is common practice to list both their yield strength and ultimate strength.

Expanded polystyrene, not a ductile material, has stress-strain curves that do not have well defined yield points. Therefore, the ultimate strengths at failure are reported for tensile, flexural, and shear strength (Figures 2, 3, and 4). For compressive strength, the stress at various deformations is reported (Figure 5). Since the proportional limit for expanded polystyrene occurs at approximately 3% deformation, deformations beyond this will result in permanent set (Figure 6).

Figures 5 and 6 can be useful guides for short term loads where some deformation is acceptable. For long term loads, Figure 7 should be used. The static compressive creep, Figures 8 and 9, correlates well with the design limit curve of Figure 7.

The values shown should not be regarded as specification or minima.

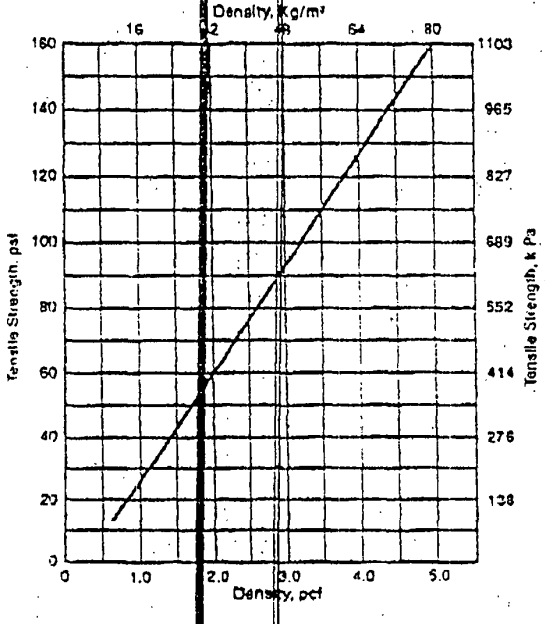


Figure 2. Tensile Strength vs Density
MIL-P-19644

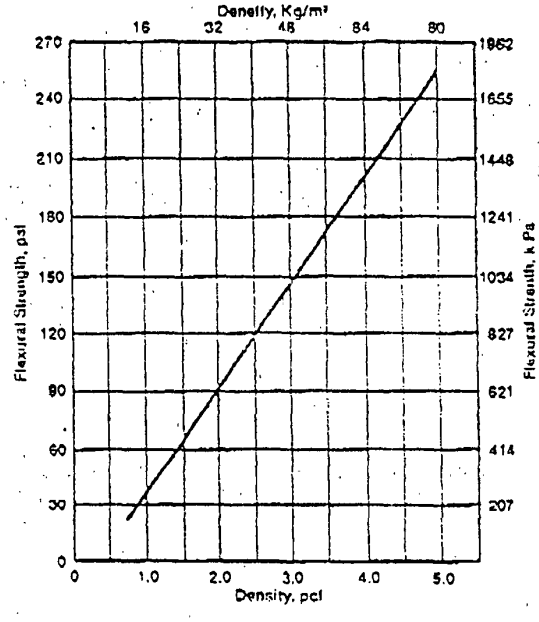


Figure 3. Flexural Strength vs Density
ASTM C-203

68

R2-0003704

Figure 1. Expanded Polystyrene Properties Summary

Property	Units	ASTM Test	Density (pcf) 1.0	1.25	1.5	2.0
Thermal Resistance (R Value) @ 75°F	one inch		3.85	3.92	4.00	4.17
Thermal Resistance (R Value) @ 40°F	one inch		4.17	4.25	4.55	4.76
Compressive Strength at 10% Deformation	psi	D1621	12-17	16-20	21-27	31-37
Flexural Strength	psi	C203	28-35	45-60	55-70	80-95
Water Vapor Transmission	perm inch	C355	0.8-2.6	0.8-2.6	0.8-2.5	0.5-2.4
Water Absorption (volume)**	%	C272*	0.9-1.9	0.8-1.3	0.8-1.6	0.1-1.5
Maximum Service Temperature	°F		175	175	175	175
Coefficient of Linear Expansion	in/in/°F	D695	3.5×10^{-5}	3.5×10^{-5}	3.5×10^{-5}	3.5×10^{-5}

*ARCO Chemical Company modified procedure (no alcohol dip).
**Sample size 3" x 3" x 1" cut from 1" boards randomly selected throughout molded 20" billets.

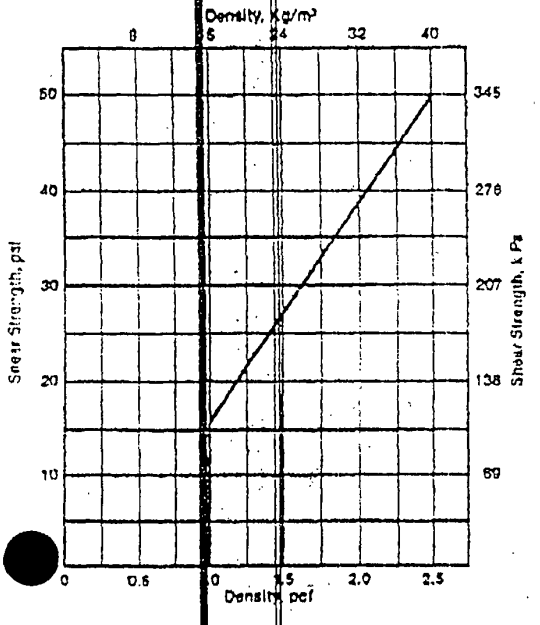


Figure 4. Shear Strength vs Density ASTM C-273

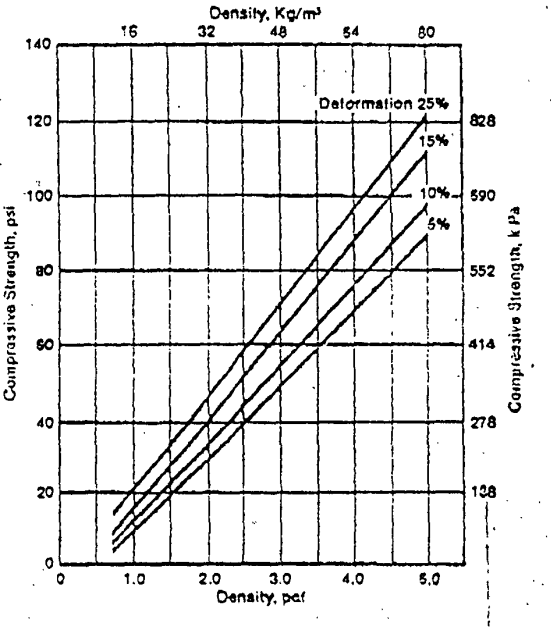


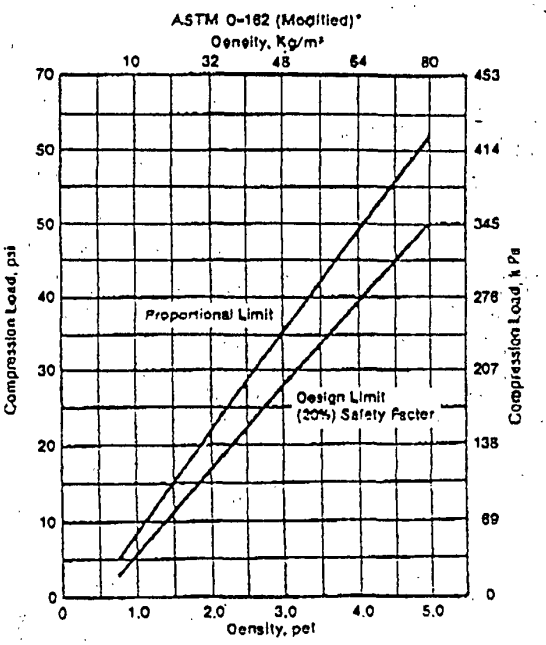
Figure 5. Compressive Strength vs Density ASTM D-1621

R2-0003705

Figure 6. Compression Set

Nominal Density pcf	kg/m³	Percent Compression Set After Deformation of: 10%	20%	30%	40%
1	16	2.3	5.4	10.3	14.3
2.5	40	3.1	9.6	15.3	24.2
3	48	3.3	9.8	17.7	24.3
4.5	72	4.0	11.7	18.6	27.7

Figure 7. Edgewise Compression Aged Expanded Polystyrene vs Density ASTM D-1621 (Modified*)



*6" x 5" x 1" Samples Tested on Edge

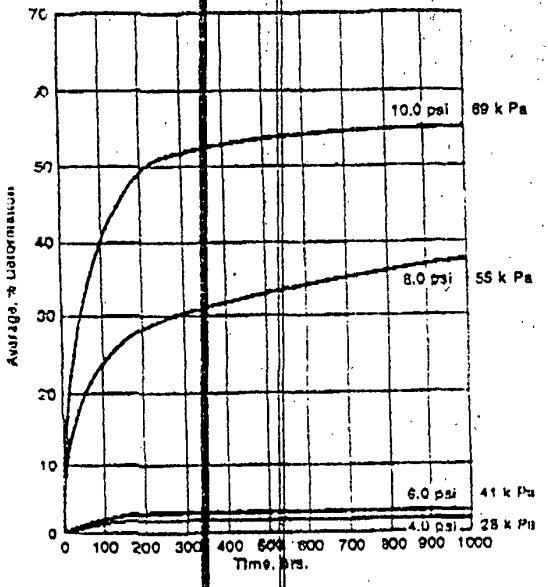


Figure 8. Static Compressive Creep—Nominal Density 1.0 pcf

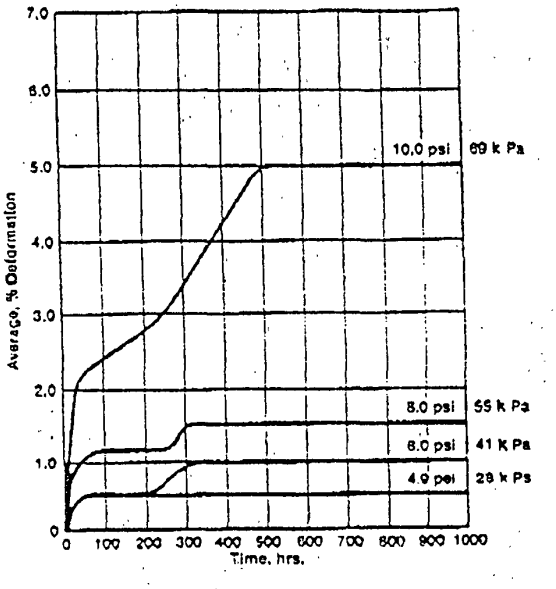


Figure 9. Static Compressive Creep—Nominal Density 1.5 pcf

70

R2-0003706

3 Thermal Properties

Expanded polystyrene does not become brittle at subzero temperatures. The testing of unnotched specimens conditioned at -100°F (-73°C) for 48 hours demonstrates no loss of impact resistance compared to specimens tested at 73°F. The effect of elevated temperature on mechanical properties is an accelerated decline of the values shown in Figures 2 to 5 until, at approximately 190°F (88°C), the so-called zero strength is reached.

Expanded polystyrene at densities above 2 pcf may expand or blister when exposed to elevated temperatures. The temperature at which blistering may occur decreases as density increases (Figure 10), particularly on freshly molded parts. Molded expandable polystyrene should not be continuously exposed to temperatures in excess of 175°F (79°C).

Figure 10. Effect of Temporature on Molded Surfaces

Nominal Density pcf	kg/m³	Exposure Tamporatures, °F (°C) 125°F (52)	150°F (66)	175°F (79)
1	16	No Change	No Change	No Change
2	32	No Change	No Change	No Change
4	54	No Change	Slightly Blistered	Blistered
6	95	No Change	Slightly Blistered	Extremely Blistered

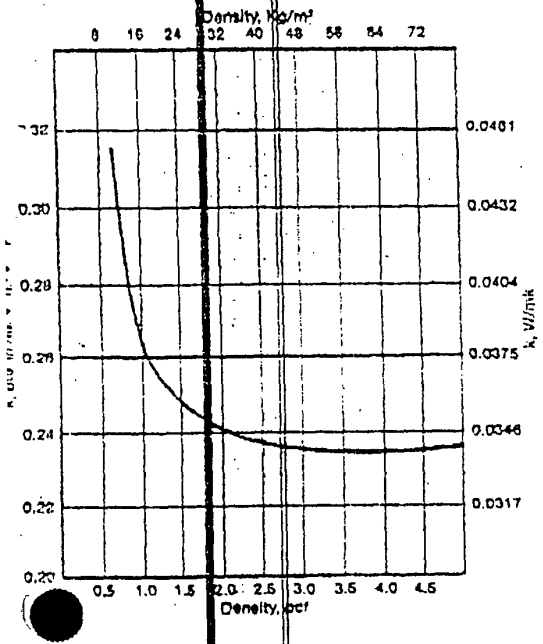


Figure 11. Thermal Conductivity, k, vs Density
Mean Temperature 75°F (24°C)
ASTM C-518

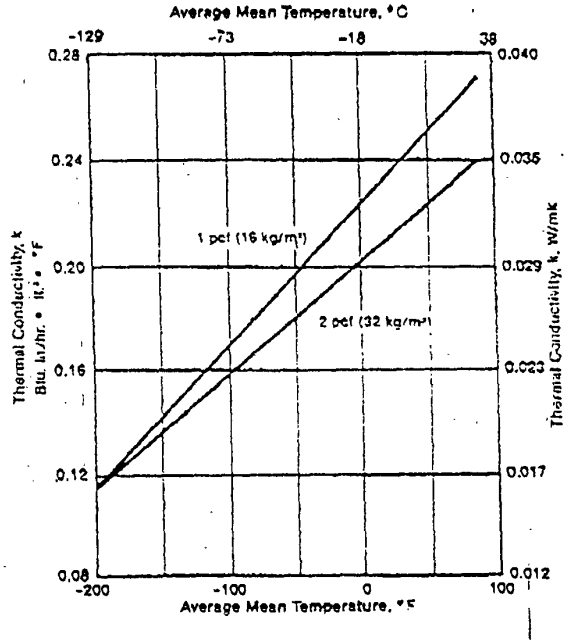


Figure 12. Thermal Conductivity, k over a Mean Temperature Range of 800°F (167°C)
ASTM C-518

71

R2-0003707

The coefficient of linear expansion of molded expanded polystyrene (ASTM D-696) in the 1-4 pcf (16-64 kg/m³) density range is 3-4 x 10^{-5} in/in/°F (5.4 - 7.2 x 10^{-5} cm/cm/°C) in the temperature range -22°F to 86°F (-30°C to 30°C).

The thermal conductivity of expanded polystyrene at an average mean temperature of 75°F (24°C) is lowest at 3.5 pcf (Figure 11). It rises slightly at lower density until about 1.5 pcf where it increases rapidly. The rate of increase is much less at higher densities:

8.0 pcf, 0.269 BTU-inch/(hr. • ft² • °F)
12.0 pcf, 0.276 BTU-inch/(hr. • ft² • °F)

Unlike some other insulating materials, the thermal conductivity of expanded polystyrene decreases at lower average mean temperature (Figure 12).

The thermal transmittance of an 8-inch, two cell concrete block wall with and without low density loose fill expanded beads in the cores was tested using the ASTM C-236 guarded hot box equipment (Figure 13).

Because absorbed water will increase the thermal conductivity of a material, the thermal conductivity of expanded polystyrene was measured before and after submersion under a 10-foot head of water (19 psi—131 k Pa) for 48 hours (Figure 14). No water drainage from the specimen was observed during the thermal conductivity determination.

Figure 13. Thermal Transmittance of an 8-Inch Concrete Wall

	Without Insulation	With Insulation
Thermal Transmittance, U as tested, BTU/hr. • ft.² • °F	0.450	0.320
Mean Temperature, °F	77	76.5
Thermal Transmittance, Corrected to ASHRAE Winter design with 15 MPH wind outside, still air inside	0.513	0.343
R	1.95	2.87
Thermal Transmittance, Corrected to ASHRAE Still air conditions on both sides	0.407	0.296
R	2.46	3.38

Figure 14. Thermal Conductivity Before and After Water Submersion

Nominal Density 1 pcf (15 kg/m³) Thermal Conductivity, k Btu. in./hr. ft.² • °F(W/mK)	
Before Submersion	After Submersion
0.26 (0.0375)	0.28 (0.0404)

The Thermal Conductivity, k of molded DYLITE expandable polystyrene at 1 pcf (16 kg/m³) density meets the Federal Housing Administration requirement for perimeter insulation (±15% change from original value) after repeated wetting and drying cycles.

R2-0003708

4 Water Absorption Properties

The water absorption of expanded polystyrene is low. Moisture takes the path of least resistance and travels around individual beads rather than through them, the non-interconnecting cell structure prevents capillary absorption into the interior of a molded piece. Although water absorption decreases as density increases, fusion is the most important factor influencing the moisture resistance of expanded polystyrene.

Good fusion drastically reduces the amount of water absorbed into foam and limits the rate of water vapor permeability. Steaming through a lesser thickness of prepuff gives better fusion and greater moisture resistance. For example, an expanded polystyrene sample molded in a plaque or single board mold (1" to 4" thick) will be fused better than a sample cut from a block mold (20" thick). Specimens from the center of the block are less completely fused than specimens taken from an area closer to the steam entry ports.

Figure 15a. Water Absorption
ASTM C-272 (Modified*)
% by Volume

Nominal Density pcf	Fusion**	Plaques***	Blocks***
0.8	Optimum	—	1.5-3.0
1.0	Optimum	0.01-0.80	0.9-1.9
1.2	Optimum	0.01-0.80	—
1.4	Optimum	0.01-0.30	0.8-1.60
1.8	Optimum	0.01-0.10	—
2.2	Optimum	0.004-0.04	0.10-1.5
2.5	Optimum	—	0.10-1.50
1.0	Minimum	0.30-1.30	1.00-5.30
1.2	Minimum	0.70-2.60	—
2.3	Minimum	0.30-0.90	1.00-3.00

**ARCO Chemical Company Modified Procedure (no alcohol dip)*
***Bead Break Method*
****Sample size 3" x 3" x 1" cut from molded 1" plaques or from 1" boards randomly selected throughout molded 20" blocks.*

Figure 15. Water Absorption MIL-P-19644

Nominal Density pcf	Nominal Density Kg/m³	Lbs. of Water Absorbed per sq. ft. of Specimen Surface: Actual	Lbs. of Water Absorbed per sq. ft. of Specimen Surface: Specification, Max.	Kg. of Water Absorbed per sq. meter of Specimen Surface: Actual	Kg. of Water Absorbed per sq. meter of Specimen Surface: Specification, Max.	% By Volume
1.0	16	0.08	0.12	0.24	—	2.3
1.5	24	0.04	—	0.20	—	2.3
2.0	32	0.04	0.12	0.20	0.59	2.3
2.5	40	0.04	—	0.20	—	2.3
3.0	48	0.04	0.12	0.20	0.59	2.3
5.0	80	0.03	0.10	0.15	0.49	1.7

R2-0003709

5 Water Vapor Transmission Properties

Although expanded polystyrene has low water vapor permeability, it is not considered a vapor barrier. As a general rule, permeability varies inversely with foam density and fusion quality as shown below, (Figure 16).

6 Flotation Properties

The density of foamed DYLITE expandable polystyrene is low compared to water. Foam can be as light as one pound per cubic foot compared to 62.4 pounds per cubic foot for water. The water buoyancy per cubic foot of foamed polystyrene is determined arithmetically by subtracting the pcf density bf the foam from 62.4. The result is the weight (pounds) which a cubic foot of foamed polystyrene can support in water.

The closed cell structure of foamed DYLITE expandable polystyrene has an advantage over large empty enclosures frequently used for flotation applications. The large empty enclosure may lose its buoyancy when punctured. A large enclosure filled with foamed DYLITE expandable polystyrene can be punctured without loss of buoyancy, as long as the foam remains in place.

Figure 16. Water Vapor Permeability ASTM C-355

Nominal Density, pcf	Fusion	Perm-In. Plaques	Perm-In. Blocks	Perm-Cm. Plaques	Perm-Cm. Blocks
1.0	Optimum	1.8-2.0	1.5-2.8	1.34-3.34	2.5-4.68
1.4	Optimum	—	1.5-2.5	—	2.6-4.17
2.2	Optimum	0.5-1.4	1.3-2.4	0.83-2.34	2.17-4.01
2.5	Optimum	—	1.0-2.4	—	1.67-4.01
1.0	Minimum	1.5-3.0	1.6-3.5	2.5-5.01	2.67-5.84
2.3	Minimum	1.0-2.0	1.0-2.3	1.67-3.34	1.57-4.68

Figure 17. Buoyancy
Nominal Density 1 pcf (16 kg/m³)

Volume of Expanded Polystyrene	Buoyancy lbs.	Buoyancy kg.
1 Cubic Foot	61.4	27.85
1 Cubic Meter	2,170	984.52

R2-0003710

7 Inertness Properties

Polystyrene is completely inert to metals; any corrosion of metals in contact with expanded polystyrene must be caused by other factors. The most frequent causes of metallic corrosion (iron rust, copper verdigris, etc.) are air in the presence of moisture or electrolytic cell action at bimetallic contacts. Corrosion can also be caused by foreign acid or alkaline agents.

To minimize corrosion due to water or humidity, foam pieces should be dried in an oven or in a heated, ventilated room until the residual moisture from molding is reduced to an acceptable level.

To demonstrate the inertness of expanded polystyrene, molded pieces were submerged in boiling water for 30 minutes. The water extract was found to have a pH of 7.2 compared to a pH of 7.1 for a water "blank."

8 Energy Absorption Properties

The energy absorption characteristics of a packaging material are determined by dropping known weights onto the material and measuring the change in acceleration (g) at impact. The lower the g, the more efficient the material is as a package cushioning medium. Expanded polystyrene provides maximum protection (has the lowest g's) in the 1 pcf to 1.2 pcf (16 kg/m³ to 19 kg/m³) density range at specific static stresses. More detailed information on g vs. static stress relationships and recommendations for efficient package design are included in our expanded polystyrene package design brochure.

R2-0003711

) Electrical Properties

electrical characteristics of expanded
/styrene and air are similar. This applies to
resistance, as well as other electrical prop-
:s. The foam melts about the path of an arc
oon as the arc penetrates it.

dielectric loss of expanded polystyrene is
e low and is relatively unaffected after five
ıths' storage.

ectric loss values are:

:imen Conditioning	Dielectric Loss
eceived	7×10^{-5}
months' storage, wed by 11 days at (25°C) and 50% R.H.	5×10^{-5}

'e 18. Electrical Properties
Nominal Density 2 pcf (32 kg/m³)

ency, ...s	Dielectric Constant	Dissipation Factor	Loss Factor	Volume Resistivity Megohm, in.	Volume Resistivity Ohm, cm.	Surface Resistivity, Megohms	Dielectric Strength, Volts/mil Short Time	Dielectric Strength, Volts/mil Step-By-Step
60	1.09	5×10^{-4}	6×10^{-4}					
1,000	1.07	5×10^{-4}	5×10^{-4}	1.5×10^{7}	3.8×10^{15}	9.8×10^{5}	49	49
0,000	1.02	5×10^{-4}	6×10^{-4}					

R2-0003712

10 Resistance to Attack

A. Chemical Reagents

Expanded polystyrene has the same resistance to chemical reagents as general purpose polystyrene. Most acids and their water solutions do not attack polystyrene; however, strong oxidizing acids, such as nitric and perchloric, will decompose it. Fuming sulphuric acid (20-40% oleum) sulfonates polystyrene; chlorine and bromine also react detrimentally. Alkali and salt water solutions—regardless of concentration, temperature and duration of exposure—do not chemically affect expanded polystyrene.

B. Solvents

The thin cell walls and large exposed surface of expanded polystyrene make it especially sensitive to attack by solvents. Solvents which affect general purpose polystyrene to a minor degree may collapse foam cells.

Chlorinated and aromatic hydrocarbons, esters, ketones, essential oils of high terpene content (like oil of lemon or orange), and turpentine are excellent solvents for polystyrene. The aromatic hydrocarbon portion of gasoline, solvent naphtha, fuel oil, and mineral oil exert solvent action on polystyrene. The lower aliphatic alcohols and glycols exert little or no solvent action on polystyrene; but higher alcohols cause relatively slow softening or swelling as do acetone, ether alcohols, glacial acetic acid, some unsaturated hydrocarbons, and essential oils of low terpene content.

Expanded polystyrene does not soften or swell after 70 hours exposure to lubricating oil, conforming to Military Specification MIL-L-6082.

Whenever the presence of solvents is suspected, exposure tests of adequate duration at the anticipated use temperature should be performed.

C. Fungi and Bacteria

Fungus attack has not been observed on expanded polystyrene, and it does not support bacterial growth. Fungal or bacterial growth on foamed DYLITE expandable polystyrene is evidence that the surface of the foam has been soiled. Only the soilage supplies nutrient for fungal or bacterial growth.

A mixed spore suspension of fungi was sprayed on specimens of foamed DYLITE expandable polystyrene, which were then incubated for 14 days at 86°F (30°C) and 95% relative humidity. The suspension contained those spores most commonly specified in military specifications for cushioning materials. The spores were those of:

Chaetomium globosum	USDA 1042.4
Aspergillus niger	USDA TC-215-4247
Aspergillus terreus	MQMD 82-J
Pencicillum citrinum	ATCC 9849
Fusarium moniforme	USDA 1004.1

After incubation, the specimens were inspected microscopically. There was no evidence of fungal growth or attack on the foamed DYLITE expandable polystyrene.

Foamed DYLITE expandable polystyrene has been tested for fungus resistance in accordance with Federal Housing Administration (FHA) "Test Procedures to Determine the Acceptability of Perimeter Insulation for Concrete Floor on Ground," June 11, 1956, Paragraph V. In this method, culture dishes with garden soil and feeder blocks (ponderosa pine sapwood) were steam sterilized for 30 minutes at 15 psig (103 kN/m²) (250°F, 121°C). The specimens (unsterilized), culture dishes, garden soil, and feeder blocks were sprayed with a single spore suspension of each of the following fungi and incubated at 80°F (27°C) and 70% R.H. for 90 days, by which time the feeder blocks were overgrown. The spores were:

Lenzites Trabea Madison	No. 617
Polyporus Versicolor	No. 5917
Coniophora Puteana	No. 515

Following incubation, the foamed DYLITE polystyrene specimens were inspected microscopically, and no evidence of fungal growth or attack was observed.

R2-0003713

Foamed DYLITE polystyrene was innoculated with a culture of Sporocytophaga Myxococcoides and incubated for 7 days at room temperature. At the end of the incubation period, the specimen displayed no bacteriological deterioration.

D. Ants, Termites, Rodents, and Marine Borers
Since it has no food value, expanded polystyrene does not attract ants, termites, or rodents. However, it is not a barrier to them. Ants, termites and rodents will chew through foamed polystyrene to reach food or establish a comfortable home. Marine borers can attack polystyrene foam, as they do wood, and foam should be protected by an anti-fouling paint over a suitable primer.

E. Ultraviolet Light
Molded expandable polystyrene is affected by ultraviolet (UV) light. Exposure of foamed polystyrene to UV will slowly cause the surface of the molded part to yellow and become powdery. As the affected surface is eroded, abraded, or washed away a new surface is exposed and the cycle is repeated. The rate of degradation is slower in geographical regions of low UV intensity and duration.

Flammability Properties

The heat of combustion of polystyrene is 17,400 BTU per pound; combustion products are carbon monoxide, carbon dioxide, water, and soot (carbon).

Expanded polystyrene products are combustible and should not be exposed to open flame or other ignition sources. Type "M" DYLITE expandable polystyrene is specifically formulated to alter its burning characteristics. If ignited, properly aged foam products molded from Type "M" DYLITE expandable polystyrene without the addition of silicone or other lubricants will, once the source of ignition is completely eliminated, stop burning sooner than foamed products molded from type "F" and "D" DYLITE expandable polystyrene. Additional information is detailed in "Safety Provisions for Handling, Storing and Processing Dylite Expandable Polystyrene."

R2-0003714

MATERIAL SAFETY DATA SHEET

SELIG

EMICAL INDUSTRIES
VISION OF
SERVICE INDUSTRIES

DATE : 01/17/89 VIXOL
SUPERSEDES: 06/19/88 PRODUCT NUMBER: 1990

TION VI - R E A C T I V I T Y D A T A

BILITY	: STABLE
OMPATIBILITY(AVOID)	: BASE
YMERIZATION	: WILL NOT OCCUR
ARDOUS DECOMPOSITION:	
C L VAPORS	

TION VII - S P I L L A N D D I S P O S A L P R O C E D U R E S

STEPS TO BE TAKEN IN CASE MATERAIL IS RELEASED OR SPILLED
OPB SPILL WITH AN ABSORBENT MATERIAL (I.E. SELIG'S AP ABSORBENT); PICK UP
DEPOSIT IN A SEALABLE CONTAINER FOR DISPOSAL AS A HAZARDOUS WASTE. THOR-
-ILY CLEAN AREA WITH A DETERGENT SOLUTION. RINSE AREA THOROUGHLY WITH CLEAN
ER.

WASTE DISPOSAL METHOD
3ED PRODUCT MAY HAVE TO ABSORBED ON AN INERT MATERIAL (SELIG'S AP ABSOR-
T) AND DISPOSED OF AS HAZARDOUS WASTE. SMALL HAZARDOUS WASTE GENERATORS
JLD CONSULT C.F.R. TITLE 40, PART 261.5 FOR POSSIBLE EXEMPTION. SINCE
ATIONS VARY CONCERNING THE DISPOSAL OF THESE CHEMIALS, CONSULT LOCAL,
ND FEDERAL AGENCIES FOR PROPER DISPOSAL PROCEDURES IN YOUR AREA. IF
ANY EFFLUENT IS ULTIMATELY TREATED BY A PUBLICLY OWNED SEWAGE TREATMENT
NT, SPENT PRODUCT MAY BE NEUTRALIZED AND DISCHARGED TO SEWER.

ERAL HAZARDOUS WASTE NUMBER(S): D002

ON VIII - S P E C I A L P R O T E C T I O N I N F O R M A T I O N

IRATORY PROTECTION	: CHEMICAL CARTRIDGE RESPIRATOR IF IN CONFINED AREA.
ILATION	LOCAL-BEST
ECTIVE CLOTHING	: RUBBER OR NEOPRENE GLOVES
PROTECTION	: SAFETY GOGGLES

TION IX - S P E C I A L P R E C A U T I O N S

D CONTACT WITH SKIN AND EYES.
D PROLONGED EXPOSURE TO VAPORS.
OUT OF REACH OF CHILDREN. MAY BE FATAL IS SWALLOWED.

THE INFORMATION HEREIN IS GIVEN IN GOOD FAITH
BUT NO WARRANTY, EXPRESS OR IMPLIED, IS MADE.

79

MATERIAL SAFETY DATA SHEET

SELIG

MICAL INDUSTRIES
ISION OF
ONAL SERVICE INDUSTRIES

DATE : 01/17/89 VIXOL
SUPERSEDES: 06/13/08 PRODUCT NUMBER: 1990

TION I - E M E R G E N C Y C O N T A C T S

G CHEMICAL INDUSTRIES
SELIG DRIVE, S.W.
NTA, GA. 30378
PHONE (404)691-9220
EEN 8:00A.M. - 5:00P.M.
STERN TIME ZONE)

LOCAL POISON CONTROL CENTER TELEPHONE .....

TRANSPORTATION EMERGENCY
CHEMTREC: TOLL-FREE 1-800-424-9300 ALL CALLS RECORDED
DISTRICT OF COLUMBIA (202)483-7616 ALL CALLS RECORDED

TION II - H A Z A R D O U S I N G R E D I E N T S

	CAS	%
HYDROCHLORIC ACID	7647-01-0	24

TLV OF 5PPM CEILING
THIS PRODUCT CONTAINS NO INREDIENTS CONSIDERED
CARCINOGENIC BY NTP, IARC OR OSHA

ENTIFIES CHEMICALS LISTED UNDER SARA--SECTION 313 FOR RELEASE REPORTING.

TION III - P H Y S I C A L D A T A

ING POINT (F)	212	SPECIFIC GRAVITY	1.12
R PRESSURE(MMHG)	UNK	PERCENT VOLATILE BY VOLUME (%)	97
R DENSITY(AIR=1)	1.25	EVAPORATION RATE(H2O =1)	1
BILITY IN WATER	COMPLETE	PH(CONCENTRATE)	1
		PH(USE DILUTION OF NA	NA

ARANCE & ODOR: MILKY WHITE LIQUID

ON IV - F I R E A N D E X P L O S I O N D A T A

H POINT(F)(METHOD USED): NONE (NA
MABLE LIMITS LEL UNK UEL UNK
NGUISHING MEDIA : NA
IAL FIRE FIGHTING: NA
UAL FIRE HAZARDS : NA

TION V - H E A L T H H A Z A R D D A T A

SYMPTOMS

: CORROSIVE TO SKIN.
: CORROSIVE TO EYES.
LE: MAY BE IRRITATING TO THROAT, NASAL PASSAGES AND MUCOUS MEMBRANES.
ST: CORROSIVE TO THROAT AND STOMACH.

FIRST AID

: RINSE IMMEDIATELY WITH WATER. SEEK MEDICAL ATTENTION.
: FLUSH IMMEDIATELY WITH PLENTY OF WATER FOR 15 MINUTES. CONSULT PHYSICIAN
LE: MOVE TO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION.
ST: RINSE MOUTH AND GIVE PLENTY OF WATER FOLLOWED BY MILK, EGG WHITE OR GRUEL.
DO NOT INDUCE V[illegible]TING IMMEDIATELY SEEK M[illegible]ICAL ATTENTION

80

: 21 PPM

R2-0003716

REFERENCE 8

R2-0003717

THE MERCK INDEX

AN ENCYCLOPEDIA OF
CHEMICALS, DRUGS, AND BIOLOGICALS

ELEVENTH EDITION

Susan Budavari, *Editor*
Maryadele J. O'Neil, *Associate Editor*
Ann Smith, *Assistant Editor*
Patricia E. Heckelman, *Editorial Assistant*

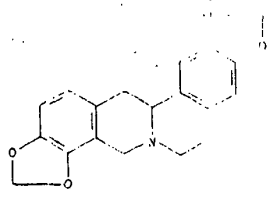
Published by
MERCK & CO., INC.
RAHWAY, N.J., U.S.A.

1989

82

R2-0003718

132.63. C 70.57%, H 5.30%, N 4.33%, O 19.79%. From rot of *Stylophorum diphyllum* (Michx.) Nutt. *Corydalis cava* (Schw. and Cheliidonium majus L., Papaveraceae: Schlotterbeck, Watkins, *Ber.* 35, 7 (1902); Späth, Julian, *Ber.* 64, 1131 (1931); Manske, *Can. J. Res.* B20, 53 (1942); Slavik, *Coll. Czech. Chem. Commun.* 20, 198 (1955); Bandelin, Mafesh, *J. Am. Pharm. Assoc.* 45, 702 (1956); Slavik, *Coll. Czech. Chem. Commun.* 26, 2933 (1961).



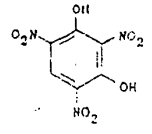
dl-Form, crystals from chloroform + methanol, mp 222-224°.

Hydrochloride, $C_{19}H_{18}ClNO_4$, needles from methanol + HCl, mp 266-269°.

l-Form, needles from chloroform + ethanol, mp 203°. $[\alpha]_D^{30}$ −300° (c = 0.53 in chloroform). Practically insol in water, sol in ale, glacial acetic acid; slightly sol in dil acids.

d-Form, crystals from alcohol, mp 203-204°. $[\alpha]_D^{25}$ +310° (c = 0.88 in chloroform). Sol in chloroform; slightly sol in ether, ethanol, methanol.

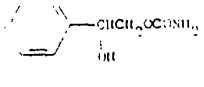
8828. Styphnic Acid. *2,4,6-Trinitro-1,3-benzenediol; 6-trinitroresorcinol;* 2,4-dihydroxy-1,3,5-trinitrobenzene. $C_6N_3O_8$; mol wt 245.11. C 29.40%, H 1.23%, N 17.14%, O 52.22%. May be prepd from natural sources, such as Peruvian cusco wood extract or quebracho extract by the action of nitric acid: Einbeck, Jablonski, *Ber.* 54, 1086 (1921). Prepd industrially by first sulfonating, then nitrating resorcinol: Merz, Zetter, *Ber.* 12, 681, 2037 (1879); Datta, Varma, *J. Am. Chem. Soc.* 41, 2043 (1919). Prepd by nitrating 2,4-dinitroresorcinol: Kametani, Ogasawara, *Chem. Pharm. Bull.* 15, 893 (1967).



Hexagonal yellow crystals from dil ale. Astringent, bitter taste. Solvated crystals from acetic acid. Sublimes in high vacuum. Becomes almost colorless upon vacuum sublimation, but turns deep yellow on contact with air. When dry, mp 175.5°; also reported as mp 179-180°. One gram dissolves in 156 ml water at 14°, in 88 ml water at 62°. Freely sol in alcohol, ether. Acid to litmus. Dibasic acid. Deflagrates on rapid heating.

USE: Forms salts and addn compds with organic compds. Used for the identification of organic compds through the formation of styphnates which, like picrates, have characteristic melting pts. Has been used in the manuf of explosives.

8829. Styrnmate. *1-Phenyl-1,2-ethanediol 2-carbamate;* carbamic acid dl-hydroxyphenethyl ester; 2-phenyl-2-hydroxyethyl carbamate; 2-hydroxy-2-phenylethyl carbamate. Sinaxar; Linaxat. $C_9H_{11}NO_3$; mol wt 181.19. C 59.66%, H 6.12%, N 7.73%, O 26.49%. Prepn: Hirt, *Can. pat.* 844,626 (1970 to C. D. Hoffmann, K. G. Lewis, U.S. pat. 3,265,728 (1960, 1966 to Armour). Pharmacology: De Salva *et al.*, *J. Pharmacol. Exp. Ther.* 126, 318 (1959).



Crystals from chloroform, mp 111-112°. LD_{50} orally in mice: 1240 mg/kg, De Salva *et al.*, *loc. cit.*

Note: Ingredient of *Myosprz.*

THERAPEUTIC: Relaxant (skeletal muscle).

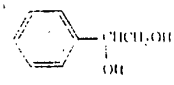
8830. Styrene. *Ethenylbenzene;* styrol; styrolene; cinnamene; cinnamol; phenylethylene; vinylbenzene. C_8H_8; mol wt 104.14. C 92.26%, H 7.74%. $C_6H_5CH{=}CH_2$. Isolated from storax by Bonastre in 1831. Manuf from benzene and ethylene: Faith, Keyes & Clark's *Industrial Chemicals*, F. A. Lowenheim, M. K. Moran, Eds. (Wiley-Interscience, New York, 4th ed., 1975) pp 779-785. Synthesis starting with 1-phenylethanol and leading to polystyrene: Wiley *et al.*, *J. Chem. Ed.* 38, 304 (1961). When heated to 200° it is converted into the polymer, polystyrene, which is a clear plastic having excellent insulating properties even at ultra-high radio frequencies. Toxicity data: H. J. Meyer, R. Kretzschmar, *Arzneimittel-Forsch.* 19, 617 (1969). Monograph: W. C. Teach, G. C. Kiessling, *Polystyrene* (Reinhold, New York, 1960). Reviews of styrene monomer and polymers: Boyer *et al.*, "Styrene Polymers" in *Encyclopedia of Polymer Science and Technology* vol. 13 (Interscience, New York, 1970) pp 128-447; Coulter *et al.*, "Styrene and Related Monomers" in *Vinyl and Diene Monomers* (part 2), E. C. Leonard, Ed. (Wiley-Interscience, New York, 1971) pp 479-576.

Colorless to yellowish, very refractive, oily liq; penetrating odor. On exposure to light and air it slowly undergoes polymerization and oxidation with formation of peroxides, etc. d^{20} 0.9059, mp −30.6°, bp 145-146°, n_D^{20} 1.5463. Flash pt, closed cup: 87° F (31° C). Sparingly sol in water; sol in alcohol, ether, methanol, acetone, carbon disulfide. LD_{50} in mice (mg/kg): 660 ± 44.3 i.p.; 90 ± 5.2 i.v. (Meyer, Kretzschmar).

Polystyrene, Hylene, Tryeite. Physical properties of unmodified polystyrene: d_4^{20} 1.04-1.065; n_D^{25} 1.60; water-clear solid plastic, begins to soften at about 85°. Dielectric constant at 100 megacycles: 2.4-2.65.

USE: Manuf plastics; synthetic rubber; resins; insulator. *Caution:* May be irritating to eyes, mucous membranes, and, in high concns, narcotic.

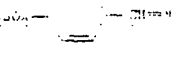
8831. Styrene Glycol. *1-Phenyl-1,2-ethanediol;* phenylglycol; phenylethyleneglycol; *α,β*-dihydroxyethylbenzene. $C_8H_{10}O_2$; mol wt 138.16. C 69.54%, H 7.30%, O 23.16%. Prepd by reduction of phenylglyoxylic acid with $LiAlH_4$: Nystrom, Brown, *J. Am. Chem. Soc.* 69, 2548 (1947); by reduction of styrene peroxide: Russel, *J. Am. Chem. Soc.* 75, 5011 (1953). Prepn of optically active styrene glycol: Wilhelm, Bright, *Helv. Chim. Acta* 37, 221 (1954).



Needles from ligroin, mp 67-68°. bp_{753} 272-274°. Freely sol in water, alcohol, benzene, ether, chloroform, acetic acid; slightly sol in ligroin.

USE: Esters as plasticizers.

8832. Subuthizone. *2-[[4-(Ethylsulfonyl)phenyl]methylene]hydrazinecarbothioamide; p-ethylsulfonylbenzaldehyde thiosemicarbazone;* 4-ethylsulfonylbenzaldehyde 3-thiosemicarbazone; Ethizone. $C_{10}H_{13}N_3O_2S_2$; mol wt 271.35. C 44.26%, H 4.83%, N 15.49%, O 11.79%, S 23.63%. Prepn from 4-ethylsulfonyltoluene: Bernstein *et al.*, *J. Am. Chem. Soc.* 73, 906 (1951); other prepns are described in Japan. pats. 1119('52), 1768('52), 3977('52), 1872('53), 6032('54), 6427('54); in U.S. pat. 2,621,484 (1952 to Schenley).



Crystals from aq *n*-propanol, mp 236-237° dec.

THERAPEUTIC: Antibacterial (tuberculostatic).

8833. Suberic Aciti. *Octanedioic acid;* 1,6-hexanedicarboxylic acid. $C_8H_{14}O_4$; mol wt 174.19. C 55.16%, H 8.10%, O

REFERENCE 9

R2-0003720

HAZARDOUS CHEMICALS DESK REFERENCE

N. Irving Sax / Richard J. Lewis, Sr.

85

R2-0003721

PROP: Colorless, odorless needles or white, crystalline powder. Insol in ether

SYN: STRYCHNINE NITRATE

THR: Poison by intravenous and subcutaneous routes. See also strychnine. When heated to decomposition it emits very toxic fumes of NO_x and HNO_x.

STRYCHNINE SALT (solid) HR: 3
NIOSH: WL 2465000

DOT: 1692

SYN: STRYCHNINE SALT, SOLID (DOT)

DOT Classification: Poison B, Label: Poison

THR: A deadly poison. See also strychnine.

STRYCHNINE SULFATE (2:1) HR: 3
CAS: 60-41-3 NIOSH: WL 2550000
mf: $C_{21}H_{22}N_2O_2 \cdot 1/2H_2O_4S$ mw: 383.49

SYNS: STRYCHNINE SULFATE • STRYCHNIDIN-10-ONE, SULFATE (2:1)

THR: Poison by ingestion, intraperitoneal, intravenous, and subcutaneous routes. See also strychnine and sulfates. When heated to decomposition it emits very toxic fumes of SO_x and NO_x.

STYRENE HR: 3
CAS: 100-42-5 NIOSH: WL 3675000
DOT: 2055
mf: C_8H_8 mw: 104.16

PROP: Colorless, refractive, oily liquid; mp: −31°, bp: 146°, lel = 1.1%, uel = 6.1%, flash p: 88°F, d: 0.9074 @ 20°/4°, autoign temp: 914°F, vap d: 1.6, fp: −33°, ulc: 40.50). Very sltly sol in water; misc in ale, ether.

SYNS: CINNAMENE • CINNAMENOL • NCI-C02200 • PHENYLETHENE • PHENYLETHYLENE • STIROLO (ITALIAN) • STYREEN (DUTCH) • STYREN (CZECH) • STYROL (GERMAN) • VINYLBENZEN (CZECH) • VINYLBENZENE • VINYLBENZOL

OSHA PEL: TWA 100 ppm; CL 200; *Pk* 600/5M/3H

ACGIH TLV: TWA 50 ppm; STEL: 100 ppm; BEI: mandelic acid in urine at end of shift 1 g/L, styrene in mixed-exhaled air prior to shift 40 ppb, styrene in mixed-exhaled air during shift 18 ppm, styrene in blood end of shift 0.55 mg/L, styrene in blood prior

DFG MAK: 100 ppm (420 mg/m³)

DOT Classification: Flammable Liquid

THR: Poison by ingestion and intravenous route. Moderately toxic by inhalation and intraperitoneal route. Mutagenic data. A skin and eye irritant. An experimental carcinogen. Human systemic irritant and central nervous system effects. It can cause irritation, violent itching of the eyes @ 200 ppm, lachrymation, and severe human eye injuries. Its toxic effects are usually transient and result in irritation and possible narcosis. Dangerous fire hazard when exposed to flame, heat or oxidants. Reacts violently with chlorosulfonic acid; oleum; H_2SO_4; O_2; alkali metal-graphite. Dangerous on decomposition it emits acrid fumes; can react vigorously with oxidizing materials. To fight fire, use foam, CO_2, dry chemical. For further information see Vol. 6, No. 2 of *DPIM* Report.

SUCCINIC ANHYDRIDE HR: 3
CAS: 108-30-5 NIOSH: WN 0875000
mf: $C_4H_4O_3$ mw: 100.08

PROP: Colorless needles; mp: 119.6°; d: 1.104; vap press: 1 mm @ 92.0°; very sltly sol in water, petroleum ether; sltly sol in ether. Bp: 261°.

SYNS: BERNSTEINSAURE-ANHYDRID (GERMAN) • BUTANEDIOIC ANHYDRIDE • DIHYDRO-2,5-FURANDIONE • 2,5-DIKETOTETRAHYDROFURAN • NCI-C55696 • SUCCINIC ACID ANHYDRIDE • SUCCINYL OXIDE • TETRAHYDRO-2,5-DIOXOFURAN

THR: An experimental neoplastigen and suspected carcinogen. An eye irritant. See also anhydrides. When heated to decomposition it emits acrid smoke and fumes.

SUCCINIC PEROXIDE HR: 3
CAS: 123-23-9 NIOSH: UF 2031000
mf: $C_8H_{10}O_8$ mw: 234.18

PROP: Fine white powder, odorless with tart taste, mod sol in water. Mp: 125° (decomp).

SYNS: BIS(3-CARBOXYPROPIONYL) PEROXIDE • SUCCINIC ACID PEROXIDE (DOT) • 3,3'-(DIOXYDICARBONYL)DIPROPIONIC ACID • SUCCINYL PEROXIDE

DOT Classification: Label: Organic Peroxide

THR: Poison by intraperitonial route. An irri-

to decomposition it emits acrid smoke and fumes.

SUCCINONITRILE HR: 3
CAS: 110-61-2 NIOSH: WN 3850000
mf: $C_4H_4N_2$ mw: 80.10

PROP: Colorless, odorless, waxy material. Mp: 58.1°, bp: 267°, flash p: 270°F, d: 1.022 @ 25°, vap press: 2 mm @ 100°, vap d: 2.1. Slightly sol in ether, water, ale; sol in acetone.

SYNS: BUTANEDINITRILE • 1,2-DICYANOETHANE • ETHYLENE CYANIDE • ETHYLENE DICYANIDE • SUCCINIC ACID DINITRILE • SUCCINIC DINITRILE • SUCCINODINITRILE • USAF A-9442

THR: Poison by intraperitoneal and other unspecified routes. See also nitriles. Combustible when exposed to heat or flame. Dangerous when heated to decomposition or on contact with acid or acid fumes, emits highly toxic fumes of NO_x, cyanides; can react with oxidizing materials. To fight fire, use alcohol foam, CO_2, dry chemical.

SUCCINOYLCHOLINE CHLORIDE HR: 3
CAS: 71-27-2 NIOSH: GA 2360000
mf: $C_{14}H_{30}N_2O_4 \cdot 2Cl$ mw: 361.36

SYNS: BIS(2-DIMETHYLAMINOETHYL)SUCCINATE BIS(METHOCHLORIDE) • BIS(SUCCINYLDICHOLINE) • CHOLINE SUCCINATE DICHLORIDE • DIACETYLCHOLINE DICHLORIDE • 2-DIMETHYLAMINOETHYL SUCCINATE DIMETHOCHLORIDE • SUCCINIC ACID DIESTER WITH CHOLINE CHLORIDE • SUCCINIC ACID BIS(BETA-DIMETHYLAMINOETHYL) ESTER, DIHYDROCHLORIDE • SUCCINIC ACID BIS(BETA-DIMETHYLAMINOETHYL)ESTER DIMETHOCHLORIDE • (2-HYDROXYETHYL)TRIMETHYLAMMONIUM CHLORIDE SUCCINATE • SUCCINYL BISCHOLINE CHLORIDE • SUCCINYLCHOLINE CHLORIDE • SUCCINYLCHOLINE DICHLORIDE • SUCCINYL CHOLINE HYDROXIDE CHLORIDE • SUCCINYLDICHOLINE CHLORIDE

THR: A poison by intravenous route. Affects the human cardiovascular system. When heated to decomposition it emits very toxic fumes of NO_x and Cl^-.

SUCROSE HR: 1

PROP: White crystals, sweet taste; d: 1.587 @ 25°/4°. Mp: 170°-186° dec comp; Sol in water, ale; insol in ether.

SYNS: BEET SUGAR • CANE SUGAR • CONFECTIONER'S SUGAR • ALPHA-D-GLUCOPYRANOSYL BETA-D-FRUCTOFURANOSIDE • (ALPHA-D-GLUCOSIDO) BETA-D-FRUCTOFURANOSIDE • GRANULATED SUGAR • NCI-C56597 • ROCK CANDY • SACCHAROSE • SACCHARUM • SUGAR

THR: Slightly toxic by ingestion. When heated to decomposition it emits acrid smoke and fumes.

SULFADIMETHYL DIAZINE HR: 3
CAS: 57-68-1 NIOSH: WO 9275000
mf: $C_{12}H_{14}N_4O_2S$ mw: 278.36

SYNS: 2-(4-AMINOBENZENESULFONAMIDO)-4,6-DIMETHYLPYRIMIDINE • 6-(4-AMINOBENZOL-SULFONAMIDO)-2,4-DIMETHYLPYRIMIDIN (GERMAN) • (P-AMINOBENZOLSULFONYL)-2-AMINO-4,6-DIMETHYLPYRIMIDIN (GERMAN) • N-(4,6-DIMETHYL-2-PYRIMIDYL)SULFANILAMIDE • N(SUP 1)-(4,6-DIMETHYL-2-PYRIMIDYL)SULFANILAMIDE • 4,6-DISIETHYL-2-SULFANILAMIDOPYRIMIDINE • NCI-C56600 • N(SUP 1)-(4,6-DIMETHYL-2-PYRIMIDINYL SULFANILAMIDE • SULFADIMETHYPYRIMIDINE • SULFAISODIMIDINE • 2-SULFANILAMIDO-4,6-DIMETHYLPYRIMIDINE • SULFAMETHYLPYRIMIDINE

FIRE: An experimental carcinogen. Moderately toxic by intravenous route. When heated to decomposition it emits very toxic fumes of SO_x and NO_x.

SULFAMETHOXAZOL HR: 3
CAS: 723-46-6 NIOSH: WP 0100000
mf: $C_{10}H_{11}N_3O_3S$ mw: 253.30

SYNS: 3-(PARA-AMINOBENZENESULFONAMIDO)-5-METHYLISOXAZOLE • 4-AMINO-N-(5-METHYL-3-ISOXAZOLYL)BENZENESULFONAMIDE • N(SUP 1)-(5-METHYL-3-ISOXAZOLYL)SULPHANILAMIDE • 5-METHYL-3-SULPHANIL-AMIDOISOXAZOLE • N'-(5-METHYL-3-ISOXAZOLE)SULFANILAMIDE • N'-(5-METHYL-3-ISOXAZOLYL)SULFANILAMIDE • 5-METHYL-3-SULFANILAMIDOISOXAZOLE • 5-METHYL-3-SULFANILAMIDOISOXAZOLE • SULFAMETHAZOLE • 3-SULFANIL-

R2-0003722

REFERENCE 10

R2-0003723

MATERIAL SAFETY DATA SHEET

Software

EMICAL INDUSTRIES
ISION OF
ONAL SERVICE INDUSTRIES

DATE 01/30/92 1200-3-L
SUPERCEDES: 02/17/86 PRODUCT NUMBER: 9170

TION I - E M E R G E N C Y C O N T A C T S

ONAL CHEMICAL
SELIG DRIVE, S.W.
NTA, GA. 30336
PHONE (404)691-9292
EEN 8:00A.M. - 5:00P.M.
TERN TIME ZONE)

LOCAL POISON CONTROL CENTER TELEPHONE

TRANSPORTATION EMERGENCY
CHEMTREC: TOLL-FREE 1-800-424-9300 ALL CALLS RECORDED
DISTRICT OF COLUMBIA (202)483-7616 ALL CALLS RECORDED

TION II - H A Z A R D O U S I N G R E D I E N T S CAS %

TION III - P H Y S I C A L D A T A

ING POINT (F)	212	SPECIFIC GRAVITY	1.185
PRESSURE(MMHG)	N/A	PERCENT VOLATILE BY VOLUME (%)	93.65
DENSITY(AIR=1)	N/A	EVAPORATION RATE(--- =1)	N/A
BILITY IN WATER	100%	PH(CONCENTRATE)	12.9
		PH(USE DILUTION OF 1/4)	N/A

ARANCE & ODOR BLACK-BROWN COLOR, MUSKY ODOR

TION IV - F I R E A N D E X P L O S I O N D A T A

H POINT(F)(METHOD USED): NONE
MABLE LIMITS LEL N/A UEL N/A
NGUISHING MEDIA N/A
IAL FIRE FIGHTING: NONE
IAL FIRE HAZARDS NONE

TION V - H E A L T H H A Z A R D D A T A

SYMPTOMS

CAN BE IRRITATING UPON CONTACT
IRRITATING UPON CONTACT
E MAY BE IRRITATING TO THROAT, NASAL PASSAGES AND MUCOUS MEMBRANES.
E: IRRITATING TO THROAT AND STOMACH.

FIRST AID

WASH WITH SOAP AND WATER.
FLUSH IMMEDIATELY WITH PLENTY OF WATER FOR 15 MINUTES. CONSULT PHYSICIAN.
E: MOVE TO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION.
E: RINSE MOUTH AND GIVE PLENTY OF WATER, FOLLOWED BY MILK, EGG WHITE OR GRUEL.
DO NOT INDUCE VOMIT. IMMEDIATELY SEEK MEDICAL ATTENTION.

88

M .TERIAL SAFET' DATA SHEET

EMICAL INDUSTRIES
N OF
SERVICE INDUSTRIES

DATE 01/30/92 1200-3-L
SUPERSEDES 02/17/86 PRODUCT NUMBER: 9170

TION VI - R E A C T I V I T Y D A T A

ILITY	STABLE. AVOID FREEZING TEMPERATURES
MPATIBILITY(AVOID)	AVOID CONTACT WITH ACIDS
MERIZATION	WILL NOT OCCUR
ARDOUS DECOMPOSITION	
FUR DIOXIDE	

TION VII - S P I L L A N D D I S P O S A L P R O C E D U R E S

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
RB SPILL WITH AN ABSORBENT MATERIAL (I.E. SELIG'S AP ABSORBENT); PICK UP DEPOSIT IN A SEALABLE CONTAINER FOR DISPOSAL AS A HAZARDOUS WASTE. OUGHLY CLEAN AREA WITH A DETERGENT SOLUTION. RINSE AREA THOROUGHLY WITH N WATER.

WASTE DISPOSAL METHOD
K LOCAL, STATE AND FEDERAL REGULATIONS PRIOR TO DISPOSAL PRODUCT IS NOT DERED A HAZARDOUS WASTE UNDER RCRA. LIQUIDS MAY BE ABLE TO BE DISPOSED OF SHING INTO SANITARY SEWER WITH PLENTY OF WATER. NEUTRALIZATION OF PH MAY IRED

ERAL HAZARDOUS WASTE NUMBER(S): NA

TION VIII - S P E C I A L P R O T E C T I O N I N F O R M A T I O N

IRATORY PROTECTION	GOOD VENTILATION IS ALL THAT IS REQUIRED
TILATION	NO SPECIAL VENTILATION REQUIRED
TECTIVE CLOTHING	RUBBER GLOVES, RUBBER APRON
PROTECTION	SAFETY GOGGLES

TION IX - S P E C I A L P R E C A U T I O N S

OUT OF REACH OF CHILDREN. HARMFUL IF SWALLOWED.
D CONTACT WITH SKIN AND EYES
CONTAINER CLOSED WHEN NOT IN USE.
D PROLONGED EXPOSURE TO VAPORS.

THE INFORMATION HEREIN IS GIVEN IN GOOD FAITH
BUT NO WARRANTY, EXPRESS OR IMPLIED, IS MADE

89

REFERENCE 11

R2-0003726

REFERENCE 12

R2-0003727

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

GEOLOGY OF THE COMERIO QUADRANGLE, PUERTO RICO

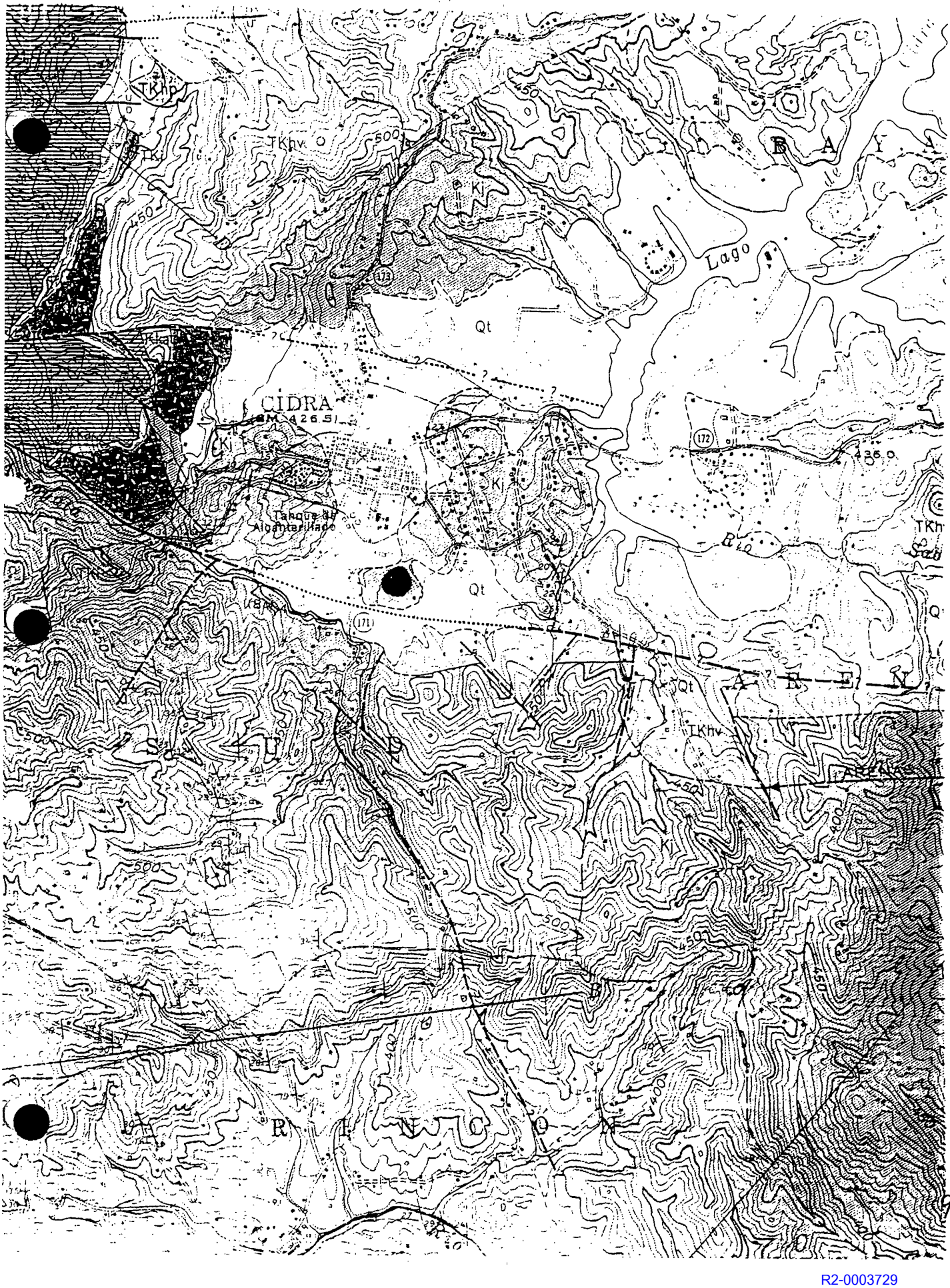
By

Maurice H. Pease, Jr., and Reginald P. Briggs

MISCELLANEOUS GEOLOGIC INVESTIGATIONS
MAP I-320

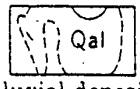
92

R2-0003728


TKhp
TKhv
Kj
Lago
Qt
CIDRA
Tanque de Alcantarillado
Kj
Qt
Qt
TKhv
Kj
ARENAS
R I N C O N

EXPLANATION

STRATIFIED ROCKS

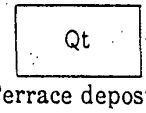


Alluvial deposits

Unconsolidated gravel, sand, and sill including large cobbles and boulders of volcanic rock; restricted to lowest deposits adjacent to present stream channels

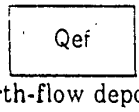
Deposits of debris-avalanche and landslide

Debris avalanche deposits; Qda, *are mixed earth and rock; landslide deposits,* Qls, *are coherent blocks derived from steep slopes*



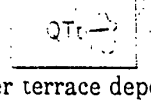
Terrace deposits

Unconsolidated sand, gravel, and silt including large cobbles and boulders of volcanic rock; restricted to deposits generally above the level of present stream action



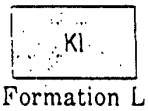
Earth-flow deposits

Deposits of clayey earth and rock fragments containing siliceous boulders as large as 25 cubic meters; restricted, in Comerio quadrangle, to the slopes of Cerro La Tiza



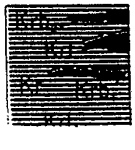
Older terrace deposits

Remnant deposits of consolidated gravel occurring at about 500 meters above sea level



Formation L

Dominantly massive porphyritic amygdaloidal flow; also flow breccia, but few clastic rocks

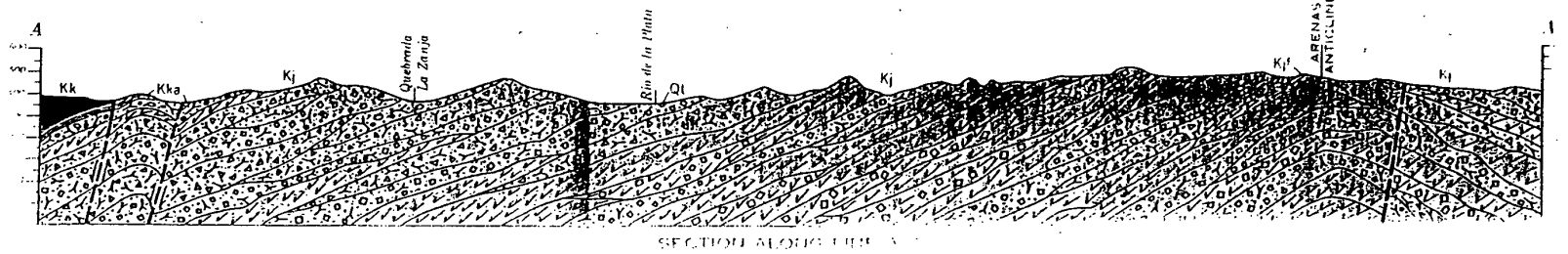


QUATERNARY

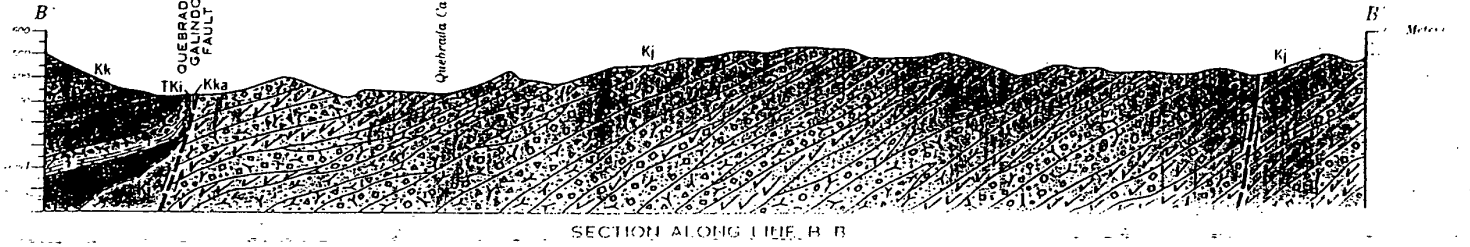
TERTIARY OR QUATERNARY

R2-0003730

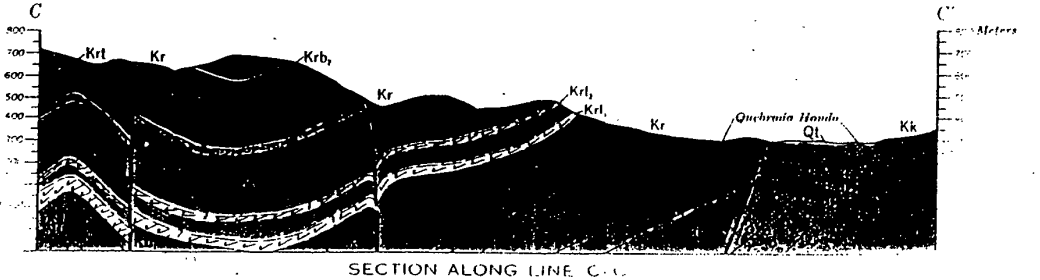
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY



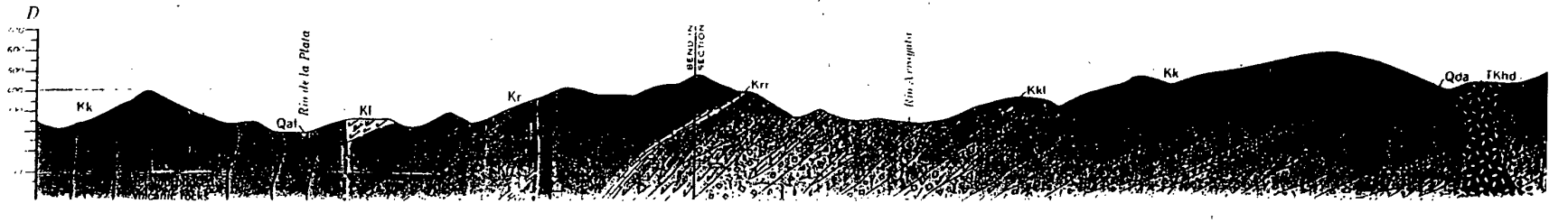
SECTION ALONG LINE A A'



SECTION ALONG LINE B B'



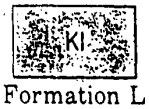
SECTION ALONG LINE C C'



R2-0003731

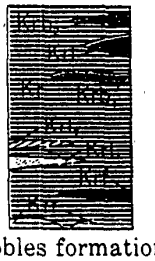
Older terrace deposits

Remnant deposits of consolidated gravel occurring at about 500 meters above sea level



Formation L

Dominantly massive porphyritic amygdaloidal flow; also flow breccia, but few clastic rocks

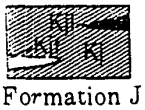


Robles formation

Chiefly thinly stratified fine-grained sedimentary rocks, Kr, *but includes fine-grained volcanic breccia,* Krb, *and* Krb$_1$, *and a lava flow,* Krf. *Also includes the Las Tetas lava member,* Krt; *the Lapa lava member, lower flow,* Krl$_1$, *and upper flow,* Krl$_2$; *and the Rio Matón limestone member,* Krr, *a thin discontinuous unit at the base of the formation*

Formation K

Chiefly crudely stratified coarsely clastic volcanic breccia; intercalated with lava flows, volcanic conglomerate, massive tuff and a few layers of bedded fine grained rocks; thin lenticular bodies of impure limestone, tuff, and limestone breccia, Kkl; *Aguas Buenas limestone member,* Kka, *at the base of formation*

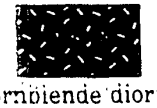


Formation J

Principally massive volcanic breccia and lava flows. Contains layers of poorly stratified tuff and volcanic conglomerate; fine-grained bedded rock occurs locally; a thin limestone lense, Kjl, *and a lava flow,* Kjf, *delineated on the geologic map*

TERTIARY OR CRETACEOUS

INTRUSIVE ROCKS

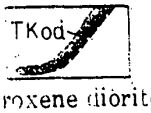


Hornblende diorite

Light olive-gray to medium-gray, fine-grained, generally porphyritic rock; phenocrysts of plagioclase and hornolende

Hornblende porphyry

Dark-colored rock characterized by hornblende phenocrysts as much as 15 millimeters in length



Pyroxene diorite

Medium-gray to greenish-gray fine-grained holocrystalline rock . . . plagioclase and

TERTIARY OR

96

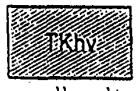
R2-0003732

CRETACE(

Undifferentiated intrusive rock

Light-colored weathered rock whose original mineral constituents cannot be recognized

METAMORPHIC ROCKS



Hydrothermally altered rocks

Light-gray clayey rock, mottled when weathered by shades of red, brown, and grayish purple; locally highly siliceous and well-indurated; banded in part at Cerro La Tiza

Contact

Dashed where approximately located

Indefinite contact

Concealed contact

Fault

Dashed where approximately located; dotted where concealed. U, *upthrown side;* D, *downthrown side*

Fault, showing relative movement

Dashed where approximately located

Doubtful fault

Dotted where concealed

Strike and dip of beds

Strike of vertical beds

Horizontal beds

Strike and dip of overturned beds

Strike and dip on questionable bedding plane

Strike and dip of foliation

Strike of vertical foliation

Anticline, showing trace of axial plane or crest line and plunge of axis

Syncline, showing trace of axial plane or trough and plunge of axis

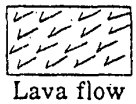
Quarry

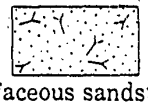
Clay pit

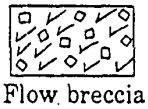
97

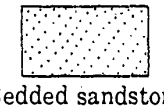
R2-0003733

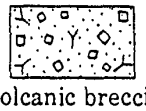
EXPLANATION

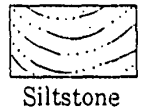

Lava flow

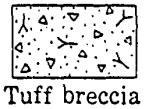

Tuffaceous sandstone

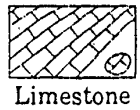

Flow breccia

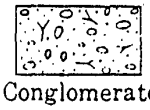

Bedded sandstone

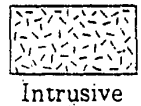

Volcanic breccia


Siltstone


Tuff breccia


Limestone


Conglomerate


Intrusive

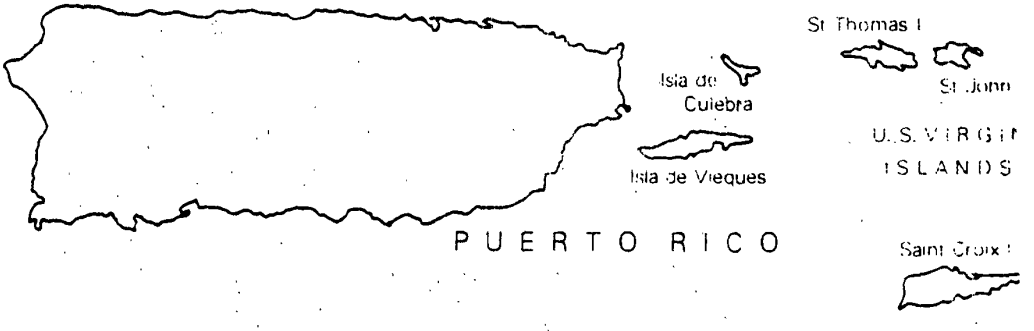
R2-0003734

REFERENCE 13

R2-0003735

Water Resources Data Puerto Rico and the U.S. Virgin islands

Water Year 1990



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT PR-90-1
Prepared in cooperation with the Commonwealth of Puerto Rico, the Government of the U.S. Virgin Islands, and other agencies

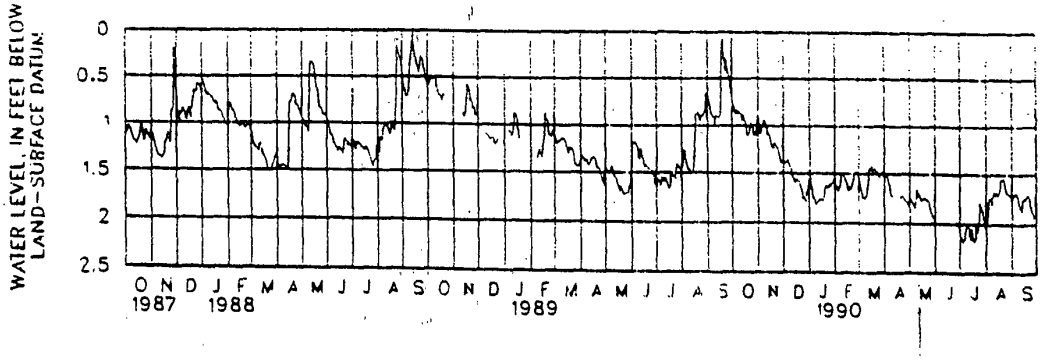
100

R2-0003736

1826S506e143600. Local number, 217.
LOCATION.--Lat 18°26'SS", long 66°14'24".
Owner: U.S. Geological Survey.
Name: Monaerrate TW-2.
AQUIFER.-Alluvial Deposits.
WELL CHARACTERISTICS.--Drilled unused water-cable well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-80 ft (0-24.4 m), perforated 10-80 ft (3.05-24.4 m). Depth 80 ft (24.4 m).
DATUM.--Elevation of land-surface datum is about 3.30 ft (1.00 m) above mean sea level, from topographic map.
Measuring point: Top of shelter floor, 3.50 ft (1.07 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--November 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.02 ft (0.006 m) below land-surface datum, May 16, 1986; lowest water level recorded, 2.20 ft (0.67 m) below land-surface datum, July 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.71	.89	1.37	1.59	1.59	1.50	1.51	1.79	2.03	2.02	2.01	1.77
2	.76	.97	1.39	1.60	1.63	1.55	1.51	1.75	2.05	2.13	2.11	1.78
3	.84	1.01	1.39	1.61	1.63	1.63	1.53	1.76	---	2.15	1.95	1.71
4	.79	1.09	1.40	1.65	1.63	1.66	1.49	1.77	---	2.16	1.88	1.70
5	.86	1.06	1.38	1.71	1.68	1.70	1.52	1.79	---	2.18	1.76	1.71
6	.88	1.00	1.36	1.74	1.64	1.74	1.57	1.79	---	2.14	1.74	1.69
7	.83	.96	1.38	1.75	1.65	1.74	1.61	1.82	---	2.16	1.74	1.68
8	.84	.94	1.41	1.78	1.55	1.75	1.63	1.84	---	2.07	1.75	1.71
9	.87	.94	1.43	1.82	1.51	1.75	1.69	1.30	---	2.03	1.80	1.73
10	.85	.97	1.45	1.81	1.50	1.73	1.72	1.66	---	2.01	1.72	1.79
11	.86	1.01	1.50	1.80	1.51	1.72	1.73	1.66	---	2.02	1.68	1.84
12	.87	1.03	1.53	1.79	1.51	1.63	---	1.72	---	2.03	1.70	1.83
13	.94	1.10	1.56	1.77	1.57	1.56	---	1.71	---	2.13	1.71	1.86
14	.90	1.08	1.58	1.76	1.57	1.46	---	1.70	---	2.15	1.68	1.81
15	.89	1.10	1.59	1.76	1.60	1.44	---	1.75	---	2.04	1.69	1.76
16	.94	1.14	1.56	1.76	1.65	1.46	---	1.76	---	2.13	1.71	1.75
17	.95	1.17	1.56	1.78	1.67	1.42	---	1.77	---	2.17	1.70	1.76
18	1.01	1.11	1.57	1.77	1.65	1.47	---	1.75	---	2.18	1.67	1.75
19	1.10	1.24	1.58	1.76	1.63	1.48	---	1.74	---	2.15	1.55	1.73
20	1.10	1.22	1.58	1.66	1.66	1.45	1.74	1.74	---	2.14	1.55	1.72
21	1.11	1.19	1.62	1.62	1.65	1.45	1.73	1.74	---	2.00	1.55	1.70
22	1.08	1.18	1.65	1.63	1.58	1.46	1.72	1.76	---	2.00	1.54	1.72
23	1.02	1.19	1.67	1.65	1.56	1.49	1.72	1.76	---	2.08	1.54	1.75
24	.96	1.22	1.70	1.64	1.52	1.48	1.74	1.76	---	1.95	1.61	1.84
25	1.00	1.27	1.76	1.63	1.50	1.48	1.76	1.78	---	1.78	1.65	1.88
26	1.01	1.29	1.74	1.60	1.48	1.53	1.77	1.86	---	1.83	1.67	1.90
27	1.10	1.34	1.75	1.63	1.47	1.51	1.77	1.89	1.98	1.83	1.69	1.93
28	1.11	1.39	1.78	1.61	1.48	1.51	1.79	1.91	1.98	1.87	1.70	1.92
29	1.11	1.39	1.68	1.59	---	1.49	1.81	1.94	1.99	1.93	1.69	1.92
30	1.05	1.39	1.68	1.56	---	1.49	1.83	1.92	2.03	1.97	1.71	1.92
31	.94	---	1.62	1.55	---	1.50	---	1.95	---	2.00	1.73	---
LOW	1.11	1.39	1.78	1.92	1.68	1.75	---	1.95	---	2.18	2.11	1.93
HIGH	.71	.89	1.36	1.55	1.47	1.42	---	1.66	---	1.78	1.54	1.68



101

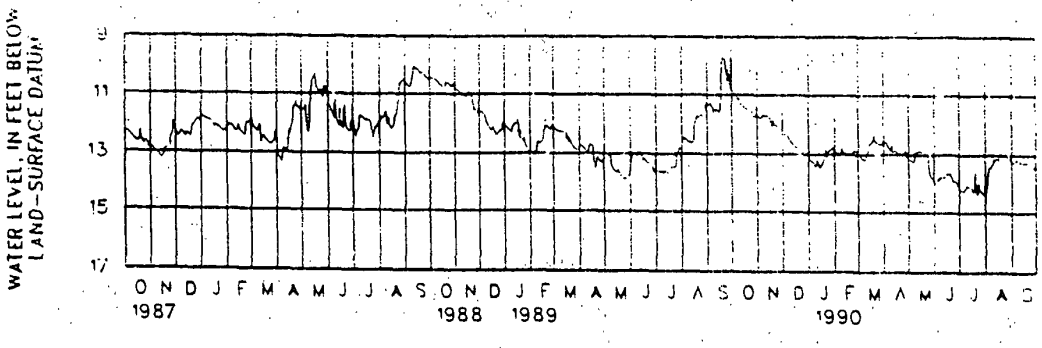
R2-0003737

182530066135400. Local number, 216.
LOCATION.--Lat 18°25'30", long 66°13'54".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Pozo Navy-Campanillaa.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (0.41 m) 0-106 ft (0-32.3 m), cased 16 in (0.41 m) 0-20 ft (0-6.10 m), eased 12 in (0.30 m) 0-106 ft (0-32.3 m), perforated 20-106 ft (6.10-32.3 m), diameter 10 in (10.25 m) 106-140 ft (32.3-42.7 m), eased 10 in (0.25 m) 106-140 ft (33.3-43.7 m), perforated 106-140 ft (32.3-42.7 m). Depth 140 ft (43.7 m).
DATUM.--Elevation of land-surface datum is about 13.0 ft (3.96 m) above mean sea level, from topographic map.
Measuring point: Hole on side of casing, 1.80 ft (0.55 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.38 ft (2.86 m) below land-surface datum, June 23, 1987; lowest water level recorded, 14.72 ft (4.49 m) below land-surface datum, Apr. 28, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.85	11.67	12.26	12.93	13.05	12.93	12.63	13.12	13.94	14.15	14.42	13.22
2	10.85	11.66	12.29	12.97	12.96	12.96	12.65	13.12	13.96	14.16	14.44	13.25
3	10.89	11.70	13.32	13.16	12.94	13.00	12.58	13.14	13.98	14.18	14.14	13.25
4	10.89	11.77	12.33	13.21	12.94	13.03	12.56	13.16	13.98	14.21	14.08	13.25
5	10.97	11.78	12.35	13.22	12.97	13.09	12.58	13.19	13.95	14.25	13.55	13.24
6	10.99	11.80	12.38	13.24	12.99	13.12	12.70	13.21	13.78	14.25	13.41	13.17
7	11.05	11.76	12.37	13.26	13.01	13.14	12.76	13.24	13.87	14.25	13.42	13.17
8	11.15	11.71	12.42	13.29	12.96	13.18	12.79	13.26	13.81	14.18	13.41	13.17
9	11.12	11.70	12.49	13.37	12.91	13.17	12.83	13.14	13.77	14.16	13.31	13.17
10	11.14	11.69	12.53	13.42	12.79	13.23	12.88	12.95	13.76	14.06	13.27	13.18
11	11.18	11.72	12.57	13.36	12.88	13.17	12.70	12.92	13.75	14.06	13.11	13.22
12	11.29	11.71	12.62	13.21	12.90	13.02	12.89	12.90	13.75	14.08	13.22	13.24
13	11.34	11.69	12.65	13.21	12.95	12.88	12.91	12.88	13.75	14.10	13.20	13.27
14	11.36	11.74	12.69	13.39	12.96	12.70	12.87	12.86	13.77	14.12	13.09	13.27
15	11.39	11.71	12.74	13.43	12.97	12.66	12.86	12.87	13.65	14.11	13.10	13.26
16	11.41	11.80	12.75	13.47	12.99	12.65	12.87	12.89	13.63	14.10	13.12	13.27
17	11.40	11.90	12.77	13.37	12.99	12.57	12.90	12.90	13.63	14.27	13.14	13.28
18	11.45	12.01	12.79	13.34	12.99	12.59	12.93	12.88	13.64	14.39	13.12	13.28
19	11.49	12.09	12.81	13.27	12.98	12.50	12.96	12.90	13.67	14.47	12.98	13.27
20	11.48	11.86	12.83	13.14	12.99	12.34	12.96	12.90	13.61	13.70	12.98	13.25
21	11.51	11.95	12.86	13.09	12.99	12.50	12.97	12.92	13.75	13.59	13.01	13.26
22	11.50	11.99	12.90	12.82	12.96	12.54	12.96	12.93	13.75	14.38	13.01	13.29
23	11.47	12.03	12.92	13.07	12.92	12.56	12.98	12.99	13.90	14.36	12.99	13.31
24	11.47	12.05	12.94	13.08	12.89	12.59	13.02	13.03	13.93	14.35	13.02	13.34
25	11.54	12.05	12.98	12.93	12.88	12.62	13.05	13.07	13.91	13.99	13.04	13.37
26	11.60	12.08	12.98	12.84	12.85	12.65	12.97	13.60	13.90	14.18	13.01	13.40
27	11.66	12.17	13.01	12.84	12.88	12.64	12.86	13.67	13.91	14.21	13.02	13.43
28	11.74	12.19	13.04	12.82	12.90	12.65	12.92	13.72	13.94	14.26	13.06	13.43
29	11.77	12.21	12.99	12.79	---	12.65	13.06	13.78	14.03	14.30	13.09	13.48
30	11.71	12.23	12.97	12.70	---	12.65	13.11	13.82	14.11	14.35	13.13	13.50
31	11.66	---	12.97	12.85	---	12.57	---	13.86	---	14.40	13.18	---
LOW	11.77	12.23	13.04	13.47	13.05	13.23	13.11	13.86	14.11	14.40	14.44	13.50
HIGH	10.85	11.66	12.26	12.70	12.79	12.34	12.56	12.86	13.61	13.59	12.98	13.17

WTR YR 1990 MEAN 12.95 LOW 14.44 HIGH 10.85



102

R2-0003738

REFERENCE 14

R2-0003739

COMMONWEALTH OF PUERTO RICO

AQUEDUCT AND SEWER AUTHORITY

WATER SUPPLY SYSTEMS MAP

COMERIO

Santiago Vázquez Flaherty • Giavara SVFG

Estado Libre Asociado de Puerto Rico

403 PARQUE STREET, SAN JUAN, PUERTO RICO 809/720-2323, 728-2324 AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS

DATE: JAN. 1983

MAP NUMBER: 44

COMMONWEALTH OF PUERTO RICO

AQUEDUCT AND SEWER AUTHORITY

WATER SUPPLY SYSTEMS MAP

CAYEY

Santiago Vázquez Flaherty • Giavara SVFG

Estado Libre Asociado de Puerto Rico

403 PARQUE STREET, SAN JUAN, PUERTO RICO 809/720-2323 728-2324 AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS

DATE: JAN. 1983

MAP NUMBER: 45

R2-0003740

COMMONWEALTH OF PUERTO RICO
AQUEDUCT AND SEWER AUTHORITY

WATER SUPPLY SYSTEMS MAP

CAGUAS

JAN. 1983
DATE

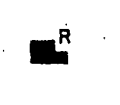
49

Santiago Vázquez Flaherty • Giavarini SVFG
Estado Libre Asociado de Puerto Rico
402 PARQUE STREET. SAN JUAN. PUERTO RICO 809 728-2222 725-2324 AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS

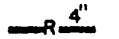
105

R2-0003741

ITIES LEGEND



Tank & Pump Station



Raw Water Pipe

Distribution Pipe

Pressure Reducing Valve
ELEV.(MTS.)

Open Valve

Closed Valve

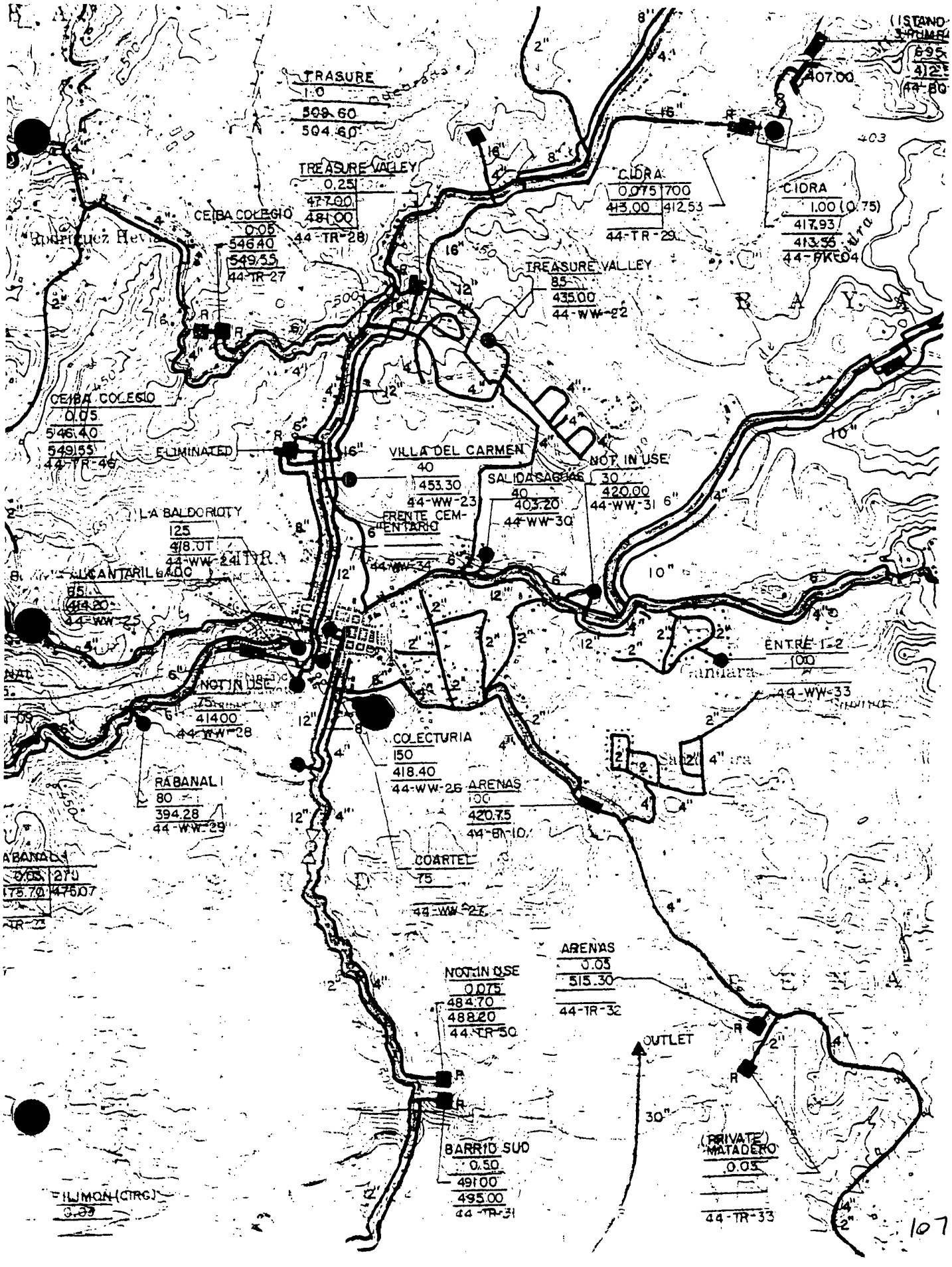
Intake
WEIR ELEV. (MTS.)

Intake & Pump Station (at Intake)
WEIR ELEV.(MTS.)

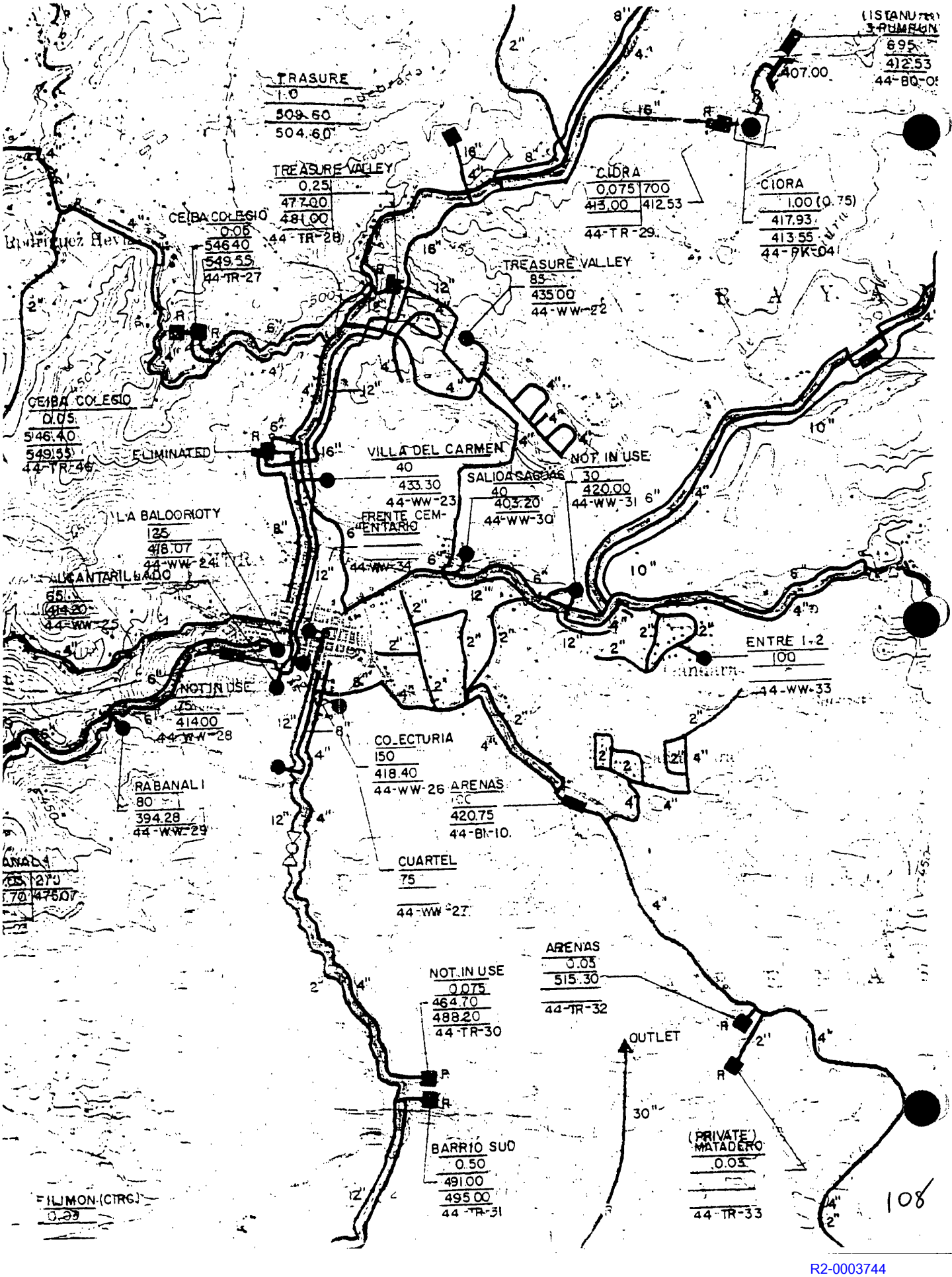
Chlorine Application (at Intake or Tank)

Dam

R2-0003742


TRASURE
1.0
509.60
504.60
TREASURE VALLEY
0.25
427.00
481.00
CEIBA COLEGIO
0.05
546.40
549.55
44-TR-28
44-TR-27
CIDRA
0.075 700
413.00 412.53
44-TR-29
CIDRA
1.00 (0.75)
417.93
413.55
44-PKE-04
TREASURE VALLEY
85
435.00
44-WW-22
CEIBA COLEGIO
0.05
546.40
549.55
44-TR-46
ELIMINATED
VILLA DEL CARMEN
40
453.30
44-WW-23
NOT IN USE
SALIDA SAGUAS
40
403.20
44-WW-30
30
420.00
44-WW-31
FRENTE CEMENTARIO
44-WW-34
LA BALDORIOTY
125
418.01
44-WW-24
LA CANTARILLA
85
414.20
44-WW-25
NOT IN USE
75
414.00
44-WW-28
RABANAL I
80
394.28
44-WW-29
COLECTURIA
150
418.40
44-WW-26
ARENAS
100
420.75
44-BR-10
COARTEL
75
44-WW-27
ENTRE 1-2
100
44-WW-33
ARENAS
0.05
515.30
44-TR-32
NOT IN USE
0.075
484.70
488.20
44-TR-30
OUTLET
BARRIO SUD
0.50
491.00
495.00
44-TR-31
(PRIVATE)
MATADERO
0.05
44-TR-33
ILIMON (CIRC)
0.39
107

R2-0003743


TRASURE
1.0
509.60
504.60
TREASURE VALLEY
0.25
477.00
481.00
44-TR-28
CEIBA COLEGIO
0.05
546.40
549.55
44-TR-27
CEIBA COLEGIO
0.05
546.40
549.55
44-TR-46
ELIMINATED
VILLA DEL CARMEN
40
433.30
44-WW-23
FRENTE CEMENTARIO
44-WW-34
SALIDA SABANA
40
403.20
44-WW-30
NOT IN USE
30
420.00
44-WW-31
LA BALOORIOTY
125
418.07
44-WW-24
ALCANTARILLADO
65
414.20
44-WW-25
NOT IN USE
75
414.00
44-WW-28
RABANAL I
80
394.28
44-WW-29
CO_ECTURIA
150
418.40
44-WW-26
ARENAS
420.75
44-BI-10
CUARTEL
75
44-WW-27
NOT IN USE
0.075
464.70
488.20
44-TR-30
ARENAS
0.05
515.30
44-TR-32
OUTLET
30"
BARRIO SUD
0.50
491.00
495.00
44-TR-31
FILIMON (CTRC.)
0.33
CIORA
0.075
700
413.00
412.53
44-TR-29
CIORA
1.00 (0.75)
417.93
413.55
44-PK-04
TREASURE VALLEY
85
435.00
44-WW-22
ENTRE 1-2
100
44-WW-33
(PRIVATE)
MATADERO
0.05
44-TR-33
407.00
695
412.53
44-BQ-0
16"
12"
10"
8"
6"
4"
2"
R
108

R2-0003744

REFERENCE 15

R2-0003745

PR ENVIRONMENTAL QUALITY BOARD		Ref. 15
SUPERFUND PA/SI PROGRAM		TELECON NOTE
CONTROL NO: PRD 987377264	DATE: July 5, 1992	TIME: 0730
DISTRIBUTION: Shelfoam Products, Inc.		
BETWEEN: Eng. González	OF: Engineering Area Operation Div. PRASA	PHONE: (809) 864-3129, 0100
AND: Enid Y. Viilegas Henríquez - Superfund Inspector		

DISCUSSION:

Eng. González explained that in Cidra exists six (6) wells that supply drinking water those are:

1. Well #3 - "Aicamarillado"
2. Well #5 - "Colecturía"
3. Well #7 - State Road #171 km. 13.2
4. Well #8 - Road #171 km. 0.2
5. Well Ceiba - Road #782 km. 2.2, Ceiba Ward
6. Bayamoncito - Road #787 km. 48
7. Intake - Cidra Lake - 1-2 miles northeast

110

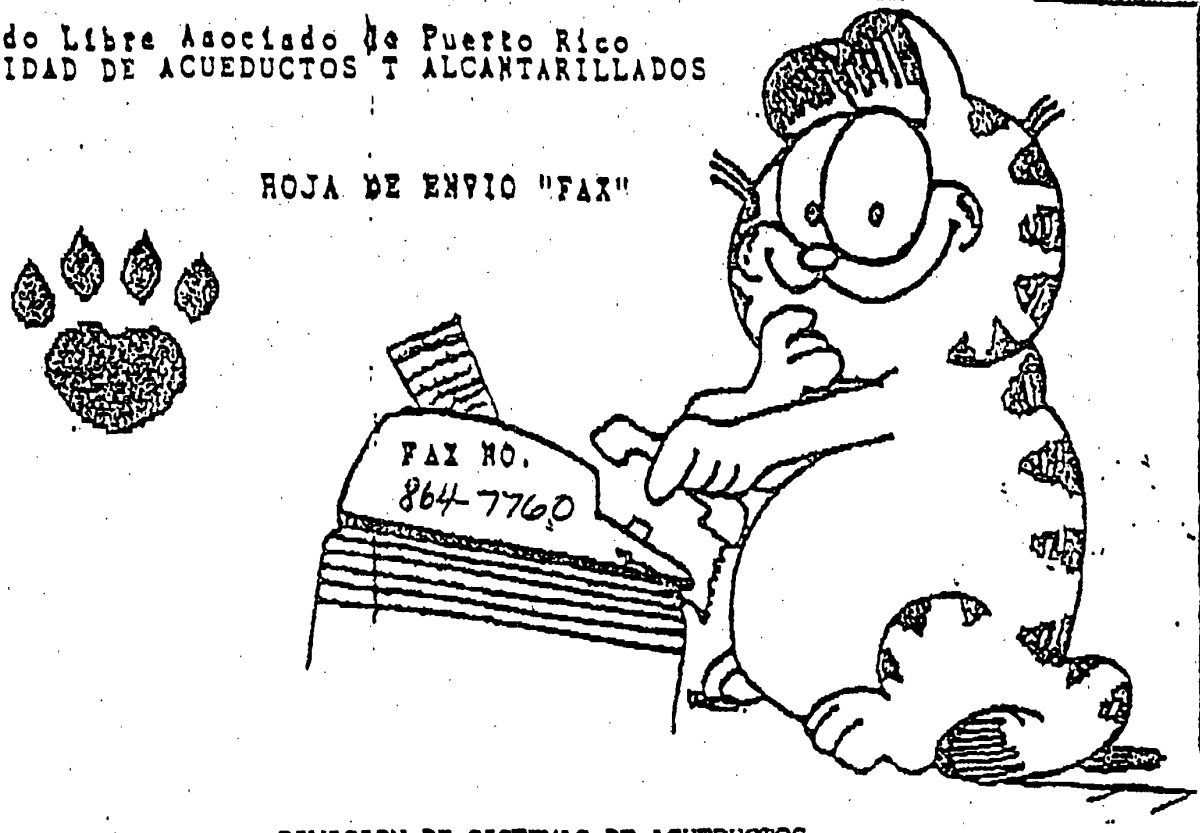
R2-0003746

REFERENCE 16

R2-0003747

Estado Libre Asociado de Puerto Rico
AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS

HOJA DE ENVIO "FAX"



DIVISION DE SISTEMAS DE ACUEDUCTOS
REGION DE GUAYAMA

FECHA: 7/Mayo/92

NOMBRE: Enid Villegas

LOCALIZACION: _____

REMITENTE: Ing. Luis González

ASUNTO: Pozos en operación en Cidra
AAA

TOTAL DE PACINAS TRANSMITIDAS INCLUYENDO ESTA: (2)

DE NO RECIBIR EL TOTAL DE PACINAS ARRIBA IRDICADAS, FAVOR COMUNICARSE A LOS TELEFONOS:
= = 864-3129, 0100

COMENTARIOS:

112

R2-0003748

A.A.A.

Pozos que están en operación (Ciera)

1. Pozo 3 - Cerca de la pta. alcantarillado.
2. Pozo 5 - Calle Padilla (colecturía)
3. Pozo 7 - Carr. 172 Km 13.2
4. Pozo 8 - Carr 171 Km 0.2
5. Ceiba - Carr 782 km 2.2, Bo. Ceiba
6. Zapera 1 y 2 - Ramal 740
7. Bayamoncito - Carr 787, Km 4.8

R2-0003749

REFERENCE 17

R2-0003750

ULTIMA: STATUS:

RECORD CODE: 4 FECHA CONSTRUCCION:

BARRIO : CEIBA

LATITUD : 18-12-38

LONGITUD: 66-10-08 ELEVACION(PIES): 1611

ED CAPACIDAD ESPECIFICA(GPM/PIES): .62

DIAMETRO

PERFORACION TUBERIA TIPO

ESTATICO: 90 FECHA:

DINAMICO: 0 FECHA:

PRODUCCION (GPM)

INICIAL: 15 FECHA:

ACTUAL : 0 FECHA:

PRUEBA DE POZO:

FORMACION GEOLOGICA: NO HAY DATA-NO DATA CONTAMINACION

CONTAMINANTES MAS COMUNES (PPM)

CONTAMINANTES FECHA CONTAMINANTES FECHA CONTAMINANTES FECHA

NITRITO : NITRATO:

MANGANESO: SULFATO:

HIERRO : TURB :

OBSERVACIONES: 16 HORAS BOMBEO-ACUMULO 6-CONSTRUIDO COMUNIDAD

ULTIMA: STATUS: OPERACION

FECHA ACTUALIZACION: SEP85 RECORD CODE: 4 FECHA CONSTRUCCION: 02OCT72

NOMBRE DEL POZO: VILLAS DEL CARMEN

POZO: CEIBA BARRIO : ANONAS

REGION: GUAYANA LATITUD : 18-10-16

ZONA : CAYEY LONGITUD: 66-09-27 ELEVACION(PIES):

CARGA SOBRE EL ACUIFERO(PIES): 132 CAPACIDAD ESPECIFICA(GPM/PIES): 1.6

PROFUNDIDAD(PIES): 300 DIAMETRO

NIVEL (PIES) PERFORACION TUBERIA TIPO

ESTATICO: 60 FECHA: 0CT72 0-40 10 0-40 10 LISA

DINAMICO: 107 FECHA: 0CT72 40-300 8 86-170 12 PERFORACA

PRODUCCION (GPM) 106-200 10 PERFORACA

INICIAL: 225 FECHA:

ACTUAL : 0 FECHA:

PRUEBA DE POZO:

FORMACION GEOLOGICA: 120 ARCILLA-10 TOSCA-170 ROCA

CONTAMINANTES MAS COMUNES (PPM)

CONTAMINANTES FECHA CONTAMINANTES FECHA CONTAMINANTES FECHA

COLIFORMES: 0 0CT72 NITRITO : 0 0CT72 NITRATO: 1 0CT72

HIERRO : 300 0CT72 MANGANESO: 0 0CT72 SULFATO: 5.4 0CT72

TDS : 214 0CT72 : CLOI : 22 0CT72

OBSERVACIONES: PRUEBA SUPERVISADA A.A.A.

R2-0003751

AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS
OFICINA DE PLANES DE AREA
SISTEMA DE POZOS

POZO NUMERO: 446MC36 ULTIMA: A STATUS: COTEJAR
FECHA ACTUALIZACION: SEP75 RECORD CODE: 4 FECHA CONSTRUCCION: 21SEP71
NOMBRE DEL POZO: TREASURE VALLEY 13
PUEBLO: CIDRA BARRIO : LAYAMON
REGION: COAYAMA CATALOGO : 18-11-25
ZONA : CAYEY LONGITUD: 66-09-21 ELEVACION(PIES):
LARGO COLUMNA DE LA PERFO(PIES): 84 CAPACIDAD ESPECIFICA(GPM/PIES): 4.5
PROFUNDIDAD(PIES): 405 C I A M E T R O
NIVEL (PIES) PERFORACION TUBERIA TIPO
ESTATICO: 45 FECHA: 21SEP71 6-E4 6 LISA
DINAMICO: 65 FECHA: 21SEP71
PRUEBA DE PRODUCCION (GPM)
ORIGINAL: 125 FECHA:
ACTUAL : 0 FECHA:
FORMA DE MEDIR:
FORMACION GEOLOGICA: 5 CAPA VEGETAL-10 CETRITO ROJO BARRO-40
BARRO ROJO-340 ROCA AZUL
CONTAMINANTES MAS COMUNES (PPM)

CONTAMINANTES	FECHA	CONTAMINANTES	FECHA	CONTAMINANTES	FECHA
CLORURO:		NITRITO :		NITRATO:	
HIERRO :		MANGANESO:		SULFATO:	
:		:		:	

OBSERVACIONES: 32 HORAS PRUEBA-NO DATA CONTAMINACION

POZO NUMERO: 446MC36A ULTIMA: STATUS: COTEJAR
FECHA ACTUALIZACION: SEP75 RECORD CODE: 4 FECHA CONSTRUCCION: 21SEP71
NOMBRE DEL POZO: TREASURE VALLEY 13
PUEBLO: CIDRA BARRIO : LAYAMON
REGION: COAYAMA CATALOGO : 18-11-25
ZONA : CAYEY LONGITUD: 66-09-21 ELEVACION(PIES):
LARGO COLUMNA DE LA PERFO(PIES): 84 CAPACIDAD ESPECIFICA(GPM/PIES): 4.5
PROFUNDIDAD(PIES): 405 C I A M E T R O
NIVEL (PIES) PERFORACION TUBERIA TIPO
ESTATICO: 45 FECHA: 21SEP71 C-E4 6 LISA
DINAMICO: 65 FECHA: 21SEP71
PRUEBA DE PRODUCCION (GPM)
ORIGINAL: 125 FECHA:
ACTUAL : 0 FECHA:
FORMA DE MEDIR:
FORMACION GEOLOGICA: 5 CAPA VEGETAL-10 CETRITO ROJO BARRO-40
BARRO ROJO-340 ROCA AZUL
CONTAMINANTES MAS COMUNES (PPM)

CONTAMINANTES	FECHA	CONTAMINANTES	FECHA	CONTAMINANTES	FECHA
CLORURO: 15	MAR75	NITRITO : 0	MAR75	NITRATO: 3.4	MAR75
HIERRO : .15	MAR75	MANGANESO: 0	MAR75	SULFATO: 3	MAR75
TDS : 112	MAR75	PARD : 74	MAR75	:	

OBSERVACIONES: 32 HORAS PRUEBA-

911

R2-0003752

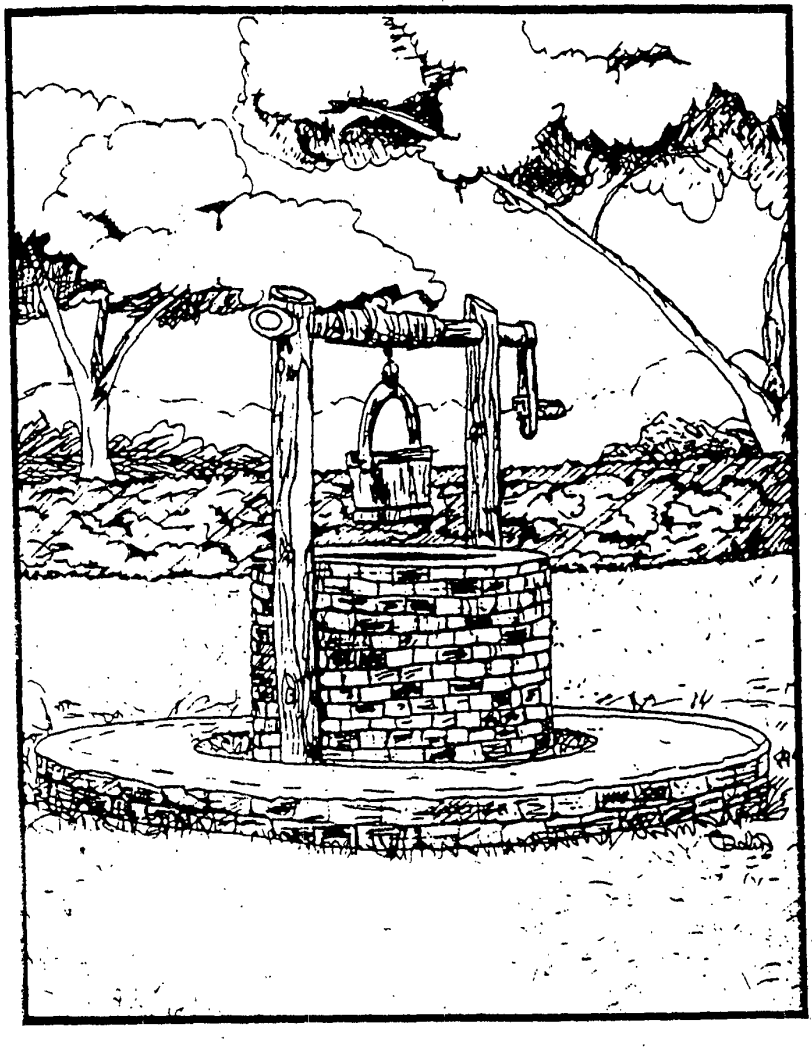
REFERENCE 18

R2-0003753

OFFICIAL FILE COPY
DO NOT REMOVE

PUBLIC WATER SUPPLIES IN PUERTO RICO, 1983

U.S. GEOLOGICAL SURVEY
OPEN FILE DATA REPORT 84-126



Prepared in cooperation with
PUERTO RICO AQUEDUCT and SEWER AUTHORITY

U.S. DEPARTMENT OF THE INTERIOR March 3, 1849

118

R2-0003754

PUBLIC WATER SUPPLIES IN PUERTO RICO, 1983

By Fernando Gómez-Gómez, Ferdinand Quiñones, and Marisol López

U.S. Geological Survey
Open-File Data Report 84-126

Prepared in cooperation with
Puerto Rico Aqueduct and Sewer Authority

San Juan, Puerto Rico
1984

119

R2-0003755

Table 1. Population, housing units and estimated number of connections to the public water supply system, by municipio.

USGS CODE	1980 CENSUS MUNICIPIO	POPUCATION	HOUSING UNITS	**NUMBER OF CONNECTIONS DOMESTIC	CONMERCIAL	INDUSTRIAL
1	ADJUNTAS	18786	5432	2955	154	8
2	AGUADA	31367	9784	6694	467	15
3	AGUADILLA	34606	17429	15024	1226	60
4	AGUAS BUENAS	22429	6625	4047	274	13
5	AIBONITO	22167	6350	5272	478	17
6	ANASCO	23274	7046	5290	298	16
7	ARECIBO	86766	27456	24182	1915	81
8	ARROYO	17014	5150	4645	195	11
9	BARCELONETA	13942	6090	5132	364	24
10	BARRANQUITAS	21639	5733	3421	353	4
11	BAYAMON	196206	56137	48411	3658	129
12	CABO ROJO	34045	12657	10692	794	24
13	CAGUAS	117959	35266	30046	1810	179
14	CAMUY	24884	7562	6178	559	21
15	CAROLINA	165954	53029	40396	1998	99
16	CATANO	25243	7626	6285	322	110
17	CAYEY	41099	12345	10756	915	22
18	CEIBA	14944	4587	2997	193	7
19	CIALES	16211	4646	3173	258	12
20	CIDRA	25365	7906	5431	484	23
21	COAMO	30822	8649	6811	403	22
22	COMERIO	13212	5227	3564	393	6
23	CORCIAL	23221	7949	5565	400	10
24	CULEBRA	1265	517	361	41	1
25	DORADO	25511	8201	6704	395	13
26	FAJARDO	32037	12358	10429	813	20
27	GUANICA	13799	6310	5302	270	3
28	GUAYAMA	40183	12355	9930	570	25
29	GUAYANILLA	21050	6090	5137	293	4
30	GUAYNABO	80742	24337	19737	1239	64
31	GURABO	23574	6933	5046	249	5
32	HATILLO	28958	3473	6988	610	49
33	HORMIGUEROS	14030	4443	4338	202	13
34	HUMACAO	46134	15023	13662	1140	53
35	ISABELA	37435	11445	9556	946	19
36	JAYUYA	14722	4013	2359	273	11

R2-0003756

Table 1- Populations, housing units and estimated number of connections to the public water supply systems, by municipios. - (Continuo)

USGS CODE	1980 CENSUS MUNICIPIO	POPULATION	HOUSING UNITS	**NUMBER OF CONNECTIONS DOMESTIC	COMMERCIAL	INDUSTRIAL
37	JUANA DIAZ	43505	11774	7744	545	17
38	JUNCOS	25197	7892	4156	377	35
39	LAJAS	21256	7439	5111	450	9
40	LARES	26743	7801	6094	446	5
41	LAS MARIAS	9747	2825	1515	106	3
42	LAS PIEDRAS	22412	6793	4926	397	23
43	LOIZA	20367	5645	6054	295	2
44	LUQUILLO	14385	6529	5672	293	19
45	MANATI	35552	11703	10390	962	39
46	MARICAO	9737	2113	106	50	5
47	MAUNABO	11313	3217	2502	154	5
48	MAYAGUEZ	95193	31806	26782	2271	91
49	MOCA	27135	7994	6066	396	7
50	MOROVIS	21142	5456	4421	553	9
51	NAGUABO	20617	6921	4964	406	31
52	NARANJITO	25633	6559	4127	520	4
53	OROCOVIS	19352	5255	3515	210	3
54	PATILLAS	17774	5099	5546	250	5
55	PENUELAS	19116	5299	5766	244	10
56	PONCE	189046	55079	49343	2524	101
57	QUEBRADILLAS	19729	5616	5054	559	16
58	RINCON	11739	3959	5584	251	4
59	RIO GRANDE	34293	10376	9254	554	16
60	SABANA GRANDE	23207	6735	6556	416	15
61	SALINAS	26438	8320	6737	510	9
62	SAN GERMAN	32922	10473	7589	576	32
63	SAN JUAN	434849	156095	122136	11578	263
64	SAN LORENZO	22428	9455	5742	563	29
65	SAN SEBASTIAN	25690	10951	8462	815	12
66	SANTA ISABEL	19354	6007	4644	192	10
67	TOA ALTA	51910	7031	7295	322	12
68	TOA BAJA	75246	22756	21185	957	43
69	TRUJILLO ALTO	51349	15905	5125	315	9
70	UTUADO	34505	10215	6553	581	13
71	VEGA ALTA	23696	9525	6285	377	21
72	VEGA BAJA	47115	14771	15155	857	45
73	VIEQUES	7652	3076	2722	246	5
74	VILLALBA	20734	5471	5095	154	7
75	YABUCOA	31425	5324	5646	410	14
76	YAUCO	57742	11577	9482	675	12
77	CANOVANAS	31530	9341	5515	405	8
78	FLORIDA	7252	2291	2283	165	3
	Totals	3,196,520	933,673	737,226	56,331	2237

** as of 1981 in PRASA files

R2-0003757

Table 5. -- Public water-supply installations and water-quality analyses for Puerto Rico Aqueduct and Sewer Authority Facilities at - Aguas Buenas

WELLS

FACILITY NAME	LATITUDE	LONGITUDE	ANNUAL AMOUNT (MILLION GALLONS)
BAYAMONCITO	181422	0660936	20.4

FILTER PLANTS

FACILITY NAME	LATITUDE	LONGITUDE	ANNUAL AMOUNT (MILLION GALLONS)
AGUAS BUENAS	181539	0660614	370.9

QUALITY OF WATER OF SELECTED WELLS AND SURFACE WATER SITES

GROUND WATER

FACILITY NAME	DATE	pH	COLOR	TUR	Ca	Mg	Na	K	CaCO3	SO4	Cl	F	SiO2	TDS	NO3-N	Fe	Mn
BAYAMONCITO	05/20/85	7.1	0	0.3	42	12.0	13.0	1.2	120	22.0	21.0	0.3	50.0	311	1.40	0.22	0.00

SURFACE WATER

FACILITY NAME	DATE	pH	COLOR	TUR	Ca	Mg	Na	K	CaCO3	SO4	Cl	F	SiO2	TDS	NO3-N	Fe	Mn
AGUAS BUENAS	05/23/83	7.4	0	0.1	44	14.0	2.0	1.4	133	16.0	22.0	0.7	34.0	299	1.00	0.00	0.00

122

R2-0003758

Table 17. -- Public water-supply installations and water-quality analyses for Puerto Rico Aqueduct and Sewer Authority facilities at - Cayey

FACILITY NAME	LATITUDE	LONGITUDE	ANNUAL AMOUNT (MILLION GALLONS
BAUZA 2	180607	0661331	14.0
LA CENTRAL	180743	0660834	25.0
CASERIO NUEVO	180647	0660948	17.5
CASERIO VIEJO	180642	0660951	15.6
FINCA BOSCH	180708	0661026	0.0
HENRY BARRACKS 1	180706	0660908	5.9
HENRY BARRACKS 2	180641	0660918	11.8
LA VEGA 1	180605	0660753	0.0
LA VEGA 2	180720	0660757	12.3
LA VEGA 3	180737	0660711	3.6
MATON 1	180831	0661236	10.2
MATON 2	180722	0661046	15.6
MATON 3	180800	0661236	27.0
MONTELLANOS (BUNGALO)	180718	0660833	63.7
PLANICIE 1	180720	0660757	0.0
PLANICIE 2 (URBANO)	------	-------	0.0
PLANICIE 2 (RURAL)	180737	0660711	20.5
VALDIVIESO	180657	0660926	0.0

FILTER PLANTS

FACILITY NAME	LATITUDE	LONGITUDE	ANNUAL AMOUNT (MILLION GALLON
CATEY	180630	0661007	883.9
BO. CEORO	180524	0660856	6.6
CULEBRAS-CATEY	180405	0660802	42.7
GUAVATE	160742	0660414	253.2
JAJOME ALTO	180337	0660904	3.3
MATON	180753	0661231	0.1
PASTO VIEJO-CAYEY	------	-------	0.0

R2-0003759

Table 17. -- Public water-supply installations and water-quality analyses for Puerto Rico Aqueduct and Sewer Authority facilities at - Cayey - (Continue)

QUALITY OF WATER OF SELECTED WELLS AND SURFACE WATER SITES

GROUND WATER

FACILITY NAME	DATE	pH	COLOR	TUR	Ca	Mg	Na	K	CaCO3	SO4	Cl	F	SiO2	IDS	NO3-N	Fe	Mn
LA CENIMAL	03/04/75	7.7	0	0.0	54	23.0	100.0	---	314	60.0	50.0	0.2	34.0	505	0.40	0.00	0.00
CASERIO NUEVO	04/27/77	7.7	0	0.0	83	24.0	47.0	---	287	23.0	70.0	0.0	43.0	506	2.20	0.15	0.00
CASERIO VIEJO	12/17/80	7.8	0	0.4	60	38.0	10.0	0.6	214	22.0	39.0	0.2	42.0	385	2.90	0.30	0.00
FINCA BOSCH	12/17/81	7.9	0	0.5	67	47.0	64.0	0.6	392	23.0	57.0	0.3	45.0	489	2.10	0.16	0.00
HENRY BARRACKS 1	08/29/73	7.0	0	0.0	54	43.0	60.0	---	314	18.0	79.0	0.1	35.0	545	2.00	0.10	0.00
LA VEGA 2	10/21/81	5.0	20	26.0	41	7.0	52.0	0.8	205	10.0	21.0	0.0	40.0	287	0.10	0.22	0.15
LA VEGA 3	10/20/81	8.1	0	1.4	43	4.0	56.0	0.7	202	11.0	26.0	0.0	36.0	298	0.10	0.61	0.10
MATON 1	12/17/80	6.0	0	0.2	60	23.0	39.0	0.9	267	22.0	30.0	0.2	29.0	329	1.40	0.13	0.00
MATON 2	12/17/80	7.9	0	0.2	59	22.0	56.0	1.0	256	22.0	25.0	0.2	25.0	390	0.50	0.13	0.00
MONTELLANOS (BUNGALO)	04/27/77	7.4	0	1.0	65	21.0	90.0	---	329	40.0	55.0	0.0	36.0	562	0.90	0.15	0.00
PLANICIE 2 (URBANO)	09/21/83	7.0	5	1.0	46	3.0	123.0	1.6	292	13.0	67.0	0.0	45.0	-	0.10	0.00	0.00
PLANICIE 2 (RURAL)	09/21/83	7.0	5	1.0	46	3.0	123.0	1.6	292	13.0	67.0	0.0	45.0	---	0.10	0.00	0.00
VALDIVIESO	09/16/77	7.5	0	0.0	52	10.0	17.0	---	106	15.0	24.0	0.0	35.0	214	1.30	0.19	0.00

SURFACE WATER

FACILITY NAME	DATE	pH	COLOR	TUR	Ca	Mg	Na	K	CaCO3	SO4	Cl	F	SiO2	IDS	NO3-N	Fe	Mn
CAYEY	09/08/82	7.8	5	2.0	28	5.0	6.0	0.9	57	16.0	14.0	0.0	6.0	155	0.10	0.07	0.00
AO. CEDRO	09/08/32	7.6	5	7.4	40	16.0	4.0	1.4	140	7.0	21.0	0.1	7.0	288	0.40	0.15	0.00
CULEBRAS-CAYEY	09/08/82	7.7	0	2.0	35	20.0	---	0.9	106	16.0	16.0	0.0	6.0	207	0.20	0.24	0.00
GUAVATE	11/24/81	7.5	0	1.0	25	---	7.0	0.6	51	7.0	14.0	0.0	29.0	136	0.10	0.21	0.01
JAJOME ALTO	09/08/82	7.5	0	0.4	63	---	12.0	0.5	154	67.0	22.0	0.1	6.0	350	0.10	0.19	0.00
MATON	05/03/75	7.2	-	---	6	5.0	16.0	---	14	30.0	15.0	0.0	24.0	186	0.50	---	0.00
PASTO VIEJO-CAYEY	09/17/73	7.4	0	0.0	35	13.0	55.0	---	176	0.5	26.0	0.0	42.0	275	1.90	0.00	0.00

R2-0003760

Table 19. -- Public water-supply installations and water-quality analyses for Puerto Rico Aqueduct and Sewer Authority facilities at - Cidra

WELLS

FACILITY NAME	LATITUDE	LONGITUDE	ANNUAL AMOUNT (MILLION GALLONS)
CALLE BALDORIOTY (AEE 61	131035	0660940	55.7
BAYAMON	------	-------	5.7
CEIBA	181147	0661024	30.3
CALLE PADILLA	161036	0660947	35.5
CERCA PLANTA ALCANTARILLADO	181052	0660945	0.0
FRENTE CEMENTERIO	181021	0660943	22.5
POZO EN EL PUENTE (CIDRA 1)	181027	0660858	0.0
EL PUEBLO	181045	0660908	0.0
EL PUENTE	181045	0660908	56.2
RASANAL	181026	0661008	19.0
SALIDA CAGUAS	------	-------	0.0
TREASURE ISLAND	181125	0660921	0.0
VILLA DEL CARMEN	181016	0660927	20.8
LAPERA	180955	0660652	32.6

FILTER PLANTS

FACILITY NAME	LATITUDE	LONGITUDE	ANNUAL AMOUNT (MILLION GALLONS)
CIDRA	181155	0660828	360.7

QUALITY OF WATER OF SELECTED WELLS AND SURFACE WATER SITES

GROUND WATER

FACILITY NAME	DATE	pH	COLOR	TUR	Ca	Mg	Na	K	CaCO3	SO4	Cl	F	SiO2	TDS	NO3-N	Fe	Mn
BAYAMON	12/09/80	7.5	0	0.4	39	13.0	13.0	0.7	128	25.0	19.0	0.0	35.0	239	0.70	0.17	0.00
CEIBA	12/09/80	8.0	10	0.9	61	5.0	31.0	0.6	189	25.0	19.0	0.0	47.0	358	1.40	0.52	0.00
CERCA PLT. ALCANT.	05/07/75	7.5	0	0.0	43	28.0	17.0	---	159	15.0	47.0	0.5	62.0	598	5.40	0.00	0.00
POIC EN EL PUENTE	05/07/75	7.5	5	0.0	44	6.0	29.0	---	146	26.0	20.0	0.1	55.0	---	12.50	0.10	0.00
EL PUEBLO	05/07/75	7.5	0	0.0	40	16.0	15.0	---	139	15.0	27.0	0.0	57.3	---	1.90	0.00	0.00
EL PUENTE	05/07/75	7.3	5	0.0	44	6.0	29.0	---	146	26.0	20.0	0.1	55.3	---	12.50	0.10	0.00
RASANAL	12/09/83	7.9	5	2.2	64	35.0	55.0	0.8	529	23.0	67.0	0.0	58.0	460	2.10	0.26	11.00
TREASURE ISLAND	05/07/75	7.3	0	0.0	11	11.0	15.0	---	75	5.0	19.0	0.1	45.0	172	3.40	0.15	0.00
VILLA DEL CARMEN	09/12/80	7.5	0	2.0	29	15.0	24.0	1.5	136	15.0	35.0	0.1	13.0	292	1.60	0.25	0.00
LAPERA	12/09/80	8.2	5	0.1	50	12.0	29.0	0.7	174	6.0	11.0	0.0	44.0	260	1.00	0.11	0.00

SURFACE WATER

FACILITY NAME	DATE	pH	COLOR	TUR	Ca	Mg	Na	K	CaCO3	SO4	Cl	F	SiO2	TDS	NO3-N	Fe	Mn
CIDRA	11/24/81	7.5	0	0.7	24	---	15.0	5.7	60	3.0	25.0	0.4	16.0	154	0.00	0.13	0.02

125

R2-0003761

Table 21. -- Public water-supply installations and water-quality analyses for Puerto Rico Aqueduct and Sewer Authority facilities at - Comerio

WELLS

FACILITY NAME	LATITUDE	LONGITUDE	ANNUAL AMOUNT (MILLION GALLONS)
BREAKERS	181333	0661430	0.0
CRUZ-ARIEL	181436	0661357	0.0
ESCUELA PASARELL	181352	0661430	0.0
HACIENDA 1	181305	0661449	0.0
HACIENDA 2	181305	0661447	0.0
NARANJO	181325	0461031	42.4
PINAS ABAJO	------	-------	11.8
PLANTA ALCANTARILLADO (POZO)	191410	0661428	0.0
PASARELL	181334	0661430	33.5
POZO ELEVADO (POLICIA)	181507	0661442	0.0
POZO PARQUE	181307	0661445	0.0
RIO HONDO	181244	0661449	0.0

FILTER PLANTS

FACILITY NAME	LATITUDE	LONGITUDE	ANNUAL AMOUNT (MILLION GALLONS)
CEDRITOS-COMERIO	181244	0461154	131.0
COMERIO	181333	0661315	224.3
PALOMAS	181348	0461357	2.0

QUALITY OF WATER OF SELECTED WELLS AND SURFACE WATER SITES

GROUND WATER

FACILITY NAME	DATE	pH	COLOR	TUR	Ca	Mg	Na	K	CaCO3	SO4	Cl	F	SiO2	TDS	NO3-N	Fe	Mn
BREAKERS	12/10/80	7.9	5	0.4	102	51.0	---	0.9	315	72.0	49.0	0.0	35.0	537	1.70	0.53	0.00
CRUZ-ARIEL	04/05/75	7.5	0	0.0	65	24.0	24.0	---	233	32.0	42.0	0.1	54.0	403	0.50	0.10	0.00
ESCUELA PASARELL	04/03/75	7.7	0	0.0	62	23.0	42.0	---	238	51.0	50.0	0.2	53.0	430	1.40	0.05	0.00
HACIENDA 1	04/07/7	7.5	0	2.0	32	IS	55.0	---	---	---	---	0.0	30.0	---	0.04	0.00	0.00
HACIENDA 2	08/19/77	7.2	0	3.0	103	31.0	45.0	---	329	58.0	66.0	0.0	28.0	620	1.30	0.80	0.00
NARANJO	12/10/E0	8.1	-	0.3	17	8.0	12.0	0.8	I9	5.0	15.0	0.0	52.0	172	1.40	0.19	0.00
PINAS ABAJO	04/15/77	7.8	0	0.0	71	26.0	27.0	---	245	25.0	50.0	0.0	38.0	453	3.10	0.25	0.00
PLANTA ALCANTARILLADO	04/05/75	7.8	0	0.0	77	6.0	51.0	---	193	55.0	35.0	0.2	51.0	539	7.40	0.10	0.00
PASARELL	04/03/75	7.5	0	0.0	78	28.0	42.0	---	277	55.0	60.0	0.2	34.0	455	5.50	0.00	0.00
POZO ELEVADO	04/03/75	7.7	0	0.0	74	20.0	50.0	---	254	30.0	47.0	0.1	35.0	433	3.20	0.00	0.00
POZO PARQUE	08/29/73	7.3	0	0.0	17	53.0	43.0	---	240	42.0	53.0	0.1	30.0	483	0.80	0.00	0.00
RIO HONDO	08/19/77	7.4	-	5.0	38	13.0	21.0	---	161	4.0	22.0	0.0	25.0	198	0.40	2.00	0.40

SURFACE WATER

FACILITY NAME	DATE	pH	COLOR	TUR	Ca	Mg	Na	K	CaCO3	SO4	Cl	F	SiO2	TDS	NO3-N	Fe	Mn
CEDRITOS-COMERIO	09/08/82	7.C	0	1.4	34	15.0	23.0	0.9	115	53.0	IS.0	0.0	10.0	277	0.80	0.IS	0.00
COMERIO	12/18/80	7.6	10	6.4	35	12.0	27.0	2.7	159	23.0	28.0	0.5	22.0	293	0.60	0.40	0.00
PALOMAS	09/08/82	6.7	0	0.1	29	18.0	11.0	1.1	139	3.0	17.0	0.0	9.0	220	1.70	0.00	0.00

R2-0003762

REFERENCE 19

R2-0003763

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

COMMONWEALTH OF PUERTO RICO

COMMUNITY-PANEL NUMBER
720000 0174 B

PANEL 174 OF 325
(SEE MAP INDEX FOR PANELS NOT PRINTED)

MAP REVISED:
JULY 19, 1982

Federal Emergency Management Agency

128

R2-0003764

KEY TO MAP

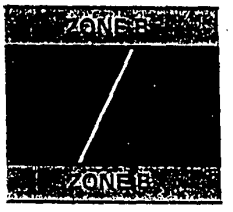
)0-Ycar Flood Boundary

)0-Year Flood Boundary

one Designations* With
ate of Identification
g., 12/2/74

)0-Year Flood Boundary

)0-Year Flood Boundary



ase Flood Elevation Line
ith Elevation In Meters**

153

Flood Elevation Line
Uniform Within Zone**

IEL 3871

levation Reference Mark

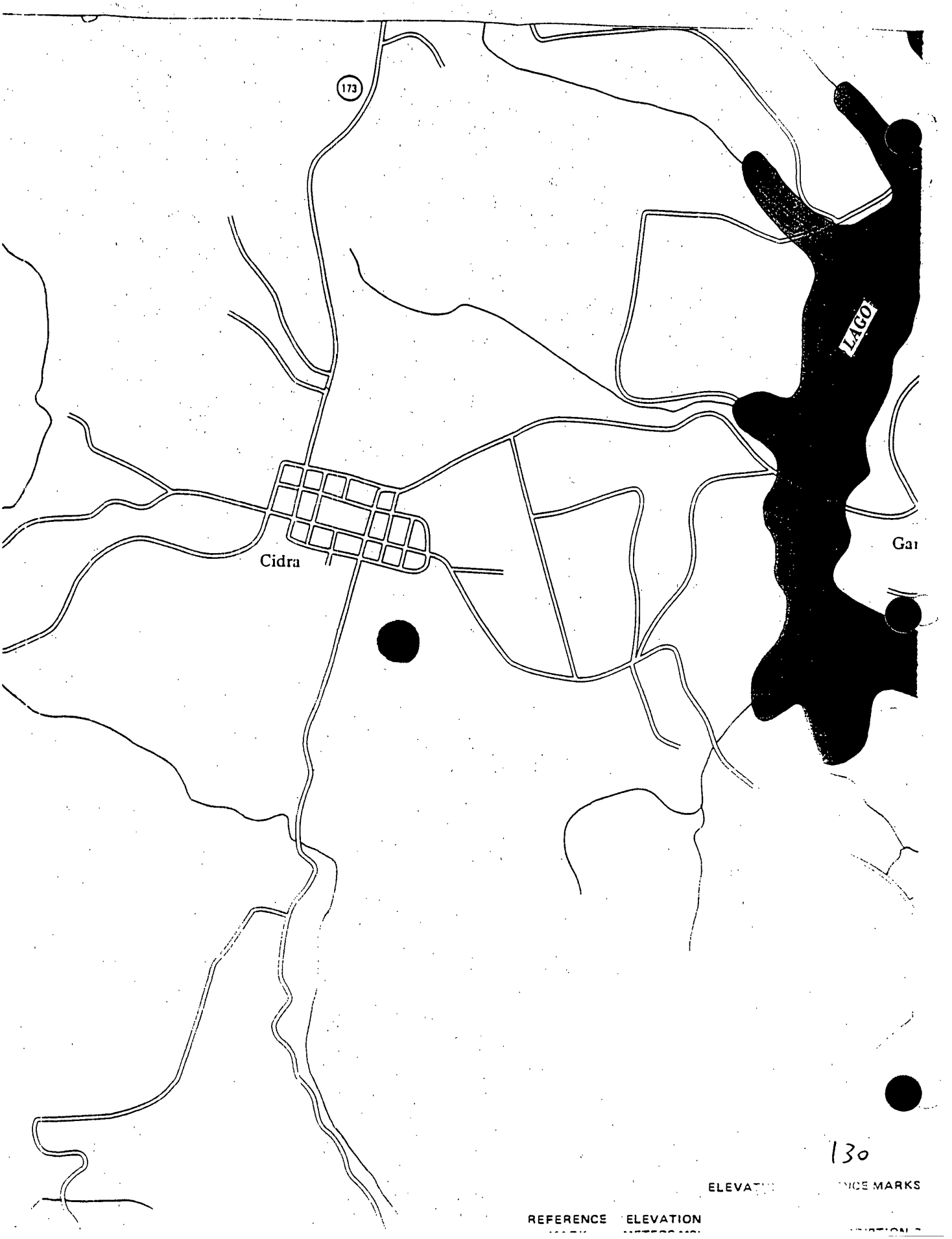
RM7X

*Relerenced to Mean Sea Level

*EXPLANATION OF ZONE DESIGNATIONS

EXPLANATION	
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding where depths are between 0.3 and 1.0 meter; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between 0.3 and 1.0 meter; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than 0.3 meter or where the contributing drainage area is less than 2.6 square kilometers, or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

R2-0003765



130

ELEVATI NCE MARKS

REFERENCE ELEVATION

R2-0003766

REFERENCE 20

R2-0003767

Rio de La Plata

Es el río más largo de Puerto Sico aunque no el más caudaloso. Tiene su nacimiento al suroesce del Cerro La Santa al este del barrio Farallón del munícipio de Cayey a una altitud aproximada de 2,625 pies (800 metros) sobre el nivel del mar.

Tiene una longitud aproximada de 45.4 millas (73 kilómetros) desde su nacimiento hasta que desemboca en el Océano Atlántico al norte de la Isla en la jurisdicción de Dorado. Cruza por los municipios de Cayey, Comerío, Toa Alta, Toa Baja y Dorado. El Río do La Plata tione un área de captación de 239 millas cuadradas.

Son tributarios del Río de La Plata, el Río Chiquito, el Río Guayate, Río Merón, Río Usabón, Río Hondo, Río Arroyata, Río Cuesta Arriba, Río Guadiana, Río Cañas, Río Bucarabones, Río Lajas, Río Cocal, Río Nuevo, Quebrada Culebra, Quebrada Grande, Quebrada de la Caña, Quebrada El Cedro, Quebrada Beatriz, Quebrada La Zanja, Quebrada Santo Domingo, Quebrada Morillo, Quebrada Ceña, Quebrada Galindo, Quebrada Gomez, Quebrada Honda, Quebrada Tinre, Quebrada Prieca, Quebrada Piña, Quebrada Convento, Quebrada Higuero, Quebrada Blanca, Quebrada Cedrito, Quebrada del Juicio, Quebrada Mula, Quebrada La Yegua, Quebrada Dajaos, Quebrada Cancel, Quebrada Ortíz, Quebrada Chinea, Quebrada Abarca, Quebrada Piña, Quebrada Méjico.

Forma dos lagos, el Lago Carito y al Lago Comerio.

El Río de La Plata suple de agua a los municipios de Guayama, Arroyo, Cayey, Barranquitas y Naranjito.

Contaminación

Recibe contaminación de las plantas de aguas negras de Cayey, Aibonito, Barranquitas, Comerío, Naranjito, Toa Alta, Toa Baja y Dorado. Recibe también contaminación de descarga de desperdicios domésticos en la Quebrada Santo Domingo de Cayey, en el Río Barranquitas del pueblo de Barranquitas y de el Río Aibonito del pueblo de Aibonito los cuales llevam agua al Río de La Plata.

1. El vertedero munícipal donde se depositan los desperdicios sólidos del pueblo da Bayamón está situado en la ladera de una montaña, pasándoie cerca una quebrada tributaria del Río La Plata. Este vertedero está localizado en el kilómetro 10 de la carretera #167 del barrio Buena Vista del municipio de Bayamón.

2. Una quebrada tributaria del Río de La Plata pasa por el centro del pueblo de Toa Baja recibiendo contaminación de dicho pueblo. Se une al Río La Plata en terrenos de la Central Constancia.

3. La Quebrada Santo Domingo otra tributaria del Río La Plata pasa por dentro de los límites del pueblo de Cayey, recibiendo contaminación de dicho pueblo.

Otro foco de concaminación son las áreas donae se daoosita la [illegible] de Cayey, Aibonito, Barranquitas, Comerío [illegible]

[illegible]

Hay [illegible] pesca de sábalo robalo, [illegible], lubina, chopa y barbudo.

Río Chiquito

Nace en el Cerro de la Tabla de la Sierra de Cayey del Municipio de Guayama a una elevación de aproximadamente 2,590 pies (700 metros) sobre el nivel del mar.

[illegible] de 3.[illegible] 5 [illegible] y corre de

132

R2-0003768

2. Quebrada Culebra

Nace al sur del barrio Culebra Bajo de Cayey a una elevación aproximada de 2,558 pies (780 metros) sobre el nivel del mar. Tiene aproximadamente 2 millas (3.2 kilómetros) de largo. Corre de sur a norte.

3. Quebrada Grande

Nace al sur del barrio Farallón de Cayey a una elevación aproximada de 2,362 pies (720 metros) sobre el nivel del mar. Tiene como 4 millas (6.4 kilómetros) de largo. Corre de este a oeste.

4. Quebrada de la Caña

Nace al norte del barrio Farallón de Cayey a una elevación de 1,625 pies (595 metros) sobre el nivel del mar. Es una quebrada corta que corre de este a suroeste.

5. Quebrada El Cero

Nace al sur del barrio Culebra Bajo de Cayey a una elevación de 2,331 pies (711 metros) sobre el nivel del mar. Tiene una longitud aproximada de 4 millas (6.4 kilómetros). Corre de sur a norte.

6. Río Guayate

Nace en el Cerro Lucero al noreste del barrio Farallón del municipio de Cayey a una elevación de aproximadamente 2,637 pies (810 metros) sobre el nivel del mar.

Tiene una longitud aproximada de 6.7 millas (10.8 kilómetre). Corre de este a oeste.

7. Quebrada Beatriz

Nace esta quebrada al noreste del barrio Beatriz de Cayey a una elevación aproximada do 1,394 pies (425 millas) sobre el nivel del mar.

Tiene una longitud aproximada ds 5 millas (8 kilómetros) desde que nace hasta que se une al Río de La Plata al sureste del barrio Arenas da Cidra.

8. Quebrada La Zanja

Nace esta quebrada en el barrio Rincón de Cayey a una elevación de 1,312 pies (400 metros) sobre el nivel del mar.

Es una quebrada corta que corre de sur a noroeste.

9. Quebrada Santo Domingo

Nace esta quebrada al sur del barrio Quebrada Arriba de Cayey a una elevación de 2,165 pies ([illegible] metros) sobre el nivel del mar.

Tiene una longitud aproximada de 3.2 millas (5.1 kilómetros) [illegible] que nace hasta que se une al Río de La Plata. Corre de sur a [illegible].

Tiene de tributario a la Quebrada Morillo.

10. Quebrada Morillo

Nace en el barrio Rincón de Cayey a una elevación de 1,2[illegible] pies (395 metros) sobre el nivel del mar. Tiene como .7 millas (1.1 kilómetro) de largo. Corre de sur hacia el noroeste hasta unirse a [illegible] Santo Domingo.

R2-0003769

norte a sur como por 2 millas (3.2 kilómetro). Tiene de tributaria a la Quebrada Bocana.

a) Quebrada Bocana

Nace al norte del barrio Toita de Cidra a una elevación de 1,476 pies (450 metros) sobre el nivel del mar. Es una quebrada corta que corre de norte a sur.

11. Quebrada Galindo

Nace en el barrio Honduras de Cidra a una elevación de 1,509 pies (460 metros) sobre el nivel del mar. Es una quebrada corta que corre de norte a sur.

12. Río Matón

Nace al este del barrio Sumido de Cayey a una elevación de 2,230 pies (680 metros) sobre el nivel del mar.

Tiene una longitud aproximada de 2.5 millas (4 kilómetros) desde que nace hasta que se une al Río de La Plata. Corre del sur al nor oeste.

Tiene de tributaria a la Quebrada Pedro Avila.

Este río y la Quebrada Santo Domingo suplen el abasto de agua (un 73%) al pueblo de Cayey.

a) Quebrada Pedro Avila

Nace al oeste del barrio Pedro Avila del municipio de Cayey a una elevación aproximada de 1,968 pies (600 metros) sobre el nival del mar. Es una quebrada corta que corre de sur a noreste.

13. Quebrada Cómez

Nace esta quebrada en el barrio Piedras de Cayey a una elevación de 2,427 pies (740 metros) sobre el nivel del mar. Tiene como 2.7 millas (4.4 kilómetro) de largo. Corre de sur a aorte hasta unirse al Río de La Plata.

14. Quebrada Honda

Nace esta quebrada al sur del barrio Robles de Aibonito a una elevación de 2,165 pies (660 metros) sobre el nivel del mar. Tiene como 3.2 millas (5.2 kilómetro) de largo y corre del sur al noreste.

15. Río Usabón

Tiene su origen en un lago formado por aguas de la Quebrada Aguas Largas y otras tres quebradas más, en una depresión entre las colinas de Asomante.

Este río tiene una serie de saltos espectaculares y a continuación de estos el río se ensanche y profundiza formando charcas, como la de la Playita, Charca Prieta, Charca Negrón, Charca [illegible] y Charca La Cabra.

Recibe la unión del Río Aibonito en el barrio Los Llanos con una caída espectacular en saltos seguidos de charcas.

Tiene una longitud aproximada de 8.7 millas (14 kilómetro) desde que nace hasta que se une al Río de La Plata. Corre generalmente de oeste a este.

Tiene de tributarios a la Quebrada Aguas Largas, Quebrada Pelechal, Río Barranquitas y Quebrada Alicia.

R2-0003770

a) Quebrada Aguas Largas

Nace al sur del barrio Pulguillas del municipio de Coamo a una elevación de 2,296 pies (700 metros) sobre el nivel del mar. Tiene una longitud aproximada de 3.7 millas (6 kilómetros). Corre de norte hacia el sureste luego sigue hacia el aoreste.

b) Quebrada Helechal

Nace esta quebrada al noreste del barrio Hayales de la municipalidad de Coamo, a una elevación como de 2,410 pies (735 metros) sobre el nivel del mar.

Tiene una longitud aproximada de 3.7 millas (6 kilómetros) y corre de oeste a este.

c) Río Aibonito

Nace este rio al sur del barrio Robles del municipio de Aibonito a una elevación aproximada de 2,460 pies (750 metros) sobre el nivel del mar. Tiene una longitud como de 6 millas (11 kilómetros) y corre de sur a noroeste.

d) Río Barranquitas

Nace en el Cerro La Torrecilla del barrio Palo Hincado de Barranquitas a una elevación de 2,788 pies (850 metros) sobre el nivel del mar. Tiene una longitud aproximada de 5.6 millas (9 kilómetro) desde quo nace hasta que se une al Río Usabón corre generalmente da norte a sur. Este rio y su tributaria la Quebrada Padilla, suplen de agua potable al pueblo de Barranquitas y comunidades distantes.

1. Quebrada Padilla

Nace esta quebrada al suroeste del barrio Quebradillas de Barranquitas. Es una quebrada corta que corre de norte a sur.

e) Quebrada Alicia

Nace al sur del barrio Caonillas de Aibonito a una elevación de 1,870 pies (570 metros) sobre el nivel del mar. Tiene una longitud aproximada de 2.7 millas (4.4 kilómetros) y corre de sur a norte.

16. Quebrada Tigre

Nace esta quebrada al norte del barrio Honduras de Barranquitas a una elevación de 1,640 pies (500 metros) sobre el nivel del mar. Es una ouebrada como de 2.3 millas (3.8 kilómetros) de largo que corre de oeste a noreste.

17. Quebroda Prieta

Nace esta cuebrada al norte del barrio Honduras de Barranquitas a una elevación de 1,771 pies (540 metros) sobre el nivel del mar. Tiene una longitud aproximada de 2.5 millas (4 kilómetros) y corre de oeste a noreste.

18. Río Lando

Tiene su origen de la unión del Río Frío, Quebrada Grande y Río Caliente, y unas cuantas cuadradas al este del barrio [illegible] de Barranquitas.

Tiene una longitud aproximada de 2.5 millas (4.2 kilómetro) desde su origen hasta que se une al Río de La Plata. Corre generalmente de oeste a este.

135

R2-0003771

a) Río Frío

Nace al noreste del barrio Quebradillas de Barranquitas a una elevación de 1,902 pies (530 metros) sobre al nivel del mar. Tiene una longitud aproximada de 2.5 millas (4 kilómetros) y corre de norte a sur.

b) Río Caliente

Nace al sur del barrio Quebradillas de Barrancuitas a una elevación de 2,034 pies (620 metros) sobre el nivel del mar. Tiene una longitud aproximada de 2 millas (3.4 kilómetro) y corre de sur a norte.

c) Quebrada Grande

Tiene su origen de la unión de varias quebradas al sur del barrio Quebrada Grande de Barranquitas a elevaciones que fluctúan entre los 1,968-2,296 pies (600-700 metres) sobre el nivel del mar. Tiene una longitud aproximada de 3 millas (5 kilómetros) y corre de sur a norte.

19. Quebrada Piña

Nace al sur del barrio Piñas de Comerio a una elevación de 1,640 pies (500 metros) sobre el nivel del mar. Tiene como 3.5 millas (5.6 kilómetros) de largo y corre de sur a norte.

20. Quebrada Convento

Nace esta quebrada al sur del barrio Palomas de Comerio a una elevación de 1,804 pies (550 metros) sobre el nivel del mar. Es una quebrada corta, como de 1.9 millas (3 kilómetros) de largo que corre de oeste a este.

21. Quebrada Higuero

Nace al noroeste del barrio Palomas de Comerio a una elevación de 1,869 pies (570 metros) sobre el nivel del mar. Tiene como 3.7 millas (6 kilómetros) de largo y corre de oeste a este.

22. Río Arroyata

Tiene su origen de la unión de varias quebradas al suroeste del pueblo de Cidra a elevaciones que fluctúan entre los 1,542-1,673 pies (470-510 metros) sobre el nivel del mar.

Tiene una longitud aproximada de 8.6 millas (13.8 kilómetres) desde su origen hasta que se une al Río de La Plata, al noroeste del barrio Naranjo de Comerio.

Tiene de tributaries a la Quebrada La Catalina, Quebrada del Banco, Quebrada Cejas, Quebrada Naranjo, etc.

a) Quebrada La Catalina

Nace al suroeste del barrio Pabonal de Cidra a una elevación de 1,804 pies (550 metros) sobre el nivel del mar. Tiene como 1.7 millas (2.8 kilómetros) de largo y corre de sur a norte.

b) Quebrada del Banco

Nace esta quebrada al sur del barrio Pabonal de Cidra a una elevación de 1,837 pies (560 metros) sobre el nivel del mar. Tiene como 3 millas (5 kilómetros) de largo y corre de sur a norte.

c) Quebrada Cejas

Nace esta quebrada al este del barrio Cejas de Comerio a una elevación de 1,738 pies (530 metros) sobre el nivel del mar. Tiene

R2-0003772

una longitud aproximada de 1.9 millas (3 kilómetros) y corre de este a oeste.

d) Quebrada Naranjo

Nace esta quebrada al sureste del barrio Naranjo de Comerío a una elevación de 1,771 pies (540 metres) sobre el nivel del mar. Tiene cono 2.2 millas (3.6 kilómetros) de largo y corre do este a oeste.

23. Quebrada Blanca

Nace al sureste del barrio Cedrito de Comerío a una elevación de 1,771 pies (540 metres) sobre el nivol del mar. Tiene una longitud aproximada de 2 millas (3.4 kilómetros) y corre de este hacia el noroeste.

24. Quebrada Doña Elena

Nace esta quebrada en el barrio Doña Elena del municipio de Comerío a una elevación aproximada de 1,837 pies (560 metros) sobre el nivel del mar. Tiene una longitud aproximada de 2.4 millas (3.8 kilómetros) y corre de oeste a este.

25. Quebrada Cedrito

Tiene su origen en una charca al sur del barrio Nuevo de Bayanón a una elevación de 1,542 pies (470 metros) sobre el nivel del mar. Tiene una longitud como de 1.2 millas (2 kilómetros) y corre de este a oeste.

26. Quebrada del Juicio

Nace en el barrio Nuevo de Bayamón a una elevación de 1,148 pies (350 metros) sobre el nivel del mar. Es una quebrada corta como de .87 milla (1.4 kilómetro) de largo. Corre de este a oeste.

27. Quebrada Mula

Naee en el barrio Anones de Naranjito a una elevación de 1,312 pies (400 metros) sobre el nivel del nar. Tiene como 2 millas (3.4 kilómetros) de largo y corre de oeste a este.

Tiene como tributarias a la Quebrada Ciénaga.

a) Quebrada Ciénaga

Nace en el barrio Anones de Naranjito a una elevación aproximada de 1,804 pies (550 metros) sobre el nivel del mar. Tiene una longitud anroximada de 2 millas (3.4 kilómetros) y corre de sur a norte.

28. Río Cuesta Arriba

Nace en el barrio Juan Asencio del municipio de Aguas Buenas a una elevación aproximada de 1,443 pies (440 metros) sobre el nivel del mar. Tiene como 3.3 millas (5.6 kilómetros) de largo y corre [illegible]

[illegible] tributarios a la Quebrada Brinta, Quebrada Franco y Quebrada [illegible]

a) Quebrada [illegible]

Nace en el barrio Juan Asencio de Aguas Buenas a una elevación de 1,[illegible] pies (4[illegible] metros) sobre el nivel del mar. [illegible] corre de sur a norte.

[illegible]

[illegible] aproximadamente [illegible]

137

R2-0003773

REFERENCE 21

R2-0003774

Water Resources Data Puerto Rico and the U.S. Virgin Islands

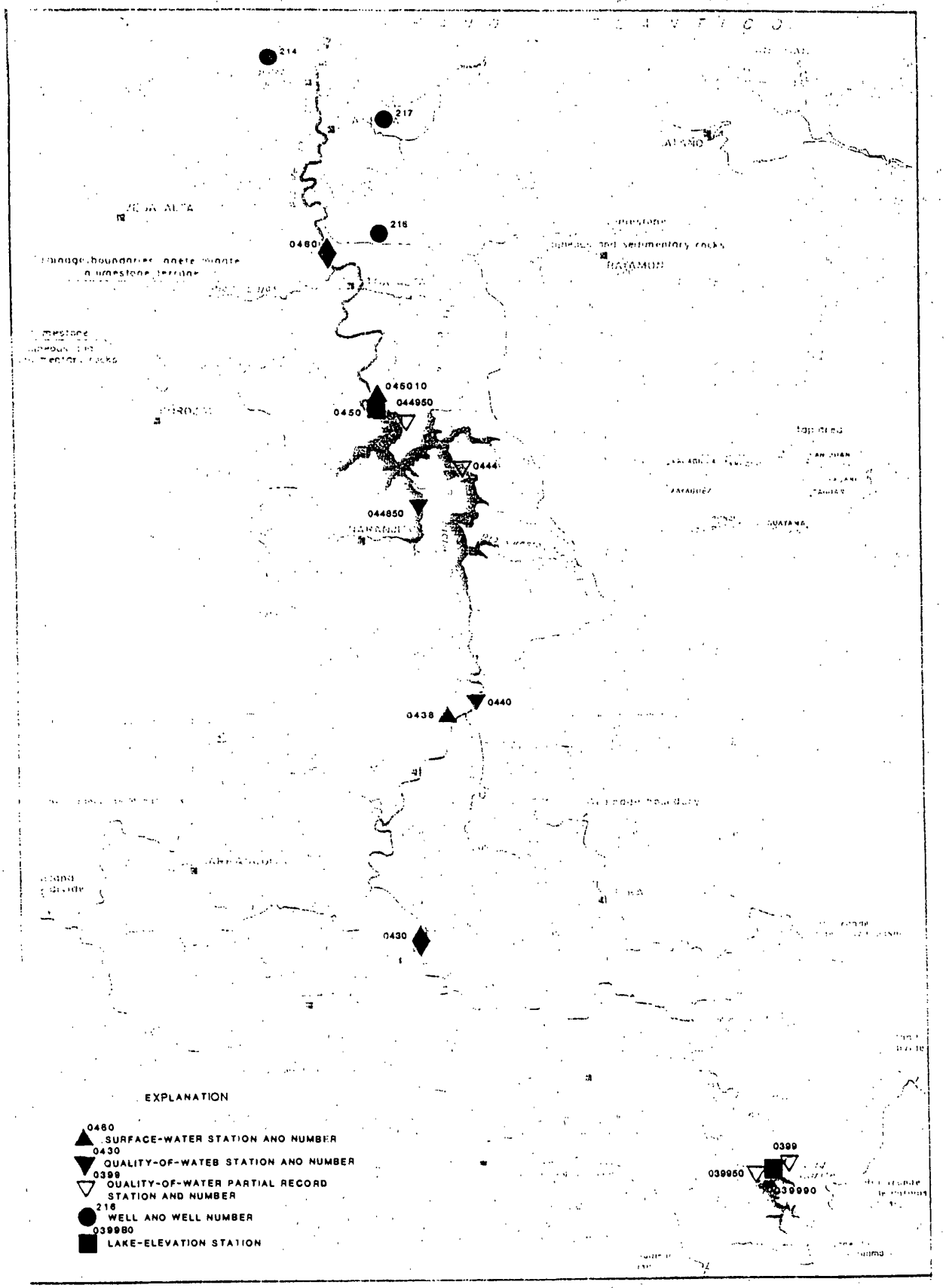
Water Year 1990

by R.E. Curtis, Jr., Z. Aquino, P.L. Diaz, and R.J. Vachier

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT PR-90-1
Prepared in cooperation with the Commonwealth of Puerto Rico, the Government of the U.S. Virgin Islands, and other agencies

139

R2-0003775



140

Figure 17.--Rio de la Plata basin.

R2-0003776

RIO DE LA PLATA DASIN

50046000 RIO DE LA PLATA AT HIGHWAY 2 NEAR TOA ALTA, PR

LOCATION.--Lat 18°24'41", long 66°15'39", Hydrologic Unit 21010005, on left bank, at downstream side of bridge on Highway 2, 1.3 mi (2.1 km) downstream from Rio Lajaa, and 1.5 mi (2.6 km) northwest of Toa Alta, 11.3 mi (18.2 km) downatream from Puerto Rico Aqueduct and Sewer Authority reservoir.

DRAINAGE AREA.--208 mi² (539 km²), exoludon 8.2 mi² (21.2 km²) upstream from Lago Carite, flow from which is divorted to Rio Guamani. Aroa at site uaed prior to September 25, 1984, 200 mi² (518 km²).

WATER-DISCHARCS RECORDS

PRRIOD OP RECORD.--November 1959 (measurement only), January 1980 to current year. Prior to October 1984, published as Rio de la Plata at Toa Alta, P.R.; October 1984 to September 1988 published as 50046900.

GAGE.--Water-stage recorder. Datum of gage la 9.15 ft (2.789 m), above mean sea level. Prior to October, 1984, at sits about 1.0 mi (1.6 km) upstream at mean sea level datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Regulation at all stages by Puerto Rico Aqueduct and Sewer Authority reservoir upstream from gage. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGE.--30 years (1961-90), 273 ft³/s (7.731 m³/s), 18.54 in/yr (471 mm/yr), 197,800 acre-ft/yr (244 hm³/yr); median of yearly mean discharges, 228 ft³/s (6.46 m³/s), 165,000 acre-ft/yr (203 hm³/yr).

RXTREHES POR PRRIOD OP RECORD.--Maximum discharge, 96,500 ft³/s (2,700 m³/s), Sept. 6, 1960, gago hoight, 36.35 ft (11.079m), from floodmark, from rating curvu oxtended above 12,000 ft³/s (340 m³/s) on basis of contracted-opening measurement of peak flow at site 1.0 mi upstroam and different datum; minimum discharge, 2.2 ft³/s (0.062 m³/s), Apr. 25, 1984.

YTREMES OOTSIDE PERIOD OP RECORD.--Approximate discharges and elevations of major floods, as pointed out by local residents are as follows: Sept. 13, 1928, 120,000 ft³/s (3,400 m³/s), gage heioht, 37.4 ft (11.40 m); June 16, 1943, 82,000 ft³/s (2,322 m³/s), gage height, 34.4 ft (10.48 m), at site 1.0 mi upstream and different datum.

EXTRIHES POR CURREHT YEAR.--Peak discharges greater than base discharge of 6,000 ft³/s (170 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage heiuht (ft)	Gage heiuht (m)
Oct. 23	2125	*3,490	98.8	*9.17	2.795						

Minimum discharge, 14 ft³/s (0.396 m³/s), Aug. 8,9.

REVISIONS.--The peak discharges and annual maximum (*) reported for some water years have been revised as shown in thu following table. They supersede figures published in the reports for 1985,1986,1987,1988 and 1989.

WATER YEAR	Date	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	WATER YEAR	Date	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
1985	Nov. 5, 1984	19,580	551	18.05	5.502	1986	May 13, 1986	30,950	876	20.64	6.291
	Nov. 7, 1984	13,870	393	15.89	4.843		May 14, 1986	25,110	711	19.83	5.953
	Apr. 25, 1985	9,010	255	13.42	4.090	1987	Apr. 12, 1987	*21,150	599	*18.54	5.651
	Apr. 30, 1985	12,480	353	15.25	4.648		May 21, 1987	10,950	310	14.50	4.420
	May 16, 1985	8,270	234	12.96	3.950	1988	Nov. 25, 1987	15,360	435	16.53	5.038
	May 17, 1985	29,150	831	20.44	6.230		Nov. 27, 1987	*29,200	829	*20.43	6.227
	May 18, 1985	38,900	1,100	21.61	6.587		May 10, 1988	8,880	251	13.34	4.066
1986	Oct. 7, 1985	*73,330	2,078	*24.58	7.492		Aug. 24, 1988	20,010	567	18.19	5.544
	Oct. 8, 1985	11,830	335	14.94	4.554		Sept.11, 1988	9,700	275	13.83	4.215
	Oct. 26, 1985	9,520	270	13.72	4.182	1989	Feb. 17, 1989	11,690	331	14.87	4.532
	Nov. 15, 1985	9,960	282	13.98	4.261		Sept.18, 1989	*37,730	1,070	*21.47	6.544
	May 1, 1986	8,100	229	12.85	3.917		Sept.24, 1989	9,810	278	13.89	4.234

R2-0003777

REFERENCE 22

R2-0003778

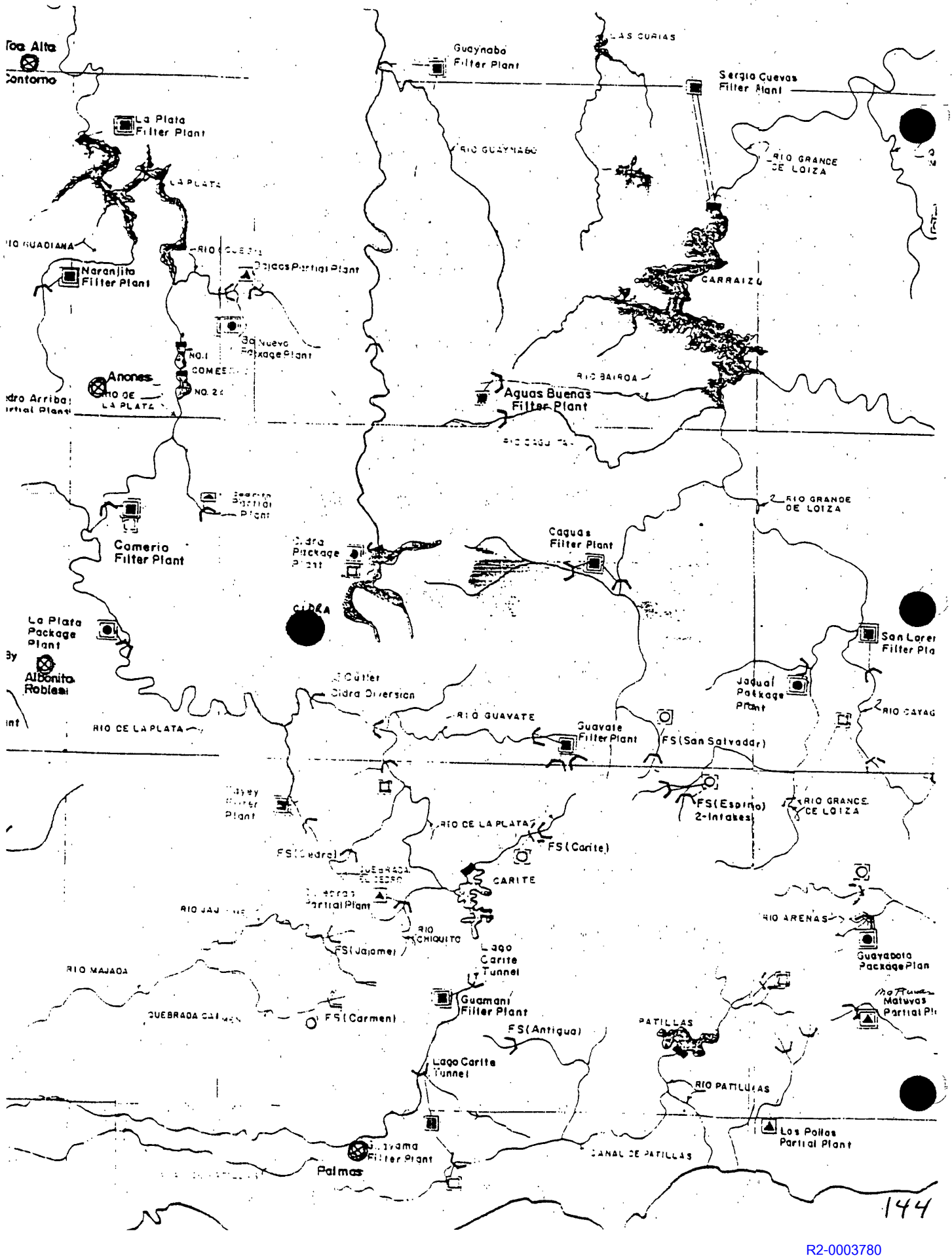
LEGEND

FS(SYSTEM NAME)	SURFACE WATER INTAKE WITH CHLORINATION
	INTAKE
	OUTLET
	FILTER PLANT
	PARTIAL PLANT
	PACKAGE PLANT
	RESERVOIR & DAM
	TUNNEL
	CANAL
R	RAW WATER LINE
	PROPOSED PLANT
	ENLAGE PLANT
	PROPOSED INTAKE
	ENLAGE INTAKE
	LANDFILL

1" = 2.60 millas

PRASA Filter Plants & Intakes in Puerto Rico

R2-0003779


Toa Alta
Contorno
La Plata Filter Plant
LA PLATA
RIO GUADIANA
Naranjito Filter Plant
Dajaos Partial Plant
Bo Nuevo Package Plant
NO. 1
COMES
NO. 2
Anones
RIO DE LA PLATA
Cedro Arriba Partial Plant
Guaynabo Filter Plant
LAS CURIAS
Sergio Cuevas Filter Plant
RIO GUAYNABO
RIO GRANDE DE LOIZA
CARRAIZO
RIO BAIROA
Aguas Buenas Filter Plant
RIO GRANDE DE LOIZA
Comerio Filter Plant
Cidra Package Plant
Caguas Filter Plant
CIDRA
La Plata Package Plant
Albonito Robles
Cutler
Cidra Diversion
RIO GUAVATE
Guavate Filter Plant
FS (San Salvador)
Jagual Package Plant
RIO CAYAG
RIO DE LA PLATA
FS (Espino) 2-Intakes
RIO GRANDE DE LOIZA
RIO DE LA PLATA
FS (Carite)
CARITE
Partial Plant
RIO CHIQUITO
FS (Jajome)
RIO ARENAS
Guayabota Package Plan
RIO MAJADA
Lago Carite Tunnel
Guamani Filter Plant
QUEBRADA CARMEN
FS (Carmen)
FS (Antigua)
PATILLAS
Matuyas Partial Pl
Lago Carite Tunnel
RIO PATILLAS
Los Pollos Partial Plant
Guayama Filter Plant
Palmas
CANAL DE PATILLAS

R2-0003780

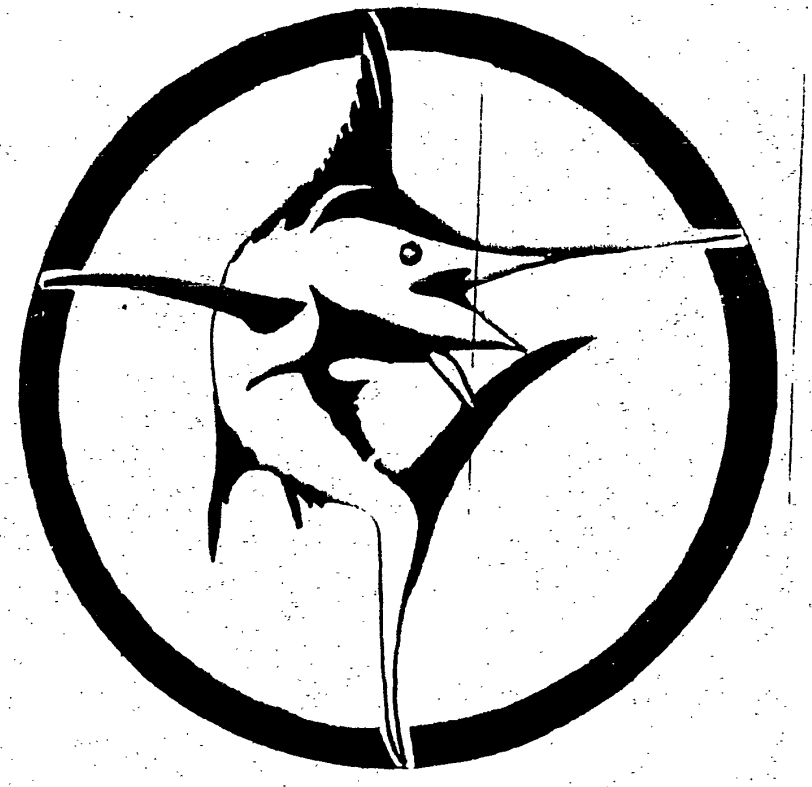
REFERENCE 24

R2-0003781

Final Report Project F-5-6
Marine Sport Fisheries Creel Survey

by

Jose M. Berrios
Emilia L. Medina
[illegible]
Israel Diaz



Department of Natural Resources
Scientific Research Area
Marine Resources Section

(April 1989)

150

TABLE OF CONTENTS

	PAGE
I. Abstract	i
II. Acknowledgements	ii
III. List of Tables	iii
IV. List of Figures	vii
V. List of Plates	ix
VI. Introduction	1
VII. Materials and Methods	
A. Big Game Fishing	7
B. Shorefishing	9
VIII. Description of Areas	
A. Big Game Fishing	12
B. Shorefishing	13
IX. Results and Discussion	
A. Computer Program Design	18
B. Big Game Fishing	
1. An Overview	19
2. Sportfish Species	24
3. Equipment and Techniques	32
4. Catch, Effort and CPUE	35
5. Species Composition	
a. Blue marlin	42
b. White marlin	52
c. Sailfish	54
d. Spearfish	56
e. Other species	56
6. Bait	57
7. Fishermen Success	58
8. Best Time for Fishing	58
9. Moon Phase	59

R2-0003782

through route 1[illegible] [illegible] residual sand dunes, [illegible] protected by the heavy wave [illegible]. From Boca de Cangrejos [illegible] have been severely limited [illegible] by the construction [illegible] almost over the entire shoreline. The [illegible] fishing spots along this area are the mouth [illegible] [illegible] Loiza, and the [illegible] Cangrejos and [illegible] (Plates 12 thru 14).

Area II

[illegible] from Dos Hermanos Bridge [illegible] types such as bays, [illegible] estuaries, [illegible] beaches and islets occur between these [illegible]

[illegible] inhabited by a large number [illegible] adequate [illegible] due to the fact that [illegible] is the [illegible] surrounded by [illegible] piers and bridges [illegible] access to anglers.

[illegible] the coast [illegible] 165 runs parallel to the [illegible] spots along this area are [illegible] pier near the [illegible] [illegible] (Plate 15), the bridges over Rio [illegible]

Hondo and Rio Bayamon and several abandoned structures in the Levittown beach (Plate 16) and Isla de Cabras (Plate 17). Many protected areas from heavy wave action occur along this part of the coast.

Area III

The coastal segment between Rio Grande de Manati and Arecibo comprises area III. State road 681, which runs parallel to the coast provides very good access for shore fishermen. Some of the most popular fishing spots such as La Boca, Palmas Altas (Plate 18), La Cueva del India and La Criolla are protected by rocky off-shore formations. All the area is readily accesible by car which makes it very appealing to shore fishermen in spite of the lack of facilities. The Arecibo pier (Plate 19), which is owned by the Puerto Rico Ports Authority, is the only place in the area used by shore fishermen which possesses good facilities including water, electricity, restrooms, parking and restaurant. Other popular fishing spots are the Rio Grande de Arecibo bridge and the Arecibo jetty (Plates 20 and 21).

Area IV

The fourth area, from Aguadilla to Cabo Rojo comprises the largest coastal segment in our study but it is the worst in terms of accesses for shore fishermen. A variety of coastal features such as rocky shorelines, mangrove stands,

151

R2-0003783

REFERENCE 25

R2-0003784

ESTADO LIBRE ASOCIADO DE PUERTO RICO / OFICINA DEL GOBERNADO

Junta de Calidad Ambiental

INVENTARIO DE USOS DE LOS CUERPOS DE AGUA SUPERFICIALES DE PUERTO RICO

Mayo 1982

BORRADOR

División Planificación
Calidad de Agua
Sección Proceso Dinámico
de Planificación

153

R2-0003785

Rio de la Plata

Nace en el Barrio Farallón del Municipio de Cayey. De longitud aproximada 97.25 kilómetros, el Rio de la Plata y sus tributaries pasa a través de los municipios de Cayey, Guayama, Coamo,Aibonito, Barranquitas, Cidra, Comerío, Bayamón, Naranjito, Corozal, Vega Alta, Toa Alta, Toa Baja y Dorado, donde desemboca al Océano Atlántico.

Scn tributarics del Rio de la Plata, los siguientes rios: Chiquito, Guavate,Matón,Usabón, Hondo, Arroyata, Cuesta Arriba, Guadiana, Cañas, Bucarabcnes, Lajas, Cocal y Río Nuevo; las quebradas Culebra, Grande De la Caña, El Cedro, Beatriz, La Zanja, Santo Domingo, Morillo, Caña, Galindo, Gómez, Honda, Tigre, Prieta, Piña, Convento, Higuero, Blanca, Cedrito, Del Juicio, Mila, La Yegua, Dajaos, Cancel, Ortiz, Cruz, Piña, Abarca,Chinea, y otros.

El sistema del Rio de la Plata posee diecinueve (19) tomas de agua potable, además cuenta con los lagos Carite y La Plata.

Como fuente de contaminación están las descargas de las Plantas de Tratamiento de Aguas Negras de Cayey, Aibonito, Barranquitas, Comerio, Cidra, Naranjito, Toa Alta, Toa Alta Heights, Toa Baja, Dorado y las descargas de las Plantas de Filtración de Naranjito, Comerio, Cayey, Enrique Ortega, Culebras, Guavate, Aibonito, Barranquitas, Cedritos y Dajaos. Bn adición hay siete (7) charcas agrícolas en el Rio de la Plata y sus tributaries. En cuanto a descargas industriales están registradas las siguientes: Consolidated Cigar Comerio, Torrecilla Poultry, Cayey Industrial Park, Consolidated Cigar Cayey, Refrescos de Puerto Rico y la descarga del Campamento Penal Guavate.

En cuanto a estacicnes de monitoria, existen cuatro (4) para aguas superficiales y una estacidn de monitoria costanera.

R2-0003786

TABLA 1
CLaSIFICaCION POR SEGMENTOS DE
RIO PE LA PLATA

SEGNENTO	CLASIRICACION	TRIDUTARIOS EN LA CLASIPICACION	OBSERVACIONES	USOS POTENCIALES
1. Uesde la deaembocadura del río haata 3.8 kllómetros aguaa arriba, en loa límitea de loa Barríos Sabana Seca e Illquilloa de los Municípios de Toa Baja y Dorado, reapectivamente.	Estuarío		Informacidn ohtonida de un documento publicado por el Departamento de Recursos Naturales.	
2. Dusde la deaembocadura del río haata 6.4 kilómetros aguaa arríba, en los llmltea de los Barríos Maguayo y Medíaluna, Municípios de Dorado y Toa Baja.	Area de Recarga	1. Río Cocal	El Río Cocal mantiene un flujo normal todo el año. En este río hay pesca ocaalonal.	
3. Ueade el kilómetro 6.4 aguas arríba hasta el kllómetro 11.7, en lus límites de los Barríos Contorno y Medlaluna de loa Municípios de Toa Alta y Toa Baja, respectivamente.	Segmento aín clasificar			
- Desde 2.9 kllómetroa de la desemboradura del Rlo Lajas, hasta su nacimiento, Barrío Maricao, Municipio de toa Alta.	Area de Recarga	1. Quebrada Arenas		

155

R2-0003787

CONT. TABLA 1
CLASIFICACIOM POR SEGMENTOS DB

RIO DE LA PLATA

SEGMEMTO	CLASIFICACION	TRIBUTARIOS EM LA CLASIPICACION	OBSERVACIONES	USOS POTENCIALES
4. Deade el kilómetro 11.7, haata el kilómetro 19.4 aguas arriba, en loa llmites de los Oarrioa Calateus y Mucarabones, Municipio de Toa Alta.	Area Ecológicamente Senaitiva	1. Ouebrada Méjlco	Aquí se encuentran parte de los Mogotea de NevArez collnaa callzas, caracte-rísticas de la topograffa cSrstlca. Esta Srea brinda albergue a la boa puertorriqueña (Epicrates isornatus)	
- Desde la desembocadura del Río Bucarabonea haata 6.4 kllómetroa aguas arriba, Barrio Mucarabonea, Municipio de Toa Alta.	Area Ecológicamente Sensitiva		Se encientran parte de loa Mogotes de Nevárez.	
5. Desde el kilómetro 19.4 aguas arriba, haata el kilómetro 22.75, en los llmitea de los barrios, Quebrada Cruz y Ortiz de loa municipios de Naranjito y Toa Alta.	Sugmento sin clasiftcar	1. Quebrada Piña 2. Quebrada Cruz		
6. Desde el kildmetro 22.75 aguaa arriba, haata cl nacimiento del río, Cerro La Santa, Barrio Farallón, Municipio de Cayey.	Agua Potable	I. Lago La Plata 2. Río Cañas a. Quebrada Jaguas	El Lago La Plata es operado por la Autoridad de Acue-ductos y Alcantarillados para suminlstro de agua potable.	

156

R2-0003788

CONT. TABLA 1
CLASIFICACION POR SEGMENTOS DE
RIO DE LA PLATA

SEGMENTO	CLASIFICACION	TRIBUTARIOS EN LA CLASIFICACION	OBSERVACIONES	USOS POTENCIALES
		3. Quebrada Abarca		
		4. Río Guadiana	El Río Guadiana mantiene un flujo normal todo el año. Tiene inundacionea severaa. Este río estd contaminado con Bilharzia y con baaura y dcaperdicios sólidos del Municipio de Naranjito. Hay pesca de camaronea, gudbaras y anguilaa.	
		a. Quebrada del Toro		
		b. Quebrada Anones		
		c. Quebrada Patos		
		d. Quebrada San Francisco		
		5. Quebrada Ortiz		
		6. Quebrada Cancol		
		7. Quebrada Dajaos		
		8. Quebrada Ycgua		

151

R2-0003789

CONT. TABLA 1
CLASIFICACION POR SEGMENTOS DE
RIO DE LA PLATA

SEGMENTO	CLASIFICACION	TRIBUTARIOS EN LA CLASIFICACION	OBSERVACIONES	USOS POTENCIALES
		9. Río Cuesta Arriba		
		a. Quebrada Prieto		
		b. Quebrada Grande		
		c. Quebrada Naranjo		
		10. Quebrada Hula		
		a. Quebrada Ciénaga		
		11. Quebrada del Juicio		
		12. Lago Comerio 1		
		13. Lago Comerio 2		
		14. Quebrada Cedrito		
		15. Quebrada Doña Elena		
		16. Quebrada Blanca		
		17. Río Arroyata	El Río Arroyata mantiene un flujo normal de agua durante todo el año. Este río está contaminado con Bilharzia. Hay pesca ocasional de dajaos, camaronea y guabinas.	

R2-0003790

CONT. TABLA 1
CLASIFICACION POR SEGMENTOS DE
RIO DE LA PLATA

SEGMENTO	CLASIFICACION	TRIBUTARIOS EN LA CLASIFICACION	OBSERVACIONES	USOS POTENCIALES
		a. Quebrada La Catalina		
		b. Quebrada del Banco		
		c. Quebrada Cajaa		
		d. Quebrada Naranjo		
		18. Quebrada Hlgüero		
		19. Quebrada Convento		
		20. Quebrada Piña		
		21. Río Mondo		
		a. RIo Frlo		
		b. RIo Caliente		
		c. Quebrada Grande		
		22. Quebrada Prieta		
		23. Quebrada Tigre		
		24. RIo Usabón		

R2-0003791

CONT. TABLA 1
CLASIFICACION POR SEGMENTOS DE
RIO DE LA PLATA

SEGMENTO	CLASIFICACION	TRIBUTARIOS EN LA CLASIFICACION	OBSERVACIONES	USOS POTENCIALES
		a. Quebrada Aguas Largas		
		b. Quebrada Helechal		
		c. Río Barranquitas		
		1. Quebrada Padilla		
		d. RIo de Aibonito		
		e. Quebrada Alicia		
		25. Quebrada Monda		
		26. Quebrada Gómez		
		27. RIo Matón	El RIo Matdn tiene un flujo Inconstante de agua durante el año. Está contaminado con Bllharzia. Hay pesca ocaalonal de camaronea y dajaoa.	
		a. Quebrada Pedro Avila		
		28. Quebrada Galindo		
		29. Quebrada Caña		

091

R2-0003792

CONT. TABLA 1
CLASIFICACION POR SEGMENTOS DE

RIO OE LA PLATA

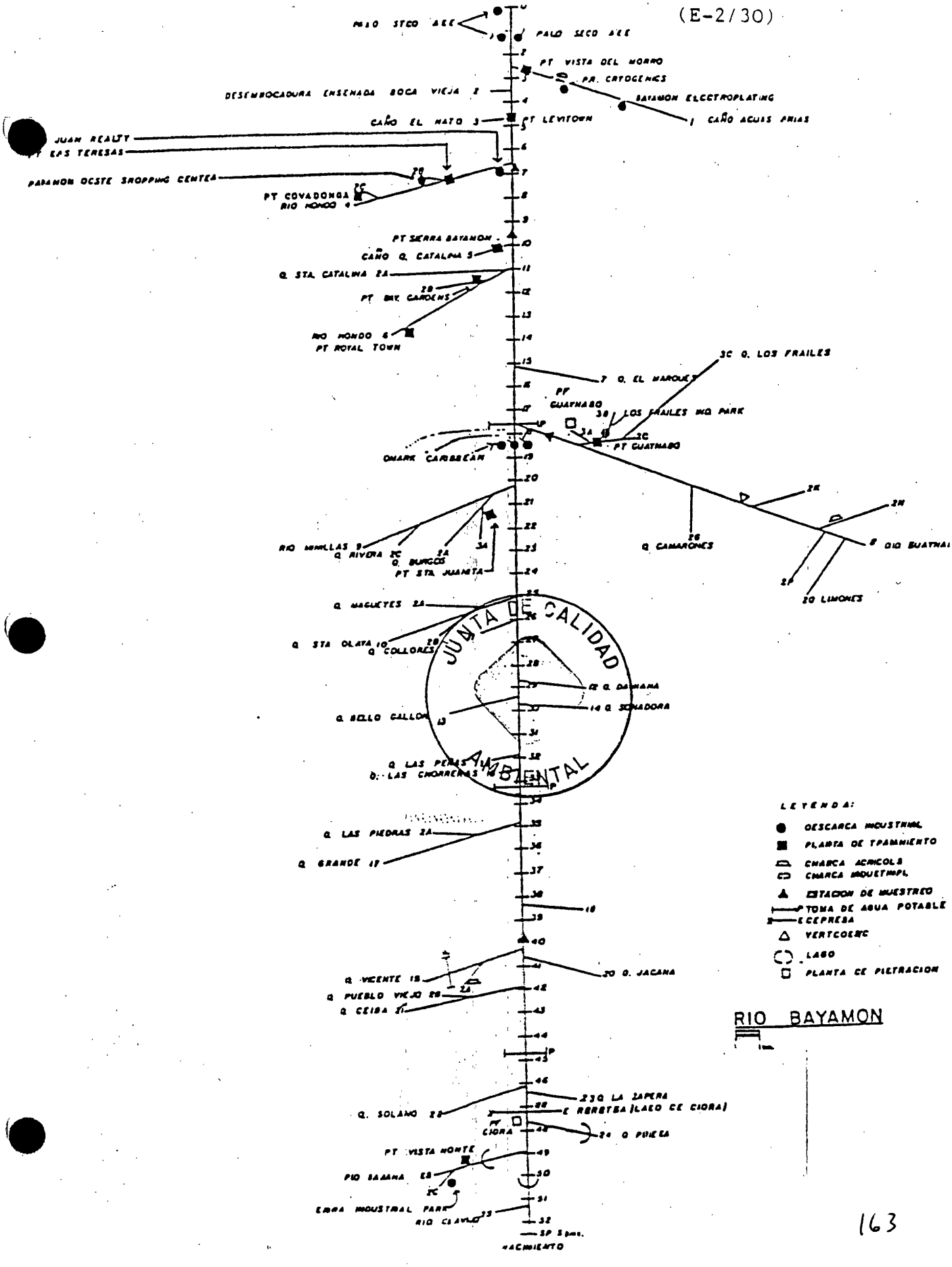
SEGMENTO	CLASIFICACION	TRIBUTARIOS EN LA CLASIFICACION	OBSERVACIONES	USOS POTENCIALES
		a. Quebrada Bocana		
		30. Quebrada Santo Domingo		
		a. Quebrada Morillo		
		31. Quebrada La Zanja		
		32. Quebrada Beatriz		
		33. Rfo Guavate		
		34. Quebrada El Cedro		
		15. Quebrada de la Caña		
		16. Quebrada Grande		
		37. Quebrada Culebra		
		38. Lago Carite	El Lago Carite ae utiliza para consumo de agua potable. También ae utiliza para riego y generación de energla eléctrica.	
		39. Quebrada Chiquito		

R2-0003793

Esquema del Rio La Plata (E 1/30)
incluido en la contraportada

R2-0003794

(E-2/30)



R2-0003795

REFERENCE 26

R2-0003796

SOIL SURVEY OF
San Juan Area of Puerto Rico

ture

165

R2-0003797

B—Torres loamy sand, 2 to 5 percent slopes. This gently sloping, excessively drained soil on coastal ns and In trapped valleys among the haystack hills. pes are gently undulating and are 50 to 200 feet long. areas range from 5 to 200 acres.

ypically the surface layer is very dark grayish brown dark brown, loose loamy sand about 28 inches thick. subsoil, to a depth of 64 inches, is yellowish brown, clay with prominent red, dark red, and light gray ties.

acluded with this soil in mapping are spots of Matan- and Almirante soils. The surface layer of the Matan- soils is dark reddish brown clay, and that of the Al- ante soils is strong brown clay. These soils make up 10 0 percent of this mapping unit.

ermeability is rapid in the surface layer and moderate he subsoil. The available water capacity is low. Runoff low. This soil is easily worked. The root zone is deep. ural fertility is low.

his soil has been in brush and brushy pasture most of time. It is suited to pangolagrass, improved bermu- rass, and Merker grass.

oper stocking rates and deferred grazing, as well as g and fertilizing, are chief management needs.

his soil is suitable for most urban uses. It has limita- s for some uses because of the clayey subsoil. Capa- y subclass Vis.

s—Tropopsamments. Tropopsamments consist of ry level, deep, excessively drained soils formed in a k accumulation of finely ground sea shells and sand. areas are narrow strips of land that parallel the t.

ommonly the soils to a depth of 60 inches are pale yel- or yellow, loose sand containing many shells and shell gments.

ost areas of these soils are devoid of vegetation or are producing a few coconuts.

hese soils are limited for most urban uses because are subject to the wave action of the sea. Capability lass VIIIs.

-Urban land-Durados complex. This nearly level plex is about 70 percent Urban land, 20 percent Du- s soils, and about 10 percent other soils. The areas e from 500 to 2000 acres. The composition of this unit out the same from place to piace.

undisturbed areas the surface layer of the Durados is very dark grayish brown, very friable sandy loam u 14 inches thick. The underlying material from 14 to ches is very dark grayish brown, loose loamy sand; 23 to 38 inches is very pale brown and very dark sh brown loose sand; and from 38 to 60 inches is a dark yellowish brown, black, brownish yellow, and wish brown, loose sand with thick layers of cemented Urban land consists mainly of sites for houses, in- rial buildings, parking lots, streets, and other struc- s that accompany community development. The land- e has been altered in places by cutting, filling, or ing and shaping. It was not practical to map the soils separately because they were so intricately intermingled with Urban land.

Mapped areas pf this complex are only in the populated and industrial areas in the vicinity of Levittown. Capability subclass not assigned.

Um—Urban land-Mucara complex. This complex is about 50 percent Urban land, 30 percent Mucara soils, and about 20 percent Rock outcrop and other soils. Slopes are irregular and are 100 to 300 feet long. The areas range from 500 to 1000 acres.

Typically the surface layer of the Mucara soils is very dark grayish brown, firm clay about 5 inches thick. The subsoil is about 7 inches thick; it is dark brown, firm clay. The substratum, beginning at a depth of 12 inches, is highly weathered volcanic rock. Hard volcanic rock is at a depth of 30 inches. Urban land consists of areas that have been altered to prepare building sites, create trafficways, or create a better environment for growing lawn grasses and landscape plants.

Included with this complex are Rock outcrop and other minor soils. These make up about 20 percent of this mapping unit. It was not practical to map the soils separately because they were so intricately intermingled with Urban land.

Mapped areas of this complex are only in the populated and industrial areas around cities. Capability subclass not assigned.

Us—Urban land-Sabana Seca complex. This complex is about 60 percent Urban land, 30 percent Sabana Seca soils, and 10 percent other soils. The areas are nearly level to gently sloping and are on coastal plains. They range from 1000 to 3000 acres. The composition of this complex is about the same from place to place.

In undisturbed areas the surface layer of the Sabana Seca soils is very dark grayish brown, firm clay about 10 inches thick. The clay subsoil is highly mottled. The dominant color from 10 to 13 inches is dark grayish brown; from 13 to 36 inches is light gray; and from 36 to 70 inches is white. The mottles are yellowish brown, red, dark red, dusky red, and strong brown. Urban land consists mainly of sites for houses, industrial buildings, parking lots, streets, and other structures that accompany community development. The landscape has been altered in places by cutting, filling, and shaping. It was not practical to map the soils separately because they were so intricately intermingled with Urban land.

Mapped areas of this complex are only in the populated areas in the vicinity of Levittown. Capability subclass not assigned.

Uv—Urban land-Vega Alta complex. This complex is about 60 percent Urban land, 25 percent Vega Alta soils, and 15 percent Aceitunas and Humatas soils. The areas are gently undulating to moderately undulating. They range from 3000 to 5000 acres. The composition of the complex is about the same from place to place.

In undisturbed areas the Vega Alta soils have a surface layer of dark yellowish brown, friable clay loam about 8 inches thick. The subsoil from 8 inches to a depth of 52

166

R2-0003798

inches is mainly red, strong brown, brownish yellow, and dark red clay. From 52 inches to a depth of 84 Inches, the subsoil is dark red, brownish yellow, and light gray, friable clay. Urban land consists mainly of sites for houses, industrial buildings, parking lots, streets, and other structures that accompany development. The landscape has been altered in places by cutting, filling, or grading and shaping. It was not practical to map the soils separately because they were so intricately intermingled with Urban land.

Mapped areas of this complex are only in the populated and industrial areas in the vicinities of the San Juan metropolitan area, Bayamon, and other towns and communities. Capability subclass not assigned.

VaB—Vega Alta clay loam, 2 to 5 percent slopes. This is a gently sloping, well drained soil on coastal plains and terraces. Slopes are undulating and are 100 to 200 feet long. The areas range from 10 to 100 acres.

Typically the surface layer is dark yellowish brown, friable clay loam about 8 inches thick. The subsoil from 8 inches to a depth of 52 inches is mainly red, strong brown, brownish yellow, and dark red clay. From 52 inches to a depth of 84 inches, the subsoil is dark red, brownish yellow, and light gray, friable clay.

Included with this soil in mapping are spots of Almirante soils. The surface layer of the Almirante soils is dark yellowish brown clay. These soils make up 10 to 20 percent of this mapping unit.

Permeability and the available water capacity are moderate. Runoff is medium, and erosion is a hazard. This soil is difficult to work because of the stickiness and plasticity of the clay. The root zone is deep. Natural fertility is medium. Crops respond well to heavy applications of lime and fertilizers. Controlling erosion is the major concern of management.

This soil has been used for sugarcane. It is suited to pangolagrass, improved bermudagrass, paragrass, and Merker grass.

Proper stocking rates and deferred grazing, as well as liming and fertilizing, are chief management needs.

This soil has moderate limitations for most urban uses because of its clayey nature and low strength. If the soil is used as construction sites, development should be on the contour. Removal of vegetation should be held to a minimum, and temporary plant cover established quickly in denuded areas. Capability subclass IIe.

VaC2—Vega Alta clay loam, 5 to 12 percent slopes, eroded. This is a sloping, well drained soil on coastal plains and terraces (fig. 11). Slopes are undulating and are 100 to 300 feet long. The areas range from 20 to 300 acres. This soil has lost much of its original surface layer through erosion.

Typically the surface layer is dark yellowish brown, friable clay loam about 8 inches thick. The subsoil from 8 inches to a depth of 52 inches is mainly red, strong brown, brownish yellow, and dark red clay. From 52 inches to a depth of 84 inches, the subsoil is dark red, brownish yellow, and light gray friable clay.

Included with this soil in mapping are spots of Almirante soils. The surface layer of the Almirante soils dark yellowish brown clay. These soils make up 10 to percent of this mapping unit.

Permeability and the available water capacity moderate. Runoff is medium, and erosion is a hazard. T soil is difficult to work because of the stickiness a plasticity of the clay. The root zone is deep. Natural f tility is medium. Crops respond well to heavy applicati of lime and fertilizers. Controlling erosion is the ma concern of management.

This soil has been used for sugarcane. It is suited pangolagrass, improved bermudagrass, paragrass, Merker grass.

Proper stocking rates and deferred grazing, as well liming and fertilizing, are chief management needs.

This soil is moderately limited for most urban u because it is sloping and clayey and has low strength the soil is used as construction sites, development sho be on the contour. Removal of vegetation should be h to a minimum, and temporary plant cover establis quickly in denuded areas. Capability subclass IIIe.

Vg—Vega Baja silty clay. This is a nearly le somewhat poorly drained soil on coastal plains and all al fans. The areas range from 50 to 100 acres.

Typically the surface layer is dark brown, dark gra brown, and yellowish brown, firm silty clay to a dept 12 inches. The subsoil from 12 to 17 inches is dark gra brown and yellowish brown, firm silty clay; from 17 t inches is mixed strong brown and gray clay; and fron to 50 inches is brownish yellow and gray silty clay lo The substratum, beginning at a depth of 50 inches, is l gray and strong brown, firm clay.

Included with this soil in mapping are spots of Co soils. The surface layer of the Coloso soils is dark br silty clay loam. These soils make up 10 to 20 percen this mapping unit.

Permeability is slow, and the available water capaci high. This soil is difficult to work because of wetness because of the stickiness and plasticity of the clay. root zone is deep. Natural fertility is medium. C respond well to heavy applications of lime and fertiliz

This soil has been used for sugarcane.

This soil is limited for most urban uses because of flood hazard, wetness, slow permeability, and its cl nature. Capability subclass IIw.

VkC2—Via clay loam, 5 to 12 percent slopes, ero This is a sloping, well dramea soil on nigh stream races. Slopes are undulating ana are 100 to 200 feet The areas range from 10 to 100 acres. This soil has much of its original surface layer through erosion.

Typically the surface layer is dark brown, friable loam about 9 inches thick. The subsoil is about 27 in thick: it is strong brown and yellowish brown, firm loam. The substratum, beginning at a depth of 36 in is strong brown, firm very gravelly clay loam.

Included with this soil in mapping are spots of Ric riba and Mabi soils. The surface layer of the Mabi so

167

R2-0003799

CEJAS
COMERIO
CIDRA
CEIBA
MONTE LLANO
ABAJO
Rodriguez Hevia
CIDRA
BAYAMON
MUNICIPIO DE CIDRA
MUNICIPIO DE AGUAS BUENAS
Rio Bayamon
Quebrada La Catalina
Cidra
Lago de Cidra
MxE
MxF
CaF
CaE
HtE
HtF
HuF
DaD
NaD2
AaC
TaF
MxC

168

169

R2-0003801

REFERENCE 27

R2-0003802

[For meaning of terms and symbols, see text]

MUNICIPIO MUNICIPIO SUBDIVISION SUBBARRIO PLACE	Persons		Housing units		
	Total	18 years and over	Total	Occupied	Vacant
Cayey Municipio	16533	11431	15195	13742	1643
Beatriz barrio	1467	957	456	901	55
Cayey barrio-pueblo	11951	13449	6492	5963	526
Pueblo Norte subbarrio	19091	7719	3335	3335	323
Pueblo Sur subbarrio	6508	5761	2131	2631	203
Cedro barrio	525	251	139	117	22
Cercadillo barrio	432	297	167	133	39
Culebras Alto barrio	284	186	111	83	28
Culebras Bajo barrio	217	161	77	65	12
Farallon barrio	171	352	122	103	19
Gavate barrio	1962	1123	559	453	101
Jajoos Alto barrio	681	527	255	198	57
Jajome Bajo barrio	531	361	288	165	35
Lapa barrio	195	131	71	60	10
Maeon Abajo barrio	1119	717	375	312	63
Maeon Arriba barrio	736	525	228	196	32
Monte Llano barrio	3373	2087	1092	992	90
Paeso Viejo barrio	688	462	198	175	23
Pedro Avila barrio	138	94	44	36	8
Piedras barrio	207	131	95	65	30
Quebrada Arriba barrio	1114	727	361	304	57
Rincon barrio	4956	3131	1516	1313	125
Suollo barrio	618	467	252	203	36
Toita barrio	5881	3835	1936	1112	224
Vegas barrio	2242	1496	712	611	94

R2-0003803

MUNICIPIO
MUNICIPIO Subdivision
SUBBARRIO
PLACE

	Total	18 years and over	Total	Occupied	Vacant
Cidra Municipio	35601	22707	10693	9765	928
Arenas barrio	5665	3645	1697	1557	140
Bayamon barrio	7247	4615	2067	1911	156
Beatriz barrio	3126	2048	989	888	101
Ceiba barrio	3434	2236	1104	991	113
Cidra barrio-pueblo	1428	1060	535	498	37
Honduras barrio	1110	719	343	305	38
Monte Llano barrio	731	494	246	215	31
Rabanal barrio	3409	2060	978	889	89
Rincon barrio	3265	2050	983	893	90
Rio Abajo barrio	1020	661	301	277	24
Salto barrio	646	387	180	166	14
Sud barrio	3656	2220	1018	954	64
Tolta barrio	854	512	252	221	31

172

R2-0003804

MUNICIPIO MUNICIPIO SUBDIVISION SUBBARRIO PLACE	Persons		Housing units		
	Total	18 years and over	Total	Occupied	Vacant
Comerio Municipio	20263	12816	6336	5720	616
Cadrieo barrio	1150	721	301	295	8
Cejas barrio	587	371	205	171	34
Comerio barrio-pueblo	1139	2139	1471	1358	116
Dona Elena barrio	2759	1785	831	761	70
Naranjo barrio	2010	1155	612	551	99
Palomas barrio	1668	2935	1812	1297	155
Pinas barrio	1139	1105	530	190	10
Rio Hondo barrio	1639	1014	513	158	65
Vega Redonda barrio	1151	708	316	307	31

R2-0003805

MUNICIPIO MUNICIPIO SUBDIVISION SUBBARRIO PLACE	Persons		Housing units		
	Total	18 years and over	Total	Occupied	Vacant
Aguas Buenas Municipio	25824	16503	8838	7016	112
Aguas Buenas barrio-pueblo	2088	1155	778	687	87
Bairoa barrio	2161	1131	688	621	51
Bayamoncito barrio	1917	1210	657	535	121
Cagüitas barrio	2299	1383	688	611	61
Jagüeyes barrio	1666	1118	547	382	65
Juan Asencio barrio	2599	1686	815	618	125
Mula barrio	3213	2695	173	887	56
Mulitas barrio	191	127	62	50	12
Sonadora barrio	3132	1576	770	656	111
Soraldero barrio	4811	3325	1072	1863	205

HL1/HL1

R2-0003806

REFERENCE 74

Número de Identificación de Facilidad _____ Núm. Página 1

NOTIFICACION PARA TANQUES DE ALMACENAMIENTO SOTERRADOS

JUNTA DE CALIDAD AMBIENTAL
APARTADO 11488
SANTURCE, PUERTO RICO 00910

Tel. (809) 767-8181 Ext. 2428

TIPO DE NOTIFICACION

_____ A. Facilidad Nueva _____ B. Enmienda X C. Cierre

1 Núm. de Tanques en la Facilidad — 1 Núm. de Hojas de Continuacidn Adjuntas

PARA USO DE LA JCA

Número identificacidn: UST-99-24-0159

Fecha recibida:

A. Fecha entrada a la computadora: _____
B. Nombre de técnico que ehtrd infonnacidn en la computadora: _____
C. Dueño/operador llamado para clarificar respuestas: _____

Comentarios:

INSTRUCCIONES

Favor de llenar a maquinilla o en letra de molde (en tinta) todos los incisos, excepto "firma" en la seccidn V. Este formulario deberd ser cumpiimentado para cada facilidad que posea tanques de almacenamiento soterrados. Si posee más de cinco (5) tanques en esta facilidad, favor de fotocopiar las siguientes hojas de continuacidn y grdpelos con el formulario.

INFORMACION GENERAL

Esta notificación es requisito por la Ley Federal para todos los tanques de almacenamiento subterráneos (TAS) que hayan sido utilizados para almacenar materiales regulados desde el 1ro. de enero de 1984, o que estén instalados desde el 8 de mayo de 1988. La notificación establecida es requisito por la Sección 9002 de la Ley de Conservación y Recuperación de Recursos (RCRA, por sus siglas en inglés), según enmendada.
El propósito principal de este programa de notificación es el de lograr y evaluar aquellos tanques soterrados que almacenan o han almacenado productos de petróleo o sustancias peligrosas. Se espera que la información que usted provea esté basada en documentación razonablemente disponible, o en ausencia de ésta, en su mejor conocimiento o recuerdo.

¿Quién deberá notificar? La Sección 9002 de RCRA, según enmendada, requiere que a no ser que estén exentos, los dueños de tanques soterrados que almacenen sustancias reguladas deberán notificar a la Junta de Calidad Ambiental (JCA) la existencia de sus tanques. Dueños significa:

a) en el caso de un tanque de almacenamiento soterrado puesto en servicio el 8 de noviembre de 1984, o después de esta fecha, cualquier persona que posea un TAS utilizado para el almacenamiento, uso o distribución de sustancias reguladas;
b) en el caso de un TAS en uso antes del 8 de noviembre de 1984, pero que no estaba en uso para esa fecha, cualquier persona que posea tal tanque inmediatamente antes de ponerse fuera de servicio; y
c) si la Junta de Calidad Ambiental así lo requiere, cualquier facilidad que haya tenido cualquier escape en su intermación o en el estatus del TAS.

¿Cuáles tanques están incluidos? Un TAS se define como cualquier tanque o combinación de tanques que (1) se utilice para contener una acumulación de "sustancias reguladas" y (2) cuyo volumen (incluyendo la tubería soterrada conectada a dicha) esté diez porciento (10%) o más por debajo de la superficie del terreno. Algunos ejemplos de tanques soterrados son los que almacenan: 1. gasolina, aceite usado, o diesel; y 2. solventes industriales, pluguicidas, herbicidas, o sustancias para fumigar.

¿Cuáles tanques están excluidos? Los tanques removidos del terreno no están sujetos a notificación. Otros tanques excluidos del requisito de notificación son:

1. tanques para uso agrícola o residencial con capacidad de 1,100 galones o menos que sean utilizados para el almacenamiento de combustible de motor con propósitos no comerciales;
2. tanques sépticos;
3. facilidades con oleoductos (incluyendo las líneas de recolección) reguladas bajo la Ley de Seguridad en los Oleoductos de Gas Natural de 1968 o la Ley de Seguridad en los Oleoductos de Líquidos Peligrosos de 1979;
4. embalses, lagos, estanques o lagunas;
5. sistemas para recolección de aguas de escorrentía o aguas usadas;
6. tanques de flujo continuo para procesos;
7. tanques de grasa o sus sistemas de líneas de recolección directamente relacionados con la producción y recolección de petróleo o gas; y
8. tanques de almacenamiento ubicados en áreas bajo el nivel del terreno, tales como sótanos, bodegas, túneles o minas, si los mismos se encuentran situados en o sobre el piso de los mismos.

¿Cuáles sustancias están reguladas? Los requisitos de notificación aplican a tanques soterrados que almacenen sustancias reguladas. Esto incluye cualquier sustancia definida como peligrosa por la Sección 101(14) de la Ley Federal Abrazadora de Emergencias Ambientales, Compensación y Responsabilidad de 1980 (CCRCLA, por sus siglas en inglés) a excepción de aquellas sustancias reguladas catalogadas como desperdicios peligrosos bajo el Subtítulo C de RCRA. Además, se incluye petróleo, es decir, aceite crudo o cualquier fracción de éste que sea líquido a temperatura y presión estándar (60 grados Fahrenheit y 14.7 lbs. por pulgada cuadrada-absoluta).

¿A dónde notificar? Envíe las notificaciones debidamente cumplimentadas a:

Junta de Calidad Ambiental
Programa Control Tanques de Almacenamiento Soterrados
Apartado Postal 11488
Santurce, Puerto Rico 00910

¿Cuándo notificar?

1. Los dueños cuyos TAS estén en servicio o hayan sido puestos fuera de operación después del 8 de enero de 1974, pero que aún permanezcan soterrados, deberán notificar estos tanques en o antes del 8 de mayo de 1988.
2. Los dueños de TAS puestos en servicio después del 8 de mayo de 1988, deberán notificar dentro de un mínimo de treinta (30) días antes de poner en servicio los tanques.
3. Los dueños de TAS que realicen cualquier enmienda o cambio en la titularidad, deberán notificarlo a la JCA a la mayor brevedad posible.

SANCIONES

Cualquier dueño de tanque que con conocimiento no cumpla con el proceso de notificación o someta información falsa estará sujeto a una penalidad civil máxima de DIEZ MIL DOLARES ($10,000) por cada tanque que no haya notificado o para el cual se haya sometido información falsa.

1/5

R2-0003808

Número de Identificacidn de Facilidad _____ Núm. Página 2

I. PROPIETARIO DE TANQUE (S)	II. UBICACION DE TANQUE (S)
Nombre del Dueño (corporacdon, individuo, agencia pública u otra entidad) SHELFOAM PRODUCTS INC	Nombre de la facilidad o compañía (Si es la mismo que en la Secddn I marque aqui) LA MISMA
Dirección Postal	Direccidn física (no se aceptará dirección costal de este inciso)
PO BOX 326	CARR 171 KM 0 .5
	Barrio/Urbanización
Ciudad CIDRA PR Zip Code 00739	Ciudad CIDRA PR Zip Code 00739
Número de Teléfono (ló duir Código de Area)	Provea la ubicación geográfica de los tanques por grados, minutos y segundos; Ej. lot. 42 de 12N long. 86 24 17W Latitud 18 10' 45" N Longitud 66 9' 45 W

III. TIPO DE DUEÑO

___ Gobierno Federal ___ Comercial
___ Gobierno Estatal X Privado
___ Gobierno Municipal ___ Otro (explique) _____

IV. RESERVADO

V. TIPO DE FACILIDAD

Seleccione la descripcidn que mejor describa su facilidad:

___ Estacidn de Gasolina
___ Distribuidor de Retrdleo
___ Aerolínea
___ Dueño de Aviones
___ Distribuidor de Automdviles
___ Fentxcarril
___ Gobierno Estatal
___ Gobierno Municipal
___ Federal Militar
___ Federal No Militar
___ Comercial
X Industrial
___ Contratista
___ Compaiiia de Transporte/ Camiones
___ Corporaciones Pdblicas
___ Residencial
___ Agrícola
___ Otro (explique) _____

VI. PERSONA CONTACTO RESPONSABLE DE TANQUE (S)

Nombre	Titulo o Posicidn	Direccidn	Teldfono
JORGE RAMIREZ	GERENTE GENERAL	BOX 326 - CIDRA PR 00739	739-2433

VII. RESPONSABILIDAD FINANCIERA

YO HE CUMPLIDO CON LOS REQUISITOS DE RESPONSABILIDAD FINANCIERA EN CONFORMIDAD CON EL TITULO 40 DEL CODIGO DE REGLAMENTOS FEDERALES SUBPARTE H ____ .

Seleccione todas las que apliquen:

___ Seguro Propio
___ Seguro Comercial
X Pdliza de Cubierta Grupal Contra Riesgo
___ Garantia o Fianza
___ Carta de Crddjto
___ Otro mdtodo permitido Especifique _____
___ Fondos Estatales
___ Fondo de Fideicomiso

VIII. CERTIFICACION (LEA Y FIRME DESPUES DE HABER COMPLETADO TODAS LAS SECCIONES)

Certifico, bajo penalidad de perjurio, que personalmente he revisado y estoy familiarizado con la informacidn suministrada en esta notificacidn y con todo documento adjunto y que basado en mi investigación de aquellos individuos inmediatamente responsables de obtener la infonnacidn, que la Infbrmacidn aqui suministrada es cierta, precisa y completa.

Nombre y título oficial del dueño o su representante autorizado:	Firma:	Fecha:
Edwin Santiago	[signature]	7/26/94

2

R2-0003809

IX. DESCRIPCION DE TANQUES DE ALMACENAMIENTO SOTERRADOS
(CUMPUMENTAR PARA CADA TANQUE UBICADO EN ESTA PMOLIDAD)

Núm. Identificacidn del Tanque	Tanque #1	Tanque #2	Tanque #3	Tanque #4	Tanque #5
1. Estatus del Tanque (marque una solamente) En uso					
Temporeramente fuera de uso (Recuerde llenar la Sección IX)					
Permanentemente fuera de uso (Recuerde llenar la Sección IX)	XX				
Enmienda de informacidn					
2. Fecha de instalacidn	1,962				
3. Capacidad total estimada (en galones)	10,000				
4. Material de Construccidn (Marque todos los que apiiquen)					
Revestido con asfalto o acero sencillo					
Acero protegido catódicamente					
Acero revestido con "epoxy"	XX				
Compuesto(acero revestido con fibre de vidrio - "fiberglass")					
Plástico reforzado con fibra de vidrio					
Fono interior					
Doble pared					
Tanques con cubierta de polietileno					
Concreto					
Excavación con revestimiento					
Desconocido					
Otro. Por favor, especifique					
¿Ha sido el tanque reparado?	NO				
5. Tuberia (material) (Marque todos los que apiiquen)					
Acero sencillo					
Acero galvanizado	XX				
Plastico reforzado con fibra de vidrio					
Cobre					
Protegida catódicamente					
Doble pared					
Contenedor secundario					
Desconocido					
Otro. Por favor, especifique					

3

IX. DESCRIPCION DE TANQUES DE ALMACENAMIENTO SOTERRADOS
(CUMPLIMENTAR PARA CADA TANQUE UBICADD EN ESTA FACILIDAD)

Núm. Iclantificación cial Tanqua	Tanqua #1	Tanqiia #2	Tanqua #S	Tanqua #4	Tanqua #S
6. Tubería (Tipos) (marque todos ios que apiiquen)					
Succidn: sin vdivula en el tanque					
Succidn: con vdivula en el tanque					
Por presidn					
Por gravedad					
¿Ha sido la tubería reparada?					
7. Sustancia almacenada o que fuera almacenada por dltima vez erí mayor cantidad por volumen.					
Oasofina					
Diesel					
Gasohol					
Kerosén					
Aceite de calefacción					
Aceite usado					
Dtra. Por favor especifique					
Sustancia peligrosa. Nombre bajo CERCLA y/o número de CAS					
Mezcla de sustancias. Por favor especifique.					

X. TANQUES FUERA DE USO, O CAMBtO EN SERVICIO

1. Cierre de tanque					
A. Fecba estimada de último nso (mos,dia,año) 07-31-87	X				
B. FecIM estiniada del cierre del tanque (mes,dia,año) 07-31-87					
C. Tanque fue removido del terreno	X				
D. Tanque clausuracio en el terreno	X				
E. Tanque rellenado con material ineita. Describa					
F. Cambio de servicio					
2. Estudio Ambiental ("Site Assessment") completado					
Evidencia de un derrame detectado	NO.				

R2-0003811

XI. CERTIFICACION DE CUMPLIMIENTO

(CUMPLIMENTAR PARA TODO TANQUE NUEVO O RE-ACONDICIONADO (UPGRADED) EN ESTA FACIUDAD)

Núm. Identificacion del Tanque	Tanque #1	Tanque #2	Tanque #3	Tanque #4	Tanque #5
1. Instalación					
A. Instalador certificado por fabricantes de tanque y tuberia					
B. Instalador certificado o ficenciado por la Junta de Calidad Ambiental					
C. Instalacibn inspeccionada por un ingeniero licenciado					
D. Instalacibn inspeccionada y aprobada por la JCA					
E. La lista de cotejo del fabricante del tanque tia sido compietada					
F. Otro método aprobado por la JCA					
Favor especificar					
2. Oetección de escapes (Marque todas las que apiiquen)					
A. Calibrsción manual del tanque					
B. Prueba de integridad del tanque					
C. Control del inventario					
D. Calibradbn automática del tanque					
E. Monitoria de vapor					
F. Monitoria de agua subterránea					
G. Monitoria intersticial del tanque y la tuberia de doble pared					
H. Monitoria intersticial/ contenedor secundario					
I. Detector de escapes automatico en linea					
J. Prueba de integridad de las lineas					
K. Otro método aprobado por la JCA Favor especificar _____					
3. Protección para prevenir derrames y sobrellenados					
A. Equipo para proteccidn de sobrellenados instalado					
B. Equipo para prevenir derrames instalado					

JURAMENTO: Certifico que la información referente a la instalación que se provee en la sección XI es cierta a mi [illegible] entendimiento y conocimiento.

Instalador: _____ (Nombre) _____ (Firma) _____ (Fecha)

_____ (Posición) _____ (Compañia)

5/5

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 75

SHELFOAM
Products, Inc.

BOX 326, CIDRA, PUERTO RICO 00739
ROAD 171, KM. 0.6, CIDRA, PUERTO RICO 00739
TELS. 739-5570/720-0260
FAX (809) 739-8479

RECIBIDO
PROGRAMA DE TANQUES SOTERRADOS

1995 OCT 24 PM 2:58

1995 OCT 24 AM 8:07

19 de octubre de 1995

Sra. Lucinia Ghligliotty
Junta de Calidad Ambiental
Calidad de Agua
PO Box 11488
Santurce, Puerto Rico 00910

Estimada señora Ghligliotty:

Según fuera solicitado por ustedes en la carta del 28 de diciembre de 1994, le estamos enviando los resultados de la investigacidn efectuada por Ages Applied Geosciences & Environmental Services sobre muestreo en el área del tanque soterrado y cerrado.

Esperamos que esto cumpla con los requisitos de su agencia.

Atentamente,

Edwin Santiago
Contralor

evv

Anexo

1/27

R2-0003815

RESULTADOS DE UN PROGRAMA DE INVESTIGACION DE LUGAR SHELFOAM PRODUCTS, INC. CIDRA, PUERTO RICO

RECIBIDO
PROGRAMA DE TANQUES SOTERRADOS
1995 OCT 24 PM 2:58

1995 OCT 24 AM 10:07

AGES
APPLIED GEOSCIENCES & ENVIRONMENTAL SERVICES, INC.
ENVIRONMENTAL CONSULTING AND HYDROGEOLOGY

2

R2-0003816

RESULTADOS DE UN PROGRAMA DE INVESTIGACION DE LUGAR SHELFOAM PRODUCTS INC. CIDRA, PUERTO RICO

SOMETIDO A:

JUNTA DE CALIDAD AMBIENTAL
P.O. BOX 11488
SANTURCE, PUERTO RICO 00910

PREPARADO PARA:

SHELFOAM PRODUCTS INC.
P.O. BOX 327
CIDRA, PUERTO RICO 00739

PREPARADO POR:

APPLIED GEOSCIENCES & ENVIRONMENTAL SERVICES, INC.
ZMS SUITE #225, PLAZA RIO HONDO
BAYAMON, PUERTO RICO 00961-3100
(809) 270-3100

25 DE SEPTIEMBRE DE 1995

R2-0003817

Este informe, incluyendo todas las actividades relacionadas, fue preparado y dirigido bajo la supervisión de la compañía Applied Geosciences & Environmental Services, Inc. (AGES). Nuestros servicios profesionales fueron llevados a cabo usando los grados de cuidado y destreza ordinariamente ejecutados bajo circunstancias similares por otros hidrogeólogos e ingenieros practicantes en este campo. Ninguna otra garantia explicita o impllcita en cuanto a consultoria profesional está expresada en este informe.

Ricardo A. Oliver
Geólogo

26/9/95
Fecha

Luis D. Figueroa, REM, CGWP
Presidente/Hidrogeólogo

26/9/95
Fecha

4

R2-0003818

TABLA DE CONTENIDO

		Página
1.0	ENTRODUCCION	1
1.1	TRASFONDO	1
1.2	ALCANCE DEL TRABAJO	2
1.3	GEOLOGIA E HIDROGEOLOGIA	2
2.0	PROGRAMA DE INVESTIGACION DE LUGAR	4
2.1	INVESTIGACION DEL SUBSUELO	4
2.1.1	BARRENADO	4
2.1.2	MUESTREO DE SUELO	4
2.1.3	RASTREO DE VAPORES ORGANICOS	5
2.2	ANALISIS DE LABORATORIO	6
3.0	RESULTADOS	7
3.1	RESULTADOS FISICOS	7
3.1.1	LITOLOGIA E HIDROGEOLOGIA	7
3.1.2	CONCENTRACIONES DE VAPORES ORGANICOS	7
3.2	RESULTADOS QUIMICOS	8
3.2.1	ANALISIS DE SUELO	8
4.0	RESUMEN Y CONCLUSIONES	9

R2-0003819

TABLA DE CONTENIDO (Continuación)

Página

5.0 RECOMENDACIONES 11

LISTA DE TABLAS

TABLA 1. RESULTADOS DEL ANALISIS QUIMICO REALIZADO A LAS MUESTRAS DE SUELO USANDO EL METODO 418.1 DE LA AFPA..... 8

LISTA DE FIGURAS

FIGURA 1. MAPA DE LOCALIZACION

FIGURA 2. MAPA DE SITIO

APENDICES

APENDICE A. BITACORAS DE CATA

APENDICE B. INFORME DE LABORATORIO Y CADENA DE CUSTODIA

R2-0003820

RESULTADOS DE UN PROGRAMA DE INVESTIGACION DE LUGAR SHELFOAM PRODUCTS, INC. CIDRA, PUERTO RICO

1.0 INTRODUCCION

Este informe presenta los resultados de un Programa de Investigación de Lugar, realizado por la compañia Applied Geosciences & Environmental Services, Inc. (AGES). El programa se llevó a cabo en agosto de 1995, en la facilidad de Shelfoam Products, Inc. La facilidad se encuentra localizada en la Carretera #171, Kilómetro 0.5, Cidra, Puerto Rico (véase la Figura 1).

Este informe contiene los procedimientos empleados en la recopilación de datos utilizados durante el programa. Además, detalla los métodos y razonamientos empleados en los análisis quimicos de las muestras de suelo. Las conclusiones a las cuales llegó AGES están basadas en los resultados fisicos y quimicos contenidos en este informe.

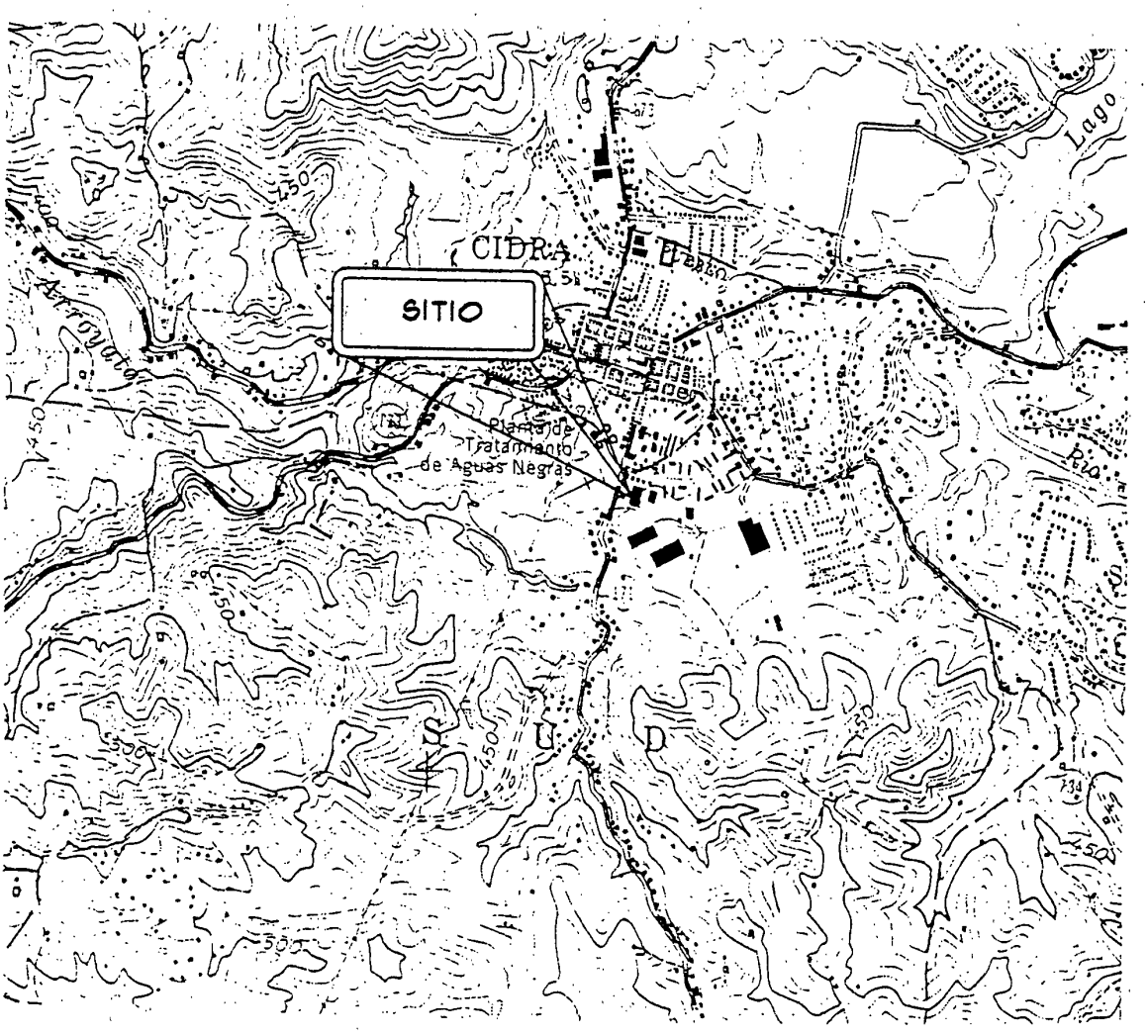
1.1 TRASFONDO

En julio de 1987, Shelfoam realizó un Programa de Cierre en Sitio de un Tanque de Almacenamiento Soterrado (TAS) de diez mil (10,000) galones de capacidad. Este era utilizado para almacenar Combustible Bunker C. Durante el programa, no se recolectadas muestras de suelo como parte del estudio ambiental según requerido por el reglamento 704 de la Junta de Calidad Ambiental (JCA). La facilidad con la localización del TAS de diez mil (10,000) galones de capacidad se ilustra en la figura 2.

En diciembre de 1994, la JCA solicita a Shelfoam que tome muestras en el área donde está ubicado el tanque.

7

R2-0003821



ESCALA

1 1/2 0 1 MILLA

1000 0 1000 2000 3000 4000 5000 6000 7000 PIES

1 5 0 1 KILOMETRO

N

AGES

APPLIED GEOSCIENCES & ENVIRONMENTAL SERVICES, INC.

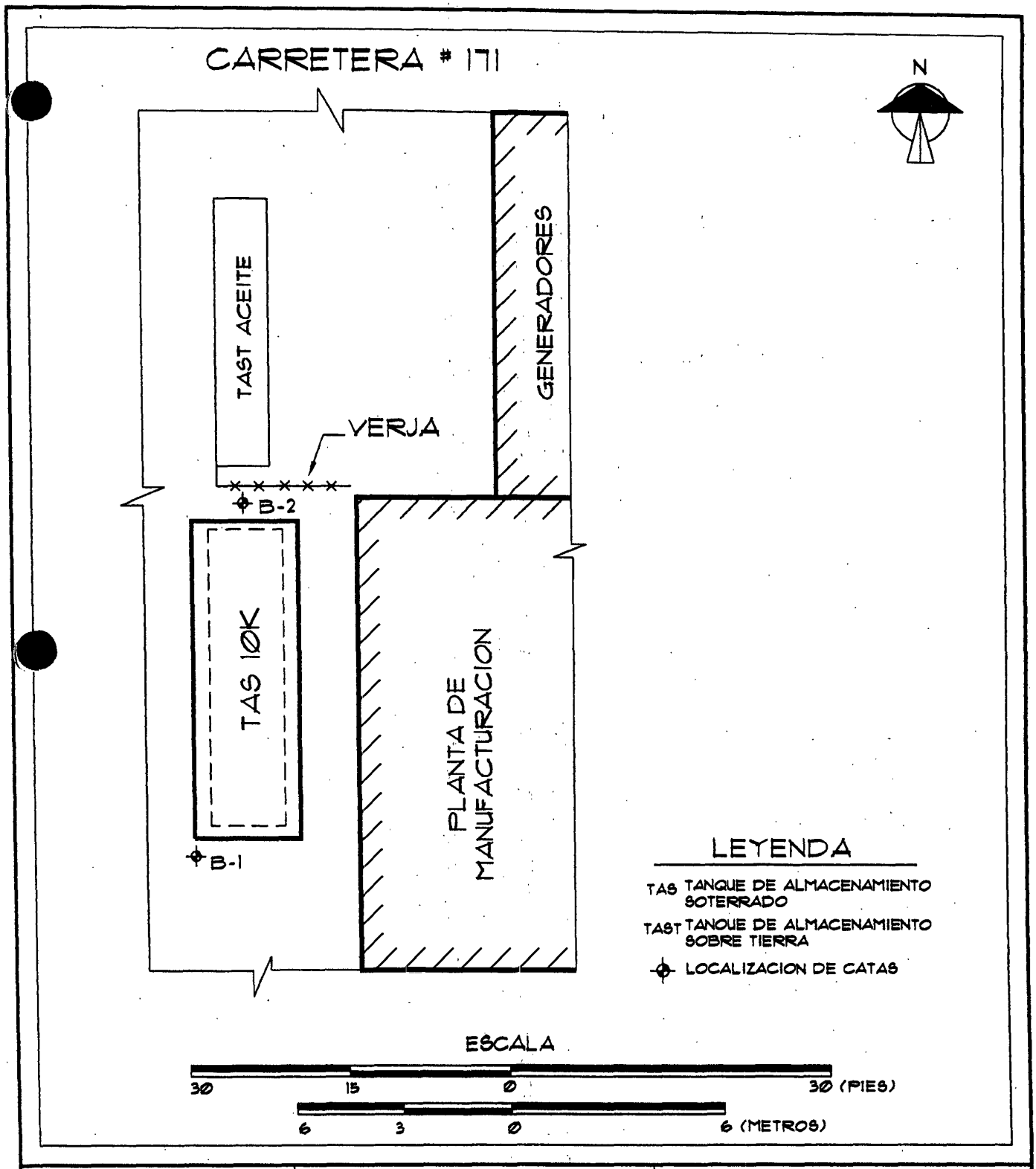
CLIENTE:	THE SHELL COMPANY (PR) LTD.
LOCALIZACION:	SHELFOAM PRODUCT CIDRA, PUERTO RICO
PROYECTO:	BARRENADO

MAPA DE SITIO

FECHA: 2-09-95	FIGURA: 1
DIBUJADO POR: DGINES	NUM. PROYECTO: 95-195-01
APROBADO POR: R OLIVER	ARCHIVO: S-F-PROD.DWG

8

R2-0003822



AGES
APPLIED GEOSCIENCES & ENVIRONMENTAL SERVICES, INC.

CLIENTE:	THE SHELL COMPANY (PR) LTD.
LOCALIZACION:	SHELPOAM PRODUCT CIDRA, PUERTO RICO
PROYECTO:	BARRENADO

MAPA DE SITIO

FECHA:	2-09-95	FIGURA:	2
DIBUJADO POR:	DGINES	NUM. PROYECTO:	95-195-01
APROBADO POR:	R OLIVER	ARCHIVO:	S-F-PROD DWG

R2-0003823

A consecuencia de esta solicitud, Shelfoam contrató a AGES para reaiizar un Programa de Investigaclón de lugar con el fm de recolectar dos (2) muestras de suelo en el área del tanque. AGES es una compañia especializada en consultoría ambiental e hidrogeologia, localizada en Dorado, Puerto Rico.

1.2 ALCANCE DEL TRABAJO

El objetivo del Programa de Investigaclón de Lugar fue recolectar muestras en el área del tanque:

El trabajo realizado durante este programa consistió de:

- Barrenado de dos (2) catas de trece (13) pies cada una; y
- Recolección y análisis quimico de dos (2) muestras de suelo.

1.3 GEOLOGIA E HIDROGEOLOGIA

La facilidad se encuentra aproximadamente un (1) kilómetro al oeste del Lago de Cidra y aproximadamente cuatrocientos cineuenta (450) metros al noreste del Rio Arroyata. La elevación de la superficie del terreno bajo la estación es de aproximadamente cuatrocientos veinte (420) metros (1,377.6 pies) sobre el nivel promedio del mar.

10

R2-0003824

La facilidad yace sobre depósitos de terraza los cuales datan del período geológico del Cuatemario[1]. Estos se componen mayormente de arena, grava y cieno, incluye peñascos de origen volcánico.

La facilidad yace dentro del área del Acuifero de la Provincia Interior, del Sistema de Acuiferos de las Islas del Caribe según el Servicio Geológico Federal (U.S.G.S., por sus siglas en inglés)[2]. El agua subterránea se estima aproximadamente a sesenta y cinco (65) pies de profundidad. Basados en la localización geográfica de la facilidad y la topografía de la zona se estima que la dirección de flujo del agua subterránea es hacia el suroeste.

[1] Miscellaneous Geologic Investigations Series Map I-320. Geologic Map of the Comerío Quadrangle, Puerto Rico by Maurice H. Pease, Jr., and Reginald P. Briggs, 1960.
[2] Compilation of Ground-Water Measurements in Puerto Rico, 1958-1985. USGS Data Report 88-701 by Sigfredo Torres, 1991.

R2-0003825

2.0 PROGRAMA DE INVESTIGACION DE LUGAR

2.1 INVESTIGACION DEL SUBSUELO

El Programa de Investigación de Lugar realizado por AGES incluyó el barrenado de dos (2) catas. Los métodos y procedimientos utilizados durante el barrenado y muestreo del suelo se describen a continuación.

2.1.1 Barrenado

En agosto de 1995, bajo la supervisión directa de un geólogo de AGES, la compañia AGES Drilling Company, Inc., de Dorado, Puerto Rico, llevó a cabo los procedimientos de barrenado de catas y muestreo de suelo. Las catas se barrenaron utilizando un barreno de mano ("Hand Auger"). Las Catas B-1 y B-2 se barrenaron a trece (13) pies de profundidad.

2.1.2 Muestreo de Suelo

Se tomaron un total de dos (2) muestras de suelo para análisis quimico (B-1 @ 13' y B-2 @13'). Las muestras fueron tomadas de acuerdo a las normas de Control de Calidad y Certeza de AGES para prevenir la contaminación cruzada. Estas fueron tomadas con un muestreador modificado de Califomia. Luego el suelo dentro del muestreador fue envasado en botellas de ciento veinte (120) mililitros (ml) con tapas de sello de Teflón.

Parte del suelo contenido dentro del muestreador fue examinado en el campo por un geólogo de AGES para detectar vapores orgánicos y para descripción litológica. Se utilizó el Sistema Unificado de Clasificación de Suelos (USCS, por sus siglas en inglés) para

R2-0003826

clasificar el tipo de suelo. El tamaño del grano, el color, el olor, la humedad y otras propiedades pertinentes al USCS fueron descritas y anotadas en el Registro de Descripción de Cata por el geólogo. El color del suelo observado fue identificado usando las Cartas de Colores de Suelo Munsell. Una descripción más detallada del suelo observado se incluye en el Apéndice A.

Para evitar la contaminación cruzada de las muestras de suelo por causa del equipo utilizado durante el muestreo, éste fue lavado antes de su ensamblaje. Los instrumentos fueron lavados con una solución acuosa de Alconox, enjuagados con agua de la pluma, con agua destilada y dejados secar al aire libre.

2.1.3 Rastreo de Vapores Orgánicos

El contenido de vapores orgánicos en la muestra fue rastreado en el campo usando un Detector de Hidrocarburos (DH) *GasTech Trace-Techtor*. Para esto, se tomó una porción de suelo de aproximadamente dos (2) pulgadas, tomada del muestreador. Esta fue extraida y colocada en un envase de cristal hasta que éste quedó casi lleno. El envase se expuso al sol por aproximadamente diez (10) minutos, luego de esto la tapa fue removida y el contenido de vapores orgánicos fiie medido introduciendo la punta del DH a través del papel de aluminio, en el espacio entre éste y la muestra de suelo. Los resultados de cada medición se encuentran anotados en las respectivas bitácoras de catas incluidas en el Apéndice A.

R2-0003827

2.2 ANALISIS DE LABORATORIO

El análisis quimico realizado en las muestras de suelo fueron llevados a cabo por el laboratorio analitico Advanced Technology Laboratories, localizado en la ciudad de Signal Hill, Califomia. El mismo participa en el Programa de Laboratorio por Contrato (CLP, según sus siglas en inglés) de la Agencia Federal de Protección Ambiental (AFPA).

Se tomaron un total de dos (2) muestras de suelo, una (1) por cata. Estas fueron analizadas para Hidrocarburos Totales de Petróleo (HTP) en Combustible Bunker C utilizando el Método 418.1 de la AFPA.

R2-0003828

3.0 RESULTADOS

Un resumen de los resultados físicos y qufmicos de las muestras de suelo extraidas de la facilidad se describe a continuación. Una descripción más detallada del suelo observado se incluye en el Apéndice A. Copia de la cadena de custodia y el informe de laboratorio se incluyen en el Apéndice B.

3.1 RESULTADOS FISICOS

3.1.1 Litología e Hidrogeologia

La litologia bajo la facilidad consiste de arcilla cienosa, color rojo amarillento. Durante el trabajo de campo, no fue interceptado el nivel hidráulico. Se estima que este se encuentre aproximadamente a sesenta y cinco (65) pies bajo la superficie de la facilidad.

3.1.2 Concentraciones de Vapores Orgánicos

El suelo generado durante el barrenado de las catas fue rastreado para detectar indicios de concentraciones de vapores orgánicos. Para ello, se utilizó un DH. Las concentraciones de vapores en el suelo variaron desde No Detectado (ND) hasta doce (12) partes por mill6n (ppm). Una descripción mas detallada se incluye en las bitácoras de cata incluidas en el Apéndice A.

R2-0003829

3.2 RESULTADOS QUIMICOS

3.2.1 Análisis de Suelo

Las muestras de suelo fueron analizadas para detectar concentraciones de HTP presentes en Combustible Bunker C, usando el Método 418.1 de la AFPA. Las concentraciones de HTP en las muestras analizadas variaron desde 5.2 hasta ciento cincuenta y dos (152) ppm. Los resultados de los análisis quimicos de las muestras de suelo se resumen en la Tabla 1. Una copia de los informes de laboratorio y la cadena de custodia se incluyen en el Apéndice B.

TABLA 1. RESULTADOS DEL ANALISIS QUIMICO REALIZADO A LAS MUESTRAS DE SUELO USANDO EL METODO 418.1 DE LA AFPA.

(PPM)

NOMBRE DE MUESTRA	HTP COMBUSTIBLE BUNKER C
B-1 @ 13'	5.2
B-2 @ 13'	152

NOTAS: PPM - Partes por Millón
HTP - Hidrocarburos Totales de Petróleo

R2-0003830

4.0 RESUMEN Y CONCLUSIONES

Los datos concemientes a la litologia y la presencia de hidrocarburos de petróleo en el suelo bajo la estación (área del tanque), fueron recolectados e interpretados durante el transcurso del programa antes descrito. Basados en los resultados obtenidos, llegamos a las siguientes conclusiones:

Litología e Hidrogeología del Lugar:

- La litologia bajo la facilidad (área de TAS) consiste de arcilla cienosa, color rojo amarillento.

- Las muestras tomadas durante el barrenado fueron rastreadas con el DH. Las concentraciones de vapores orgánicos en las muestras variaron de ND a doce (12) ppm.

- Durante el trabajo de campo el nivel hidráulico no fue interceptado. Se estima que este se encuentre aproximadamente a sesenta y cinco (65) pies bajo la superficie de la facilidad.

Resultados Químicos:

- Las concentraciones de HTP variaron de 5.2 a ciento cineuenta y dos (152) ppm.

R2-0003831

Conclusiones:

- Ya que no se determinó la condición fisica del TAS antes de este ser cerrado en sitio es probable que las concentraciones de HTP en el suelo sean causadas por el sobrellenado y/o mal manejo del producto; y,

- El Bunker C es un aceite. Y, el aceite es un liquido de lento movimiento en el suelo. Además, ya no existe una fuente (TAS) que pueda sobrepasar la saturación residual existente, pudiendo causar flituras migraciones. Por lo tanto, se estima que las concentraciones encontradas no deben representar un peligro al ambiente o a la salud humana.

R2-0003832

4.0 RECOMENDACIONES

Basados en los resultados obtenidos y documentados en este Programa de Investigaclón de Lugar, hacemos la siguiente recomendación:

- No es necesario trabajo adicional en la facilidad de Shelfoam Products Inc., Cidra, Puerto Rico.

R2-0003833

APENDICE A

BITACORAS DE CATA

R2-0003834

AGES

APPLIED GEOSCIENCES & ENVIRONMENTAL SERVICES, INC.

LOG OF EXPLORATORY BORING

FIELD LOCATION OF BORING:

Project # 95-195-01	Date 08/22/95	Boring No. B-1
Client SHELFOAM PRODUCT		Sheet 1
Location CIDRA, PUERTO RICO		of 1
Logged By R. OLIVER	Drilling Company AGES DRILLING	
Drilling Method HAND AUGER		Dwg. Name: S-FOAM-B.DWG
		Hole Dia. 4"

Well Installation Data: TOTAL DEPTH: 13'

BACKFILLED WITH NATIVE SOIL.

Water Level					
Time					
Date					

DEPTH (FEET)	GRAPHIC LOG	BLOW /FT	METER READING	SAMPLE TYPE & DEPTH	U.S.C.S. SYMBOL	LITHOLOGIC DESCRIPTION
1						
2						
3						
4						
5		-	-	Grab @ 5'	cl	Silty Clay, HUE 5YR 4/6 yellowish red, mottled, HUE 7.5 YR N5 gray, odor.
6						
7						
8						
9						
10		-	-	Grab @ 10'	cl	Silty Clay, HUE 5YR 4/6 yellowish red, mottled, HUE 7.5 YR N5 gray, odor.
12						
13		-	10	S. Spoon @ 13'	cl	Silty Clay, HUE 5YR 4/6 yellowish red, mottled, HUE 7.5 YR N5 gray, odor.
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
30						
31						
32						

R2-0003835

AGES — APPLIED GEOSCIENCES & ENVIRONMENTAL SERVICES, INC.

LOG OF EXPLORATORY BORING

FIELD LOCATION OF BORING:

Project # 95-195-01	Date 08/22/95	Boring No B-2	
Client SHELFOAM PRODUCT			
Location CIDRA, PUERTO RICO		Sheet 1	
Logged By R. OLIVER	Drilling Company AGES DRILLING	Of 1	
Drilling Method HAND AUGER		Dwg. Name: S-FOAM-B.DWG	
		Hole Dia. 4"	

Well Installation Data: TOTAL DEPTH: 13'

BACKFILLED WITH NATIVE SOIL.

Water Level				
Time				
Date				

DEPTH (FEET)	GRAPHIC LOG	BLOW /FT	METER READING	SAMPLE TYPE & DEPTH	U.S.C.S. SYMBOL	LITHOLOGIC DESCRIPTION
1						
2						
3						
4						
5		-	-	Grab @ 5'	cl	Silty Clay, HUE 5YR 4/6 yellowish red, mottled, HUE 7.5 YR N5 gray, odor.
6						
7						
8						
9						
10		-	-	Grab @ 10'	cl	Silty Clay, HUE 5YR 4/6 yellowish red, mottled, HUE 7.5 YR N5 gray, odor.
11						
12						
13		-	10	S. Spoon @ 13'	cl	Silty Clay, HUE 5YR 4/6 yellowish red, mottled, HUE 7.5 YR N5 gray, odor.
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

R2-0003836

APENDICE B
INFORME DE LABORATORIO Y CADENA DE CUSTODIA

R2-0003837

Advanced Technology Laboratories

August 28, 1995

ELAP No.: 1838

AGES, Inc.
Carr. #2 Km 26.8 (INT) Camino Guarisco
Bo. Espinosa, Dorado P.R. 00646

ATTN: Mr. Luis De Figueroa

Client's Project: Shel Foam
Lab No.: 7716-001/002

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 – 4045 if I can be of further assistance to your company.

Sincerely,

Edgar P. Caballero
Laboratory Director
EPC\ms

Agustin A. Ruiz Guardiola
Chemist, License No. 987

9/10/95

ESTADO LIBRE ASOCIADO
AGUSTIN A. RUIZ GU...
A 963660
Lic. No. 987
Químico Licenciado

Enclosures

This cover letter is an integral part of this analytical report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

R2-0003838

Clieat: AGES, Inc.
Attn: Mr. Luis De Figueroa

lieat's Project: Shel Foam

Date Received: 08/24/95
Date Sampled: 08/22/95

Lab No.	Sample I.D.	Analysis	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initiais
7716-001	B1 @ 13'	EPA 418.1 (TRPH)	08/25/95	5.2	Soil, mg/kg	4.0	4.0	MCC
7716-002	B2 @ 13'	EPA 418.1 (TRPH)	08/25/95	152	Soil, mg/kg	4.0	20	MCC

MDI = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: Cheryl de los Rs Date: 8/29/95
Cheryl De Los Reyes
Department Supervisor

The caver letter is an integral part ot this analytical report.

25

R2-0003839

CHAIN OF CUSTODY RECORD

Pg 1 of 1

No. H 6476

FOR LABORATORY USE ONLY:

Advanced Technology Laboratories
10 E. 33rd Street
gnal Hill, CA 90807
0) 989-4045 • FAX (310) 989-4040

Batch #: 7716 D.O. #:
P.O.#:
Logged By: NT Date: 8/24/95 Time: 1pm

Method of Transport: Walk-in ☐ Courier ☐ UPS ☑ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt: CHILLED Y ☑ N ☐ SEALED Y ☐ N ☑ SEAL INTACT Y ☐ N ☑ PRESERVED Y ☐ N ☑ CONTR. LOT #
CONTAINER INTACT Y ☑ N ☐ # OF SPLS MATCH COC Y ☑ N ☐ * HAZARDOUS FEE Y ☐ N ☐ HEADSPACE(VOA) Y ☐ N ☐ COOLER TEMP °C 712 (2-6)

nt: AGES, Inc.
n: R. OLIVER
Address:
City State Zip Code
TEL: (801) 270-3100
FAX: (801) 270-3110

ject Name: Shel Foam Project #: Sampler: (Printed Name) R. OLIVER (Signature) [signature]
nquished by: (Signature and Printed Name) [signature] R. OLIVER Received by: (Signature and Printed Name) Tri Nguyen Date: 8/24/95 Time: 1pm
nquished by: (Signature and Printed Name) Received by: (Signature and Printed Name) Date: Time:
nquished by: (Signature and Printed Name) Received by: (Signature and Printed Name) Date: Time:

less otherwise requested, all samples will be sposed 60 days after receipt.

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: R. OLIVER Date: 23, 8, 95
Print Name
[signature]
Signature

Send Report To: Attn: R. OLIVER
Co:
Address
City State Zip

Special Instructions/Comments:

SHIP TO LAB: (SUB CONTRACT)	SHIP TO LAB: (SUB CONTRACT)	SHIP TO LAB: (SUB CONTRACT)
ST.	TEST	TEST
#	ATL #	ATL #
TE	DATE	DATE
ENT I D	CLIENT I D	CLIENT I D

Circle or Add Analysis(es) Requested

CIRCLE APPROPRIATE MATRIX

QA/QC: RTNE ☑ RWQCB ☐ WIP ☐ NAVY ☐ CT ☐ OTHER

LAB USE ONLY: Batch #: Lab No.	Sample Description: Sample I.D.	Date	Time	601/8010 (Halogenated Volatiles-GC)	602/8020/BTEX (Aromatic Volatiles-GC)	608/8080 (Pesticides/PCB-GC)	624/8240/8260 (Volatiles-GC/MS)	625/8270 (BNA-GC/MS)	8015M TPHG/BTEX(COMBINATION)	8015M TPH/D (Diesel-GC)	418.1 (TPH-IR)	Metals-Total (CAC-6010/7000)	SOIL/SOLID	WATER/LIQUID	SLUDGE/OIL	GAS/AIR	WIPE/FILTER	MULTIPHASE	OTHER	TAT	Container(s) #	Type	PRESERVATION	REMARKS
7716-001	B1 J 13'	2[illegible]	2:10								✓		✓							E	1	J	G	
-002	B2 J 13'	31	3:30								✓		✓							E	1	J	G	

ple Archive/Disposal
Laboratory Standard
Other
Return To

TAT: A= Overnight 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays • TAT starts 8 a.m. following day if samples received after 3 p.m.

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaO[illegible] =$Na_2S_2O_3$

Container Types B=Brass V=VOA L=Liter P=Pint [illegible] T=Tedlar G=Glass P=Plastic M=Metal

[illegible] White [illegible] Green to organic Yellow to inorganic Pink to sample control [illegible] to submitter

R2-0003840

Spike Recovery and RPD Summary Report

Method: 418.1
Analyst: MCC
Data File: 5237-S

Date: 08/25/95
Sample ID: 7716-001
Matrix: Soil

ANALYTE	UNITS	LCS Conc	LCS Res	%Rec	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	DLR
TRPH	mg/kg	40	38	95	ND	5.2	40	39	38	85	82	65-123	3	19	4.0

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 8/29/95

27/27

Advanced Technology Laboratories

R2-0003841

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 76

RESULTADOS DE UN PROGRAMA DE CARACTERIZACION DE LUGAR SHELFOAM PRODUCTS, INC. CIDRA, PUERTO RICO

AGES
APPLIED GEOSCIENCES &
ENVIRONMENTAL SERVICES, INC.
ENVIRONMENTAL CONSULTING AND HYDROGEOLOGY

1/29

R2-0003844

RESULTADOS DE UN PROGRAMA DE CARACTERIZACION DE LUGAR SHELFOAM PRODUCTS, INC. CIDRA, PUERTO RICO

1989 JUL 22 PM 1:22

2

RESULTADOS DE UN PROGRAMA DE CARACTERIZACION DE LUGAR SHELFOAM PRODUCTS, ING. CIDRA, PUERTO RICO

SOMETIDO A:

JUNTA DE CALIDAD AMBIENTAL
P.O. BOX 11488
SANTURCE, PUERTO RICO 00910

PREPARADO PARA:

SHELFOAM PRODUCTS, INC.
P.O. BOX 327
CIDRA, PUERTO RICO 00739

PREPARADO POR:

APPLIED GEOSCIENCES & ENVIRONMENTAL SERVICES, INC.
ZMS SUITE #225, PLAZA RIO HONDO
BAYAMON, PUERTO RICO 00961-3100
(787) 270-3100

26 DE JUNIO DE 1996

R2-0003846

Este informe, incluyendo todas las actividades relacionadas, fue preparado y dirigido bajo la supervisión de la compañía Applied Geosciences & Environmental Services, Inc. (AGES). Nuestros servicios profesionales fueron llevados a cabo usando los grados de cuidado y destreza ordinariamente ejecutados bajo circunstancias similares por otros hidrogeólogos e ingenieros practicantes en este campo. Ninguna otra garantía explicita o implícita en cuanto a consultoría profesional está expresada en este informe.

Aníbal Negrón Rodriguez
Geólogo

10 Junio 1996
Fecha

Luis D. Figueroa, REM, CGWP
Presidente/Hidrogeólogo

6.10.96
Fecha

R2-0003847

TABLA DE CONTENIDO

Página

1.0 INTRODUCCION 1

1.1 TRASFONDO..... 1

1.2 ALCANCE DEL TRABAJO..... 2

1.3 GEOLOGIA E HIDROGEOLOGIA 3

2.0 PROGRAMA DE CARACTERIZACION DE LUGAR..... 4

2.1 INVESTIGACION DEL SUBSUELO..... 4

2.1.1 BARRENADO..... 4

2.1.2 MUESTREO DE SUELO..... 4

2.1.3 RASTREO DE VAPORES ORGANICOS..... 6

2.2 ANALISIS DE LABORATORIO..... 6

3.0 RESULTADOS 7

3.1 RESULTADOS FISICOS 7

3.1.1 LITOLOGIA E HIDROGEOLOGIA..... 7

3.1.2 CONCENTRACIONES DE VAPORES ORGANICOS..... 7

3.2 RESULTADOS QUIMICOS 8

3.2.1 ANALISIS DE SUELO..... 8

4.0 RESUMEN Y CONCLUSIONES 9

5

R2-0003848

TABLA DE CONTENIDO (Continuación)

Página

5.0 RECOMENDACIONES 11

LISTA DE TABLAS

TABLA 1. RESULTADOS DEL ANALISIS QUIMICO REALIZADO A LAS MUESTRAS DE SUELO UTILIZANDO EL METODO 418.1 DE LA AFPA 8

LISTA DE FIGURAS

FIGURA 1. MAPA DE LOCALIZACION

FIGURA 2. MAPA DE SITIO

APENDICES

APENDICE A. BITACORAS DE CATA

APENDICE B. INFORME DE LABORATORIO Y CADENA DE CUSTODIA

R2-0003849

RESULTADOS DE UN PROGRAMA DE CARACTERIZACION DE LUGAR SHELFOAM PRODUCTS, INC. CIDRA, PUERTO RICO

1.0 INTRODUCCION

Este informe presenta los resultados de un Programa de Caracterización de Lugar, realizado por la compañia Applied Geosciences & Environmental Services, Inc. (AGES). El programa se llevó a cabo en marzo de 1996, en la facilidad de Shelfoam Products, Inc. (Shelfoam). La facilidad se encuentra localizada en la Carretera #171, Kilómetro 0.5, Cidra, Puerto Rico (véase la Figura 1).

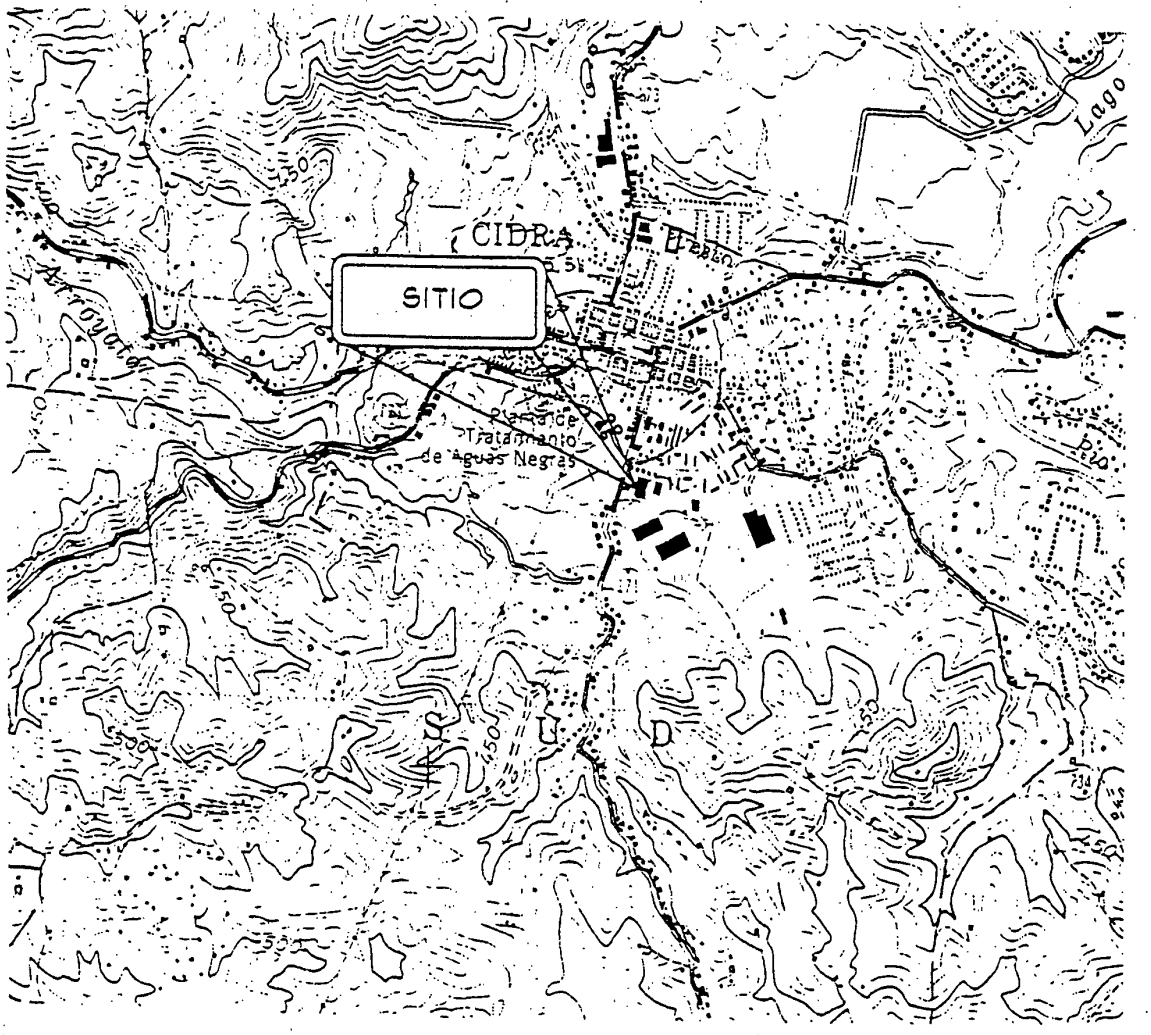
Este informe contiene los procedimientos empleados en la recopilación de datos utilizados durante el programa. Además, detalla los métodos y razonamientos empleados en los análisis quimicos de las muestras de suelo. Las conclusiones a las cuales llegó AGES están basadas en los resultados fisicos y quimicos contenidos en este informe.

1.1 TRASFONDO

En julio de 1987, Shelfoam realiz6 un Programa de Cierre en Sitio de un Tanque de Ahnacenamiento Soterrado (TAS) de diez mil (10,000) galones de capacidad. El mismo se utilizaba para almacenar Combustible Bunker C. Durante el cierre del TAS, no se tomaron muestras de suelo según requerido por el Reglamento 704 de la Junta de Calidad Ambiental (JCA). La facilidad con la localización del TAS cerrado en sitio se ilustra en la Figura 2.

7

R2-0003850



ESCALA

1 MILLA — 1 — 1/2 — 0

PIES — 1000 — 0 — 1000 — 2000 — 3000 — 4000 — 5000 — 6000 — 7000

1 KILOMETRO — 1 — .5 — 0

N

AGES
APPLIED BIOSCIENCES & ENVIRONMENTAL SERVICES, INC.

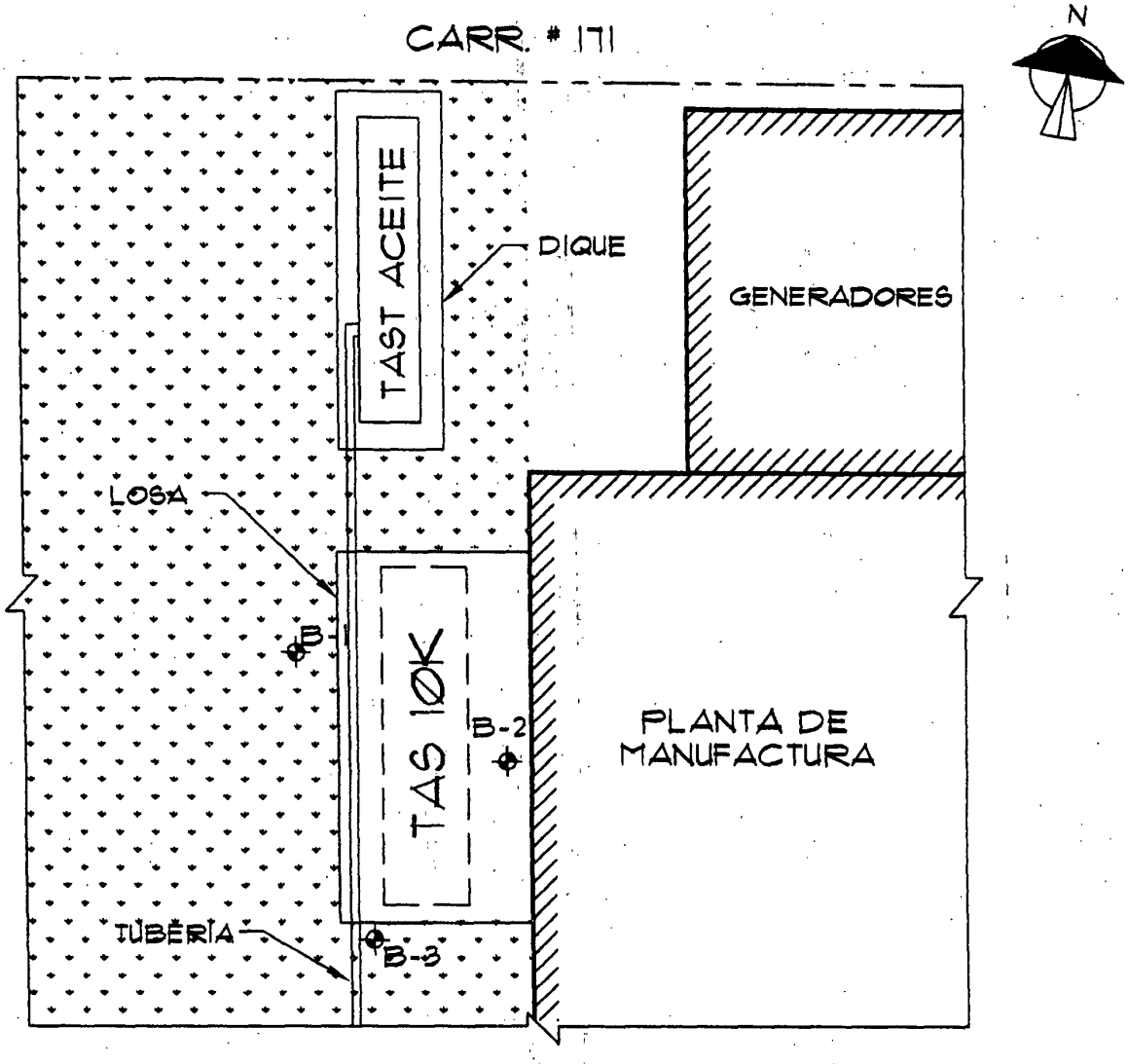
CLIENTE:	BHEL FOAM PRODUCT
LOCALIZACION:	CIDRA, PUERTO RICO
PROYECTO:	BARRENADO

MAPA DE LOCALIZACION

FECHA:	03/28/96	FIGURA:	1
DIBUJADO POR:	R. ALICEA	NUM. PROYECTO:	96-198-01
APROBADO POR:	R. OLIVER	ARCHIVO:	8-FOM.DWG

8

R2-0003851



EXPLICACION

TAST TANQUE DE ALMACENAMIENTO SOBRE TIERRA

TAS TANQUE DE ALMACENAMIENTO SOTERRADO

LOCALIZACION DE CATA

ESCALA

30 15 0 30 (PIES)

5 2.5 0 5 (METROS)

AGES
APPLIED GEOSCIENCES & ENVIRONMENTAL SERVICES, INC.

CLIENTE:	SHEL FOAM PRODUCT
LOCALIZACION:	CIDRA, PUERTO RICO
PROYECTO:	BARRENADO

MAPA DE SITIO

FECHA:	03/28/96	FIGURA:	2
DIBUJADO POR:	R ALICEA	NUM. PROYECTO:	96-185-01
APROBADO POR:	R OLIVER	ARCHIVO:	S-FOMOW.S

R2-0003852

En agosto 22 de 1995, Shelfoam contrató a AGES para reaiizar un Programa de Investigación de Lugar con el fin de determinar la presencia de Hidrocarburos de Petróleo en el subsuelo del área de la facilidad.

Se recolectaron y se analizaron químicamente dos (2) muestras de suelo (B-1 @ 13' y B-2 @ 13'). Las muestras fueron analizadas usando el Método 418.1 de la Agencia Federal de Protección Ambiental (AFPA), para la detección de Hidrocarburos Totales de Petróleo (HTP). Los resultados del análisis a las muestras de suelo encontraron concentraciones de HTP, las cuales variaron desde cinco punto dos (5.2) a ciento cineuenta y dos (152) partes por millón (ppm).

Como resultado de las concentraciones encontradas durante el Programa de Investigaclón de Lugar, Shelfoam contrató a AGES para reaiizar un Programa de Caracterización de Lugar en el área del TAS. Este programa se llevo a cabo en el mes de marzo del 1996.

1.2 ALCANCE DEL TRABAJO

El objetivo del Programa de Caracterización de Lugar es determinar la extensión vertical y horizontal de hidrocarburos de petróleo bajo el área de la facilidad (área del antiguo TAS). El trabajo realizado durante este programa consistió de:

- Barrenado de tres (3) catas a una profundidad de trece (13) pies cada una; y,

- Recolección y análisis quimico de tres (3) muestras de suelo, usando el Método 418.1 de la AFPA.

10

R2-0003853

1.3 GEOLOGIA E HIDROGEOLOGIA

La facilidad se encuentra aproximadamente un (1) kilómetro al oeste del Lago de Cidra y aproximadamente cuatrocientos cineuenta (450) metros al noreste del Rio Arroyata. La elevación de la superficie del terreno bajo la estación es de aproximadamente cuatrocientos veinte (420) metros (1,377.6 pies) sobre el Nivel Promedio del Mar (NPM).

La facilidad yace sobre depósitos de terraza los cuales datan del periodo geológico Cuaternario[1]. Estos se componen de arena, grava, cieno y peñascos de origen volcánico.

La facilidad yace dentro del área del Acuifero de la Provincia Interior, del Sistema de Acuiferos de las Islas del Caribe según el Servicio Geológico Federal (U.S.G.S., por sus siglas en inglés)[2]. El agua subterránea se estima aproximadamente a sesenta y cinco (65) pies de profundidad. Basados en la localización geográfica de la facilidad y la topografia de la zona se estima que la dirección de flujo del agua subterránea es hacia el sudoeste.

---

[1] Miscellaneous Geologic Investigations Series Map I-320. Geologic Map of the Comerío Quadrangle, Puerto Rico by Maurice H. Pease, Jr., and Reginald P. Briggs, 1960.

[2] Compilation of Ground-Water Measurements in Puerto Rico, 1958-1985. USGS Data Report 88-701 by Sigfredo Torres, 1991.

11

R2-0003854

2.0 PROGRAMA DE CARACTERIZACION DE LUGAR

2.1 INVESTIGACION DEL SUBSUELO

El Programa de Caracterizaci6n de Lugar realizado por AGES incluyó el barrenado de tres (3) catas y muestreo de suelo. Los métodos y procedimientos utilizados durante el barrenado y muestreo del suelo se describen a continuacidn.

2.1.1 Barrenado

En marzo de 1996, bajo la supervisión directa de un geólogo de AGES se llevaron a cabo los procedimientos de barrenado de tres (3) catas (B-1, B-2 y B-3) a trece (13) pies de profundidad cada una. Las catas se barrenaron utilizando un barreno de mano (*Hand Auger*).

2.1.2 Muestreo de Suelo

Luego del barrenado, el geólogo tomo una (1) muestra de suelo de cada cata. Las muestras de suelo fueron tomadas directamente del fondo del envase. Luego el suelo fue envasado en botellas de ciento veinte (120) mililitros (ml) con tapas de sello de Teflón.

Se tomaron un total de tres (3) muestras de suelo (B-1@13', B-2@13' y B-3@13') para análisis quimico. Las muestras fueron tomadas de acuerdo a las normas de Control de Calidad y Certeza de AGES.

12

R2-0003855

Además, para garantizar la calidad de recolección y muestreo de suelo, se tomaron las siguientes muestras:

- un (1) Duplicado de B-1@13' (D-1@13');
- un (1) Blanco de Campo (FB, por sus siglas en inlgés);
- un (1) Blanco de Viaje (TB, por sus siglas en inglés); y,
- un (1) Blanco de Equipo (EB, por sus siglas en inglés).

Parte del suelo contenido en el envase fue examinado en el campo por el geólogo para detectar concentraciones de Compuestos Orgánicos Volátiles (COV's) y para descripción litológica. Se utilizó el Sistema Unificado de Clasificación de Suelos (USCS, por sus siglas en inglés) para clasificar el tipo de suelo. El tamaño del grano, el color, el olor, la humedad y otras propiedades pertinentes al USCS fueron descritas y anotadas por el geólogo en el Registro de Descripción de Cata. El color del suelo observado fue identificado usando las Cartas de Colores de Suelo Munsell. Una descripción más detallada del suelo observado se incluye en el Apéndice A.

Para evitar la contaminación cruzada de las muestras de suelo por causa del equipo utilizado durante el muestreo, éste fue lavado antes y después de ser usado en cada una de las catas. Los instrumentos fueron lavados con una solución acuosa de Alconox, enjuagados con agua de la pluma, con agua destilada y dejados secar al aire libre.

R2-0003856

2.1.3 Rastreo de Vapores Orgánicos

El contenido de COV en las muestras recuperadas en el campo fue rastreado usando un Detector de Hidrocarburos (DH) modelo "*GasTech Trace-Techtor*". Para esto, se tomó una porción de suelo de aproximadamente dos (2) pulgadas. Esta colocada en un envase de cristal hasta que éste quedó casi lleno. El envase fue cubierto con una lámina de papel de aluminio, sellado con una tapa con sello de Teflón, y se expuso al sol por aproximadamente diez (10) minutos. Luego de esto la tapa fue removida y el contenido de vapores orgánicos fue medido introduciendo la punta del DH a través del papel de aluminio, en el espacio entre éste y la muestra de suelo. Los resultados de cada medición se encuentran anotados en las respectivas bitácoras de cata, incluidas en el Apéndice A.

2.2 ANALISIS DE LABORATORIO

El análisis quimico realizado a las muestras de suelo fue llevado a cabo por el laboratorio analitico Transgobal Environmental Geochemistry (TEG), localizado en Guaynabo, Puerto Rico.

Se tomaron un total de cuatro (4) muestras de suelo, una (1) muestra por cata y un (1) duplicado de la Muestra B-1@13' (D-1@13'). Además se tomaron tres (3) blancos; un (1) Blanco de Campo, un (1) Blanco de Equipo, y un (1) Blanco de Viaje. Estas fueron analizadas para HTP utilizando el Método 418.1 de la AFPA.

R2-0003857

3.0 RESULTADOS

Un resumen de los resultados fisicos y quimicos de las muestras de suelo extraidas de la facilidad se describe a continuación. Una descripción más detallada del suelo observado se incluye en el Apéndice A. Copia de la cadena de custodia y el informe de laboratorio se incluyen en el Apéndice B.

3.1 RESULTADOS FISICOS

3.1.1 Litología e Hidrogeología

La litologia bajo la facilidad (área del TAS) varió de arcilla a arena cienosa, color amarillo rojizo a marrón oscuro. No se observaron manchas u olores a hidrocarburos de petróleo en el suelo recuperado de las catas. El nivel hidráulico no fue interceptado. Se estima que este se encuentre aproximadamente a sesenta y cinco (65) pies bajo la superficie del terreno.

3.1.2 Concentraciones de Vapores Orgánicos

El suelo generado durante el barrenado de las catas fue rastreado para detectar concentraciones de COV, usando el DH. Las concentraciones de vapores en el suelo fueron de No Detectado (ND). Una descripción detallada se incluye en las bitdcoras de cata incluidas en el Apéndice A.

R2-0003858

3.2.1 Análisis de Suelo

Las muestras de suelo fueron analizadas para detectar concentraciones de HTP usando el Método 418.1 de la AFPA. Las concentraciones de HTP en las muestras analizadas variaron desde No Detectado (ND) hasta setenta y ocho 78 ppm. El resultado del análisis quimico de las muestras de suelo se resume en la Tabla 1. Una copia del informe de laboratorio y la cadena de custodia se incluyen en el Apéndice B.

TABLA 1. RESULTADOS DEL ANALISIS QUIMICO REALIZADO A LAS MUESTRAS DE SUELO UTILIZANDO EL METODO 418.1 DE LA AFPA.

(PPM)

NOMBRE DE LA MUESTRA	HTP COMBUSTIBLE BUNKER C
B-1 @13'	ND
B-2 @13'	ND
B-3 @13'	78
D-1 @13'*	ND
FB	ND
TB	ND
EB	ND

NOTAS: PPM - Partes por Millón
HTP - Hidrocarburos Totales de Petróleo
* - Duplicado de B-1 @13'
FB - Blanco de Campo
EB - Blanco de Equipo
TB - Blanco de Viaje
ND - No Detectado

R2-0003859

4.0 RESUMEN Y CONCLUSIONES

Los datos concernientes a la litologia y la presencia de hidrocarburos de petróleo en el suelo bajo la facilidad (área del tanque), fueron recolectados e interpretados durante el transcurso del programa antes descrito. Basados en los resultados obtenidos, llegamos a las siguientes conclusiones:

Litología e Hídrogeología del Lugar:

- La litologia bajo la facilidad (área del TAS de 10,000 galones) varia de arcilla a arena cienosa, color amarillo rojizo a marrdn oscuro;

- El suelo recuperado durante el barrenado fue rastreado con el DH. Las concentraciones de vapores orgánicos en las muestras fueron de ND; y,

- El nivel hidráulico no fue interceptado. Se estima que este se encuentre aproximadamente a sesenta y cinco (65) pies bajo la superficie del terreno.

Resultados Químicos:

- Las concentraciones de HTP en las muestras analizadas variaron de ND a setenta y ocho (78) ppm.

R2-0003860

Conclusiones:

Durante este Programa de Caracterización de Lugar solo se detectaron concentraciones de Hidrocarburos de Petróleo en la Muestra B-3 @ 13'. Estas concentraciones se encuentran por debajo de los limites máximos aceptados por la JCA y la AFPA. El suelo analizado no muestra caracteristicas tóxicas (Compuestos de Hidrocarburos de Petróleo) segun los parámetros establecidos.

Las concentraciones de Hidrocarburos de Petróleo aparentan estar marginadas al área inmediatamente alrededor del TAS cerrado en sitio y no deben presentar peligro a los recursos de agua subterránea locales.

18

R2-0003861

5.0 **RECOMENDACIONES**

Basados en los resultados obtenidos y documentados en este **Programa** de **Caracterización de Lugar**, hacemos la siguiente recomendación:

- No es necesario trabajo adicional en la facilidad de Shelfoam Products Inc. (área del antiguo TAS), en Cidra, Puerto Rico.

R2-0003862

APENDICE A

BITACORAS DE CATA

R2-0003863

AGES — APPLIED GEOSCIENCES & ENVIRONMENTAL SERVICES, INC.

LOG OF EXPLORATORY BORING

FIELD LOCATION OF BORING:

Project # 96-195-01	Date: 03/21/96	Boring No. B-1
Client: SHEL FOAM FRODUCT		Sheet 1 of 1
Location: CARR # 111 KM. 05, CIDRA		
Logged By: A. NEORON	Drilling Company: AGBB DRILLING	
Drilling Method: HAND AUGER	Dwg. Name: DIB/B-POAMB	
	Hole Dia.: 4"	

Well Installation Data: TOTAL DEPTH: 13'

BACKFILLED WITH NATIVE SOIL.

Water Level / Time / Date

DEPTH (FEET)	GRAPHIC LOG	BLOW /FT	METER READING	SAMPLE TYPE & DEPTH	U.S.C.S. SYMBOL	LITHOLOGIC DESCRIPTION
1–12						
13		-	ND	S. Spoon @ 13'	OH	Organic Clay, 7.5YR 3/4 dark brown, molst, no odor.
14–32						

21

R2-0003864

AGES
APPLIED GEOSCIENCES & ENVIRONMENTAL SERVICES, INC.

LOG OF EXPLORATORY BORING

FIELD LOCATION OF BORING:

Project # 96-195-01	Date: 03/21/96	Boring No. B-2
Client SHEL FOAM PRODUCT		Sheet 1 of 1
Location CARR # 171 KM. 03, CIDRA		
Logged By A NEGRON	Drilling Company AGES DRILLING	
Drilling Method HAND AUGER		Disp. Media DIG/S-FOAMS
		Hole Dia. 4"
Well Installation Data TOTAL DEPTH: 13'		
BACKFILLED WITH NATIVE SOIL.		

Water Level										
Time										
Date										

DEPTH (FEET)	GRAPHIC LOG	BLOW /FT	METER READING	SAMPLE TYPE & DEPTH	U.S.C.S. SYMBOL	LITHOLOGIC DESCRIPTION
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13		-	ND	S. Spoon @ 13'	sm	Silty Sandy, 7.5YR 7/8 reddish yellow, moist, no odor.
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

R2-0003865

AGES

APPLIED GEOSCIENCES & ENVIRONMENTAL SERVICES, INC.

LOG OF EXPLORATORY BORING

FIELD LOCATION OF BORING:

Project # 96-195-01	Date: 03/21/96	Boring No. B-3
Client: SHEL FOAM PRODUCT		Sheet 1 of 1
Location: CARR # 171 KM. 05, CIDRA		
Logged By: A NEGRON	Drilling Company: AGES DRILLING	
Drilling Method: HAND AUGER	Dwg. Name: DIG/S-FOAMB	
	Hole Dia.: 4"	
Well Installation Data: TOTAL DEPTH: 13'		
BACKFILLED WITH NATIVE SOIL.		

DEPTH (FEET)	GRAPHIC LOG	BLOW /FT	METER READING	SAMPLE TYPE & DEPTH	U.S.C.S. SYMBOL	LITHOLOGIC DESCRIPTION
Water Level						
Time						
Date						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13		-	ND	S. Spoon @ 13'	OH	Organic Clay, 7.5YR 3/4 dark brown, moist, no odor.
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

R2-0003866

APENDICE B

INFORME DE LABORATORIO Y CADENA DE CUSTODIA

R2-0003867

March 27, 1996
TEG Project #96I0325AGE

Mr. Ricardo Oliver
AGES
ZMS Suite 225 Plaza Rio Hondo
Bayamon, P.R. 00961-3100

SUBJECT: DATA REPORT - SHELFOAM (96-195-01)

Dear Ricardo,

Please find enclosed the analytical report for the samples collected by AGES personnel from the above-referenced site and delivered to TEG under the proper chain-of-custody protocol. All samples were analyzed in TEG's Califomia Department of Health Services certified mobile laboratory by TEG's Puerto Rico-certified chemist. The following analyses were performed:

- 4 soil samples for TRPH by modified EPA test method 418.1.
- 1 trip, 1 equipment and 1field water blank samples for TRPH.
- QA/QC samples for TRPH analyses.

The analytical resuhs are summarized in the attached table. Applicable detection limits, QA/QC data, chromatograms, chain-of-custody and an invoice are attached.

TEG appreciates the opportunity to provide analytical services to AGES for this project. If you have any questions relating to the data or report, please do not hesitate to contact us.

Sincerely,
TEG

Kevin Shelbume
Principal

Attachments

TRANSOLOBAL ENVIRONMENTAL GEOCHEMISTRY
TEO- PUERTO RICO, PMB 627, HC-01 Box 29030, Caguas, PR 00725
Telephone 720-0329 Fax 789-3858

R2-0003868

teg

AGES PROJECT #96-195-01
SHELFOAM
CIDRA, PR

TEG Project #96I032SAGE

TRPH (Mod. EPA Method 418.1) ANALYSES OF SOIL

SAMPLE NUMBER	DATE ANALYZED	TRPH (mg/kg)
METHOD BLANK	3/26/96	ND
B1 @ 13'	3/26/96	ND
B2 @ 13'	3/26/96	ND
B2 dup. @ 13'	3/26/96	ND
B3 @ 13'	3/26/96	7B
D1 @ 13'	3/26/96	ND
DETECTION LIMIT (mg/kg)		10

TRPH (Mod. EPA Method 418.1) ANALYSES OF WATER

SAMPLE NUMBER	DATE ANALYZED	TRPH (ug/L)
METHOD BLANK	3/26/96	ND
FB	3/26/96	ND
TB	3/26/96	ND
EB	3/26/96	ND
DETECTION LIMIT (ug/L)		500

SAMPLING PERFORMED BY AGES PERSONNEL
"ND" INDICATES NOT DETECTED AT LISTED DETECTION LIMIT
mg/kg = MILLIGRAMS PER KILOGRAM
ug/L = MICROGRAMS PER LITER
CALIFORNIA DOHS LABORATORY CERTIFICATE NO. 2115
ANALYSES PERFORMED BY: MARCO A . PEDRAZA
DATA REVIEWED BY: MR. KEVIN L. SHELBURNE

MARCO A. PEDRAZA RUIZ Químico Licenciado Estado Libre Asociado de Puerto Rico LICENCIA NUM. 3395

Marco A. Pedraza
Laboratory Manager

Kevin Shelburne
Principal

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY
PMB 627, HC-01 BOX 29030, CAGUAS, P.R. 00725
TELEPHONE (809) 720-0329 FAX 789-3858

R2-0003869

teg Transglobal Environmental Geochemistry — Chain of Custody Record

Client: AGES

Address:

Phone: 270-3100 FAX: 270-3110

Client Project #: 96-195-01 Project Manager: B. Oliver

Date: 25/March/96 Page 1 Of 1

TEG Project #: Outside Lab #:

Location: Shelf Foam, Cidra

Collector: B. Oliver Date of Collection: 21/March/96

Sample #	Depth	Time	Sample Type	Container Type	VOA 8010	VOA 8020	VOA 8240	Semi Vol 8270	TRPH 418.1	TPH 8015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (gas & diesel)	PNA 610/8100	PEST/PCB's 8080	HEX Chrome	Organic Lead	Total Lead	pH	Metals						Field Notes	Total # of containers
B1	1.31	11:21	Soil	Jar					✓	✓																1
B2	1.31	12:36p	Soil	Jar					✓	✓																1
B3	1.31	2:54p	Soil	Jar					✓	✓																1
D1	1.31	11:22	Soil	Jar					✓	✓																1
EB	—	11:07a	Water	VOA					✓	✓																1
TB	—	10:00a	Water	VOA					✓	✓																1
EB	—	3:30a	Water	VOA					✓	✓																1

Relinquished by: (signature) A. N. B. Oliver — Date / Time — Received by: (signature) T. Shelburn — Date / Time 3/25/96 10:30

Relinquished by: (signature) — Date / Time — Received by: (signature) — Date / Time

Total # of containers: 7

Chain of Custody seals Y/N/NA: NA

Seals intact? Y/N/NA: NA

Received good condition/cold: Y

Notes: 8 days

Turn around time:

Sample disposal instructions: ___ TEG Disposal @ $2.00 each ___ Return to client ___ Pickup

R2-0003870

QA/QC REPORT - CALIBRATION OATA

TEG Project #96I0325AGE
DAILY CALIBRATION DATE : 3/26/96

AGES 96-195-D1
PROJECT NAME: SHELFOAM

			INITIAL		OPENING			CLOSING		
COMPOUND	DETECTOR	CALIB RANGE	RF	%RSD	AREA	RF	%DIFF	AREA	RF	%DIFF
TRPH	BUCK	10 - 1,000	474.9	18.20%	0.971	461.1	2.9%	0.963	444.1	3.7%

CALIB RANGE - RANGE OF CALIBRATION CURVE IN ppm
INITIAL RF - AVERAGE RESPONSE FACTOR FROM MULTIPOINT CALIBRATION CURVE
% RSD - LINEARITY OF MULTIPOINT CALIBRATION CURVE (+/- 20% ACCEPTABLE LIMITS)
AREA - AREA COUNTS FROM DAILY CALIBRATION STANDARD
RF - DETECTOR RESPONSE FACTOR FROM MID-POINT CALIBRATION STANDARD
% DIFF - DIFFERENCE, IN PERCENT, BETWEEN THE AVERAGE RF AND THE OPENING OR CLOSING RF (+/- 15% ACCEPTABLE LIMITS)
OPENING - MID-POINT CALIBRATION STANDARD ANALYZED BEFORE SAMPLE ANALYSES BEGIN
CLOSING - MID-POINT CALIBRATION STANDARD ANALYZED AFTER SAMPLES ANALYSES ARB COMPLETE

ANALYSES PERFORMED BY: MARCO A . PEDRAZA
DATA REVIEWED BY: KEVIN SHELBURNE

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY
PMB 627, HC-01 BOX 29030, CAGUAS, P.R. 00725
TELEPHONE (809) 720-0329 FAX 789-3S58

32

QA/QC REPORT - MS/MSD DATA

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD) FOR SOILS

DAILY CALIBRATION DATE : 3/26/96 AGES 96-195-01

TEG Project #96I0325AGE PROJECT NAME: SHELFOAM

COMPOUND	SPK CONC (mg/kg)	MS CONC (mg/kg)	%REC MS	MSD CONC (mg/kg)	%REC MSD	RPD	ACCEPTABLE RPD	ACCEPTABLE RECOVERY
TRPH	500	426	85%	419	84%	2%	15%	80% - 125%

mg/kg = MILLIGRAMS PER KILOGRAM
SPK CONC - CONCENTRATION SPIKED INTO MATRIX
MS CONC - ANALYZED CONCENTRATION OF SPIKED SAMPLE
% REC - PERCENT RECOVERY OF SPIKE FROM MATRIX
RPD - RELATIVE PERCENT DIFFERENCE BETWEEN MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERIES

ANALYSES PERFORMED BY: MARCO A . PEDRAZA
DATA REVIEWED BY: KEVIN SHELBURNE

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY
PMB 627, HC-01 BOX 29030, CAGUAS, P.R. 00725
TELEPHONE (809) 720-0329 FAX 789-3858

29/29

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 77

GOBIERNO DE PU. .TO RICO / OFICINA DEL GOBERNAL .R

Junta
de Calidad
Ambiental

22 de octubre de 1996

Sr. Edwin Santiago
Contralor
SHELFOAM PRODUCTS INC.
P.O. Box 326
Cidra, P.R. 00739

RE: INFORME FINAL DE CIERRE
SHELFOAM PRODUCTS, INC.
CARR. 171 KM. 0.5
CIDRA, P.R.
PR 02-94-0159

Estimado señor Santiago:

El Programa para el Control de Tanques de Almacenamiento Soterrado (PCTAS) del Area de Calidad de Agua de la Junta de Calidad Ambiental (JCA) recibió el 22 de julio de 1996, el informe "Resultados de un Programa de Caracterización de Lugar" realizado en marzo de 1996 en el lugar donde se llevó a cabo un cierre en sitio de un (1) tanque de 10,000 galones de capacidad. El informe fue preparado por la compañía de consultoría AGES.

Personal técnico adscrito al PCTAS evaluó la información encontrando lo siguiente:

1. Las concentraciones de hidrocarburos totales de petróleo (TPH, por sus siglas en inglés) en las muestras de terreno estuvieron por debajo de los limites de detección del método de análisis o de los limites permitidos por el PCTAS.

2. El formulario de notificación para notificar el cierre de estos tanques de almacenamiento soterrado fue sometido el 3 de agosto de 1994. Por medio de este documento se inactiva del sistema computadorizado del PCTAS el sistema de tanques previamente localizado en la facilidad 02-94-0159.

R2-0003875

3. Los controles de calidad por medio de muestreo y análisis de duplicado están aceptables. Además, se inlcuye en forma aceptable los análisis de blancos, curvas analiticas y recuperación de "spike".

4. La cadena de custodia está aceptable.

A base de los datos sometidos en el Informe Final de Cierre preparado por la compañiia AGES, el Area de Calidad de Agua releva a la compañiia Shelfoam Products, Inc. de cualquier estudio ambiental adicional a realizarse en esta facilidad en relación al sistema de tanques previamente establecido en la facilidad (PR 02-94-0159). Sin embargo, el expediente de este cierre, deberá mantenerse por lo menos tres (3) años para cumplir con los requisitos federales (Secciones 280.34 (b) y (5) y Subparte G del Código de Reglamentos Federales (CFR, por sus siglas en inglés) promulgado el 27 de septiembre de 1988 y de la Parte VII-del Reglamento para el Control de Tanques de Almacenamiento Soterrado promulgado por esta Junta el 7 de noviembre de 1990.

Para aclarar cualquier duda o pregunta se puede comunicar con la Sra. Ada N. Otero al teléfono 767-8181 Ext. 2611. También nos pueden visitar en nuestras oficinas localizadas en la Ave. Ponce de León #431, Edificio Nacional Plaza, Sexto Piso, Hato Rey, Puerto Rico.

Cordialmente,

Lucaila Gliglipttty
Directora
Area Calidad de Agua

2/2

R2-0003876

REFERENCE 78

COMMONWEALTH OF PUERTO RICO / OFFICE OF THE GOVERNOR

Environmental Quality Board

December 3, 1992

Mrs. Flor L. Del Valle López
Director
Land Pollution Control Area

Mr. Carmelo Vázquez, Chief
Inspection, Monitoring and
Surveillance Section

Mr. Félix M. Mariani
Environmental Inspector

Inspection Report for
Smith Kline Beecham Pharmaceuticals
Cidra, Puerto Rico
PRD 090023250

The above mentioned company was visited on October 9, 1992. During the visit, a Full RCRA Generator and TSF Inspection was performed, in order to determine their compliance with the Federal Resource Conservation and Recovery Act (RCRA) and the State Regulation for the Control of Hazardous and Non - Hazardous Solid Wastes (RCHNHSW).

Attached, please find the following documents with regard to this inspection:

- Inspection Report
- Notification to the company
- Documents submitted by the company

/sec

1/20

R2-0003878

SUMMARY OF FINDINGS

Smith Kline Beecham (S.B.) Pharmaceuticals is located at Road 172, Km. 9.1, Cidra, Puerto Rico. According to our records, the person to contact is Mr. Antonio Garcia, Plant sanitary and Environmental Services Administrator of the company.

On October 9, 1992, a Full RCRA Generator and TSF Inspection was performed by myself in order to verify compliance with the state and federal regulations. I was accompanied by Mrs. Maricarmen Rodríguez, Environmental Specialist. During the inspection Mr. Hans Figueroa, Project Engineer and Mr. José Rivera, Environmental Technician, were contacted. Mr. Antonio Garcia was not available during the inspection due to an illness; however, eventually he contacted us by phone at the facility and provided us the necessary information.

The manufacturing activities at SB facilities site at Cidra, take place in two differeht buildings. The first structure known as Cidra I is dedicated basically to the production of tranquilizers, analgesics and diuretics.

The other building known as Cidra II located west of Cidra I is engaged in the manufacture of drugs used in the treatment of ulcers and in controlling the segregations of gastric acids. All these products are produced either as tablets, caplets, or injectables.

The process consists in weighing raw materials, blending, compression, coating, drying, labelling, and packaging the products. No hazardous wastes are generated during the manufacturing process.

The company submitted to the Environmental Protection Agency (EPA), a revised notification (Form 8700-12) on August 18, 1989, for the generation of the following wastes:

D000	D004	D008	F001	F005
D001	D005	D009	F002	
D002	D006	D0I0	F003	
D003	D007	D011	F004	

In addition, the company notified the generation of commercial chemical products (P and U wastes) in the event that an expired or an off specification product reagent lot had to be disposed of.

According to Mr. Garcia, the only hazardous wastes generated

R2-0003879

at the company come from the analyses performed at three (3) Quality Control and Assurance (QA/QC) laboratories and from expired reagents. This information is also reflected on the RCRA Facility Assessment (RFA), performed to this facility and on the Part A Permit Application.

According to the (RFA) performed on October 20, 1988 by the EQB, the following materials are used for quality control tests and other chemical analyses:

Hazardous Waste	Waste Number	Hazard Code
Tetrachioroethylene	F002	T
Methylene Chloride	F002	T
Trichloroethylene	F002	T
Chloroebenzene	F002	T
Nitrobenzene	F004	T
Toluene	F005	I, T
Pyridine	F005	I, T
Xylene	F003	I
Acetone	F003	I
Ethyl ether	F003	I
Carbon disulfide	F005	I, T
Methyl alcohol	F003	I

The above materials are listed as hazardous wastes on local and federal regulations when discarded.

The small amounts of wastes generated from the laboratory procedures are collected in five gallon containers located at the laboratories. These containers are labelled as "basic", "acids", "phenols", and "organics", in order to segregate the wastes. The wastes are collected once a week and taken to an area were they are transferred to fifty-five (55) gallon plastic drums that are also labelled "basic", "acids", "phenols" and "organics". These drums

R2-0003880

are located in an area designated as a Satellite Area by Mr. Garcia and Mr. Rivera. This area is provided with a communication system, however, it lacks of a secondary containment system, such as a dike, berm or sumps. No warning signs (no-smoking, hazardous waste, etc.), and emergency equipment, were found at this area. Since the access door can not be locked there was no means to secure the area.

At the time of the inspection four (4) fifty five gallon drums were found, at the designated Satellite Area completely full of wastes generated from the QA/QC Laboratories operation. The drums were inside individual 85 gallon overpacks. None of the drums were labelled with the words "hazardous waste" and no accumulation date was posted on them.

According to Mr. Garcia and Mr. Rivera, the drums remain in their designated Satellite Area sometimes over 90 days until TCLP analyses are performed, then transferred to the Temporary Hazardous Waste Storage Area (THWSA) with the accumulation date corresponding to the day the company receives the TCLP results and after the wastes are determined to be hazardous.

The THWSA is a large metal box located inside a surrounding concrete dike. The metal box contains three (3) safety cabinets, two of them are used to store hazardous waste in glass bottles and the other one to store emergency equipment. The area is equipped with a sprinkler and a hood system (for vapor extraction, etc.)

At the time of the inspection, the following hazardous wastes were found at the THWSA:

Waste	Acc. Date	Containers	Waste Code
Dioxane	August 5, 1992	7-1 liter bottles	D001
Hexane	August 5, 1992	1 pint bottle	D001
Mercury	August 5, 1992	broken thermometers	D009
Sodium Nitro-prusside	August 5, 1992	bag	D009

The former Hazardous Waste Storage Area was inspected and no hazardous wastes were found stored there. The company has already finished the closure activities and a certification of it is pending approval since EPA requested additional information to the

R2-0003881

company. The information was submitted to EPA for the final evaluation of the document and no reply has been received at this time.

During the manifest records review, it was found that the company exceeded the time allowed (45 days) to have on file the manifests with the handwritten signature of the designated facility. Also, no Exemption Reports were found for the manifests mentioned.

The following is a description of the manifests mentioned above:

Manifests #	Days	Generator/Transporter date	Facility date
15379	54	8/21/90	10/14/90
15505	47	2/01/91	3/19/91

Also, it was noticed that the hazardous waste generation log only reflected out of specification chemical materials from the laboratories. The drums that are transferred from their designated "Satellite Storage Area", are not recorded ih any log after being identified as hazardous waste. TCLP analyses are available at the facility's files. Previous chemical analyses performed to the contents of the drums held at the designated Satellite Storage Area denote that the waste contained listed hazardous wastes, as already indicated on the RFA and Part A Permit Application.

CONCLUSIONS AND RECOMMENDATIONS

As a result of the inspection performed to Smith Kline Beecham Pharmaceuticals, it was found that the company was not in compliance with the Generator and TSF standards set forth in the State Regulation for the Control of Hazardous and Non - Hazardous Solid Wastes (RCHNHSW) and federai regulations (40 CFR).

The following violations were found:

(1) During the manifest records review, it was found that the company exceeded the time allowed (45 days) to have on file the manifests (15379 and 15505) with the handwritten signature of the

R2-0003882

designated facility and no Exception Reports were found for those manifests.

(2) The company failed to determine that the waste solvents generated at the QA/QC laboratories and stored at the Satellite Area (sometimes over 90 days) were already listed as hazardous wastes in the local and federal regulation.

(3) The Hazardous Waste Container Storage Area Operating Log does not reflect the drums containing hazardous waste that are transferred from the Satellite Area, to the THWCSA.

(4) The company stored more than 55 gallons of hazardous wastes at the Satellite Area. Four (4) full fifty five (55) gallon drums containing "organics", "acids", "phenols", "basics", were found stored there.

Violations on items 1,2, and 4 will be referred to our Legal Division for the appropriate enforcement action.

Herein, please find the letter to the company for your approval and signature.

FMM/sec

R2-0003883

Please print or type in the unshaded areas only (fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-H0175

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F

LABEL ITEMS

II. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X			D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X			F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP: S K F L A B C O

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
2 G A R C I A A N T O N I O E N V. A D M I N I S T R A T O R	

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 C A L L B O X S K F

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 C I D R A	P R	0 0 6 3 9

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

R. R O A D 1 7 2 K M 9 . 1

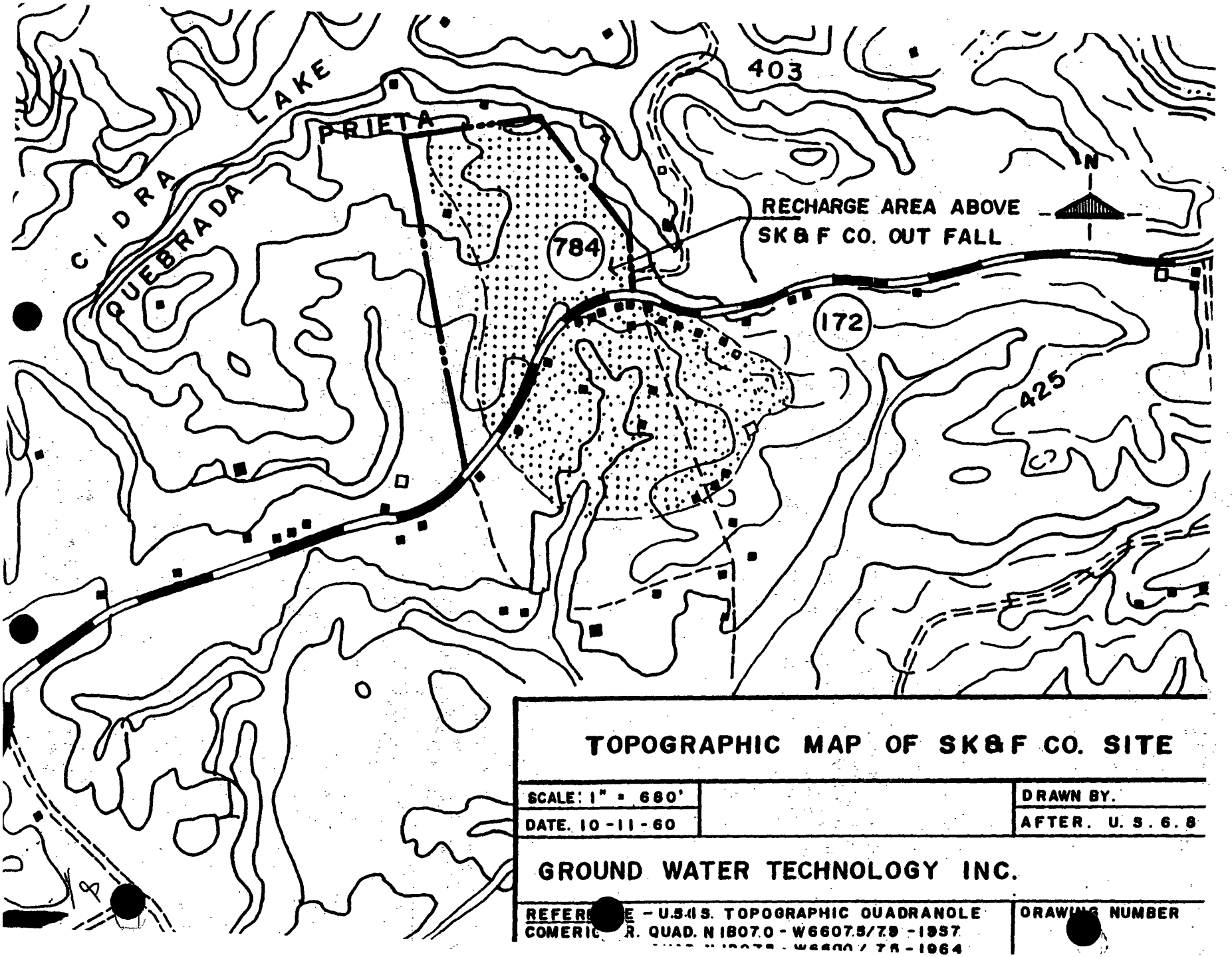
B. COUNTY NAME

B O B A Y A M O N

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE (if known)
6 C I B R A	D D	0 0 6 0 0	

7

R2-0003884



TOPOGRAPHIC MAP OF SK&F CO. SITE

SCALE: 1" = 660'		DRAWN BY.
DATE. 10-11-60		AFTER. U.S.G.S

GROUND WATER TECHNOLOGY INC.

REFERENCE – U.S.G.S. TOPOGRAPHIC QUADRANOLE
COMERIO R. QUAD. N1807.0 - W6607.5/7.5 - 1957
[illegible] - 1964

DRAWING NUMBER

R2-0003885

...in areas are spaced for elite type, i.e., 12 ... restrictions.

Form Approved OMB No. ...

FORM ... RCRA

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER

F P R 0 0 9 0 0 2 3 2 5 0

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

A. FIRST APPLICATION (place an "X" below and provide the appropriate data)

X 1. EXISTING FACILITY (See instructions for definition of "existing" facility. Complete item below.)

2. NEW FACILITY (Complete item below.)

YR.	MO.	DAY
77	10	11

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the boxes to the left)

FOR NEW FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR EXPECTED TO BE

B. REVISED APPLICATION (place an "X" below and complete item I above)

X 1. FACILITY HAS INTERIM STATUS

2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, describe the process (including its design capacity) in the space provided on the form (Item III-C).

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.
1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER (barrel, drum, etc.)	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET (the volume that would cover one acre to a depth of one foot) OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR GALLONS PER HOUR OR LITERS PER HOUR
OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	Y	ACRE-FEET	
LITERS	L	TONS PER HOUR	O	HECTARE-METER	
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III (shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons and other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

S		T/A	C
C	DUP		1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
	S 0 1	1,100	G		7				
2					8				
3					9				
4					10				

R2-0003886

ao from the from.

)CESSES (continued)

IC FOR ACDITIONAL PROCESS EOBES OR FOR OSSCRIBING OTHER PROEESSES (code "[illegible]"). FOR EACH PROCESS BUTSRBD HERE NDC OKSIGN CAPAEITY.

DESCRIPTION OF HAZARDOUS WASTES

:PA HAZARDOUS WASTE NUMBER — Emer the four-oign numoer from 40 CFR, Suppert D for eacn intea nazaroous waste you wili hasidie. if yo aodte hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, StAspert C that descriiies the characteri ies and/or the toxic contaminents of those hazardous westes.

:STIMATED ANNUAL QUANTITY — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annu msis. For each charawerisdc or taxic contaminant entered in column A ertimate the total annuai quantity of all the npn-listed wmsa(s) that will be handle which possess that characteristic or contaminant.

UNIT OF MEASURE — For each quantity entered in column B enter the unit of measure code. Units of measure which mutt be used and the appropnw ctxies are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If faciiity reconls use any other unit of measure for quwitity, the units of measure mun be converted into one of the required units of measure taking in account the appropriate density or specific gravity of the waste.

PROCESSES

1. PROCESS CODES:
   For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item to indicate how the wtste will be stored, treated, and/or disposed of at the faciiity.
   For non-lisied hasardous wastes: For eacn characteristic or toxic contaminant entered in column A, seteet the code(s) from the lirt of process coc contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-iisted hazardous wastes that poss that characteritiic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above: (2) Enter "000" in i extreme right box of Item IV-0(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the spacs provided on the form.

DTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER — Hasardous wastes that can be described ore than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazaicious Waste Numbers and enter it in columi A. On the same line complete columns B,C, and D by estimating the total ann quantity of the watte and describing all the processes to be used to treat, stars, and/or dispose of the watte.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that lino ar "included with above" and make no oBier entries on that line.
3. Repoat step 2 for each other EPA Hazardous Waste Number that can bo used to dascribe the hazardous swste.

XAMPLE FOR COMPLETING ITEM IV (tbomn in line numbert X-1, X-2, X-3, mcl X-4 below) — A facility will treat and dispose of an estimated 900 pou er year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wartes. Two wa ra corrosive only and there will be an estimated 200 pounds per year of each wwsie. The other swsie is corrosive and ignitable and there will be an estim 00 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
X-1	K054	900	P	T03 D80	
X-2	D002	400	P	T03 D80	
X-3	D001	100	P	T03 D80	
					included with above

10

R2-0003887

...ue from page 2.
Photocopy this page before completing if you ...or more than 26 wastes to list.

Form Approved OMB No. 158-S800M

EPA I.D. NUMBER (enter from page 1)		FOR OFFICIAL USE ONLY	
P R D 0 9 0 0 2 3 2 5 0	1	W DUP	2 DUP

DESCRIPTION OF HAZARDOUS WASTES (continued)

	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
	F 0 0 1	See foot note (a)	K	S 0 1	Lab Pack.
	F 0 0 2	See foot note (a)		S 0 1	Lab Pack & Drums
	F 0 0 3	" "		S 0 1	Lab Pack & Drums
	F 0 0 4	" "		S 0 1	Lab Pack.
	F 0 0 5	" "		S 0 1	Lab Pack.
	D 0 0 1	" "		S 0 1	LAB PACK & DRUMS
	0 0 0 2	" "		S 0 1	LAB PACK & DRUMS
3	D 0 0 3	" "		S 0 1	LAB PACK
	0 0 0 4	" "		S 0 1	LAB PACK
0	D 0 0 5	" "		S 0 1	LAB PACK
	0 0 6	" "		S 0 1	LAB PACK
2	D 0 0 7	" "		S 0 1	LAB PACK
3	D 0 0 8	" "		S 0 1	LAB PACK
4	D 0 0 9	" "		S 0 1	LAB PACK
15	D 0 1 0	" "		S 0 1	LAB PACK
16	D 0 1 1	" "		S 0 1	LAB PACK
17	P 0 1 2	See foot note (b)		S 0 1	LAB PACK
18	P 0 2 2	" "		S 0 1	LAB PACK
19	P 0 3 0	" "		S 0 1	LAB PACK
20	P 0 8 7	" "		S 0 1	LAB PACK
21	P 0 9 8	" "		S 0 1	LAB PACK
22	P 1 0 5	" "		S 0 1	LAB PACK
23	P 1 1 9	" "		S 0 1	LAB PACK
24	U 0 0 1	See foot note (a)		S 0 1	LAB PACK
25	U 0 0 2	" "		S 0 1	LAB PACK
26	U 0 0 3	" "		S 0 1	LAB PACK

//

R2-0003888

EPA I.D. NUMBER (enter from page 1)

R 0 0 9 0 0 2 3 2 5 0 | T/A | 1

FOR OFFICIAL USE ONLY

W | DUP | T/A | 2 | DUP

DESCRIPTION OF HAZARDOUS WASTES (continued)

	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
	U013	See foot note (a)		S01	LAB PACK
	U019	" "		S01	LAB PACK
	U029	" "		S01	LAB PACK
	U031	" "		S01	LAB PACK
	U044	" "		S01	Lab Pack & Drums
	U056	" "		S01	LAB PACK
	U057	" "		S01	LAB PACK
	U068	" "		S01	LAB PACK
	U077	" "		S01	LAB PACK
0	U080	" "		S01	LAB PACK AND DRUMS
1	U088	" "		S01	LAB PACK
2	U108	" "		S01	LAB PACK
3	U112	" "		S01	LAB PACK
4	U117	" "		S01	LAB PACK
5	U122	" "		S01	LAB PACK
6	U123	" "		S01	LAB PACK
7	U132	" "		S01	LAB PACK
8	U134	" "		S01	LAB PACK
9	U135	" "		S01	LAB PACK
20	U138	" "		S01	LAB PACK
21	U144	" "		S01	LAB PACK
22	U146	" "		S01	LAB PACK
23	U151	" "		S01	LAB PACK
24	U154	" "		S01	LAB PACK AND DRUMS
25	U159	" "		S01	LAB PACK
26	U165	" "		S01	LAB PACK

12

EPA Form 3510-3 (6-80)

CONTINUE ON F

R2-0003889

from page 2.
Mocopy this page before completing if you [illegible] more than 26 wastes to list.

Form Approved OMB No. 158-S80004

I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY	
R D 0 9 0 0 2 3 2 5 0 T/A C 1	W DUP T/A C 2 DUP	

[illegible]UPTION OF HAZARDOUS WASTES (continued)

A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
U169	See footnote (a)		S01	LAB PACK
U188	" "		S01	LAB PACK
U196	" "		S01	LAB PACK
U201	" "		S01	LAB PACK
U210	" "		S01	LAB PACK
U211	" "		S01	Lab Pack & Drums
U213	" "		S01	LAB PACK
U220	" "		S01	LAB PACK
U222	" "		S01	LAB PACK
U225	" "		S01	LAB PACK
[illegible]226	" "		S01	LAB PACK & DRUMS
U228	" "		S01	LAB PACK
U239	" "		S01	LAB PACK

NOTES: (a) All "F", "D" and "U" wastes if combined, will not represent more than 12,000 kilos/year.

(b) All "P" wastes if combined, will not represent more than 100 kilos/y[illegible]

* THE ABOVE QUANTITY FIGURES ARE BASED ON THE CURRENT WASTE GENERATION POTENTIAL OF THE MANUFACTURING OPERATIONS.

* ALL WASTE AT STORAGE WILL BE TREATED AND/OR DISPOSED AT AN OUTSIDE PERMITTED TSDF FACILITY.

R2-0003890

SCRIPTION OF HAAAKUUUs WAb. a (continued)

E THIS SPACE TO LIST ADDITIONA ROCESS CODES FROM ITEM D(1) ON GE 3.

EPA I.D. NO. (enter from page 1)

P R D 0 9 0 0 2 3 2 5 0 | 6

FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility (see instructions for more detail).

PHOTOGRAPHS

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

FACILITY GEOGRAPHIC LOCATION

LATITUDE (degrees, minutes, & seconds)	LONGITUDE (degrees, minutes, & seconds)
18 11 52	66 07 35

III. FACILITY OWNER

☐ A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. (area code)

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
	C G		

X. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

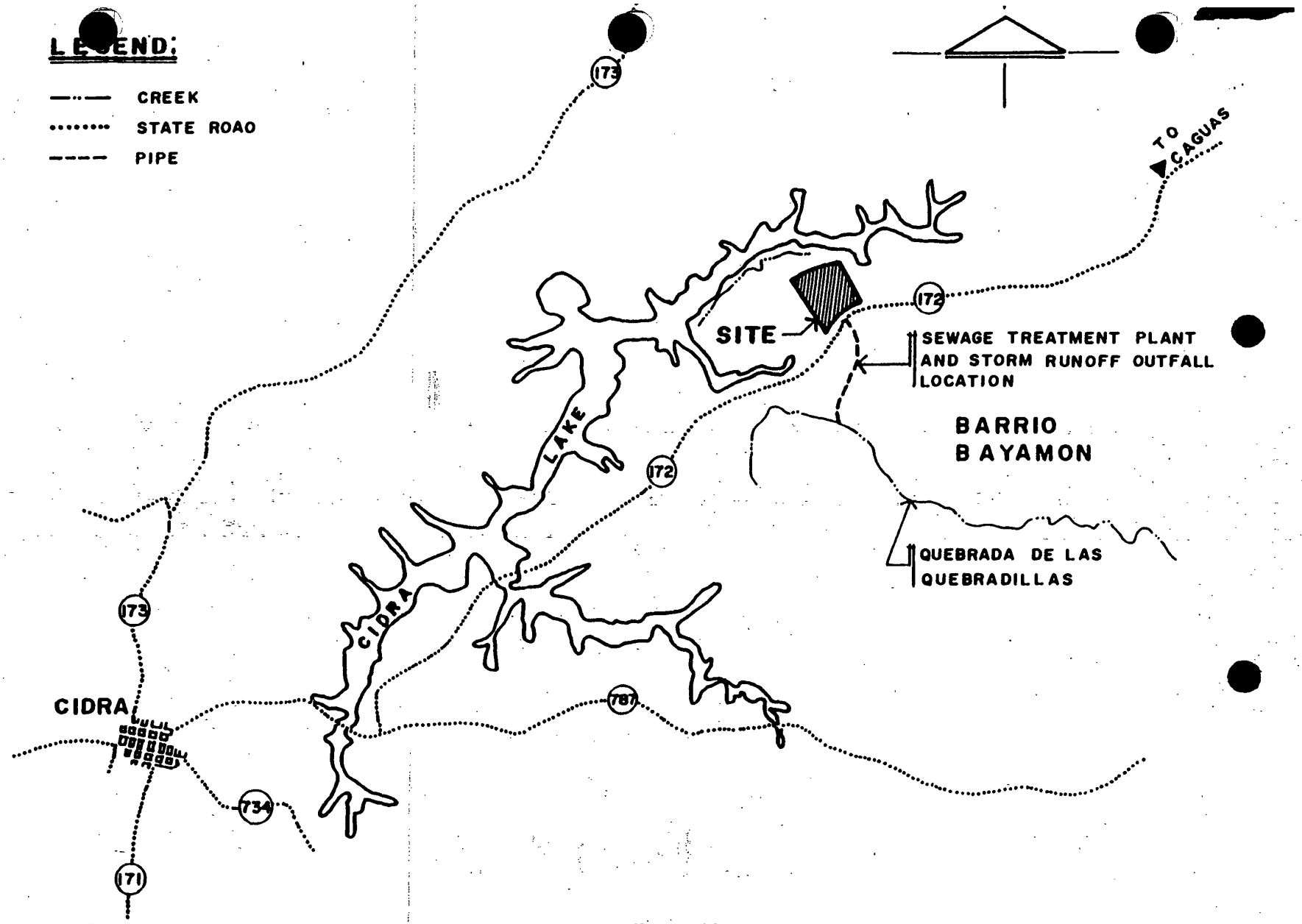
A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
Carlos H. Del Río President and General Manager	Carlos H. Del Río	7/26/89

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
Carlos H. Del Río	Carlos H. Del Río	7/26/89

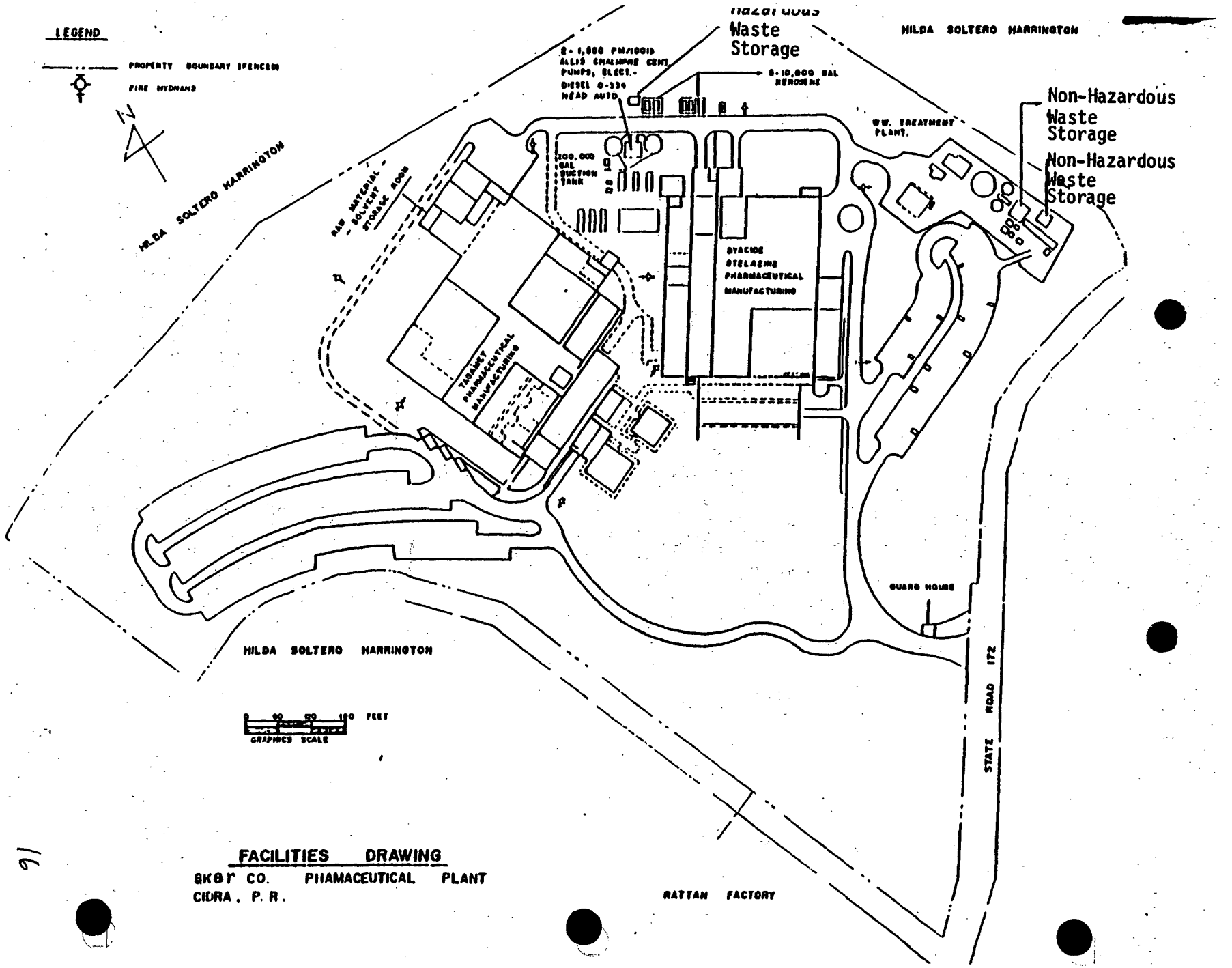
14



LOCATION PLAN

S K & F CO – CIDRA, R R.

R2-0003892



FACILITIES DRAWING

SKB & CO. PHARMACEUTICAL PLANT
CIDRA, P. R.

91

R2-0003893

A. FIRST

3 3 4 (specify) PHARMACEUTICALS PREPARATION

B. SECOND: C 7 (specify)

C. THIRD

(specify)

D. FOURTH C 7 (specify)

OPERATOR INFORMATION

A. NAME

S K & F C O

B. Is the name listed in Item VIII-A also owner? ☒ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)

F = FEDERAL M = PUBLIC (other than federal or state)
S = STATE O = OTHER (specify)
P = PRIVATE

P (specify)

D. PHONE (area code & no.)

C A 8 0 9 7 6 6 4 0 0 (

E. STREET OR P.O. BOX

L L B O X S K F

F. CITY OR TOWN

I D R A

G. STATE P R

H. ZIP CODE 0 0 6 3 9

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)

P R 0 0 2 1 9 9 7

B. PSD (Air Emissions from Proposed Sources)

C T 9 P

B. UIC (Underground Injection of Fluids)

N/A

C T 9

E. OTHER (specify)

(specify)

C. RCRA (Hazardous Wastes)

R D 0 9 0 0 2 3 2 5 0

C T 9

E. OTHER (specify)

(specify)

MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

NATURE OF BUSINESS (provide a brief description)

Formulation of pharmaceutical drugs into therapeutic dosage forms such as tablets, capsules, inyectables, serum and oral liquid.

Blow molding of polyethylene plastic bottles.

Packaging of finished pharmaceuticals products.

CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
Carlos H. Del Rio President and General Manager	Carlos H. del Rio	7/26/89

COMMENTS FOR OFFICIAL USE ONLY

17

R2-0003894

Table I-A
EPA Waste Codes for SK&F Co. Wastes

EPA Waste Code	Hazardous Waste	Hazard Code	Basis for hazards Description
F001	Comaercial Products for Degreasing	Toxic	CFR 261.31
F002	Spent Methylene Chloride Trichloroethylene, Tetrachlorosthylsne Carbon Tetrachloride	Toxic	CFR 261.31 See Attch.
F003	Spent Methanol & Ethanol (SD3A Spirit) Spent N-Butyl Alcohol	Ignitable	CFR 261.31 Flash Point 30° C See Attch. 1
F005	Spent Toluene	Toxic & Ignitable	CFR 261.31 Flash Point 4.4° C
D001	Iso-Propyl Alcohol (off Spec.)	Ignitable	Flash Point 11.6° C
	Lab Mixtures	Ignitable	Flash Point 60° C
D003	Lab. Reagents with expired dates	Reactive	CFR 261.23
D004 to D011	Lab. Reagents with expired dates & Lab. mixtures (see table 1S)	EP Toxic	CFR 261.24
Listed U and P	Lab./Reagents with expired dates & Lab. mixtures. (see Table 1B)	Toxic Reactive, Ignitable	CFR 261.33 (e) and (f)

NOTE: Other aliphatic halogenated and non-halogenated hydrocarbons are not currently wasted at the date this W/A/P/ is revised but may be as the manufacturing activities change due to new production. Such substances are commonly used in pharmaceutical processes. In addition, the above mentioned substances may not be generared but, such substances were in use in SK&F in the past, creating a potential of existance.

R2-0003895

TABLE IB

EPA Waste Codes For Laboratory Chemicals
With Potential To Become Wastes

EPA Waste Code	Hazardous Waste	Hazard Code
D003	Ammonium Sulfamate	Reactive
0003	Diphenyl Thiocarbozene	Reactive
D003	Hydrazine Sulfate	Reactive
D003	Magnesium Sulphate	Reactive
D003	Potassiun Bromate	Reactive
D003	Sodium Methoxide	Reactive
D003	Sodium Thiosulfate	Reactive
D003	Diephenyldithlocarbazone	Reactive
D003	Ammonium Sulfate	Reactive
D003	Ferrous Ammonium Sulfate	Reactive
D003	Lead Nitrate	Reactive
D003	Potassium Bisulfate	Reactive
D003	Sodium Dielhyldithiocarbamate	Reactive
D003	Sodiun Nitrate	Reactive
D003	Zinc Granular	Reactive
D003	Dihydroxy Napthalene Disulfide Acid	Reactive
D004	Arsenious Oxide	Toxic
0005	Bariun	Toxic
D006	Cadmium	Toxic
D007	Potassium Chromate (Chromium)	Toxic
D007	Potassium Dischromate (Chromium)	Toxic
D008	Lead Oxide (Lead)	Toxic
D009	Mercuric Acetate (Mercury)	Toxic
D009	Mercuric Bromide (Mercury)	Toxic
D009	Mercuric Chloride (Mercury)	Toxic
D009	Mercuric Oxide (Mercury)	Toxic
D009	Mercuric Sulfate (Mercury)	Toxic
DOIO	Selenium	Toxic
DOll	Silver Diethylthiocarbamate (Silver)	Toxic
P012	Arsenious Oxide	Toxic
P022	Carbon Disulfide	Toxic
P030	Ammonium Thiocyanate	Toxic
P030	Potassium Ferrocyanide	Toxic
P030	Potassium Thiocyanate	Toxic
P098	Potassium Cyanide	Toxic
U019	Benzene	Ignitable & Toxic
0031	1-Butanol	Ignitable
UOBO	Dichloromethane	Toxic
U112	Ethyl Acetate	Ignitable
U122	Formaldehyde	Toxic

R2-0003896

TABLE IB

EPA Waste Codes For Laboratory Chemicals
With Potential To Become Wastes

EPA Waste Code	Hazardous Waste	Hazard Code
U144	Lead Acetate	Toxic
U146	Lead Subacetate	Toxic
U154	Methanol	Ignitable
U165	Naphthalene	Toxic
U188	Phenol	Toxic
U196	Pyridine	Toxic
U201	Resorcinol	Toxic
U210	Tetrachioroethylene	Toxic
U211	Carbon Tetrachloride	Toxic
U220	Toluene	Toxic
U228	Trichloroethylene	Toxic
U239	Xylene	Ignitable

NOTE: Other laboratory chemicals that are not listed here but that are listed in CFR 261.33, may also be wasted by the laboratories as QA activities change due to new production. All above mentioned as well as those not mentioned that may become wastes, are laboratory reagents used commonly in very small quantities in phamaceutical QA.

20/20

R2-0003897

REFERENCE 79

2 DA. ENMIENDA DN-94-0971 (CFI)

REVISION Y MODIFICACION DE PLAN DE OPERACIONES FLEXIBLES

1998 DEC 18 PM 12:53
ENVIRONMENTAL REGIONAL BOARD

SB PHARMCO PUERTO RICO, INC.
CIDRA. PUERTO RICO,
NOVIEMBRE 1998

1/124

R2-0003899

INDICE

Sección			Página
Hoja de Titulo			i
Indice de Contenido			ii
Indice de Tablas			v
Indice de Anejos			vi
1.0	ANTECEDENTES		I
	1.1	Proyectos Considerados en Documento Original	1
2.0	INFORMACION GENERAL		3
	2.1	Lugar de Ubicación	3
	2.2	Dirección Postal	3
	2.3	Número de Teléfono	3
	2.4	Representante Local	3
	2.5	Resumen de Revisiones y Modificaciones	3
		2.5.1 Alteraciones a la Infraestructura	4
		2.5.2 Manufactura de Nuevos Productos	4
3.0	REVISIONES Y MODIFICACIONES PROPUESTAS		5
	3.1	Mejoras a la Infraestructura	5
		3.1.1 Completar la Extensión del Pasillo Interconector (FaseII)	5
		3.1.2 Area Central para el Pesado de Materiales	6
		3.1.3. Area de Granulación	6
		3.1.4 Nuevos Cuartos de Compresión	7
		3.1.5 Nuevas Areas de Revestimiento	7

R2-0003900

	3.1.6	Consideraciones Ambientales		8
		3.1.6.1	Calidad de Aire	8
		3.1.6.2	Calidad de Agua	9
		3.1.6.3	Desperdicios Sólidos	9
		3.1.6.4	Ruidos	10
3.2	Manufactura de Nuevos Productos			10
	3.2.1	Manufactura de Cremas		14
	3.2.2	Manufactura de Tabletas		15
		3.2.2.1	Manufactura de *"Idoxifene"*	16
			3.2.2.1.1 Materias Primas	17
			3.2.2.1.2 Equipo y Maquinaria	17
			3.2.2.1.3 Descripción del Proceso	18
			3.2.2.1.4 Medidas de Ingeniería y Administrativas para Lograr la Seguridad en el Proceso	18
	3.2.3	Cosideraciones Ambientales		19
		3.2.3.1	Calidad de Aire	20
		3.2.3.2	Calidad de Agua	21
		3.2.3.3	Desperdicios Sólidos	22
		3.2.3.4	Ruidos	23
4.0	INFRAESTRUCTURA, CONDICIONES EXISTENTES			25
	4.1	Energia Eléctrica		25
	4.2	Agua Potable		25
	4.3	Tratamiento y Disposición del Desperdicio Liquido		26

R2-0003901

	4.4	Sistema de Manejo de Aguas Pluviales	27
	4.5	Incineradores	27
	4.6	Finca de Tanques	28
	4.7	Estación de Bombas para la Distribución de Gasolina	28
5.0		ASPECTOS SOCIO ECONOMICOS	29

R2-0003902

INDICE DE TABLAS

Tablas		Página
3.2-A	Ingredientes Activos Existentes en Cidra, Puerto Rico	11
3.2-B	Ingredientes Activos Nuevos en Cidra, Puerto Rico	13
3.2-C	Nuevas Formulaciones Con Ingredientes Activos Existentes en Cidra, Puerto Rico	14

R2-0003903

INDICE DE ANEJOS

A	Mapa de Localizacion
B	Perspectiva del Pasillo Interconector
C	Localización del Area de Pesado de Materiales
D	Localización de Nuevos Cuartos de Compresión
E	Cuartos de Compresión Existentes Num. 2 & 5
F	Localizacion de Nuevas Areas de Revestimiento
G	Hojas de Datos de Seguridad de Materiales (MSDS) de los Productos Nuevos
H	Localización de Area de Manufactura de Cremas
I	Diagrama de Flujo - Manufactura de Cremas
J	Diagrama de Flujo - Manufactura de Tabletas y Cápsulas
K	Localización de Areas de Granulación
L	Localización de Area de Manufactura de *"Idoxifene"*
M	Hojas de Datos de Seguridad de Materiales (MSDS) de las Materias Primas Nuevas en SB
N	Diagrama de Flujo - Manufactura de Tabletas de *"Idoxifene"*
O	Diagrama de Balance de Agua

R2-0003904

ANALISIS AMBIENTAL
REVISION Y MODIFICACION DEL
PLAN DE OPERACIONES FLEXIBLES (DN-94-0971 (CFI)

1.0 ANTECEDENTES

En junio de 1994, mediante la DN-94-097 (CFI), se sometió a la Junta de Calidad Ambiental (JCA) y a otras agencias de gobiemo el proyecto "Plan de Operaciones Flexibles" que la compañia farmaceútica SmithKline Beechman Pharmaceuticals (SB) interesaba implantar en sus instalaciones ubicadas en el Barrio Certenejas de Cidra, Puerto Rico.

El plan de operaciones flexibles expuesto en dicho documento ambiental describia varias acciones propuestas por SB con el propósito de mejorar las instalaciones manufactureras para hacerlas más eficientes y productivas. Se proyectaban mejoras a la infraestructura y modificaciones diseñadas para obtener una mejor y eficiente utilización del espacio. Además se mencionaba en términos generales la manufactura de nuevos productos en el finturo.

Se presentó un plan de trabajo ideado para completarse en diez años. Se aspiraba que este instrumento ayudara a agilizar el proceso de evaluación de los proyectos esbozados, facilitando de esta forma la rápida implementación de los mismos, sin soslayar, desde luego, los aspectos ambientales de estos.

1.1 Proyectos Considerados en Documento Original

Los siguientes proyectos trataban de mejoras a la infraestructura y estaban programados para implementarse en un periodo de diez años:

- ☑ Construir un Pasillo Interconector (entre Cidra I y Cidra II)
- ☑ Expansión de Vestuarios
- ☑ Proveer un Centro de Archivos
- ☑ Proveer Cuartos para Manufactura Farmaceútica

R2-0003905

- ☑ Proveer Cuarto para el Manejo de Desperdicios No-Peligrosos
- ☑ Expansión del Sistema Enfriador de Agua
- ☑ Construir Nuevo Almacén de Materiales
- ☑ Construir Torre de Granulación

De los ocho proyectos arriba indicados, cuatro fueron realizados de acuerdo a lo programado: la primera fase de la construcción del pasillo interconector entre los edificios Cidra I y Cidra II; la expansión de los vestuarios; el centro de archivos; y la expansión del sistema enfriador de agua. Un quinto proyecto, los cuartos para la manufactura farmaceútica, se construye al presente. Esta acción se realiza dentro el edificio Cidra II. Consiste en la rehabilitación de áreas para ubicar elementos de producción tales como tómbolas de revestimiento, máquinas de compresión y estaciones para el pesado de materiales junto al equipo de apoyo representado por colectores de polvo y unidades acondicionadoras de aire.

Tres proyectos ni siquiera han comenzado, han quedado pendientes, sujetos a reconsideración: el cuarto para el manejo de desperdicio no-peligroso, la construcción del nuevo almacén y la torre de granulación. Son proyectos de vanguardia, ambiciosos, donde SB pretendia establecer los prototipos para operaciones futuras. Requerian uso de tierra, obra civil y el diseño y construcción de estructuras en hormigón lo cual los convertia en proyectos muy costosos. Al ser sometidos al escrutinio corporativo para determinar su viabilidad actual vista desde la perspectiva de nuevos descubrimientos, de nuevos procesos, de nuevas formas de mercadeo, y a lo que tal vez sea el factor más importante, visto desde el ángulo de las finanzas corporativas, se ha determinado revisar y modificar los elementos del plan original para atemperarios a la realidad actual. Por lo tanto, se proponen los cambios que se definen en las secciones subsiguientes.

R2-0003906

2.0 INFORMACION GENERAL

2.1 Lugar de Ubicación

El sitio donde radican las instalaciones de SB se encuentra en la Carretera PR 172, kilómetro (Km.) 9.1, en el Barrio Certenejas de Cidra, Puerto Rico (Véase Anejo A). Originalmente este sitio fue utilizado por la firma SmithKline Frenchman (SKF), cuando en 1978 trasladó hacia Cidra la producción de productos farmaceúticos que desarrollaba en Carolina, Puerto Rico. Ese año inauguró la instalaciones dedicadas básicamente a la producción de *"Tagamet"*. Desde entonces el sitio ha estado en el mismo uso.

2.2 Dirección Postal

La dirección postal de la empresa es: Apartado 11975, Cidra, PR 00739-1975

2.3 Número de teléfono: (787) 739-8401

2.4 Representante Local:

El representante local de la empresa es el Sr. José L. Rosado, Presidente y Gerente General.

2.5 Resumen de Revisiones y Modificaciones

Las acciones proyectadas por SB y cubiertas por este documento se relacionan con alteraciones a la infraestructura y con la manufactura de nuevos productos. A continuación se identifican las mismas. Se discutirán en más detalle en secciones posteriores de este documento.

R2-0003907

2.5.1 Alteraciones a la Infraestructura

Se proyecta extender el pasillo interconector entre los edificios Cidra I y Cidra II para unir el área de cápsulas en el edificio Cidra I con el área de recibo en Cidra II.

El proyecto conocido como la torre de granulación donde además de las granulaciones se proyectaban concentrar las operaciones de compresión de materiales y de revestimiento, no se ha descartado en su totalidad. Ha sido sustituido al presente por unas facilidades más modestas, pero no menos eficientes, que se construirán en los edificios Cidra I y Cidra II para lograr los mismos propósitos. Consiste en la adaptación de espacios disponibles en los edificios Cidra I y Cidra II donde se habrán de llevar a cabo los distintos pasos necesarios para formular los medicamentos. Se construirán distintos cuartos donde se realizarán las actividades de pesado, granulación, y compresión de los materiales. Al igual que áreas donde reaiizar las funciones de revestir los productos finales que naturalmente requieran de esta terminación.

2.5.2 Manufactura de Nuevos Productos

Se planea manufacturar nuevos productos en el sitio de Cidra. Unos utilizarán ingredientes activos que son parte del inventario actual de las operaciones, y otros, para los cuales será necesario incorporar nuevos ingredientes activos al inventario existente.

Los nuevos productos a manufacturarse usando ingredientes activos existentes en Cidra pero en formulación distinta a la que se produeen actualmente son *"Relafen SB"*, *"Paxil"* (distintas formulaciones) y *"Bactroban"*.

Utilizando ingredientes activos nuevos en el sitio se manuacturarán *"Idoxifene"*, *"Avandia"*, *"Quinolone"*, *"SB-207266-A"*, *"Paroxetine/Pinodolol"*, *"Penciclovir"*, *"Tranilasi"*, *"SB-220453"*, *"Topotecan"* y *"Eprosartan"*.

R2-0003908

3.0 REVISIONES Y MODIFICACIONES PROPUESTAS

En esta sección se examinarán más detalladamente las acciones propuestas resumidas en la página anterior. Se discutirán acciones relacionadas con las mejoras y alteraciones a la infraestructura del sitio y con la manufactura de nuevos productos. Representan un plan de trabajo a completarse en un periodo de tiempo estimado de cinco años.

3.1 Mejoras a la Infraestructura

3.1.1 Completar la Extensión el Pasillo Interconector (Fase II)

Se propone completar la construcción del pasillo interconector entre Cidra I y Cidra II. La Fase 1 de este pasillo se construyó como parte de los proyectos cubiertos por el documento original. Ahora se propone su terminación, que consiste de una sección que unirá el área de cápsulas en Cidra I y el área de recibo en Cidra II. Una vez terminado el pasillo tendrá aproximadamente las siguientes dimensiones: 16 pies de ancho por 15 pies de alto por 350 pies de largo (Véase Anejo B).

La construcción del pasillo Fase II, requiere obra civil en término de movimiento minimo de tierra; labores asociadas con el vaciado de hormigón y labores asociadas con la rutina establecida en la edificación de estructuras tales como carpinteria, electricidad, plomeria, etcétera . El tiempo de construcción del proyecto se estima en seis meses.

El pasillo una vez terminado brindará la flexibilidad necesaria para lograr un mejor manejo de los materiales dentro del sitio; ayudará a controlar el acceso a las facilidades; facilitará el cumplimiento con la reglamentación de Ley de la Incapacidad Americana (ADA por sus siglas en inglés) y proveerá un elemento de protección adicional a las instalaciones.

R2-0003909

3.1.2 Area Central para el Pesado de Materiales

En el tercer nivel de Cidra II (Véase Anejo C) se propone proveer un área donde ubicar facilidades y equipo para el pesado de excipientes y materiales activos en cumplimiento con la reglamentación de Buenas Practicas de Manufactura (GMP por sus siglas en inglés) y con las guias relacionadas con seguridad y salud . Se revisará la disposición del equipo de suerte de que permita un mejor flujo de los materiales usados en la manufactura de multi-productos incluyendo la provisión de esclusas neumáticas ("air locks").

Se construirán tres nuevos cuartos de pesado equipados cada uno con cabinas de extracción que permitan procesar hasta nueve productos nuevos según contemplado en los planes de SB para el sitio de Cidra. Cada cuarto tendrá un área aproximada de 1,000 pies cuadrados (pc).

3.1.3 Area de Granulación

Según informado en la Sección 1.1, el proyecto de la construcción de una torre donde efectuar todas las granulaciones contemplado en el plan original ha sido modificado. En su defecto se ha separado un área de 8,000 pc en el tercer nivel de Cidra II donde se han estado sustituyendo los tres granuladores Glatt existentes. Están siendo reemplazados por nuevos granuladores marca Aeromatic, usando tecnologia de lecho fluidizado, diseñados para controlar posible explosiones. Además, con el propósito de aumentar la flexibilidad de los procesos, se retendrá uno de los granuladores Glatt existentes. Los nuevos granuladores se acoplarán de tal forma que permitan transferir el material directamente hacia el siguiente paso. Estarán provistos de esclusas neumáticas y de un sistema de extracción de polvo. Los nuevos granuladores aumentarán la capacidad de granulación en el sitio lo que es indispensable para satisfacer la demanda futura de nuevos productos tales como *"Teveten"* y *"Avandia"*.

R2-0003910

3.1.4 Nuevos Cuartos de Compresión

Debido a que la torre de granulación, la cual incorporaba también facilidades para la compresión de materiales, proyectada en el plan original ha sido descartada por el presente, ha surgido la necesidad de preparar nuevos cuartos de compresión en el primer nivel del edificio Cidra II (Véase Anejo D). Se prepararán dos cuartos, cada uno con un área estimada de 800 pc. Estos cambios al plan original son necesarios para adaptarios a las nuevas técnicas de manufactura que se avecinan. Para apoyar los procesos actuales y nuevas técnicas de producción en la cuales se obvia la fase de granulación, se instalarán cuatro nuevas prensas diseñadas para producir tabletas de doble capa. Dos de estas prensas se instalarán en los nuevos cuartos a prepararse en el primer nivel del edificio de Cidra II. Las otras dos se instalarán en los cuartos existentes #2 y #5 (Véase Anejo E), que serán renovados. El proyecto también incluye la instalación de equipo auxiliar, dos estaciones de transferencia de productos y unidades de vacio similares a las existentes marca Spencer.

3.1.5 Nuevas Areas de Revestimiento

Con el propósito de añadir flexibilidad y de mantener la armonia con los estándares de GMP, se propone proveer un cuarto adicional de revestimiento, en espacio adyacente a cuarto de revestimiento existente en Cidra II (Véase Anejo F). El cuarto tendrá un área aproximada de 3,000 pc y contará con dos máquinas de revestimiento, espacio para preparar soluciones y un área de máquinas adyacente donde se instalará el equipo de control de emisiones. Estas áreas vienen a sustituir las facilidades contempladas en la torre de granulación cubiertas por el plan original. Se propone además sustituir dos tómbolas de revestimiento existentes y hacer una nueva disposición en el piso de las tómbolas en el área de producción existente en Cidra I. Con estos cambios se espera mejorar la flexibilidad en la utilización del equipo que permita producir simultaneamente tantos productos como tómbolas haya, evitando la contaminación cruzada entre productos, asegurando asi la integridad de los mismos.

R2-0003911

3.1.6 Consideraciones Ambientales

3.1.6.1 Calidad de Aire

La calidad del aire durante la construcción del pasillo interconector pudiera verse afectada por la generación de polvo fugitivo a consecuencia del movimiento de tierra durante la preparación del terreno. Y en forma menos prominente por las emisiones de los motores de combustión interna del equipo pesado que normalmente se usa en esta operación. Factor mitigante e importante para evitar posible daño a la calidad del aire es el tamaño del área afectada que se estima en 740 metros cuadrados, lo cual significa que el área expuesta a los efectos de elementos climatológicos es mínima. Además, debido a que el terreno hace tiempo fue desarrollado, se usará un número limitado de equipo pesado, y por lo tanto, se reducirán considerablemente las emisiones de los motores. Debido a esta combinación de factores, y a la corta duración del proyecto, no se espera que la construcción del pasillo impacte significativamente la calidad del aire.

A su debido tiempo, se iniciaran los trámites para obtener un Permiso para la Generación de Polvo Fugitivo con la JCA.

Durante la preparación de los cuartos o áreas donde se llevarán a cabo las actividades de pesado, granulado, comprimido y revestido descritas en subsecciones 3.2 a la 3.5, son muy escasas las posibilidades de que se puedan generar emisiones que ganen acceso al exterior. Se trata del reordenamiento de espacios internos en las estructuras principales que albergan las operaciones manufactureras de SB en el sitio en Cidra, Puertro Rico. Requiere remover y relocalizar divisiones internas y paredes para conformar la geometría de las áreas a ser modificadas para poder situar la maquinaria que se necesita para desarollar los nuevos procesos. Son acciones de muy corta duración que se realizan en espacios cerrados, bajo techo.

R2-0003912

3.1.6.2 Calidad de Agua

Las posibilidad de que pueda haber impacto adverso sobre los recursos de agua durante la preparación del terreno para construir el pasillo interconector es minimo. La naturaleza misma del proyecto en cuanto a duración , sitio de ubicación y la limitada extensión de terreno que demanda la obra son factores limitantes en lo que respecta a la erosión de los suelos. De haber algún cambio en el diseño del proyecto que requiera incrementar las proporciones del mismo, SB reconoce la responsabilidad de cumplir con el Reglamento para el Control de la Erosión y Prevención de la Sedimentación. De ser necesario se preparará un Plan para el control de la erosión y la sedimentación (CES) según se establece en la reglamentación..

3.1.6.3 Desperdicios Sólidos

No se espera que el proyecto para construir la extensión del pasillo interconector genere grandes cantidades de desperdicio sólido. Se estima que la remoción de la capa vegetal durante la preparación de terreno produzca un total de 200 yardas cúbicas (yds cu) de material, compuesto de materia vegetal y tierra. En cuanto a escombros y basura convencional se estima que se generarán cuatro yds cub diarias. Este desperdicio se acumulará en un sitio dedicado a estos fines dentro de la propiedad. Será responsabilidad del contratista disponer en forma apropiada de estos materiales. A esos efectos deberá solicitar y obtener de la JCA un Permiso para una Actividad Generante de Desperdicio Sólido.

Los proyectos de relacionados con la adaptación de espacios disponibles en las estructuras de SB para acomodar los cuartos o áreas de manufactura descritos en las subsecciones 3.2 a la 3.5, pueden generar, en forma limitada, desperdicio sólido representado por los escombros producto de la remoción de divisiones, resanado de paredes, de pisos, etc. El grado de generación de desperdicio sólido es básicamente función del tamaño del área a renovarse. Se espera que se produzca en cantidades minimas debido a que los espacios

R2-0003913

requeridos para cada proceso en particular es relativamente pequeho. Además las obras se harán en forma escalonada, según vayan surgiendo las necesidades, diluyendo aún más los posibles efectos negativos al ambiente. Se estima que modificar las áreas donde ubicar los cuartos de manufactura requiera la remoción de 300 yds cu de materiales en forma de escombros.

Este desperdicio se depositará en el sitio de acumulación, para luego ser transportado al la facilidad seleccionada para la disposición final. Será responsabilidad del contratista disponer correctamente de estos materiales. Antes de comenzar la construcción radicará en la JCA una solicitud de permiso para reaiizar una Actividad Generante de Desperdicios Sólidos (Forma DS-3).

3.1.6.4 Ruidos

La fuente principal generadora de ruido en los proyectos de construcción es el eqtipo pesado, representado por excavadoras, palas mecánicas, retro excavadores, niveladoras, herramientas de impacto, etc. La magnitud del proyecto para construir la extensión del pasillo interconector es tan pequefia que no requiere que se utilice tanta variedad de equipo pesado. Tampoco que requiere de equipo de alta capacidad. Por lo tanto los niveies de sonido en los limites de la propiedad no deben de exceder el estándard diurno de 65 dBA. Otros factores mitigantes de los inconvenientes que produeen los ruidos, aplicables a este proyecto, son, primero la distancia entre la fuente de ruido y el receptor; y segundo, el hecho de que el proyecto es de corta duración. El área residencial más cercana al proyecto se encuentra a una distancia aproximada de 700 pies.

3.2 Manufactura de Nuevos Productos

Actualmente en las instalaciones de SB en Cidra se utiliza una gran variedad de ingredientes activos para formular una gama de medicamentos los cuales han estado produciéndose en las distintas formulaciones tipicas de la industria como lo son, tabletas,

R2-0003914

cápsulas, etcétera. Estos ingredientes activos, existentes en Cidra, son parte del inventario que se mantiene en las facilidades. En la Tabla 3.2-A se identifican estos ingredientes y

TABLA 3.2-A

INGREDIENTES ACTIVOS EXISTENTES
EN CIDRA, PUERTO RICO

INGREDIENTE ACTIVO	NOMBRE COMERCIAL	FORMULACION	USO TERAPEUTICO
"Paroxetine Hydrochloride"	*"Paxil"*	T	Depresión, Pánico
"Carvedilol"	*"Coreg"*	T	Hipertensión
"Prochlorperazine Maleate"	*"Thorazine"*	T, I,L	Anti-depresivo
"Chlorpromazine"	*"Compazine"*	T	Anti-emético
"Chlorpromazine Hydrochloride".	*"Compazine"*	I,L	Anti-emético
"Trifluoperazine Hydrochloride".	*"Stelazine"*	T,I,L	Tranquilizante menor
"Granisetron Hydrochloride"	*"Kytril"*	I	Anti-emético
"Dibenzyline"	*"Dibenzyline"*	C	Anti-hipertensivo
"Albendazole"	*"Albenza"*	T	Anti-parasitico
"Nabumetone"	*"Relafen"*	T	Artritis, Anti-inflamato
"Mupirocin"	*"Bactroban"*	U	Anti-infectivo
"Triamterene"	*"Dyrenium"*	C	Anti-hipertensivo
"Hydrochlorothiazide"	*"Dyacide"*	C	Diurético
"Cimetidine"	*"Tagamet"*	T	Ulceras Duodenales
"Cimetidine"	*"Tagamet"*	L,I	Ulceras Duodenales
"Acetylsalicylic Acid"	*"Ecotrin"*	T	Anti-inflamatorio

LEYENDA: T: Tableta
I: Inyectable
L: Liquido Oral
C: Cápsula
U: Ungüento

R2-0003915

el nombre comercial del medicamento que se formula con estos, el uso terapeútico del medicamento y la forma de dosificación en que se produce.

En adición a los medicamentos incluidos en la Tabla 3.2-A, los cuales se fabrican actualmente en las instalaciones en Cidra, SB interesa traer nuevos ingredientes activos al sitio para iniciar la formulación de nuevos productos que han estado bajo consideración desde hace algún tiempo. La manufactura de estos nuevos productos se incorpora en el plan de trabajo cubierto por este documento. La mayoria de los nuevos productos se manufacturarán en forma de tabletas . Otros en forma de cápsulas, cremas y suspensiones. En la Tabla 3.2-B se presentan los ingredientes activos nuevos con los cuales habrán de formularse los nuevos medicamentos. Al presente se desconoce el nombre comercial de la gran mayoria de los productos finales que habrán de originarse de estos ingredientes activos. Se identifican los conocidos. En el Anejo G se reproducen las Hojas de Datos de Seguridad de Materiales (MSDS por sus siglas en inglés) de estos ingredientes.

Otra categoria de producto nuevo que se hace parte de este plan de trabajo son aquellos que a pesar de estar formulándose actualmente a base de ingredientes activos existentes en SB, se fabricarán en una forma de dosificación distinta a la actual. Este es el caso de *"Paxil"* que se fabrica actualmente en forma de tabletas ; se proyecta producirlo también en forma de cápsulas y en suspensión oral. En la Tabla 3.2-C se indican los productos nuevos que se proyecta formular en forma de dosificación distinta a la que se hace actualmente utilizando ingredientes activos existentes en SB. Se indica además la forma de dosificación en que se habrán de producir y el uso terapeútico para el cual se han formulado.

R2-0003916

TABLA 3.2-B

INGREDIENTES ACTIVOS NUEVOS EN
CIDRA, PUERTO RICO

INGREDIENTE ACTIVO	NOMBRE COMERCIAL	FORMULACION	USO TERAPEUTICO
"Idoxifene"		T	Osteoporosis
"Avandia"	*"Avandia"*	T	Diabetes Tipo 2
"Quinolone"		T	Anti-infectivo
"SB-207266-A		T	Irritación intestinal
"Paroxetine/Pindolol"		T	Depresión, Pánico
"Penciclovir"	*"Denavir"*	CR	Ulceras por frío
"Tranilast"		T	Restenosis
"SB-220453"		T	Migraña
"Topotecan"	*"Hycamtin"*	C	Cáncer
"Eprosartan"	*"Teveten"*	T	Hipertensión

LEYENDA: T: Tabletas
CR: Cremas
C: Cápsulas

R2-0003917

TABLA 3.2-C

NUEVAS FORMULACIONES CON
INGREDIENTES ACTIVOS EXISTENTES EN CIDRA, PUERTO RICO

INGREDIENTE ACTIVO	NOMBRE COMERCIAL	FORMULACION	USO TERAPEUTICO
"Nabumetone"	*"Relafen" FB*	T	Anti-inflamatorio
"Paroxetine"	*"Paxil"*	C	Depresión, Pánico
"Paroxetine"	*"Paxil CR"*	T	Depresión, Pánico
"Paroxetine"	*"Paxil"*	S	Depresión, Pánico
"Mupirocin"	*"Bactroban"*	CR	Anti-infectivo

LEYENDA: T: Tableta
C: Cápsula
S: Suspensión
CR: Crema

3.2.1 Manufactura de Cremas

El proceso de manufactura tanto de las cremas como de las tabletas y cápsulas no requieren de sintesis quimicas, de reaeeiones complejas en condiciones criticas de presión y temperatura. Es un proceso sencillo que requiere básicamente el molido y mezclado de los materiales. Es muy similar para cada uno de los productos variando en las últimas etapas del proceso. Lo normal es que proceda a base de campañas, permitiendo que el mismo equipo se pueda utilizar en la elaboración de distintos productos.

Se propone ubicar en el primer nivel del edificio Cidra II, en el espacio donde se preparan supositorios, las facilidades para manufacturar productos en forma de crema. Requiere un minimo de esfuerzo y de recursos remodelar el espacio para acomodar los

R2-0003918

equipos que incluyen, entre otros, una unidad homogenizadora, tanques para el proceso y mezcladores (Véase el Anejo H). Se proverá un sistema de calor y de vacio, y equipo para el pesado del ingrediente activo. Un producto tipico es *"Denavir"* con el cual se espera comenzar la nueva producción de cremas; al igual que *"Bactroban"* que se manufactura actualmente en forma de ungüento y se proyecta manufacturar también en forma de crema..

El proceso de manufactura de los productos en forma de cremas y de ungüentos es un proceso más corto, requiere menos pasos que el proceso para manufacturar tabletas. Lo primero y comun a todos es verificar la calidad de la materia prima, luegos se pesan los ingredientes, se mezclan, se llenan los envases, empaque y verificación de calidad. El diagrama de flujo del proceso se presenta en el Anejo I.

3.2.2 Manufactura de Tabletas

La forma de dosificación que predomina en los nuevos productos a elaborarse es la tableta. El proceso para la manufactura de tabletas sigue el siguiente curso una vez la materia prima ha sido verificada: pesado y cernido del ingrediente activo y de los excipientes; luego los ingredientes pasan por el paso de granulación y molido; se mezclan, se comprimen para darle la configuración al producto, se revisten con una capa selladora que sirve para enmascarar el sabor y el olor del medicamento además de protegerio contra la humedad y de añadir un elemento cosmético al producto. Luego pasa por la sección de inspección, verificación de calidad y empaque. En el Anejo J se ofrece un diagrama tipico del proceso para la manufactura de tabletas y cápsulas.

Como se ha discutido en las secciones 3.1.2 a la 3.1.5, se habilitará un área en el tercer nivel de Cidra II (Véase Anejo K) para ubicar las facilidades donde se procesarán las granulaciones concentradas, las cuales serán diluidas posteriormente a las concentraciones requeridas. Para esos fines se instalará un nuevo granulador de lecho fluidizado el cual además aumentará la capacidad de granulación. Se instalará equipo para manejar, moler y transferir los excipientes y el material granulado. Se proveerá equipo de proceso y lineas de

R2-0003919

empaque en botellas y en burbujas ("blister"). Incluye además mejorar el área de pesado para un manejo más efectivo del ingrediente activo. Los productos a manufacturarse en forma de tabletas son: *"Relafen FB"*, *"Paxil CR"*, *"Idoxifene"*, *"Avandia"*, *"Quinolone"*, *"SB-207266-A"*, *"Paroxetine/Pindolol"*, *"Tranilast"*, *"SB-220453"* y *"Eprosartan"*.

3.2.2.1 Manufactura de *"Idoxifene"*

En esta sección se le da un enfoque particular a la manufactura de tabletas de *"Idoxifene"* por ser este medicamento formulado a base de un ingrediente altamente activo, contrario a los discutidos anteriormente, que catalogaremos como ingredientes convencionales para los efectos de este escrito. Es el segundo producto de esta categoria proyectado para manufacturarse próximamente en SB. Su nombre responde al nombre del ingrediente activo: *"Idoxifene"*. Se producirá en tabletas y se usará en el tratamiento de la osteoporosis . Los pasos del proceso siguen el método convencional de preparar tabletas. La gran diferencia consiste en que todo las fases del proceso se llevan a cabo dentro de cámaras superselladas portaguantes ("glove box") Clase III, equipadas con una serie de filtros que rematan con filtros HEPA Las cámaras Clase III realmente es un espacio completamente cerrado que opera dentro de una atmósfera controlada. Tiene instalados sistemas para purificar el aire entrante y sistemas especiales para purificar el aire saliente mediante el uso de filtros de alta eficiencia (HEPA por sus siglas en inglés) que se distinguen por la capacidad que tienen de retener particulados hasta un tamaño minimo de 0.3 micrones.

El manejo de ingredientes altamente activos requiere especial atención debido a las caracteristicas citotóxicas de unos, y al potencial que tienen otros de afectar en forma adversa, severa, la genética del cuerpo humano. Es por estas razones que SB ha establecido un limite permisible de exposición (PEL por las siglas en inglés) de 30 ng/m^3 (nanogramos por metro cúbico) para el material en el evento de ser aerotransportado. Este es valor de PEL establecido para el ingrediente activo en la manufactura de *"Topotecan"* , producto promovido por la CFI, para el cual la agencia preparé y sometió un documento ambiental a la JCA en septiembre de 1997, bajo el titulo de Enmienda a DN-94-0971 (CFI). La JCA en carta

R2-0003920

del 18 de diciembre de 1997 determiné que la CFI habia cumplido con el Artlculo 4C de la Ley de Politica Ambiental de Puertro Rico.

Los productos ha formularse usando ingredientes altamente activos serán tratados en este documento de forma especial debido, precisamente a las caracteristicas de dichas drogas. Es por esa razón que se tratan en forma individual en esta sección, contrario a los otros productos, más convencionales los cuales se describen de forma generalizada en las secciones anteriores. Las facilidades para la manufactura comercial de productos formulados a base de ingredientes altamente activos, se ubicarán en un área al presente vacante, contigua a las facilidades comerciales de *"Topotecan"*, producto de similar manufactura, próximo a ser manufacturado en SB. El área se encuentran localizadas en el edificio Cidra 1 (Véase Anejo L). Se proveerá un espacio completamente aislado donde desarrollar las actividades de pesado y distribución de los materiales; transferencia del producto; operaciones de laboratorio; documentación; formación de las tabletas; revestimiento y empaque. En el diseño de las facilidades comerciales se incorporarán elementos de flexibilidad que permitan acomodar la manufactura en el futuro de productos similares con el minimo de modificaciones. El costo estimado de las facilidades comerciales este proyecto es de ochenta millones y médio de dólares ($8.5 MM).

3.2.2.1.1 Materias Primas

La materias primas que habrán de usarse en la formulacion de las tabletas de *"Idoxifene"*, además del ingrediente altamente activo, son las siguientes: SB223030 (confidencial), celulosa microcristalina, monohidrato de lactosa modificado, estearato de magnesio, "Opadry" y agua purificada. Los MSDS están recopilados en el Anejo M.

3.2.2.1.2 Equipo y Maquinaria

R2-0003921

En la manufactura de las tabletas de *"Idoxifene"* se usará equipo y maquinaria convencional. Nos referimos a cernidores, mezcladores, equipo de compresión, equipo para el revestimiento del producto y empaquetadoras. Equipo especial a usarse en el proceso son las cámaras superselladas portaguantes Clae III, donde se han de desarrollar todas las etapas del proceso.

3.2.2.1.3 Descripción del Proceso

El paso inicial en el proceso de manufactura después de comprobada la calidad de los materiales, es cernirios para luego pasarios a un mezclador para un premezclado. En este paso se estarán usando una porción de los materiales: SB223030, celulosa microcristalina y monohidrato de lactosa modificada. El material resultante del premezclado pasa a otro mezclador donde se le añadirán, después de ser cernidos, además de algunos de los materiales ya mezclados, y otros nuevos componentes : estearato de magnesio y "explotab". Esta nueva mezcla pasa a otro mezclador donde se le añadirá estearato de magnesio para producir la mezcla final. La mezcla final pasa a la estación (36) de compresión donde se configura la tableta. Las tabletas pasan luego al área donde ubican los revestidores de alta eficiencia donde reciben el tratamiento final. Como último paso pasan a la linea de empaque. Véase el Anejo N.

Dato importante y significativo en el proceso es que todas las operaciones descritas en el párrafo anterior ocurren dentro de cámaras portaguantes Clase III.

3.2.2.1.4 Medidas de Ingenieria y Administrativas para Lograr la Seguridad en el Proceso

Las medidas que siguen responden a iniciativas del personal técnico de SB, desarrelladas durante el diseño de las facilidades para la manufactura de *"Topotecan"*, primer producto basado en ingrediente altamente activo a

R2-0003922

fabricarse en SB. La información se incluyó en el documento ambiental preparado para este producto y se reproduce en esta sección por la similitud en el proceso de manufactura de ambos productos.

- ☑ Establecer programas de adiestramiento y educación continua para todo el personal. Acceso al área de manufactura limitado al personal autorizado solamente.
- ☑ Facilidades dedicadas para el proceso de manufactura.
- ☑ El diseño requiere la utilización de cámaras superselladas portaguantes Clase III para controlar las emisiones de materia partlculada dentro de los límites establecidos por SB.
- ☑ Proveer al personal con equipo de seguridad apropiado para manipular las materias primas.
- ☑ Establecer un plan de monitereo de la calidad del aire y de la posible deposición de material sobre en las superficies.
- ☑ Establecer un plan de vigilancia médica a todo el personal autorizado.
- ☑ Establecer procedimientos estándares de operación dirigidos a controlar las emisiones del material altamente active.
- ☑ Establecer un sistema de comunicación entre el personal para mantenerios conscientes en todo momento de las caracteristicas peligrosas del ingrediente activo.

3.2.3 Consideraciones Ambientales

Les aspectos ambientales más significativos de los procesos de manufactura de los nuevos productos se relacionan con la posible emisión al aire de materia partlculada, con la generación de aguas residuales de proceso, generación de desperdicios sólidos y en un grado menor, generación de ruides. Las consecuencias ambientales que se derivan de la manufactura de fármacos discutidos anteriormente son bien conocidas y adecuadamente controladas por la industria ya que son productos con un largo historial de producción. Como se

R2-0003923

ha indicado en otras secciones de este documento, SB tiene instalado o está comprometida con instalar el equipo apropiado para controlar posibles daños al ambiente por razón de este proceso.

El punto realmente delicado en la manufactura de las tabletas de *"Idoxifene"* se asocia con en el manejo adecuado del ingrediente activo. SB cuenta con la experiencia necesaria para manejar perfectamente esta situaeión puesto que actualmente elabora productos similares en plantas ubicadas fuera de Puerto Rico. Además, está próxima a iniciar en Cidra la producción de un producto a base de un ingrediente altamente activo, *"Topotecan"*, para lo cual la CFI radicó en septiembre de 1977 un documento ambiental discutiendo los pormenores del proceso. Las medidas de protección ambiental delineadas en dicho documento se hacen extensivas a éste informe.

No se espera que la manufactura de tabletas de *"Idoxifene"* impacte en forma adversa el ambiente general del área.

3.2.3.1 Calidad de Aire

Emisiones al aire las podemos esperar durante el manejo de las materias primas, las cuales en su gran mayoria se encuentran en estado sólido, muchas veces en forma de polvo. Debido a esta cendición es que etapas del proceso come son el pesado, mezclado y compresión de los materiales se caracterizan como fuentes de emisiones al aire. De igual forma la fase de revestimiento de las tabletas tiene el potencial de generar emisiones al aire.

La elaboración de las formas de desificación descritas en las secciones anteriores son procesos rutinarios en las operaciones de SB. Por largos años se han estado fabricando en las instalaciones en Cidra, Puerto Rico. Este hecho implica que la firma cuenta con todos les recursos para poder atender satisfacteriamente toda la problemática relacionada con las condiciones ambientales del área. Para controlar las emisiones al aire, hay instalados sistemas colectores de polvo centrales e individuales atendiendo distintas áreas de

R2-0003924

producción. En adición, según se ha informado en otras secciones del documento, los nuevos cuartos de manufactura estarán provistos de equipo para controlar las emisiones de materia particulada.

Los aspectos ambientales de la manufactura de *"Idoxifene"* en tabletas son básicamente idénticos a los relacionados con la manufactura de tabletas en general. Emisiones al aire del ingrediente activo y de los excipientes durante las labores de pesado, cernido, compresión y mezclado de estos materiales, y otras emisiones durante el revestimiento de las tabletas. La gran diferencia consiste, como se ha establecido anteriormente, en las caracteristicas nocivas del ingrediente altamente activo, que obliga a reducir a niveles extremadamente bajos (30 ng/m^3) las concentraciones del ingrediente activo en el sitio de trabajo. Es por esa razón que todas las fases del proceso donde se maneja materia prima sólida o en polvo, siguen el patrón establecido en la manufactura de *"Topotecan"*, y se desarrollan dentro de cámaras portaguantes superselladas Clase III, y estas a su vez, dentro de cuartos completamente aislados, a presienes negativas para evitar la transportación de sustancias hacia el exterior. Todas las operaciones se manipulan con guantes en un ambiente de trabajo libre por complete de materias extrañas.

SB semeterá a la JCA las solicitudes de permiso para construir nuevas fuentes de emisión y posteriormente las solicitudes de permiso de operación de las posibles nuevas fuentes, según le requiere el Reglamento para el Contrel de la Contaminación Atmosférica (RCCA).

3.2.3.2 Calidad de Agua

La fuente principal de aguas residuales durante la manufactura de los productos a base de les ingredientes activos convencionales, es el lavado del equipo y de la maquinaria. Historicamente estas aguas, si proceden de la manufactura de productos a base de ingredientes activos convencionales, pasan al sistema de alcantarillado interne

R2-0003925

de la planta, para ser transportadas hacia la planta de tratamiento en el sitio para su depuración y disposición final.

Aguas que exhiban caracteristicas distintas como sucede durante la manufactura a base de ingredientes altamente activos, recibirán pretratamiento antes de ser descargadas al sistema de la planta de tratamiento del sitio. Este es el caso que aplica a la manufactura de *"Idoxifene"*. Las aguas residuales producto de la limpieza de equipo y de maquinaria se acumularán en tanques dedicados y luego se pretratarán en facilidades que se instalarán en el área de manufactura. Una vez pretratada y comprobada la depuración de estas, pasarán al sistema de tratamiento terciario operando en el sitio.

Los procesos descritos se estima que generen aguas residuales a razón de 10,000 galones per dia (GPD). Los contribuyentes principales a este caudal son les procesos relacionados con la manufactura de *"Idoxifene"*, con 2,000 galones, y las actividades de revestimiento, con 8,000 galones. La planta existente que ofrece tratamiento a nivel terciario, puede manejar adecuadamente el caudal de agua estimado a generarse. La capacidad hidraúlica de la unidad es de 130,000 GPD y puede manejar pices de hasta 160,000 GPD. El volumen de agua entrando a la planta (influente) promedia 96,480 GPD, lo que refleja un balance favorable de 33,520 GPD, indicative de que el caudal de aguas adicional a generarse. recibirá tratamiento adecuado en la facilidad. Es conveniente señalar además que durante los últimos años, la industria ha entrado en una cendición de equilibrio donde se compensa la pérdida de mercado para algunos productos con la manufactura de productos nuevos. Este balance se proyecta a todas las actividades incluyendo el reclutamiente de empleados, la utilización de recursos, la generación de desperdicios, etc.

3.2.3.3 Desperdicios Sólidos

Los procesos de manufactura propuestos no generarán desperdicio sólido peligreso.

R2-0003926

El desperdicio sólido que preducirán las actividades manufactureras propuestas consistirá de basura convencional, representado por materiales tipicos como son el cartón cerrugado y les materiales de empaque; y material farmaceútico, que consiste básicamente de materia prima rechazada y en menor escala, por producto rechazado. Se estima que se generarán cuatro yds cu de basura convencional. Se utilizarán les servicios de BFI y de PROTECO para recolectar y transpertar estos desperdicios hacia el lugar de disposición final que con toda prebabilidad será el vertedero de Juncos, que recibe actualmente este tipo de desperdicios de SB. Per otro lado, el material farmaceútico del cual se espera que se produzca un pie cúbico diario (60 #) será responsabilidad de Crowley Environmental, quien lo transportará desde Cidra hasta las facilidades autorizadas de Environmental Healthcare Inc., localizadas en Savannah, Georgia, para ser incinerado.

Los desperdicios sólidos a generarse en la manufactura de las tabletas de *"Idoxifene"* legalmente no cualifican come peligrosos, no obstante, serán tratados como tal para todos los fines ambientales. Este desperdicio estará representado, entre otros, por la vestimenta y aparatos de seguridad personal usado per los empleados (caretas, guantes etc.), materiales utilizados en la limpieza de equipo y maquinaria, envases y cartones de empaque. Al igual que en la manufactura de "Topotecan", se estima que se generarán 180 kg por lote. Se acumulará en recipientes apropiades y permanecerá en áreas dedicadas hasta llegado el memento de ser transportados hacia facilidades en el exterior para su disposición final.
La firma Ochoa Environmental Services probablemente asuma la responsabilidad de manejar este desperdicio desde las instalaciones en Cidra hasta las facilidades de disposición final localizadas en las ciudades de Barlow y Clearwater en el estado de Florida, EE.UU.

3.2.3.4 Ruidos

Es normal que las actividades relacionadas cen la manufactura generen ruidos. Las fuentes principales son la maquinaria, motores eléctrices, granuladores, transportadores y los otros equipos necesarios para elaboración de los productos. Sin embargo, debido a que las operaciones ocurren bajo techo, en cuartos completamente

R2-0003927

cerrados, y a que la maquinaria utilizada no se caracteriza por generar ruidos a niveles exagerados, no se espera que los niveles alteren el balance actual en los limites de la propiedad.

SB mantiene unas reglas muy estrictas relacionadas con la preservación del ambiente acústico del área. A tone con esta politica, ha preparado y está en vigor, un modelo abarcador de niveles de sonido para toda la propiedad. Todo equipo nuevo que se adquiera para operar en el exterior se semeterá al modelo. Una vez instalado se valida. De excederse les niveles de sonido de los limites establecidos para la celindancia, el fabricante del equipo se compromete a reaiizar los estudios necesarios para determinar las causas y buscar e implantar las medidas atenuantes necesarias para mantenerios dentro de lo establecido en el Reglamento para el Control de la Centaminación por Ruido.

R2-0003928

4.0 INFRAESTRUCTURA, CONDICIONES EXISTENTES

4.1 Energia Eléctrica

La eferta de energia eléctrica actual en SB continua igual a lo informado en el documento sujeto a revisión. La capacidad instalada usando como fuente la Autoridad de Energia Eléctrica (AEE) es de 13,500 kilovohamperios (KVA), desglosada de esta forma: subestación #1 de 3,000 KVA para el edificio Cidra 1; subestación #2, 3,000 KVA supliende a Cidra II y la subestación #3 de 7,500 KVA supliende los enfriaderes ("chillers"). Adicional en el sitio hay cinco generadores de electricidad de emergencia, uno con capacidad de 400 KVA y cuatro de 1,250 KVA cada uno, lo que resulta en una capacidad en reserva para atender situaciones de emergencia de 5,400 KVA. El gran total de energia disponible en SB actualmente es de 18,900 KVA, 13,500 instalada y 5,400 de emergencia..

La demanda total del sitio promedia 5,000 KVA. Las acciones propuestas se estima que requieran 600 KVA. Definitivamente hay capacidad suficiente en el sitio para cubrir cemedamente les requisites de energia eléctrica del proyecto.

4.2 Agua Potable

El abasto de agua fresca para atender la demanda de las instalaciones procede de dos fiientes: agua subterranea y la Autoridad de Acueductos y Alcantarillados (AAA). De agua subterranea se alimentan des pozos llanos hihcados en la propiedad. El pozo Núm. 1, el primero hincado en la propiedad, provee agua a razón de 135 galones por minute (GPM); el pozo Núm. 2, hincado en 1994, a razón de 157 GPM. Ambos pozos amparados en franquicias otorgadas per el Departamento de Recursos Naturales (DRN). En términos de producción diaria, el pozo Núm. 1 tiene el potencial de producir 194,400 galones per dia (GPD) y el Núm. 2, 226,080 GPD para un total de 420,480 galones GPD.

La AAA suple un promedio de 2,500 GPD.

R2-0003929

De acuerdo con los sistemas de medición instalados en SB, el consume de agua fresca durante el pasado año ascendió a 36,500,000 galones equivalente a un promedio de 100,000 galones diarios tomando como base el año calendario. De ese total entraron un promedio de 96,480 GPD como desperdicio liquido a la planta de tratamiento terciario operando en el sitio. De ese total se recicló un promedio de 55,000 GPD en el sitio; 9,000 GPD fueron tratados y fueron dispuestos fuera de las instalaciones de SB en Cidra y 32,480 GPD fueron descargados a la Quebrada Las Quebradillas. La diferencia, 5,520 GPD, representa agua utilizada en al atención de los patios y en el producto final. Véase el Anejo O, diagrama del promedio diario de uso de agua.

Las fuentes de agua potable en el sitio pueden producir 420,480 GPD. Actualmente el consume de agua promedia 100,000 GPD, lo que deja un excedente de 320,480 GPD suficiente para suplir plenamente la demanda del proyecto propuesto que se estima en 10,000 GPD.

4.3 Tratamiento y Disposición del Desperdicio Liquido

Entendemos per desperdicio liquido el combinado de las aguas residuales generadas en el proceso de manufactura más el deperdicio doméstico. Ambos caudales permanecen segregados hasta llegar a la planta de tratamiento donde se combinan para ser tratados en conjunto.

La planta de tratamiento depura el influente compuesto per las aguas residuales del proceso y el desperdicio doméstico, sometiéndole a un tratamiento terciario, basado en la tecnologia de osmosis invertida (RO por sus siglas en inglés) en su fase final, antes de descargar el efluente a la Quebrada Las Quebradillas, para le cual le fue expedido el permiso de descarga (NPDES Núm. PR-0021997) por la Agencia Federal de Protección Ambiental (EPA por sus siglas en inglés).

R2-0003930

Actualmente la capacidad hidraúlica de ia planta, luego de varias modificaciones a las cuales fuera sometida, y que fueron documentadas en su tiempo ante la JCA y otras agencias, es de 130,000 GPD, aunque puede aceptar eventos pices hasta de 160,000 GPD. El influente a la planta promedia 96,480 GPD. Es evidente que la planta tiene capacidad excedente suficiente para tratar aprepiadamente el caudal a generarse a consecuencia de les proyectos propuestos que se estima en 10,000 GPD.

4.4 Sistema de Manejo de las Aguas Pluviales

El diseño del sistema de alcantarillado pluvial, consistente de canales abiertes y de tubes soterrados, unido a la topografia endulante, ha resultado muy eficaz en el manejo del la preciphación que ocurre en el sitio. Hace alrededor de cinco años, se mejoró el sistema mediante la censtrucción de un tanque de retención (Véase la DN-93-1003) instalado al final del alcantarillado, antes de que las aguas pluviales ganaran acceso a los cuerpos de agua fuera de los limites de la propiedad. El tanque, con capacidad de 15,000 galones recoge la descarga inicial del agua de lluvia, al igual que cualquier derrame que pudiera ocurrir debido a posibles accidentes en los camiones tanques que entregan materiales, algunos de ellos peligrosos, que se usan en los procesos manufactureres en SB. Actualmente el únice material que se trabaja a granel es el combustible.

4.5 Incineradores

Dos incineradores que operaban en el sitio han sido permanentemente paralizados . Uno se usaba para disponer de desperdicio sólido no-peligroso y el etro, un oxidader térmico, utilizado destruir per acción térmica compuestos orgánicos volátiles (VOC per sus siglas en inglés). La clausura de este úhimo equipo obedeció al éxito logrado al reformular varios productos eliminando el uso de solventes halogenados.

R2-0003931

Naturalmente, la clausura de los dos incineradores se traduce en un consume menor de combustible al igual que en una reducción de emanaciones al aire y en una disminución del volumen de aguas residuales.

4.6 Finca de Tanques

Al norte de Cidra I ubica el área donde se recibe a granel y se almacena el combustible que usa SB para generar vapor en las calderas y para mover los motores de combustión interna que mueven los generadores de electricidad de emergencia. Se trata de residual #2 (kerosene y diesel) con un contenido de azufre de 0.5% por peso. La finca de tanques consiste de cinco tanques horizontales, con una capacidad de 10,000 galones cada uno, localizades sobre tierra, sobre losa de hermigón previstas de diques de contención construidos en hormigón.

4.7 Estación de Bombas para la Distribución de Gasolina

Hace aproximadamente cuatro años SB construyó al norte del edificio Cidra I, entre éste y la planta de tratamiento de aguas residuales, un estación para distribuir gasolina a la flota de vehiculos de la compañiia y a los vehiculos de los empleados (Véase la DN-93-1003 CFI). El sistema de distribución consiste de dos tanques de pared doble, instalados dentro de una bóveda soterrada de hormigón, con capacidad para almacenar 4,000 galones de gasolina cada une; y de bombas distribuidoras, similares a les sistemas comerciales convencionales de expendio del producto.

El propósito principal del sistema es asegurar que la compañia pueda contar con una fuente confiable de combustible durante situaciones de emergencia que puedan surgir, por ejemplo, al paso de un huracán, cuando pueda verse afectada la distribución del combustible en las estaciones comerciales.

R2-0003932

5.0 ASPECTOS SOCIO ECONOMICOS

La fase de la censtrucción de los proyectos cubiertos por este documento, aun si se realizaran de una vez y no en forma gradual como se han planificado, no requieren, debido a la pequefía escala de los mismos, de una demanda exhorbitante de trabajadores. No obstante ofrece opertunidades de empleo para una gran variedad de trabajadores especializados en distintas ramas de la censtrucción. Se necesitarán entre otros, albafiiles, carpinteros, soldadores, instaladores de sistemas de refrigeración, electricistas, etcétera. En otras palabras, SB continuará siendo una fuente firme y segura de empleo por un futuro inmediato para estos trabajadores de la censtrucción.

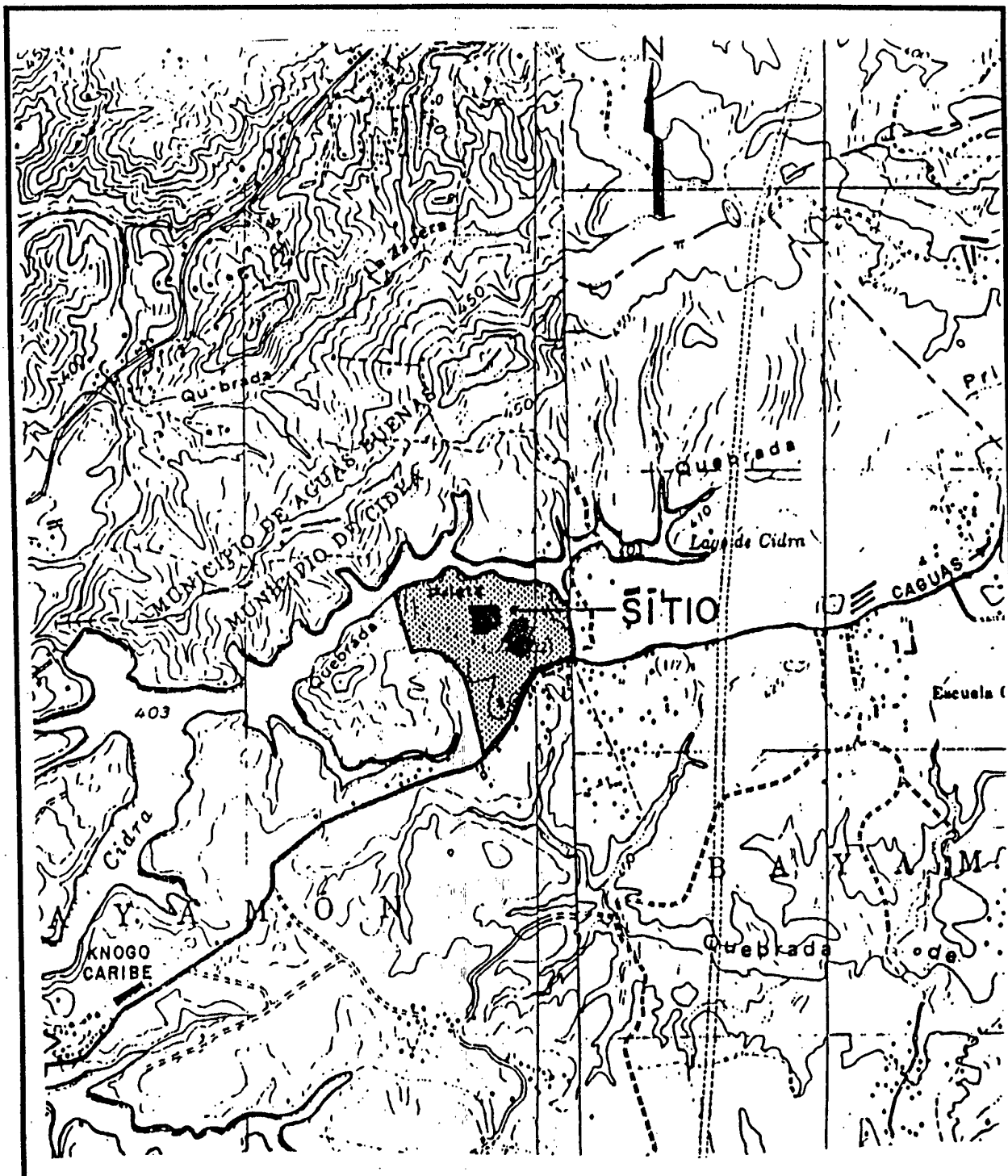
En la fase operacional, SB reafirma la politica de conservación de empleo de la compañía, explorando la posiblidad de satisfacer la demanda de nuevos mercades en el ámbito intemacienal con los productos de su manufactura. No se anticipa que los procesos descritos en este documento vayan a resultar en incrementes significativos del personal laborando en SB. Al presente el número de personas laborando en la planta de Cidra son alrededor de 700, incluyendo aseciados regulares y temporeres que devengan una nómina anual de aproximadamente veinticinco millones de dólares. Algunas de la razones per la cual ne hay una relación directa entre la introducción de nuevos productos y la eferta de empleo es que la industria ha desarrollado nuevos equipos de producción y nueva tecnologia en los procesos de manufactura, lo que permite que se puedan lograr las metas de producción con menos esfuerzo personal en las lineas de producción. Es por eso que la introducción de nuevos fármacos en la producción de la planta de Cidra, ne necesariamente representa un incremento sustancial en el número de empleos a generarse. Lo que se ha logrado hasta ahóra, y que cenfiamos que prevalezca por tiempo indefinide, es mantener una fuerza laboral estable y confiada en las mejores intencienes de la empresa de seguir siendo un puntal en el desarrollo económico de la región, y de Puerto Rico entero.

R2-0003933

ANEJO A

MAPA DE LOCALIZACION

R2-0003934



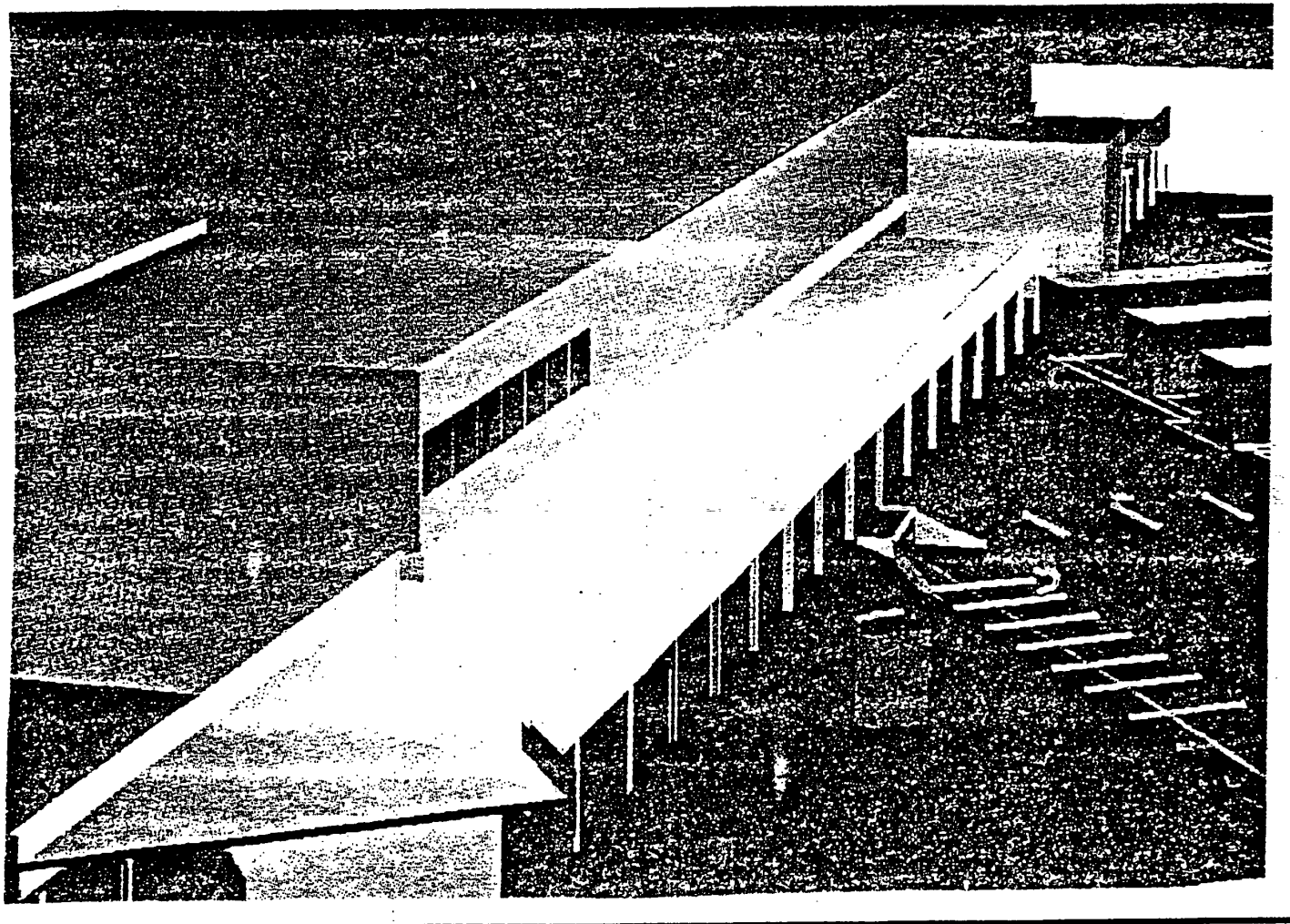
SB PHARMCO PUERTO RICO, INC. CIDRA, PUERTO RICO	ANEJO A MAPA DE LOCALIZACION

R2-0003935

ANEJO B

PERSPECTIVA DEL PASILLO INTERCONECTOR

R2-0003936



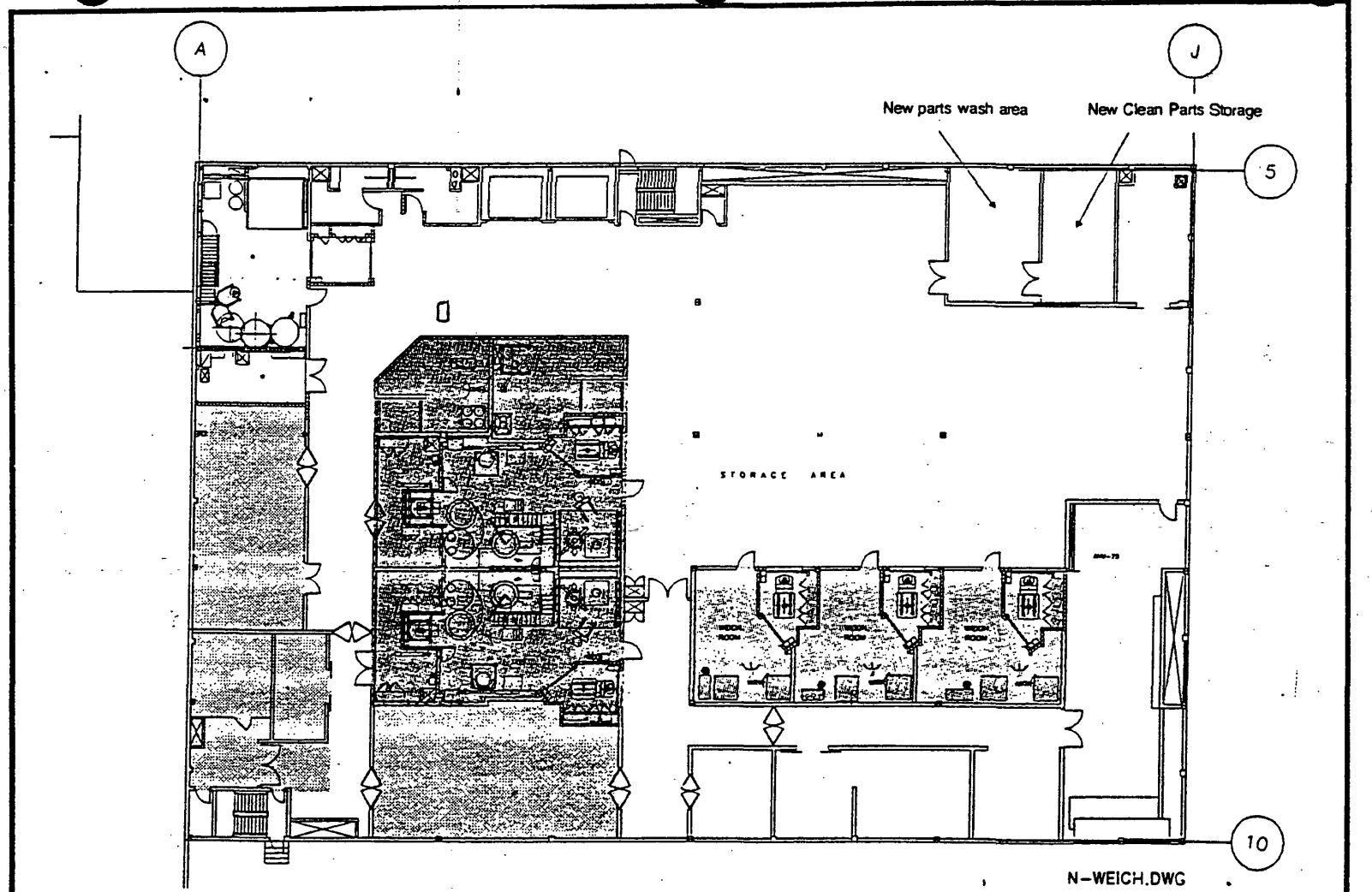
SMITHKLINE BEECHAM PHARMACEUTICALS CIDRA, PUERTO RICO	ANEJO B PERSPECTIVA OEL PASILLO INTERCONECTOR

R2-0003937

ANEJO C

LOCALIZACION AREA DE PESADO DE MATERIALES

R2-0003938



SMITHKLINE BEECHAM PHARMACEUTICALS
CIDRA, PUERTO RICO

ANEJO C

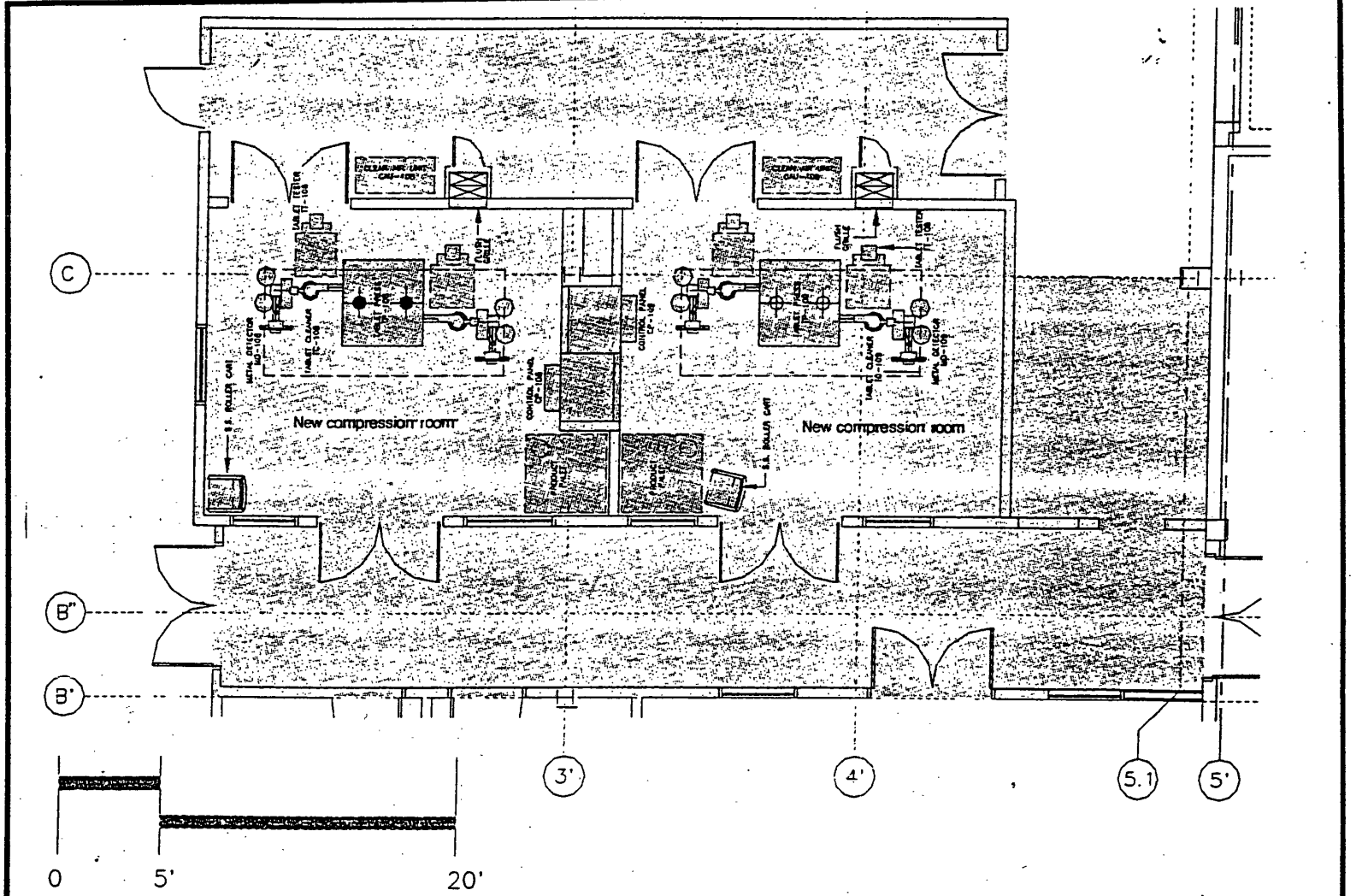
LOCALIZACION DE AREA DE PESADO DE MATERIALES

R2-0003939

ANEJO D

LOCALIZACION DE NUEVOS CUARTOS DE COMPRESION

R2-0003940



SMITHKLINE BEECHAM PHARMACEUTICALS
CIDRA, PUERTO RICO

ANEJO D

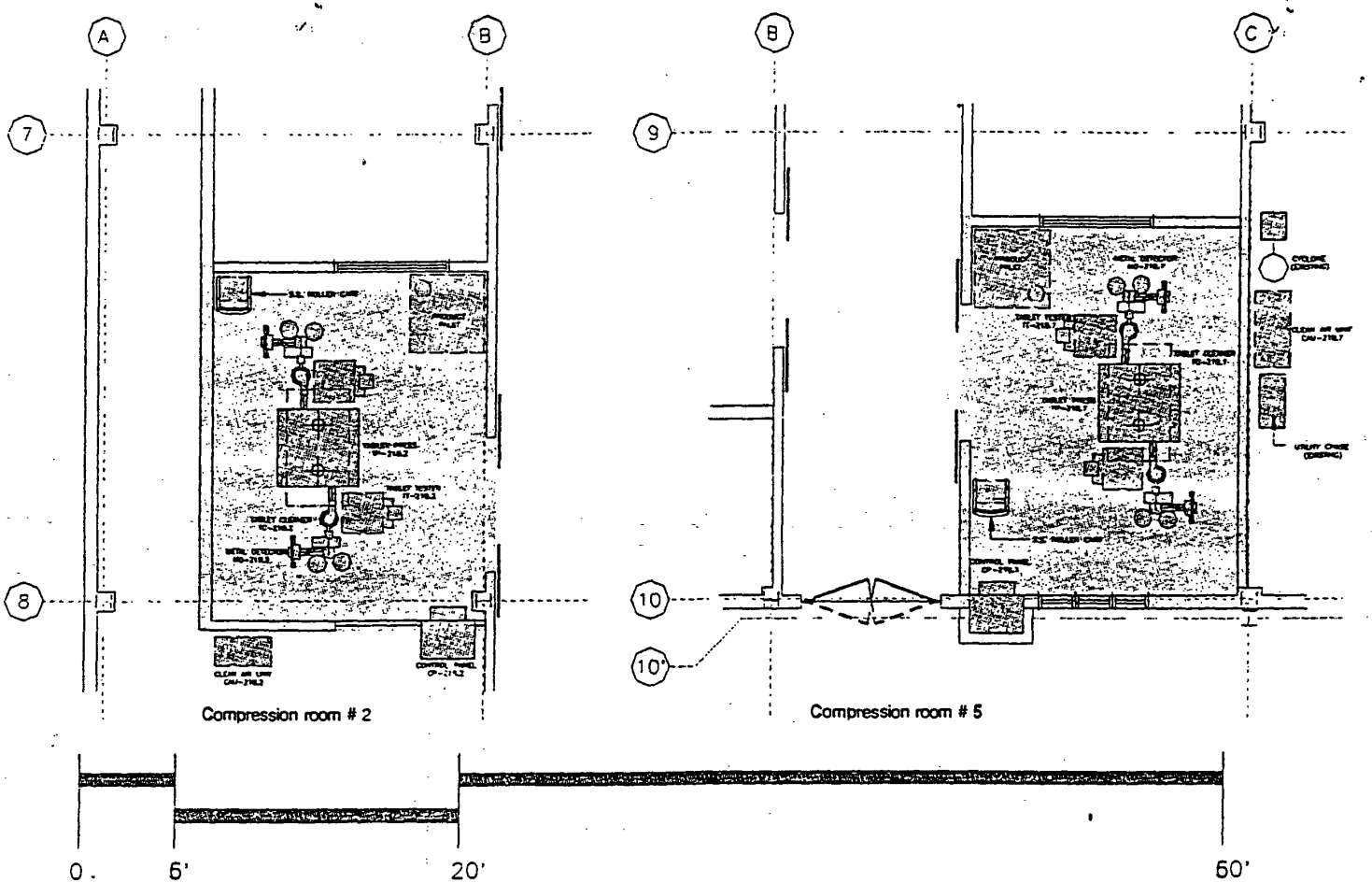
LOCALIZACION DE NUEVOS CUARTOS DE COMPRESION

R2-0003941

ANEJO E

CUARTOS DE COMPRESION EXISTENTES NUM. 2 & 5

R2-0003942



SMITHKLINE BEECHAM PHARMACEUTICALS
CIDRA, PUERTO RICO

ANEJO E

CUARTOS DE COMPRESION EXISTENTES NUM. 2 & 5

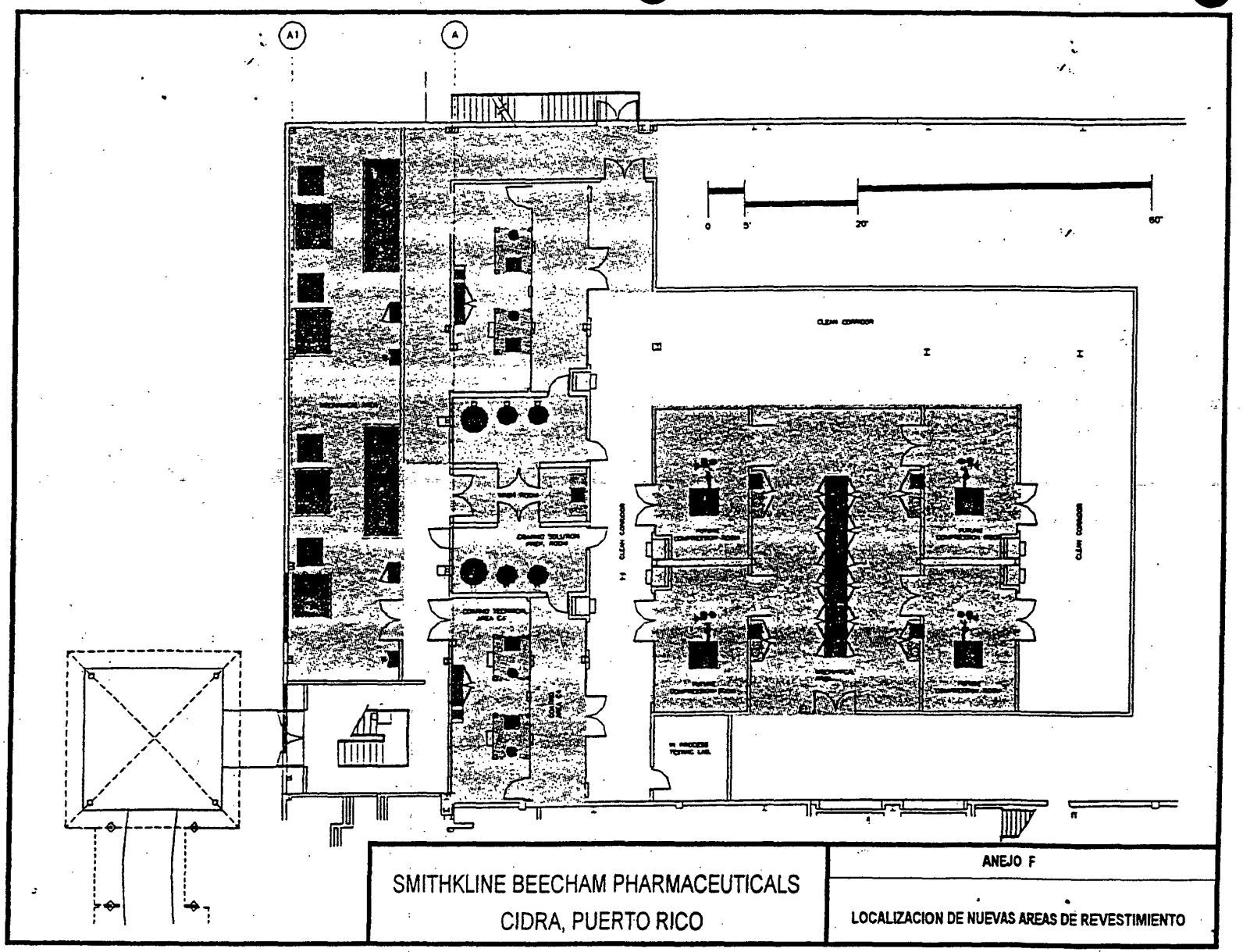
sh

R2-0003943

ANEJO F

LOCALIZACION DE NUEVAS AREAS DE REVESTIMIENTO

R2-0003944



Lh

R2-0003945

ANEJO G

HOJAS DE DATOS DE SEGURIDAD DE MATERIALES (MSDS)

DE LOS PRODUCTOS NUEVOS

R2-0003946

SmithKline Beecham

TABLETA

SAFETY SUMMARY

TO BE USED WITH MSDS NUMBER 10000837

IDOXIFENE

HAZARDS OVERVIEW

		May impair fertility. May cause harm to the unborn child. May cause harm to breastfed babies. Wear suitable protective clothing and gloves. Avoid exposure - obtain special instructions before use. Do not breathe dust.
Toxic		

Caution - fire hazard not fully Identified.

Caution - environmental hazard not fully identified.

TARGET ORGAN: PHARMACEUTICAL AGENT.
AFFECTS FEMALE SEX HORMONES AND REPRODUCTIVE SYSTEM.
AFFECTS MALE SEX HORMONES AND REPRODUCTIVE SYSTEM.

SYNONYMS

TRADENAMES/SYNONYMS:

223030 (SB) * PYRROLIDINO-4-IODOTAMOXIFEN * (E)-1-[4-(2-(PYRROLIDINO)ETHOXY]PENYL]-1-(4-IODOPHENYL)-2-PHENYL-1-BUTENE * (E)-1-[2-[4-[1-(4-IDODOPHENYL)-2-PHENYL-1-BUTENYL]PHENOXY]ETHYL]PYRROLIDINE * SB-223030 * DRAFT MSDS NO. USPH0200

HEALTH EFFECTS

SKIN CONTACT:

Minor skin irritation with itching redness or swelling might occur following direct contact with this material. Allergic reaction is not expected.

EYE CONTACT:

Irritation is not expected following direct contact with this material. However, eye contact should be avoided.

INHALATION:

This material is a potent pharmaceutical agent. Symptoms after overexposure might include nausea or vomiting or, in females, uncomfortable feeling of warmth.

INGESTION:

This material is a potent pharmaceutical agent. Symptoms after overexposure might include nausea or vomiting or, in females, uncomfortable feeling of warmth.

FIRST AID

SKIN CONTACT:

Remove contaminated clothing and flush exposed area with large amounts of water. Obtain medical assistance if skin reaction occurs, which may be immediate or delayed. Do not use a chemical neutraliser.

EYE CONTACT:

If eye contact occurs, flush eyes continuously with water for at least 15 minutes. Do not use a chemical neutraliser. Obtain medical assistance if symptoms occur.

INHALATION:

Move exposed person to fresh air. Seek medical assistance in case of known or possible overexposure to this material or with symptoms including chest pain, difficulty breathing, loss of consciousness or other adverse effects which may be delayed. IF BREATHING HAS STOPPED, START BASIC LIFE SUPPORT AND SEEK IMMEDIATE MEDICAL ATTENTION.

INGESTION:

In the event of occupational ingestion, seek medical advice. Induction of vomiting is not a recommended first-aid procedure.

EMERGENCY PROCEDURES

FIRE CONTROL:

This material is non-combustible. However, toxic or corrosive vapours are expected if this material is exposed to fire.

SPECIAL FIREFICHTING PROCEDURES:

Since toxic, corrosive or flammable vapours might be evolved from fires involving this material, self contained breathing apparatus and full protective equipment are recommended for firefighters. Move containers from the fire area if possible without increased personal risk. If possible, contain and collect firefighting water for later disposal.

SPILLS:

Prevent entry into waterways, sewers, and surface drainage systems. If spill is outdoors, cover with plastic sheet to minimise spreading or contact with rain. Fence or cordon the affected area and do not allow individuals to touch or walk through the spilled material unless wearing appropriate protective clothing. Avoid dust generation. Collect material and place it in a suitable, properly labelled container for recovery or disposal. Following removal of spillage, wash down spillage area with copious amounts of water only if waste water can be directed to an on-site waste water treatment system.

DECONTAMINATION PROCEDURES:

Detergent solutions can be used for clean-up and decontamination operations. No specific detoxification procedures have been identified for this substance.

STORAGE, HANDLING AND PROTECTION

HANDLING:

Isolation or enclosure is recommended to control exposure to this material. Assess operations based upon available dust explosion information to determine the suitability of preventive or protective systems as precautionary measures against possible dust explosions. If prevention is not possible, consider protection by use of containment, venting or suppression of dust handling equipment. Bond and earth (ground) all plant and equipment to ensure that no isolated conductors are present. All personnel dealing with dusty operations must be earthed (grounded). Minimise the use of plastics when handling this material. This material should be handled in conductive or anti-

R2-0003947

static liners (bags). This material is of low conductivity and coupled with its appreciable charge decay time might represent a source of electrostatic charge accumulation. This material should not be allowed to come into contact with any surface temperature greater than 215C C.

STORAGE:

Avoid prolonged storage at elevated temperatures (greater than room temperature, apprdximately 20 degrees C). Keep in tightly closed containers or packages away from moisture.

RESPIRATORS:

When isolation is not possible, respiratory protective equipment (RPE) should be combined with applicable protective equipment. The type of RPE will depend on air concentrations present and operations performed.

EYE PROTECTION:

If eye contact is possible, wear safety glasses with sideshields when handling this material.

GLOVES:

If gloves are needed, nitrile gloves are expected to protect against occasional skin contact with this material, based on solubility information. Additional protection may be required based on other hazards present and operations performed.

OTHER EQUIPMENT OR PROCEDURES:

In laboratories, wear lab coat or other protective clothing with long sleeves and applicable protective equipment. When isolation is not possible in production areas, applicable personal protective equipment must be used. An eye wash station and safety shower should be available.

SmithKline Beecham Personal Exposure Limit (SB PEL):

0.0002 MG/M3 (8 HR TWA)

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:

COLOUR:

White/off-white.

PHYSICAL FORM:

Solid.

MELTING POINT:

107 degrees C.

BOILING POINT:

Not determined.

WATER SOLUBILITY:

This material is insoluble in water.

OTHER INFORMATION

HAZARDOUS DECOMPOSITION PRODUCTS:

Toxic, corrosive or flammable thermal decomposition products are expected when the material is exposed to fire.

DISPOSAL CONSIDERATIONS:

Collect for recycling or recovery, if possible. The only appropriate method of disposal for this material is incineration. Wherever possible, disposal should be in an on-site licenced chemical incinerator, if allowed by the incinerator licence or permit. If no on-site incinerator is available, dispose of material in a licenced commercial chemical incinerator.

EXPOSURE CONTROLS:

IDOXIFENE:

R2-0003948

AVANDIA
TABLETS

SmithKline Beecham

SAFETY SUMMARY

TO BE USED WITH MSDS NUMBER 10000615

BRL-49653-C

HAZARDS OVERVIEW

		Irritating to eyes. Possible risk of harm to the unborn child. Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves. Avoid exposure - obtain special instructions before use.
Harmful	Irritant	

No warning required for fire hazards.
Caution - environmental hazard not fully identified.

TARGET ORGAN: PHARMACEUTICAL AGENT.
AFFECTS BLOOD SUGAR LEVELS

SYNONYMS

TRADENAMES/SYNONYMS:

5-(4-(2-(N-METHYL-N-(2-PYRIDYL)AMINO)ETHOXY)BENZYL)THIAZOLIDINE-2,4-DIONE (Z)-2-BUTANEDIOATE (1:1) * 5-((4-(2-(METHYL-2-PYRINDINYLAMINO)ETHOXY)PHENYL)METHYL)-2,4-THIAZOLIDINEDIONE (Z)-2-BUTANEDIOATE (1:1) * 49653-C (BRL) * DRAFT MSDS NO. USPH0095 * ROSIGLITAZONE * AVANDIA

HEALTH EFFECTS

SKIN CONTACT:

Minor skin irritation with itching redness or swelling might occur following direct contact with this material. Allergic reaction is not expected.

EYE CONTACT:

Irritation can occur following direct contact with this material. Symptoms might include redness, swelling, blurred vision or pain.

INHALATION:

This material is a pharmaceutical agent. Symptoms after inhalation might include headache, flushing, weakness, fatigue, irregular heartbeat, decrease in blood pressure or decrease in heart rate.

INGESTION:

This material is a pharmaceutical agent. No effects on blood sugar are expected in normal individuals.

FIRST-AID

SKIN CONTACT:

Remove contaminated clothing and flush exposed area with large amounts of water. Obtain medical assistance if skin reaction occurs, which may be immediate or delayed. Do not use a chemical neutraliser.

EYE CONTACT:

If eye contact occurs, flush eyes continuously with water for at least 15 minutes. Do not use a chemical neutraliser. Obtain medical assistance if symptoms occur.

INHALATION:

Move exposed person to fresh air. Seek medical assistance in case of known or possible overexposure to this material or with symptoms including chest pain, difficulty breathing, loss of consciousness or other adverse effects which may be delayed. IF BREATHING HAS STOPPED, START BASIC LIFE SUPPORT AND SEEK IMMEDIATE MEDICAL ATTENTION.

INGESTION:

In the event of occupational ingestion, seek medical advice. Induction of vomiting is not a recommended first-aid procedure.

EMERGENCY PROCEDURES

FIRE CONTROL:

The combustibility of this material has not been determined. Water, dry powder or foam extinguishers are recommended. Carbon dioxide extinguishers may be ineffective.

SPECIAL FIREFIGHTING PROCEDURES:

Since toxic, corrosive or flammable vapours might be evolved from fires involving this material, self contained breathing apparatus and full protective equipment are recommended for firefighters. Move containers from the fire area if possible without increased personal risk. If possible, contain and collect firefighting water for later disposal. Refer to MSDS section 10 for expected thermal decomposition products.

SPILLS:

Eliminate all sources of ignition (no smoking, sparks or flames). Prevent entry into waterways, sewers, and surface drainage systems. If spill is outdoors, cover with plastic sheet to minimise spreading or contact with rain. Fence or cordon the affected area and do not allow individuals to touch or walk through the spilled material unless wearing appropriate protective clothing. Avoid dust generation. Collect material and place it in a suitable, properly labelled container for recovery or disposal. Following removal of spillage, wash down spillage area with copious amounts of water only if waste water can be directed to an on-site waste water treatment system.

DECONTAMINATION PROCEDURES:

Water can be used for clean-up and decontamination operations. No specific detoxification procedures have been identified for this substance.

STORAGE, HANDLING AND PROTECTION

HANDLING:

This material has not been tested for its dust explosion properties. However, like most dusts, it is expected to explode when ignited as a dust cloud. Care should be taken to avoid dispersion as a dust cloud. Ensure that all items of plant and equipment used for handling this material are bonded and earthed (grounded). The presence of isolated conductors should be avoided. Depending upon scale of operation, a fume cupboard or other type of exhaust ventilation is

R2-0003949

recommended to routinely control exposure to this material.

STORAGE:

Avoid prolonged storage at elevated temperatures (greater than room temperature, approximately 20 degrees C).

RESPIRATORS:

Respiratory protective equipment (RPE) is not required for normal handling of this material.

EYE PROTECTION:

If eye contact is possible, wear chemical splash goggles or comparable eye protection when handling this material.

GLOVES:

If gloves are needed, latex rubber gloves are expected to protect against occasional skin contact with this material, based on solubility information. Additional protection may be required based on other hazards present and operations performed.

OTHER EQUIPMENT OR PROCEDURES:

tf skin contact is possible, wear protective clothhig with long sleeves. An eye wash station should be available.

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:

COLOUR:

White/cream.

PHYSICAL FORM:

Crystalline solid.

MELTING POINT:

122-123 degrees C.

BOILING POINT:

Not determined.

WATER SOLUBILITY:

This material is soluble in water.

OTHER SOLUBILITY:

This material is soluble in: Ethanol.

OTHER INFORMATION

HAZARDOUS DECOMPOSITION PRODUCTS:

Toxic or corrbsive thermal decomposition products are expected when this material is exposed to fire.

DISPOSAL CONSIDERATIONS:

Collect for recycling or recovery, if possible. The recommended method of disposal for this material is incineration. Wherever possible, disposal should be in an on-site licenced chemical incinerator, if allowed by the incinerator licence or permit. If no on-site incinerator is available, dispose of material in a licenced commercial chemical incinerator. Where Incineration is not possible, SmithKline Beecham operations should refer to SB Standard E-7 and associated guidance G-E-7 for selection of the most appropriate altemative waste disposal option, or consult their local, sector or corporate environmental specialist. In addition, all current local and national requirements must be observed when disposing of this material.

EXPOSURE CONTROLS:

BRL-49653-C:

SmithKline Beecham Personal Exposure Limit (SB PEL):
0.03 MG/M3 (8 HR TWA)

R2-0003950

QUINOLONE TABLETA

SmithKline Beecham

SAFETY SUMMARY

TO BE USED WITH MSDS NUMBER 10001400

SB-265805-S

HAZARDS OVERVIEW

		Do not breathe dust. Wear suitable protective clothing.
Harmful - Pharmaceutical Agent		
Caution - environmental hazard not fully identified.		
TARGET ORGAN: CAN INCREASE SENSITIVITY OF SKIN TO SUNLIGHT.		

SYNONYMS

TRADENAMES/SYNONYMS:

265805-S (SB) * LB-20304-A * FLUOROQUINOLONE ANTIBIOTIC

HEALTH EFFECTS

SKIN CONTACT:

Overexposure can increase sensitivity of skin to sunlight. Allergic reaction can occur following direct contact with this material. Symptoms such as itching, redness, swelling, rhinitis, sneezing, or signs similar to asthma such as coughing, wheezing or difficulty breathing might occur after repeated contact.

EYE CONTACT:

Potential to produce irritation is not known. Assume symptoms might include redness or swelling.

INHALATION:

Effects of breathing dust are not known. Avoid inhalation. Symptoms after overexposure might include dizziness, headache, nervousness, drowsiness, insomnia, stomach pain, diarrhea, nausea, or vomiting.

INGESTION:

Symptoms after overexposure might include dizziness, headache, nervousness, drowsiness, insomnia, stomach pain, diarrhea, nausea, or vomiting.

FIRST-AID

SKIN CONTACT:

Remove contaminated clothing and flush exposed area with large amounts of water. Obtain medical assistance if skin reaction occurs, which may be immediate or delayed. Do not use a chemical neutraliser.

EYE CONTACT:

Flush eyes continuously with water for at least 15 minutes. Do not use a chemical neutraliser. Obtain medical assistance if symptoms occur.

INHALATION:

Move exposed person to fresh air. Seek medical assistance in case of known or possible overexposure to this material or with symptoms including chest pain, difficulty breathing, loss of consciousness or other adverse effects which may be delayed. IF BREATHING HAS STOPPED, START BASIC LIFE SUPPORT AND SEEK IMMEDIATE MEDICAL ATTENTION.

INGESTION:

In the event of occupational ingestion, seek medical advice. Induction of vomiting is not a recommended first-aid procedure.

EMERGENCY PROCEDURES

FIRE CONTROL:

The combustibility of this material has not been determined. Water, dry powder or foam extinguishers are recommended. Carbon dioxide extinguishers may be ineffective.

SPECIAL FIREFIGHTING PROCEDURES:

Since toxic, corrosive or flammable vapours might be evolved from fires involving this material, self contained breathing apparatus and full protective equipment are recommended for firefighters. Move containers from the fire area if possible without increased personal risk. If possible, contain and collect firefighting water for later disposal.

SPILLS:

Prevent entry into waterways, sewers, and surface drainage systems. If spill is outdoors, cover with plastic sheet to minimise spreading or contact with rain. Fence or cordon the affected area and do not allow individuals to touch or walk through the spilled material unless wearing appropriate protective clothing. Avoid dust generation. Collect material and place it in a suitable, properly labelled container for recovery or disposal. Following removal of spillage, wash down spillage area with copious amounts of water only if waste water can be directed to an on-site waste water treatment system.

DECONTAMINATION PROCEDURES:

Water can be used for clean-up and decontamination operations. No specific detoxification procedures have been identified for this substance.

STORAGE, HANDLING AND PROTECTION

HANDLING:

This material has not been tested for its dust explosion properties. However, like most dusts, it is expected to explode when ignited as a dust cloud. Care should be taken to avoid dispersion as a dust cloud. Ensure that all items of plant and equipment used for handling this material are bonded and earthed (grounded). The presence of isolated conductors should be avoided.

STORAGE:

Protect from light.

RESPIRATORS:

If respiratory protective equipment (RPE) is used, the type of RPE will depend upon air concentrations present, required protection factor as well as hazards, physical properties and warning properties of substances present.

EYE PROTECTION:

If eye contact is possible, wear chemical splash goggles or comparable eye protection when handling this material.

R2-0003951

GLOVES:

If gloves are needed, latex rubber gloves are expected to protect against occasional skin contact with this material, based on solubility information. Additional protection may be required based on other hazards present and operations performed.

OTHER EQUIPMENT OR PROCEDURES:

If skin contact is possible, wear protective clothing with long sleeves. An eye wash station should be available.

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:

COLOUR:

Beige.

PHYSICAL FORM:

Solid.

MELTING POINT:

Not determined.

OTHER INFORMATION

DISPOSAL CONSIDERATIONS:

Collect for recycling or recovery, if possible. The recommended method of disposal for this material is incineration. Wherever possible, disposal should be in an on-site licenced chemical incinerator, if allowed by the incinerator licence or permit. If no on-site incinerator is available, dispose of material in a licenced commercial chemical incinerator. Where incineration is not possible, SmithKline Beecham operations should refer to SB Standard E-7 and associated guidance G-E-7 for selection of the most appropriate altemative waste disposal option, or consult their local, sector or corporate environmental specialist. In addition, all current local and national requirements must be observed when disposing of this material.

EXPOSURE CONTROLS:

No permissible exposure limits established by SmithKline Beecham, Australia, Belgium, Denmark, France, Germany, United Kingdom (HSE) or United States (ACGIH,OSHA).

R2-0003952

SmithKline Beecham

TABLE 7A

SAFETY SUMMARY
TO BE USED WITH MSDS NUMBER 10000680
SUBSTANCE/PREPARATION : SB-207266-A

SB-207266-A

		Harmful if swallowed. Do not breathe dust.
Harmful		

Not classified as a significant fire hazard
Caution - Environmental hazard not fully identified
Pharmaceutical Agent

TARGET ORGANS-PHARMACEUTICAL AGENT-MAY AFFECT BEHAVIOR PRODUCING DROWSINESS OR WEAKNESS.

SYNONYMS

N-[(1-N-BUTYL-4-PIPERIDYL)METHYL]-3,4-DIHYDRO-2H-[1,3]OXAZINO[3,2-A]INDOLE-10-CARBOXAMIDE HYDROCHLORIDE *
[(1-BUTYL-4-PIPERIDINYL)METHYL]3,4-DIHYDRO-2H-[1,3]OXAZINO[3,2-A]INDOLE-10-CARBOXAMIDE MONOHYDROCHLORIDE *
207266-A (SB) * DRAFT MSDS NO. USPH0130

HEALTH EFFECTS

SKIN CONTACT:
Potential to produce irritation or allergic skin reaction are not known. Assume symptoms such as itching, redness or swelling might be delayed.

EYE CONTACT:
Potential to produce irritation is not known. Assume symptoms might include redness, swelling, blurred vision or pain.

INHALATION:
Effects of breathing dust are not known. Symptoms after overexposure are not known but might include sedation, sleepiness, blurred vision, speech difficulty or mental confusion.

INGESTION:
This material is a potent pharmaceutical agent. Symptoms after overexposure might include sedation, sleepiness, blurred vision, speech difficulty or mental confusion.

FIRST AID

SKIN CONTACT:
Remove contaminated clothing and flush exposed area with large amounts of water. Obtain medical assistance if skin reaction occurs, which may be immediate or delayed.

EYE CONTACT:
Flush eyes continuously with water for at least 15 minutes and obtain medical assistance.

INHALATION:
Move exposed subject to fresh air. Seek medical assistance in case of known or possible over exposure to this material or with symptoms including chest pain, difficulty breathing, loss of consciousness or other adverse effects which may be delayed. IF BREATHING HAS STOPPED, START BASIC LIFE SUPPORT AND SEEK IMMEDIATE MEDICAL ASSISTANCE.

INGESTION:
In the event of swallowing this material, seek medical assistance. Do not induce vomiting.

EMERGENCY PROCEDURES

FIRE:
Use water, carbon dioxide, foam or dry chemical extinguishers.

SPILLAGE:

SPILLS:
Prevent entry into waterways, sewers, basements or confined areas. Avoid dust generation. Cover with plastic sheet to minimise spreading or contact with rain (if spill is outdoors). Do not touch or walk through the spilled material unless wearing appropriate protective clothing. Avoid dust generation. Use clean, non-sparking tools to collect material and place it in a suitable, properiy labeled container for recovery or disposal. Wash down spillage area with copious amounts of water only if waste water can be directed to an on-site waste water treatment system.

DECONTAMINATION PROCEDURES:
Water can be used for clean-up and decontamination operations. No specific detoxification procedures have been identified for this substance.

STORAGE, HANDLING AND PROTECTION

STORAGE:
Avoid prolonged storage at elevated temperatures (greater than room temperature, approximately 20 degrees C). Keep in tightly closed containers or packages away from moisture.

HANDLING:
This material has not been tested for its dust explosion properties. However, like most organic dusts, it is expected to explode when ignited as a dust cloud. Care should be taken to avoid dispersion as a dust cloud. Ensure that all items of plant and equipment used for handling this material are bonded and earthed (grounded). The presence of isolated conductors should be avoided. Use only with adequate local exhaust ventilation or enclosure to routinely control airborne dust levels.

PROTECTION:

RESPIRATORS:
If dust is present, a laboratory fume hood, local exhaust ventilation or an appropriate respirator should be used. The specific type used will be determined by air concentrations present. Follow local regulations for respirator use in the workplace.

GLOVES:

R2-0003953

Wear impervious gloves.

EYE PROTECTION:

Wear safety glasses with sideshields when handling this material.

HYGIENE PRACTICES:

Wash hands and arms thoroughly after handling this material.

Clean up spills immediately.

OTHER PROTECTIVE EQUIPMENT:

Wear lab coat or other protective clothing with long sleeves.

An eye wash station should be available.

PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION:

White solid.

BOILING POINT:

No Data Available

SOLUBILITY:

Expected to be soluble in water.

OTHER INFORMATION

DECOMPOSITION PRODUCTS:

Not identified.

DISPOSAL CONSIDERATIONS:

Collect for recycling or recovery, if possible. Dispose of material on site in a licensed chemical incinerator, if allowed by the incinerator license or permit. If no on-site incinerator is available, dispose of material in a licensed commercial chemical incinerator.

OCCUPATIONAL EXPOSURE LIMITS:

SmithKline Beecham(PEL):

0.02 MG/M3 (8 HR TWA)

R2-0003954

COMBO CON PAROXETINA TABLETA

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MDL INFORMATION SYSTEMS, INC.
14600 CATALINA STREET
SAN LEANDRO, CA 94577
1-800-635-0064 OR
1-510-895-1313

FOR EMERGENCY SOURCE INFORMATION
CONTACT: 1-615-366-2000 USA

CAS NUMBER: 13523-86-9
RTECS NUMBER: UB6660000
EU NUMBER (EINECS):
236-867-9
SUBSTANCE: PINDOLOL
TRADE NAMES/SYNONYMS:
2-PROPANOL, 1-(1H-INDOL-4-YLOXY)-3-((1-METHYLETHYL)AMINO)-; 2-PROPANOL, 1-(INDOL-4-YLOXY)-3-(ISOPROPYLAMINO)-;
1-(1H-INDOL-4-YLOXY)-3-((1-METHYLETHYL)AMINO)-2-PROPANOL;
1-(INDOL-4-YLOXY)-3-(ISOPROPYLAMINO)-2-PROPANOL; CARVISKEN; PRINODOLOL;
4-(2-HYDROXY-3-ISOPROPYLAMINOPROPOXY)-INDOLE; VISKEN; C14H20N2O2; OHS69125
CHEMICAL FAMILY:
bicyclic
CREATION DATE: Dec 21 1992 REVISION DATE: Mar 30 1997

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: PINDOLOL
CAS NUMBER: 13523-86-9
PERCENTAGE: 100.0

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=1 REACTIVITY=0
EU CLASSIFICATION:
Xn; R 22
EMERGENCY OVERVIEW:
COLOR: off-white.
PHYSICAL FORM: crystalline powder.
ODOR: faint odor.
MAJOR HEALTH HAZARDS: harmful if swallowed
PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.
POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: irritation.
LONG TERM EXPOSURE: no information is available.
SKIN CONTACT:
SHORT TERM EXPOSURE: irritation.
LONG TERM EXPOSURE: no information is available.
EYE CONTACT:
SHORT TERM EXPOSURE: irritation.
LONG TERM EXPOSURE: no information is available.
INGESTION:
SHORT TERM EXPOSURE: same as effects reported in other routes of exposure, irregular heartbeat, drowsiness, dizziness, disorientation, dilated pupils, lung congestion, convulsions, coma.

R2-0003955

PINDOLOL

LONG TERM EXPOSURE: allergic reactions, sore throat, rash, hair loss, ringing in the ears, nausea, vomiting, diarrhea, stomach pain, chest pain, difficulty breathing, headache, fainting, tingling sensation, joint pain, hearing loss, visual disturbances, impotence, lung damage, blood disorders, kidney damage, liver enlargement.
CARCINOGEN STATUS:
OSHA: N
NTP: N
IARC: N

SECTION 4 FIRST AID MEASURES

INHALATION: Remove from exposure immediately. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Get medical attention.
SKIN CONTACT: Remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention, if needed.
EYE CONTACT: Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.
INGESTION: Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, tum head to side. Get medical attention immediately.
ANTIDOTE: isoproterenol, intravenous; glucagon, infusion; atropine; epinephrine; l-norepinephrine; dopamine; dobutamine.
NOTE TO PHYSICIAN: For ingestion, consider gastric lavage, activated charcoal slurry and catharsis.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Slight fire hazard. Dust/air mixtures may ignite or explode.
EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, water, regular foam.
Large fires: Use regular foam or flood with fine water spray.
FIREFIGHTING: Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding fire Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.
FIREFIGHTING PROTECTIVE EQUIPMENT: Full firefighting tum-out gear (bunker gear). Any supplied-air respirator with fiill facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:
Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny entry.

R2-0003956

SECTION 7 HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards.
Store in a cool, dry place. Store in a tightly closed container. Keep
separated from incompatible substances.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
PINDOLOL:
No occupational exposure limits established by OSHA, ACGIH, or NIOSH.
VENTILATION: Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.
EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
CLOTHING: Wear appropriate chemical resistant clothing.
GLOVES: Wear appropriate chemical resistant gloves.
RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
Any dust, mist, and fume respirator.
Any air-purifying respirator with a high-efficiency particulate filter.
Any powered, air-purifying respirator with a dust, mist, and fume filter.
Any powered, air-purifying respirator with a high-efficiency particulate filter.
For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: off-white
PHYSICAL FORM: crystalline powder
ODOR: faint odor
MOLECULAR WEIGHT: 248.33
MOLECULAR FORMULA: C14-H20-N2-O2
MELTING POINT: 333-343 F (167-173 C)
VAPOR PRESSURE: not applicable
VAPOR DENSITY: not applicable
SPECIFIC GRAVITY: No data available
WATER SOLUBILITY: almost insoluble
PH: not applicable
VOLATILITY: not applicable
ODOR THRESHOLD: No data available
EVAPORATION RATE: not applicable
SOLVENT SOLUBILITY:
Slightly Soluble: alcohol, chloroform

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

R2-0003957

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.
INCOMPATIBILITIES: oxidizing materials.
PINDOLOL:
OXIDIZERS (STRONG): Fire and explosion hazard.
HAZARDOUS DECOMPOSITION: Thermal decomposition products: oxides of carbon, nitrogen.
POLYMERIZATION: Will not polymerize.

SECTION 11 TOXICOLOGICAL INFORMATION

PINDOLOL:
TOXICITY DATA:
263 mg/kg oral-rat LD50; 110 mg/kg intraperitoneal-rat LD50; 251 mg/kg subcutaneous-rat LD50; 51 mg/kg intravenous-rat LD50; 235 mg/kg oral-mouse LD50; 80 mg/kg intraperitoneal-mouse LD50; 336 mg/kg subcutaneous-mouse LD50; 22600 ug/kg intravenous-mouse LD50.
CARCINOGEN STATUS: None.
ACUTE TOXICITY LEVEL:
Toxic: ingestion.
TARGET ORGANS: No data available
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: kidney problems, liver problems.
REPRODUCTIVE EFFECTS DATA:
2200 mg/kg oral-rat TDLo 7-17 day(s) pregnant female continuous.
ADDITIONAL DATA: May be excreted in breast milk. Interactions with drugs may occur.
HEALTH EFFECTS:
INHALATION:
ACUTE EXPOSURE:
PINDOLOL: May cause irritation.
CHRONIC EXPOSURE:
PINDOLOL: No data available.
SKIN CONTACT:
ACUTE EXPOSURE:
PINDOLOL: May cause irritation.
CHRONIC EXPOSURE:
PINDOLOL: No data available.
EYE CONTACT:
ACUTE EXPOSURE:
PINDOLOL: May cause irritation.
CHRONIC EXPOSURE:
PINDOLOL: No data available.
INGESTION:
PINDOLOL: Reproductive effects have been reported in animals. See information on on beta-adrenergic blocking agents.
ACUTE EXPOSURE:
BETA-ADRENERGIC BLOCKING AGENTS: An overdose may produce cardiovascular effects of profound hypotension and bradycardia, or less commonly hypertension and tachycardia; atrioventricular block; intraventricular conduction disturbances; cardiogenic shock; pulmonary edema, especially in persons with myocardial disease; and cardiorespiratory arrest due to asystole or rarely, ventricular fibrillation. Some beta-blockers act on the central nervous system producing dizziness, drowsiness, decreased alertness, respiratory depression and apnea, delirium, convulsions, catatonia, and coma. Amnesia, dilated pupils, hypoglycemia,

hyperkalemia, and bronchospasm may also occur. Allergic reactions may occur in previously exposed persons. Other effects may occur as detailed in chronic ingestion. Most of the critical signs of an overdose appear in about 1-2 hours. Fatalities have been reported.

CHRONIC EXPOSURE:

BETA-ADRENERGIC BLOCKING AGENTS: In addition to the effects of acute exposure, continued therapeutic use has produced dry mouth, taste distortion, heartburn, gastric pain, nausea, vomiting, anorexia, bloating, flatulence and diarrhea or constipation. Nervous system effects may include fatigue, headache, lightheadedness, lethargy, mental depression, weakness, paresthesias, hypoesthesia, hyperesthesia, anxiety, nervousness, diminished concentration, insomnia, nightmares and bizzare, vivid, and numerous dreams. Changes in behavior, hallucinations, disorientation of time and place, short-term memory loss, emotional lability, decreased performance on neuropsychometrics, slurred speech, tinnitus and hearing loss may also occur. The eyes may be affected by irritation, discomfort, drying, buming, conjunctivitis, visual disturbances, and decreased intraocular pressure. Myasthenia gravis may be aggravated. Cardiovascular effects which may be produced or exacerbated, and which may depend on underlying disease, include angina, arterial insufficiency usually of the Raynaud type, vasodilation, claudication, congestive heart failure, first and third degree heart block, and cerebral vascular accident. Symptoms may include chest pain, shortness of breath, cold extremities, edema, flushing, pallor, and syncope. Respiratory effects may include nasal stuffiness, cough, rhonchi, bronchial obstruction, rales, wheezing, and pulmonary fibrosis. Renal and mesenteric arterial thrombosis, renal failure, ischemic colitis, retroperitoneal fibrosis, acute pancreatitis, hepatomegaly, elevated liver enzymes, altered blood lipid levels, and hyperglycemia have been reported. Impotence or decreased libido, dysuria nocturia, and urinary retention or frequency may occur. Arthritis, arthralgia, muscle cramps and pain, and back pain are possible. Allergic reactions may include fever, pharyngitis, sore throat, numerous numerous erythematous skin reactions, laryngospasm, respiratory distress, and anaphylaxis which may be fatal. Other skin reactions may include pruritus, increased pigmentation, sweating, reversible alopecia, dry skin, psoriasiform eruptions, onycholysis, and rarely, necrotic reactions. Hematologic reactions may include agranulocytosis and thrombocytopenic or nonthrombocytopenic purpura. Induction or exacerbation of lupus erythematosus has been reported rarely. Miscellaneous effects may include facial swelling, weight gain or loss, decreased exercise tolerance, peyronie's disease, and rigors. Hypertensive crisis, myocardial infarction, exacerbation of angina and hyperthyroidism, ventricular arrhythmias and death may occur after abrupt withdrawl.

SECTION 12 ECOLOGICAL INFORMATION

No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

SECTION 14 TRANSPORT INFORMATION

R2-0003959

No classification currently assigned.

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:
TSCA INVENTORY STATUS: N
TSCA 12(b) EXPORT NOTIFICATION: Not listed.
CERCLA SECTION 103 (40CFR302.4): N
SARA SECTION 302 (40CFR355.30): N
SARA SECTION 304 (40CFR355.40): N
SARA SECTION 313 (40CFR372.65): N
SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21):
ACUTE: Y
CHRONIC: N
FIRE: N
REACTIVE: N
SUDDEN RELEASE: N
OSHA PROCESS SAFETY (29CFR1910.119): N
STATE REGULATIONS:
CALIFORNIA PROPOSITION 65: N
INTERNATIONAL REGULATIONS:
EU NUMBER (EINECS): 236-867-9
EU RISK AND SAFETY PHRASES:
R: 22
Harmful if swallowed.
S: 2-13-24-36-46
Keep out of reach of children. Keep away from food, drink and animal feeding stuffs. Avoid contact with skin. Wear suitable protective clothing. If swallowed, seek medical advice immediately and show this container or label.

SECTION 16 OTHER INFORMATION

MSDS SUMMARY OF CHANGES
SECTION 3 HAZARDS IDENTIFICATION
SECTION 5 FIRE FIGHTING MEASURES
SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES
SECTION 11 TOXICOLOGICAL INFORMATION
SECTION 12 ECOLOGICAL INFORMATION
COPYRIGHT 1984-1997 MDL INFORMATION SYSTEMS, INC. ALL RIGHTS RESERVED.

R2-0003960

DENAVIR
CREMA

SmithKline Beecham

SAFETY SUMMARY
TO BE USED WITH MSDS NUMBER 10000326
SUBSTANCE/PREPARATION : PENCICLOVIR, FREE ACID

PENCICLOVIR, FREE ACID		
		May cause heritable genetic damage. Avoid exposure - obtain special instruction before use. Wear suitable protective clothing and gloves.
Toxic		
Not classified as a significant fire hazard Not classified as a significant environmental hazard.		
TARGET ORGANS-NO SPECIFIC TARGET ORGAN EFFECTS KNOWN.		

SYNONYMS

9-[4-HYDROXY-3-(HYDROXYMETHYL)BUTYL]GUANINE * PENCICLOVIR FREE ACID * 2-AMINO-1,9-DIHYDRO-9-[4-HYDROXY-3-(HYDROXYMETHYL)BUTYL 6H-PURIN-6-ONE * BRL-39123 * 39123 (BRL) * PENCICLOVIR * DRAFT MSDS NO. BRL39123

HEALTH EFFECTS

SKIN CONTACT:
Irritation and allergic skin reaction are not expected following direct contact. However, skin contact should be avoided.

EYE CONTACT:
Irritation can occur following direct contact with this material. Symptoms might include redness, swelling, blurred vision or pain.

INHALATION:
Effects of breathing dust are not known. Symptoms after over exposure might include non-specific signs of irritation such as coughing, increased secretions or difficulty breathing.

INGESTION:
Toxicity following ingestion is not expected. However, ingestion should be avoided.

FIRST-AID

SKIN CONTACT:
Remove contaminated clothing and wash exposed area with soap and water. Obtain medical assistance if irritation occurs.

EYE CONTACT:
Wash eyes with water for at least 15 minutes with copious amounts of water, then obtain immediate medical attention.

INHALATION:
Move exposed subject to fresh air. Seek medical assistance in case of known or possible over exposure to this material or with symptoms including chest pain, difficulty breathing, loss of consciousness or other adverse effects which may be delayed. IF BREATHING HAS STOPPED, START BASIC LIFE SUPPORT AND SEEK IMMEDIATE MEDICAL ASSISTANCE.

INGESTION:
In the event of swallowing this material, seek immediate medical assistance.

EMERGENCY PROCEDURES

FIRE:
Toxic or corrosive gases are expected from fires involving this material. Use water, carbon dioxide, foam or dry chemical extinguishers.
Toxic or corrosive gases are expected in fires involving this material.

SPILLAGE:
Instruct all personnel not involved in clean up operations to keep at a designated, safe distance. Wear protective clothing and equipment consistent with the degree of hazard. Carefully scoop up the spillage and place in a suitable, properly labeled container for recovery or disposal. Take care to avoid excessive dust during cleanup. Wash down spillage area with copious amounts of water. This must only be undertaken in waste water can be directed to an on-site waste water treatment system.

STORAGE, HANDLING AND PROTECTION

STORAGE:
Avoid prolonged storage at elevated temperatures (greater than room temperature, approximately 20 degrees C).

HANDLING:
This material has not been tested for its dust explosion properties. However, like most organic dusts, it is expected to explode when ignited as a dust cloud. Care should be taken to avoid dispersion as a dust cloud. Do not use this material near sources of ignition. Use a fume hood when working with dust.

PROTECTION:
Personal exposure to this material should be avoided. Enclosure or local exhaust ventilation at the source of the material release should be used to routinely control exposure. If local exhaust ventilation is not appropriate, respirators supplied for the identified hazard must be worn. Protection of the eyes, body, hands and feet must be considered and the appropriate protective clothing supplied should be worn if contact is possible.

R2-0003961

SmithKline Beecham

SAFETY SUMMARY
TO BE USED WITH MSDS NUMBER 10000326
SUBSTANCE/PREPARATION : PENCICLOVIR, FREE ACID

PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION:
White to off-white solid.

FLASH POINT:
Not applicable.

VAPOUR DENSITY:
Expected to be negligible.

AUTOIGNITION TEMP:
Not determined.

VAPOUR PRESSURE:
Expected to be negligible.

LOWER EXPLOSIVE LIMIT:
Not applicable for solids.

UPPER EXPLOSIVE LIMIT:
Not applicable for solids.

BOILING POINT:
Not determined.

SOLUBILITY:
Slightly soluble in water (3.13 g/cubic dm), propylene glycol, methanol and absolute alcohol.
Insoluble in octanol and isopropyl myristate.

OTHER INFORMATION

DECOMPOSITION PRODUCTS:
Not identified.

DISPOSAL CONSIDERATIONS:
Collect for recycling or recovery, if possible. Dispose of material on site in a licensed chemical incinerator, if allowed by the incinerator license or permit. If no on-site incinerator is available, dispose of material in a licensed commercial chemical incinerator.

OCCUPATIONAL EXPOSURE LIMITS:
SmithKline Beecham(PEL):
0.4 MG/M3 (8 HR TWA)

R2-0003962

TABLETA

SBMID Material Safety Summary Sheet

TO BE USED WITH MSDS: 10001464

Substance/Preparation
TRANILAST

SB Number
9952-AA (BRL)

SAFETY SUMMARY INFORMATION:

==========

HAZARDS OVERVIEW

==========

INFORMATION ON HAZARD LABELLING:
Harmful
Caution - fire and environmental hazards not yet fully identified.

Harmful if swallowed.
SYMBOL:
St Andrew's cross (Xn)
TARGET ORGAN:
PHARMACEUTICAL AGENT.
MAY PRODUCE LIVER TOXICITY.

==========

SYNONYMS

==========

TRADENAMES/SYNONYMS:
BRL-9952-AA * 9952-AA (BRL) *
2-[[3-(3,4-DIMETHOXYPHENYL)-1-OXO-2-PROPENYL]AMINO] BENZOIC ACID *
N-(3,4-DIMETHOXYCINNAMOYL) ANTHRANILIC ACID * MK-341 * D1003546

==========

HEALTH EFFECTS

==========

SKIN CONTACT:
Potential to produce irritation or allergic reaction is not known. Itching, redness or swelling might occur immediately or after repeated contact.
EYE CONTACT:
Potential to produce irritation is not known. Assume symptoms might include redness or swelling.
INHALATION:
Effects of breathing dust are not known. Avoid inhalation.
INGESTION:
This material is a pharmaceutical agent.
Effects after prolonged, repeated overexposure might include feeling of discomfort, nausea and headache.

==========

FIRST-AID

==========

SKIN CONTACT:
Remove contaminated clothing and flush exposed area with large amounts of water. Obtain medical assistance if skin reaction occurs, which may be immediate or delayed. Do not use a chemical neutraliser.
EYE CONTACT:
Flush eyes continuously with water for at least 15 minutes. Do not use a

R2-0003963

chemical neutraliser. Obtain medical assistance if symptoms occur.

INHALATION:

Move exposed person to fresh air. Seek medical assistance in case of known or possible overexposure to this material or with symptoms including chest pain, difficulty breathing, loss of consciousness or other adverse effects which may be delayed. IF BREATHING HAS STOPPED, START BASIC LIFE SUPPORT AND SEEK IMMEDIATE MEDICAL ATTENTION.

INGESTION:

In the event of occupational ingestion, seek medical advice. Induction of vomiting is not a recommended first-aid procedure.

EMERGENCY PROCEDURES

FIRE CONTROL:

The combustibility of this material has not been determined. Water, dry powder or foam extinguishers are recommended. Carbon dioxide extinguishers may be ineffective.

SPECIAL FIREFIGHTING PROCEDURES:

Since toxic, corrosive or flammable vapours might be evolved from fires involving this material, self contained breathing apparatus and full protective equipment are recommended for firefighters. Move containers from the fire area if possible without increased personal risk. If possible, contain and collect firefighting water for later disposal.

SPILLS:

Prevent entry into waterways, sewers, and surface drainage systems. If spill is outdoors, cover with plastic sheet to minimise spreading or contact with rain. Fence or cordon the affected area and do not allow individuals to touch or walk through the spilled material unless wearing appropriate protective clothing. Avoid dust generation. Collect material and place it in a suitable, properly labelled container for recovery or disposal. Following removal of spillage, wash down spillage area with copious amounts of water only if waste water can be directed to an on-site waste water treatment system.

DECONTAMINATION PROCEDURES:

Water can be used for clean-up and decontamination operations. No specific detoxification procedures have been identified for this substance.

STORAGE, HANDLING AND PROTECTION

HANDLING:

Depending upon scale of operation, a fume cupboard or other type of exhaust ventilation is recommended to routinely control exposure to this material. This material has not been tested for its dust explosion properties. However, like most dusts, it is expected to explode when ignited as a dust cloud. Care should be taken to avoid dispersion as a dust cloud. Ensure that all items of plant and equipment used for handling this material are bonded and earthed (grounded). The presence of isolated conductors should be avoided.

STORAGE:

Keep in tightly closed containers or packages away from moisture. Avoid prolonged storage at elevated temperatures (greater than room temperature, approximately 20 degrees C). Protect from light.

RESPIRATORS:

If respiratory protective equipment (RPE) is used, the type of RPE will depend upon air concentrations present, required protection factor as well as hazards, physical properties and warning properties of substances present.

R2-0003964

Follow local regulations for respirator use in the workplace.

EYE PROTECTION:

If eye contact is possible, wear safety glasses with sideshields when handling this material.

GLOVES:

if gloves are needed, nitrile gloves are expected to protect against occasional skin contact with this material, based on solubility information. Additional protection may be required based on other hazards present and operations performed.

OTHER EOUIPMENT OR PROCEDURES:

If skin contact is possible, wear protective clothing with long sleeves. An eye wash station should be available.

PHYSICAL AND CHEMICAL PROPERTIES

COLOUR:

Light yellow.

PHYSICAL FORM:

Crystals or powder.

ODOUR:

Odourless.

MELTING POINT:

207-210 degrees C.

WATER SOLUBILITY:

This material is insoluble in water.

OTHER SOLUBILITY:

This material is very soluble in:
Dimethyl formamide.
This material is soluble in:
Pyridine.
This material is sparingly soluble in:
Acetone.
Glacial Acetic Acid.
Methanol.
Chloroform.
This material is insoluble in:
Benzene.
Hexane.

OTHER INFORMATION

HAZARDOUS DECOMPOSITION PRODUCTS:

Toxic, corrosive or flammable thermal decomposition products are expected when the material is exposed to fire.

DISPOSAL CONSIDERATIONS:

Collect for recycling or recovery, if possible. SmithKline Beecham operations should refer to SB Standard E-7 and associated guidance G-E-7 for selection of the most appropriate waste disposal option, or consult their local, sector or corporate environmental specialist. In addition, all current local and national requirements must be observed when disposing of this material.

EXPOSURE CONTROLS:

TRANILAST:

0.3 MG/M3 (8 HR TWA)

DATE REVISED: 25 February 98

R2-0003965

SmithKline Beecham

TABLETA

SAFETY SUMMARY
TO BE USED WITH MSDS NUMBER 10000700

SUBSTANCE/PREPARATION : SB-220453

HAZARDS OVERVIEW

FIRE: Not classified as a significant fire hazard

HEALTH: Caution - Health hazard not fully identified

ENVIRONMENTAL:

Caution - Environmental hazard not fully identified

HAZARDS:

No severe health effects expected when handling this material.

PRECAUTIONS:

Avoid exposure - obtain special instructions before use.
Do not breathe dust.

SYNONYMS

6-ACETYL-3,4-DIHYDRO-2,2-DIMETHYL-CIS-4S-(3-CHLORO-4-FLUORO-BENZOYLAMINO)-2H-BENZO[B]PYRAN-3S-OL * 220453(SB) * (3S-CIS)-N-(6-ACETYL-3,4-DIHYDRO-3-HYDROXY-2,2-DIMETHYL-2H-1-BENZOPYRAN-4-YL)-3-CHLORO-4-FLUOROBENZAMIDE * D1000004 * DRAFT MSDS NO. D1000004

HEALTH EFFECTS

SKIN CONTACT:

Potential to produce irritation or allergic reaction is not known. Itching, redness or swelling migh occur immediately or after repeated contact.

EYE CONTACT:

Potential to produce irritation is not known. Assume symptoms might include redness or swelling.

INHALATION:

Avoid inhaling this material. Effects of breathing dust are not known but might include migraine-like symptoms in some individuals.

INGESTION:

Avoid swallowing this material. Ingestion might include migraine-like symptoms in some individuals.

FIRST AID

SKIN CONTACT:

Remove contaminated clothing and flush exposed area with large amounts of water. Obtain medical assistance if skin reaction occurs, which may be immediate or delayed. Do not use a chemical neutraliser.

EYE CONTACT:

Flush eyes continuously with water for at least 15 minutes. Do not use a chemical neutraliser. Obtain medical assistance if symptoms occur.

INHALATION:

Move exposed subject to fresh air. Seek medical assistance in case of known or possible overexposure to this material or with symptoms including chest pain, difficulty breathing, loss of consciousness or other adverse effects which may be delayed. IF BREATHING HAS STOPPED, START BASIC LIFE SUPPORT AND SEEK IMMEDIATE MEDICAL ATTENTION.

INGESTION:

In the event of occupational ingestion, seek medical advice. Induction of vomiting is not a recommended first-aid procedure.

EMERGENCY PROCEDURES

FIRE:

This material is expected to be combustible. Water, dry powder or foam extinguishers are recommended. Carbon dioxide extinguishers may be ineffective.

SPILLAGE:

SPILLS:

Prevent entry into waterways, sewers, and surface drainage systems. If spill is outdoors, cover with plastic sheet to minimise spreading or contact with rain. Fence or cordon the affected area and do not allow individuals to touch or walk through the spilled material unless wearing appropriate protective clothing. Avoid dust generation. Collect material and place it in a suitable, properly labeled container for recovery or disposal. Following removal of spillage, wash down spillage area with copious amounts of water only if waste water can be directed to an on-site waste water treatment system.

DECONTAMINATION PROCEDURES:

Detergent solutions can be used for clean-up and decontamination operations. No specific detoxification procedures have been identified for this substance.

STORAGE, HANDLING AND PROTECTION

STORAGE:

Avoid prolonged storage at elevated temperatures (greater than room temperature, approximately 20 degrees C).

Keep in tightly closed containers or packages away from moisture.

HANDLING:

This material has not been tested for its dust explosion properties. However, like most dusts, it is expected to explode when ignited as a dust cloud. Care should be taken to avoid dispersion as a dust cloud. Ensure that all items of plant and equipment used for handling this material are bonded and earthed (grounded). The presence of isolated conductors should be avoided. Use only with adequate local exhaust ventilation or enclosure to routinely control airborne dust levels.

PROTECTION:

RESPIRATORS:

If respiratory protective equipement (RPE) is used, the type of RPE will depend upon air concentrations present, required protection factor as well as hazards, physical properties and warning properties of substances present.

GLOVES:

If gloves are needed, nitrile gloves are expected to protect against occasional skin contact with this material, based on solubility

R2-0003966

information. Additional protection may be required based on other hazards present and operations performed.

EYE PROTECTION:

If eye contact is possible, wear chemical splash goggles or comparable eye protection when handling this material.

HYGIENE PRACTICES:

Wash hands and arms thoroughly after handling this material.
Clean up spills immediately.

OTHER PROTECTIVE EQUIPMENT OR PROCEDURES:

An eye wash station should be available.

PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION:

White crystals.

BOILING POINT:

No Data Available

SOLUBILITY:

Expected to be insoluble.

OTHER INFORMATION

ECOMPOSITION PRODUCTS:

Toxic, corrosive or flammable thermal decomposition products areexpected when this material is exposed to fire.

DISPOSAL CONSIDERATIONS:

Collect for recycling or recovery, if possible. The recommended method of disposal for this material is incineration. Wherever possible, disppsal should be in an on-site licenced chemical incinerator, if allowed by the incinerator licence or permit. If no on-site incinerator is available, dispose of material in a licenced commercial chemical incinerator. Where incineration is not possible, SmithKline Beecham operations should refer to SB Standard E-7 and associated guidance G-E-7 for selection of the most appropriate altemative waste disposal option, or consult their local, sector or corporate environmental specialist. In addition, all current local and national requirements must be observed when disposing of this material.

OCCUPATIONAL EXPOSURE LIMITS:

SmithKline Beecham(PEL):

0.4 MG/M3 (8 HR TWA)

R2-0003967

Teveten
TABLETS

SmithKline Beecham

SAFETY SUMMARY
TO BE USED WITH MSDS NUMBER 10000675

SUBSTANCE/PREPARATION : EPROSARTAN

EPROSARTAN

		Risk of serious damage to eyes. May cause harm to unborn child. Avoid exposure - obtain special instruction before use. Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves.
Toxic	Irritant	

Not classified as a significant fire hazard

Caution - Environmental hazard not fully identified

Pharmaceutical Agent

TARGET ORGANS-PHARMACEUTICAL AGENT- MAY REDUCE BLOOD PRESSURE.

SYNONYMS

(E)-ALPHA-([2-BUTYL-1-[(4-CARBOXYPHENYL)METHYL)-1H-IMIDAZOL-5-YL]METHYLENE]-2-THIOPHENEPROPANIC ACID MONOMETHANESULFONATE * SK&F 108566-J * 108566-J (SKF) * (E)-3-[2-BUTYL-1-[(4-CARBOXYPHENYL)METHYL]-1H-IMIDAZOL-5-YL)-2-[(2-THIENYL)METHYL]PROPENIC ACID METHANESULFONATE * TEVENTEN

HEALTH EFFECTS

SKIN CONTACT:

Allergic skin reaction and irritation are not expected following direct contact with this material. However, skin contact should be avoided.

EYE CONTACT:

SEVERE IRRITATION CAN OCCUR. Serious or permanent eye damage is possible.

INHALATION:

This material is a pharmaceutical agent. Effects of breathing dust are not known but might include dizziness and lightheadedness, based upon effects of other drugs that reduce blood pressure.

INGESTION:

This material is a pharmaceutical agent. Symptoms after ingestion might include dizziness and lightheadedness, based upon effects of other agents that reduce blood pressure.

FIRST-AID

SKIN CONTACT:

If skin contact occurs, wash contaminated area thoroughly.

EYE CONTACT:

Flush eyes continuously with water for at least 15 minutes. Do not use a chemical neutraliser. Obtain immediate medical attention.

INHALATION:

Move exposed subject to fresh air. Seek medical assistance in case of known or possible overexposure to this material or with symptoms including chest pain, difficulty breathing, loss of consciousness or other adverse effects which may be delayed. IF BREATHING HAS STOPPED, START BASIC LIFE SUPPORT AND SEEK IMMEDIATE MEDICAL ASSISTANCE.

INGESTION:

In the event of swallowing this material, seek medical assistance. Do not induce vomiting.

EMERGENCY PROCEDURES

FIRE:

This material is expected to be combustible. Water, dry powder or foam extinguishers are recommended. Carbon dioxide extinguishers may be ineffective.

SPILLAGE:

Instruct all personnel not involved in clean up operations to keep at a designated, safe distance. Wear protective clothing and equipment consistent with the degree of hazard. Carefully scoop up the spillage and place in a suitable, properly labeled container for recovery or disposal. Take care to avoid excessive dust during cleanup. Wash down spillage area with copious amounts of water. This must only be undertaken in waste water can be directed to an on-site waste water treatment system.

STORAGE, HANDLING AND PROTECTION

STORAGE:

Keep in tightly closed containers or packages away from moisture and away from sources of ignition. Store at room temperature (15 to 30 degrees C; 59 tb 86 degrees F).

HANDLING:

Depending upbn scale of operation, a lime cupboard or other type of exhaust ventilation is recommended to routinely control exposure to this material. Assess operations based upon available dust explosion information to determine the suitability of preventive or protective systems as precautionary measures against possible dust explosions. If prevention is not possible, consider protection by use of containment, venting or suppression of dust handling equipment. Bond and earth (ground) all plant and equipment to ensure that no isolated conductors are present. All personnel dealing with dusty operations must be earthed (grounded). Minimise the use of plastics when handling this material. This material should be handled in conductive or anti- static liners (bags). This material should not be allowed to come into contact with any surface temperature greater than 327 C.

PROTECTION:

Personal exposure to this material should be avoided. Enclosure or local exhaust ventilation at the source of the material release should be used to routinely control exposure. If local exhaust ventilation is not appropriate, respirators

R2-0003968

supplied for the identified hazard must be wom.
Protection of the eyes, body, hands and feet must be considered and the appropriate protective clothing supplied should be wom If contact is possible.

PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION:
White/off-white. Solid.

BOILING POINT:
Not determined.

SOLUBILITY:
This material is insoluble in water.

OTHER INFORMATION

DECOMPOSITION PRODUCTS:
Toxic, corrosive or flammable thermal decomposition products areexpected when the material is exposed to fire.

DISPOSAL CONSIDERATIONS:
Collect for recycling or recovery, if possible. Dispose of material on site in a licensed chemical incinerator if allowed by the incinerator license or permit. If no on-site incinerator is available, dispose of material in a licensed commercial chemical incinerator. For SmithKline Beecham operations, refer to SB Standard E-7 and associated guidance G-E-7 on hazardous waste disposal for selection of the most appropriate waste disposal option. All local and national requirements must be observed when disposing of this material.

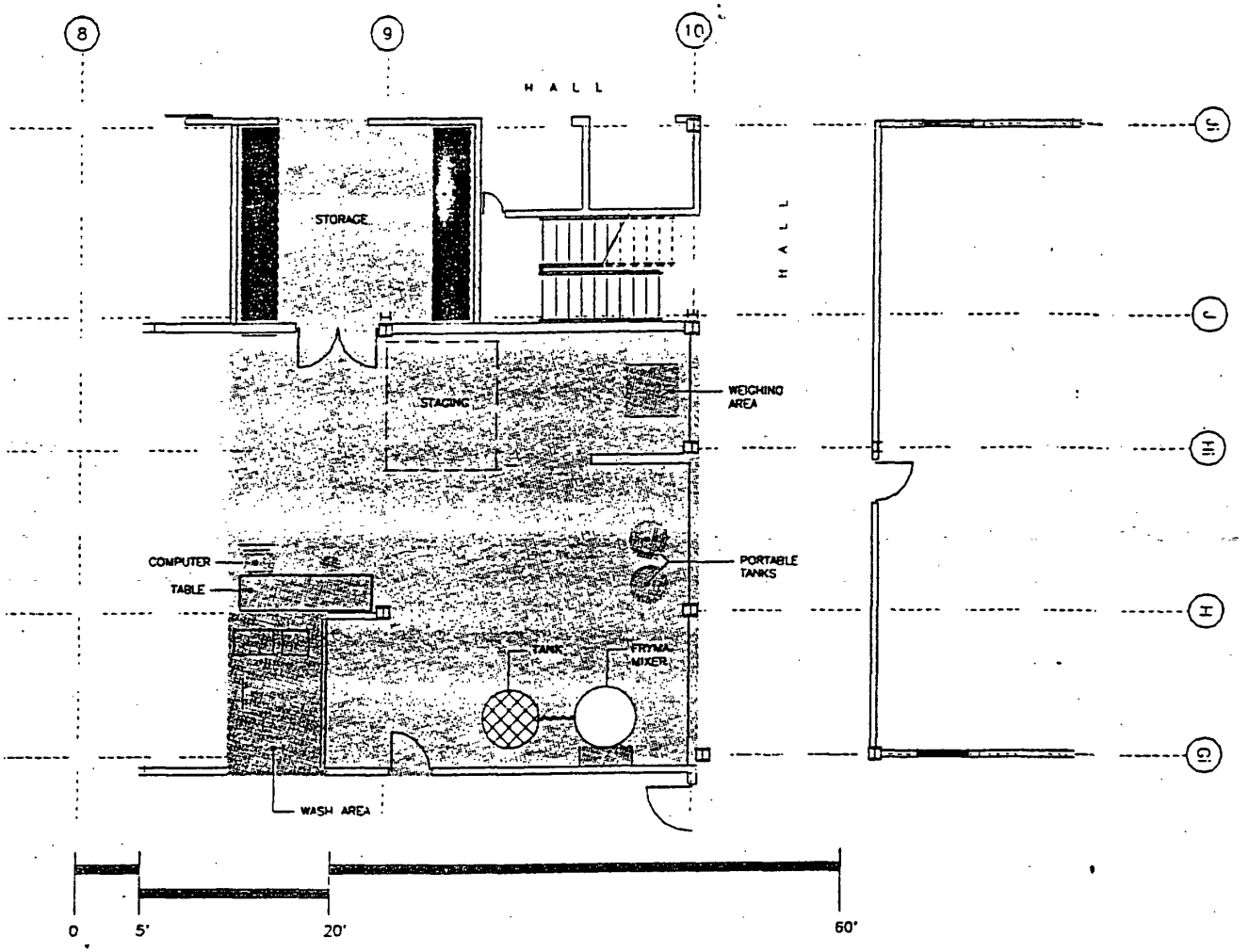
OCCUPATIONAL EXPOSURE LIMITS:
SmithKline Beecham(PEL):
0.2 MG/M3 (8 HR TWA)

R2-0003969

ANEJO H

LOCALIZACION DE AREA DE MANUFACTURA DE CREMAS

R2-0003970



SMITHKLINE BEECHAM PHARMACEUTICALS
CIDRA, PUERTO RICO

ANEJO H

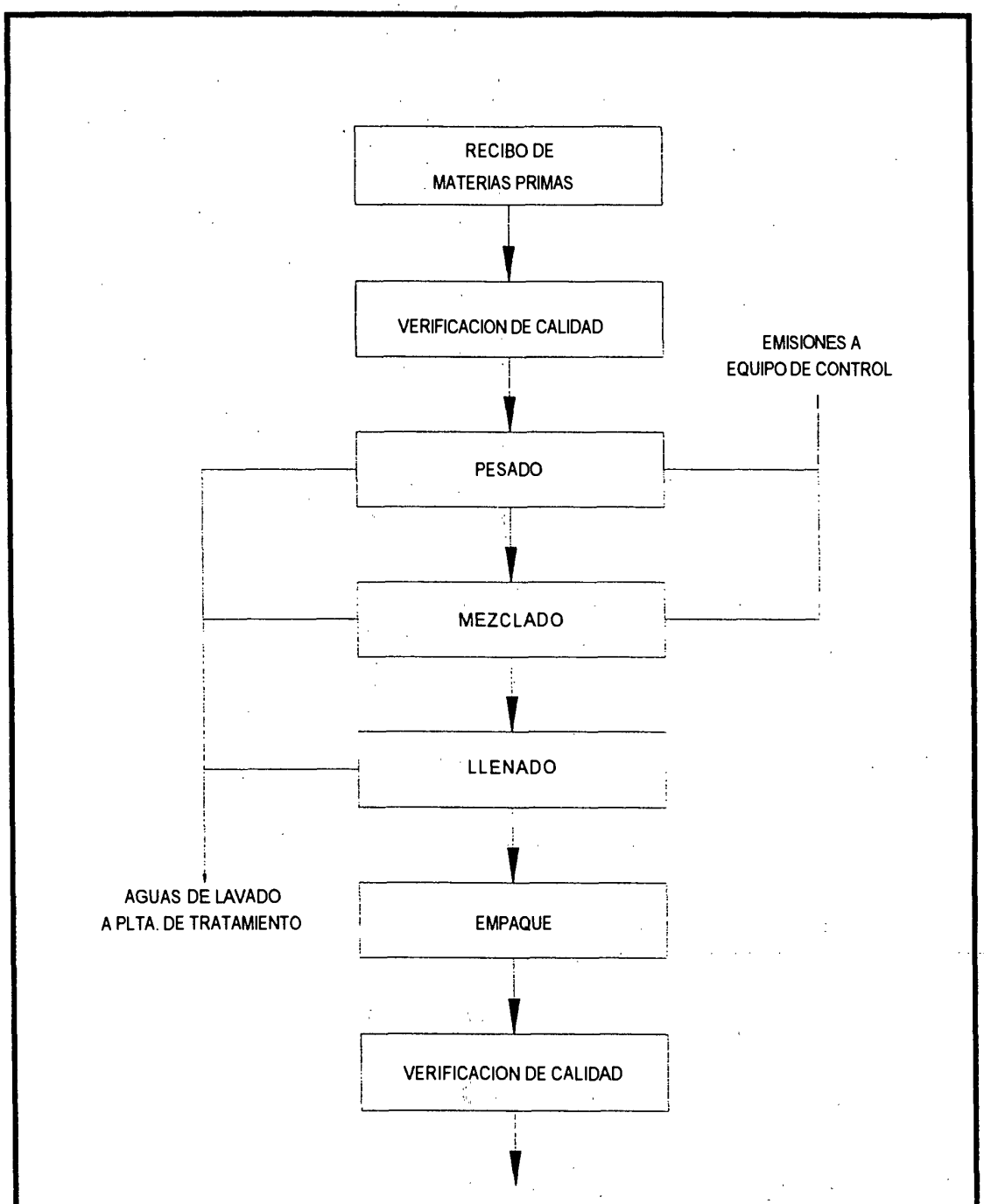
LOCALIZACION DE AREA DE MANUFACTURA DE CREMAS Y UNGÜENTOS

R2-0003971

ANEJO I

DIAGRAMA DE FLUJO - MANUFACTURA DE CREMAS

R2-0003972



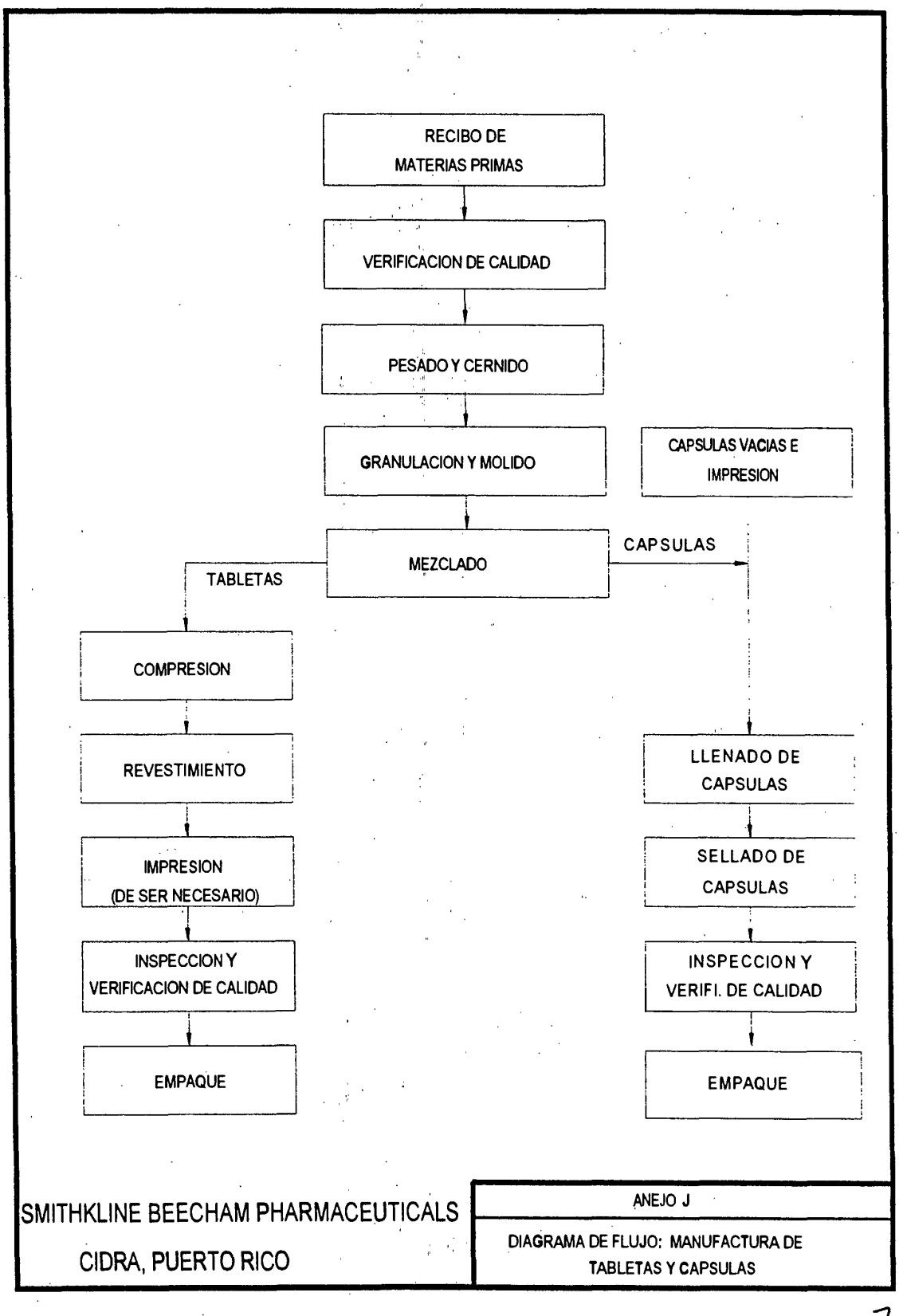
SMITHKLINE BEECHAM PHARMACEUTICALS CIDRA, PUERTO RICO	ANEJO I DIAGRAMA DE FLUJO: MANUFACTURA DE CREMAS Y

R2-0003973

ANEJO J

DIAGRAMA DE FLUJO - MANUFACTURA DE TABLETAS Y CAPSULAS

R2-0003974



SMITHKLINE BEECHAM PHARMACEUTICALS

CIDRA, PUERTO RICO

ANEJO J

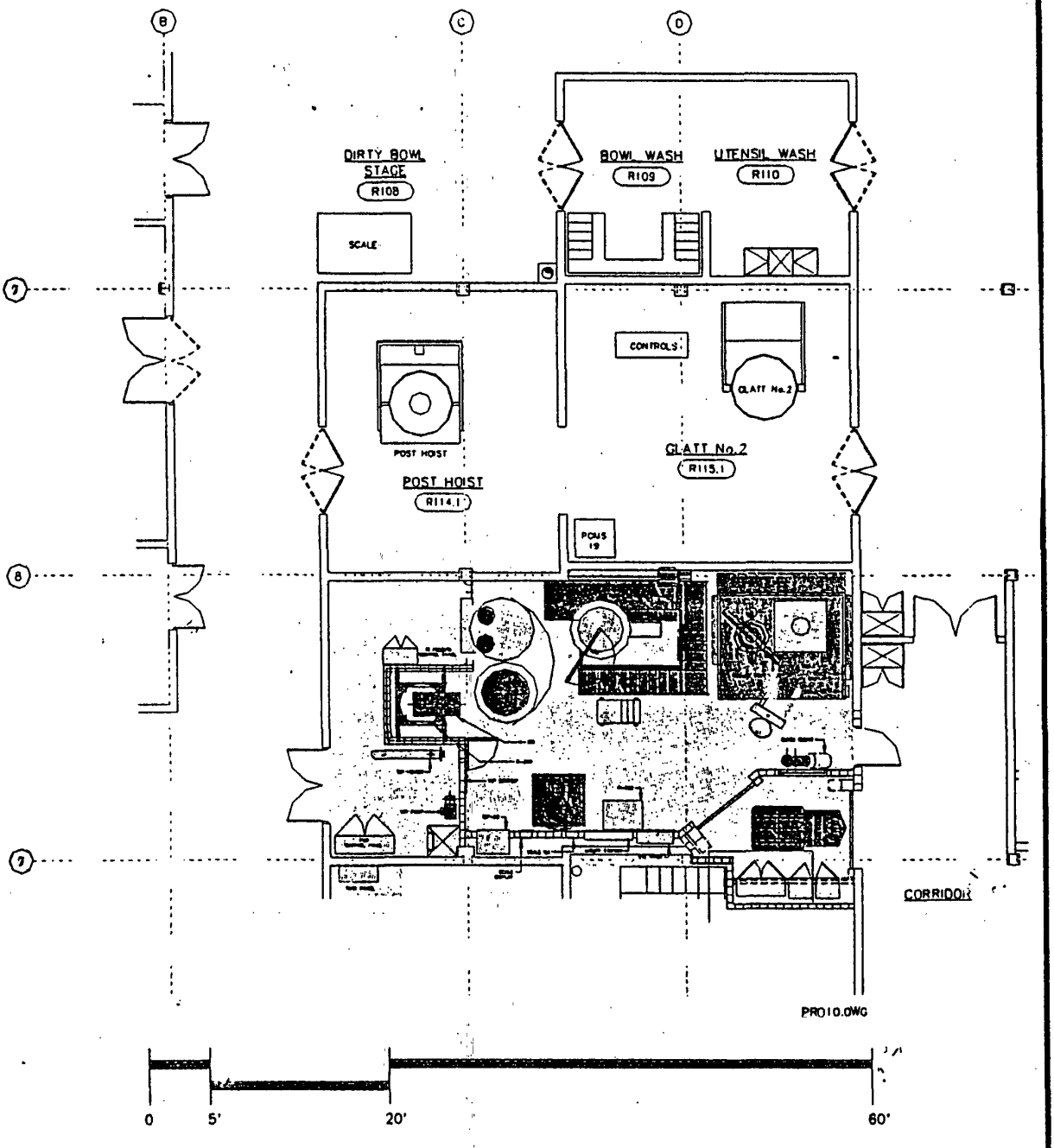
DIAGRAMA DE FLUJO: MANUFACTURA DE TABLETAS Y CAPSULAS

R2-0003975

ANEJO K

LOCALIZACION DE AREAS DE GRANULACION

R2-0003976



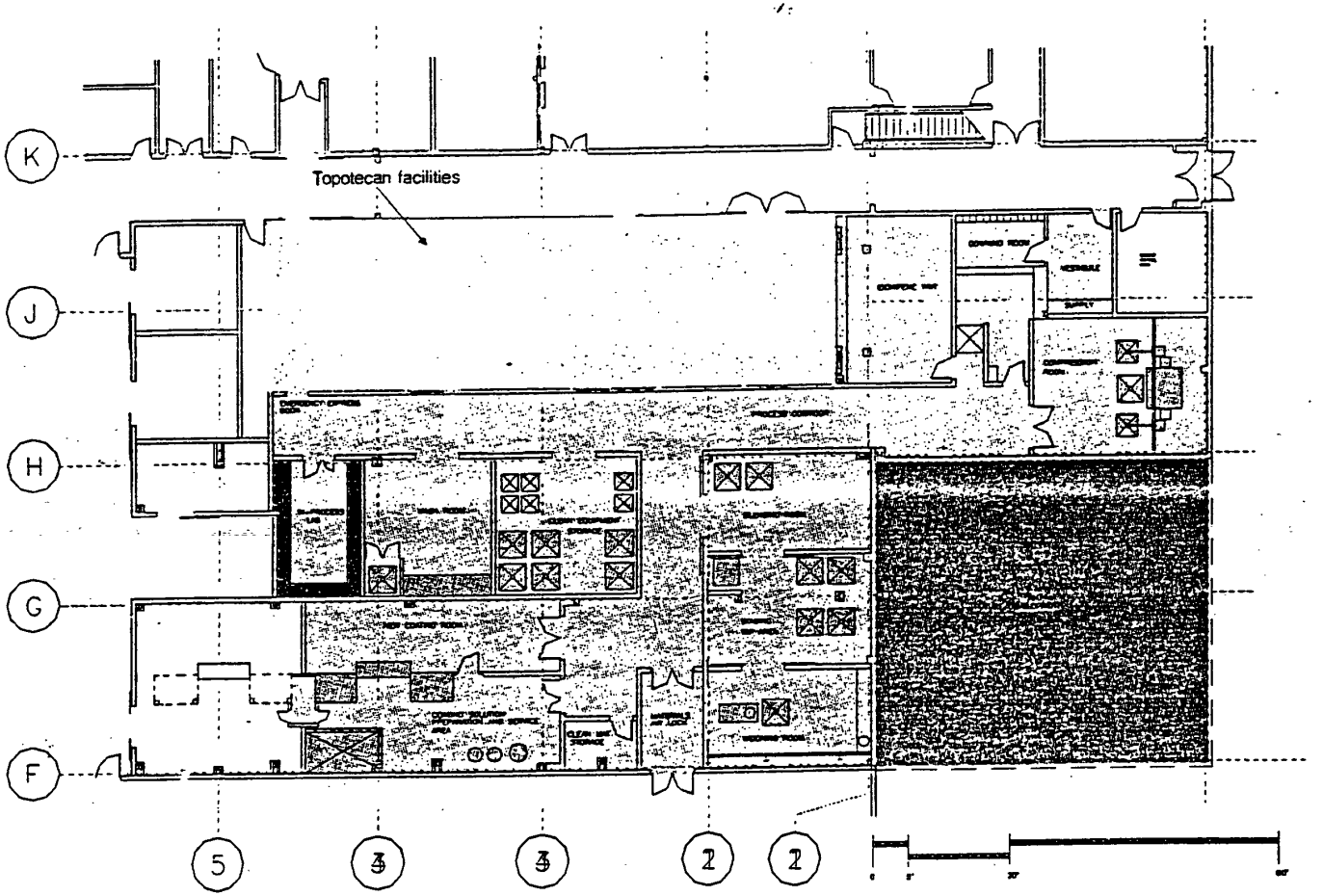
SB PHARMCO PUERTO RICO, INC. CIDRA, PUERTO RICO	ANEJO K LOCALIZACION DE AREA DE GRANULACION

R2-0003977

ANEJO L

LOCALIZACION DE AREA DE MANUFACTURA DE IDOXIFENE

R2-0003978



SMITHKLINE BEECHAM PHARMACEUTICALS CIDRA, PUERTO RICO	ANEJO L LOCALIZACION DE AREA PARA LA MANUFACTURA DE IDOXIFENE

R2-0003979

ANEJO M

HOJAS DE DATOS DE SEGURIDAD DE MATERIALES (MSDS)

DE LAS MATERIAS PRIMAS NUEVAS EN SB

R2-0003980

SmithKline Beecham

MATERIAL SAFETY DATA SHEET 10000837

IDOXIFENE

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

SUBSTANCE/PREPARATION:

IDOXIFENE

TRADENAMES/SYNONYMS:

223030 (SB) * PYRROLIDINO-4-IODOTAMOXIFEN *
(E)-1-[4-[2-(PYRROLIDINO)ETHOXY]PENYL]-I-(4-IODOPHENYL)-2-PHENYL-1-BUTENE *
(E)-1-[2-[4-[1-(4-IDODOPHENYL)-2-PHENYL-1-BUTENYL]PHENOXY]ETHYL]PYRROLIDINE * SB-223030 *
DRAFT MSDS NO. USPH0200

MOLECULAR FORMULA:

C28-H30-I-N-O

MOLECULAR WEIGHT:

523.451

COMPANY NAME:

SmithKline Beecham, Corporate Environment & Safety

U.S. Office
2200 Renaissance Blvd Suite 105
King of Prussia, PA 19406
U.S.A.
Phone Numbers:
+1 610-239-5229

U.K. Office:
Norfolk House
Southdownview Way, Worthing
West Sussex, BN14 8 NQ England
+44-(0)1903-822650

Emergency and after hours contact:
+1-800-228-5635, Extension 221 (In North America)
+1-612-221-3999, Extension 221 (Outside North America)

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	CAS NUMBER	PERCENTAGE
IDOXIFENE	116057-75-1	99

3. HAZARDS IDENTIFICATION

SKIN CONTACT:

Minor skin irritation with itching redness or swelling might occur following direct contact with this material. Allergic reaction is not expected.

EYE CONTACT:

Irritation is not expected following direct contact with this material. However, eye contact should be avoided.

INHALATION:

This material is a potent pharmaceutical agent. Symptoms alter overexposure might include nausea or vomiting or, in females, uncomfortable feeling of warmth.

INGESTION:

This material is a potent pharmaceutical agent. Symptoms after overexposure might include nausea or vomiting or, in females, uncomfortable feeling of warmth.

CONDITIONS AGGRAVATED BY EXPOSURE:

Overexposure might have an adverse effect on: Male and female fertility. Developing offspring during pregnancy. The nursing infant if you are breast feeding.

4. FIRST-AID MEASURES

R2-0003981

SKIN CONTACT:

Remove contaminated clothing and flush exposed area with large amounts of water. Obtain medical assistance if skin reaction occurs, which may be immediate or delayed. Do not use a chemical neutraliser.

NOTE TO PHYSICIAN:

None.

EYE CONTACT:

If eye contact occurs, flush eyes continuously with water for at least 15 minutes. Do not use a chemical neutraliser. Obtain medical assistance if symptoms occur.

NOTE TO PHYSICIAN:

Consider further flushing of eyes with large amounts of water or saline.

INHALATION:

Move exposed person to fresh air. Seek medical assistance in case of known or possible overexposure to this material or with symptoms including chest pain, difficulty breathing, loss of consciousness or other adverse effects which may be delayed. IF BREATHING HAS STOPPED, START BASIC LIFE SUPPORT AND SEEK IMMEDIATE MEDICAL ATTENTION.

NOTE TO PHYSICIAN:

None.

INGESTION:

In the event of occupational ingestion, seek medical advice. Induction of vomiting is not a recommended first-aid procedure.

NOTE TO PHYSICIAN:

Medical treatment in cases of overexposure should be treated as an overdosage of antiestrogen. This material is not a corrosive agent.

ANTIDOTES:

No specific antidotes known.

5. FIRE-FIGHTING MEASURES

FIRE CONTROL:

This material is non-combustible. However, toxic or corrosive vapours are expected if this material is exposed to fire.

SPECIAL FIREFIGHTING PROCEDURES:

Since toxic, corrosive or flammable vapours might be evolved from fires involving this material, self contained breathing apparatus and full protective equipment are recommended for firefighters. Move containers from the fire area if possible without increased personal risk. If possible, contain and collect firefighting water for later disposal.

6. ACCIDENTAL RELEASE MEASURES

SPILLS:

Prevent entry into waterways, sewers, and surface drainage systems. If spill is outdoors, cover with plastic sheet to minimise spreading or contact with rain. Fence or cordon the affected area and do not allow individuals to touch or walk through the spilled material unless wearing appropriate protective clothing. Avoid dust generation. Collect material and place it in a suitable, properly labelled container for recovery or disposal. Following removal of spillage, wash down spillage area with copious amounts of water only if waste water can be directed to an on-site waste water treatment system.

DECONTAMINATION PROCEDURES:

Detergent solutions can be used for clean-up and decontamination operations. No specific detoxification procedures have been identified for this substance.

7. HANDLING AND STORAGE

R2-0003982

HANDLING:

Isolation or enclosure is recommended to control exposure to this material. Assess operations based upon available dust explosion informadon to determine the suitability of preventive or protective systems as precautionary measures against possible dust explosions. If prevention is npt possible, consider protection by use of containment, venting or suppression of dust handling equipment. Bond and earth (ground) all plant and equipment to ensure that no isolated conductors are present. All personnel dealing wilh dusty operations must be earthed (grounded). Minimise the use of plastics when handling this material. This material should be handled in conductive or anti- static liners (bags). This material is of low conductivity and coupled wilh its appreciable charge decay time might represent a source of electrostatic charge accumulation. This material should nol be allowed to come into contact with any surface temperature greater than 215C C.

STORAGE:

Avoid prolonged storage at elevated temperatures (greater than room temperature, approximately 20 degrees C). Keep in tightly closed containers or packages away from moisture.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE CONTROLS:

IDOXIFENE:

SmithKline Beecham Personal Exposure Limit (SB PEL):

0.00003 MG/M3 (8 HR TWA)

OCCUPATIONAL HYGIENE METHODS:

"For SmithKline Beecham operations, conlact the site Indusirial or Occupational Hygienist, site safety advisor or regional Corporate Environment & Safety group, as appropriate, for advice on suitable monitoring methods.

RESPIRATORS:

When isolation is nol possible, respiratory protective equipment (RPE) should be combined with applicable protective equipment. The type of RPE will depend on air concentrations present and operations performed.

EYE PROTECTION:

If eye contact is possible, wear safety glasses with sideshields when handling this malerial.

GLOVES:

If gloves are needed, nitrile gloves are expected lo protect against occasional skin contact with this material, based on solubility information. Addidonal protection may be required based on other hazards present and operations performed.

OTHER EQUIPMENT OR PROCEDURES:

In laboratories, wear lab coat or olher protective clothing with long sleeves and applicable protective equipment. When isolalion is nol possible in production areas, applicable personal protecdve equipment must be used. An eye wash station and safely shower should be available.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:

COLOUR:

White/off-while.

PHYSICAL FORM:

Solid.

MELTING POINT:

107 degrees C.

BOILING POINT:

Not determined.

DISSOCIATION CONSTANT (PKA):

7.5.

R2-0003983

IDOXIFENE

WATER SOLUBILITY:

This material is insoluble in water.

OXYGEN BALANCE:

This material is considered to be of low energy hazard potential based on its oxygen balance. Oxygen balance calculated as minus 199.

TRAIN FIRE:

This material is classified as a non combustible solid. Therefore it will not bum in bulk quantities.

DUST EXPLOSION:

Classification A.
Minimum Ignilion Temperature - Cloud (degrees C): 380.
Minimum Ignidon Temperature -Layer (degrees C) : 290.
Maximum Explosion Pressure - Pmax (bar): 7.9.
Maximum Rate of Pressure Change - dP/dTmax (bar/second): 750.
Explosion Constant - Kst (bar metre/second):. 203.
Explosion Severity - St (Class): 2.

DUST ELECTROSTATIC PROPERTIES:

Minimum Ignition Energy (mJ): 3-5.
Resislivity at Ambient (55%) Humidity (ohm metre): L9x10e14.
Charge Relaxation Time at Ambient (55%) Humidity (seconds): 21240.
Resistivity al Low (10%) Humidity (ohm metre): 1.0x10e13.
Charge Relaxation Time at Low (10%) Humidity (seconds): 20160.

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:

Avoid direct sunlight, conditions that might generate heat and dispersion as a dust cloud.

STABILITY:

This material is stable.

THERMAL STABILITY:

Decomposes at greater than 292 degrees C. This material exhibited exothermic activity in laboratory studies. However, this activity occurred al temperatures nol expected lo occur during normal process operafions.

HAZARDOUS POLYMERISATION:

This malerial will not polymerise.

HAZARDOUS DECOMPOSITION PRODUCTS:

Toxic, corrosive or flammable thermal decomposition products are expected when the material is exposed to fire.

FIRE AND EXPLOSION HAZARDS:

Ignition of a dust cloud produces a strong dust explosion. Moderate pressure between 6 and 8 bar is produced during a dust explosion. Dust clouds are potentially very highly sensitive to ignition from incendive electrostafic discharges. Dust clouds are not considered to be sensitive toward ignition from hot surfaces. Powder layers are considered to be relafively sensitive toward ignition from hot surfaces.

IL TOXICOLOGICAL INFORMATION

ORAL TOXICITY:

Lethality occurred in rats followed a single oral dose of 300 mg/kg. In a 28 day study in rats, tethality occurred at 10 mg/kg/day.

INHALATION TOXICITY:

No studies have been conducted.

R2-0003984

IDOXIFENE

SKIN TOXICITY:

Non irritant to intact rabbit skin. Minor irritant to intact rabbit skin (Draize categoiy = mild).

EYE EFFECTS:

Minor irritadon occurred following direct application to rabbit eyes (Kay and Calandra class 4).

SENSITISATION:

Classified as a non-sehsitiser to guinea pig skin. No allergic skin reacdons occurred in the maximisation test.

GENETIC TOXICITY:

Not genoloxic in laboratory studies with cultured cells or in animals.

CARCINOGENICITY:

This material is not listed as a carcinogen by SB, IARC, NTP or US OSHA.

REPRODUCTIVE EFFECTS:

Assigned to the following reproductive toxicity category, according to SB criieria: Known or presumed to impair ferfility in human males and females (category IF). Known or presumed to cause toxicity in developing hiiman offspring (category ID). Known or presumed to affect the quantity or the quality of breast milk in humans (category IM).

OTHER TOXICOLOGIC OR ADVERSE EFFECTS:

This material is expected lo affect sex hormones and reproduction.

12. ECOLOGICAL INFORMATION

SUMMARY:

No information is available about the potendal pf this malerial lo produce adverse environmenlal effects. Local regulafions and procedures should be consulted prior to environmenlal release.

13. DISPOSAL CONSIDERATIONS

DISPOSAL CONSIDERATIONS:

Collect for recycling or recovery, if possible. The only apprppriate method of disposal for this material is incinerafion. Wherever possible, disposal should be in an on-site licenced chemical incinerator, if allowed by the incinerator licence or permit. If no on-site incinerator is available, dispose of material in a licenced commercial chemical incinerator.

14. TRANSPORT INFORMATION

The MSDS should accompany all shipments for reference in the event of spillage or accidental release.

TRANSPORT CLASSIFICATION AND LABELLING:

Technical Name:	IDOXIFENE.

AIR TRANSPORT (IATA REQUIREMENTS):

Classification And Labelling:	As above.
Proper Shipping Name:	Olher Regulated Substance IDOXIFENE.
ID Number:	ID 8027
Class/Division:	9 (danger sign - black vertical stripes in upper half of while diamond with figure 9 in bottom comer)
Subsidiary Risk:	None
Packing Group:	Not applicable (use packing instruction 906).
Excepfions:	None

MARITIME TRANSPORT (IMDG REQUIREMENTS):

Classification and Labelling:	As above.
Exceptions;	Although the hazards of this malerial are not regulated according lo IMDG

R2-0003985

requirements, hazard label information in seclion 16 of the MSDS must be shown on the conlainer

UNITED STATES GROUND TRANSPORT (DOT REQUIREMENTS):

Proper Shipping Name:	Other Regulated Substance, solid, nos IDOXIFENE.
NA Number:	NA 3077
Class/Division:	9 (danger sign - black vertical stripes in upper half of white diamond with figure 9 in bottom comer)
Subsidiary Risk:	None
Paclding Group:	III.
Marine Pollutant:	Nol Listed
US Emergency Response Guide Number:	171
Exceptions:	Quantities equal to or less than 5 kg per inner packaging are not subject to the fiill packaging and labelling requirements, although the appropriate shipping papers will be required.

EUROPEAN GROUND TRANSPORT (ADR/RID REQUIREMENTS):

Classification And Labelling:	Not classified for European ground transport.
Exceptions:	Although the hazards of this material are not regulated according to ADR/RID requirements, hazard label information in secfion 16 of the MSDS must be shown on the container.

15. REGULATORY INFORMATION

EUROPEAN UNION CLASSIFICATION AND LABELLING REQUIREMENTS:

Toxic (T),R60, R61, R64, S36/37, S53, S22

16. OTHER INFORMATION

REFERENCES:

SB Hazard Determinafion

R2-0003986

IDOXIFENE

INFORMATION ON HAZARD LABELLING:

IDOXIFENE		
		May impair fertility. May cause harm to the unborn child. May cause harm to breastfed babies. Wear suitable protective clothing and gloves Avoid exposure - obtain special instructions before use. Do not breathe dust.
Toxic		
Caution - fire hazard not fully identified. Caution - environmental hazard not fully identified.		
TARGET ORGAN: PHARMACEUTICAL AGENT. AFFECTS FEMALE SEX HORMONES AND REPRODUCTIVE SYSTEM. AFFECTS MALE SEX HORMONES AND REPRODUCTIVE SYSTEM.		

'This information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. The publisher, its parent, subsidiaries and affiliates assume no responsibility for personal injuty or property damage to vendees, users or third parties caused by the material. Such persons assume all risks associated with the use of the material. '

R2-0003987

SmithKline Beecham

MATERIAL SAFETY DATA SHEET 20000261

SUBSTANCE/PREPARATION : OPADRY YELLOW OY-S-22907

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

SUBSTANCE/PREPARATION :
OPADRY YELLOW OY-S-22907
TRADENAME/SYNONYMS :
COLORCON YELLOW OY-S-22907 * D1000581
CHEMICAL FAMILY:
Mixture.
COMPANY:
SMITHKLINE BEECHAM, CORPORATE ENVIRONMENT & SAFETY

U.S. OFFICE:	U.K. OFFICE:
2200 RENAISSANCE BLVD	NORFOLK HOUSE
KING OF PRUSSIA, PA, 19406	SOUTHDOWNVIEW WAY, WORTHING
U.S.A.	WEST SUSSEX, BN14 8NQ, ENGLAND

PHONE NUMBERS:
+1-610-239-5229 +44-(0)1903-822650
EMERGENCY AND AFTER HOURS CONTACT:
++1-612-221-3999, EXTENSION 221 (Outside North America)
++1-800-228-5635, EXTENSION 221 (Toll Free USA/Canada)

2. *COMPOSITION/INFORMATION ON INGREDIENTS*

INGREDIENT	CAS RN	PERCENT
NON HAZARDOUS INGREDIENTS	UNASSIGNED	100

CONTAMINANTS
No significant hazardous contaminants.

3. *HAZARDS IDENTIFICATION*

HEALTH EFFECTS:
SKIN CONTACT:
Allergic skin reaction and irritadon are not expected following direct contact with this materiat. However, skin contact should be avoided.
EYE CONTACT:
Irritation following direct contact with this material is not expected. However, eye contact should be avoided.
INHALATION:
Not expected with the recommended use of this material. Effects of breathing dust are not known. Avoid inhalation.
INGESTION:
Toxicity following ingestion is not expected. However, ingestion should be avoided.
CONDITIONS AGGRAVATED BY EXPOSURE:
None for occupational exposure.

R2-0003988

4. FIRST-AID MEASURES

SKIN CONTACT:

Remove contaminated clothing and flush exposed area with large amounts of water. Obtain medical assistance if skin reaction occurs, which may be immediate or delayed. Do not use a chemical neutraliser.

NOTES TO PHYSICIAN:

None.

EYE CONTACT:

Flush eyes continuously with water for at least 15 minutes. Do not use a chemical neutraliser. Obtain medical assistance if symptoms occur.

NOTES TO PHYSICIAN:

Consider further flushing of eyes with large amounts of water or saline.

INHALATION:

Move exposed person to fresh air. Seek medical assistance in case of known or possible overexposure to this material or with symptoms including chest pain, difficulty breathing, loss of consciousness or other adverse effects which may be delayed. IF BREATHING HAS STOPPED, START BASIC LIFE SUPPORT AND SEEK IMMEDIATE MEDICAL ATTENTION.

NOTES TO PHYSICIAN:

For combustion products, refer to section number 10.

INGESTION:

In the event of swallowing this material, seek medical assistance. Do not induce vomiting.

NOTES TO PHYSICIAN:

This material is not a corrosive agent.

ANTIDOTES:

No specific antidotes known.

5. FIRE-FIGHTING MEASURES

FIRE CONTROL

This material is expected to be combustible. Water, dry powder or foam extinguishers are recommended. Carbon dioxide extinguishers may be ineffective.

SPECIAL FIREFIGHTING PROCEDURES:

Since toxic, corrosive or flammable vapours might be evolved from fires involving this material, self contained breathing apparatus and full protective equipment are recommended for firefighters. Move containers from the fire area if possible without increased personal risk. If possible, contain and collect firefighting water for later disposal. Refer to MSDS Section 10 for expected thermal decomposition products.

6. ACCIDENTAL RELEASE MEASURES

SPILLS:

Prevent entry into waterways, sewers, and surface drainage systems. If spill is outdoors, cover with plastic sheet to minimise spreading or contact with rain. Fence or cordon the affected area and do not allow individuals to touch or walk through the spilled material unless wearing appropriate protective clothing. Avoid dust generation. Collect material and place it in a suitable, properly labeled container for recovery or disposal. Following removal of spillage, wash down spillage area with copious amounts of water only if waste water can be directed

R2-0003989

to an on-site wasle water treatment system.

DECONTAMINATION PROCEDURES:

Water can be used for clean-up and decontamination operations. No specitic detoxitication procedures have been identitied for this substance.

7. HANDLING AND STORAGE

HANDLING:

No special control measures required for normal handling of this malerial. Normal room ventilation is expected to be adequate.

This material has nol been tested for its dust explosion properties. However, like most dusts, it is expected to explode when ignited as a dust cloud. Avoid dispersion as a dust cloud. Ensure lhal all items of plant and equipment used for handling this material are bonded and earthed (grounded). Avoid the presence of isolated conductors.

STORAGE:

Keep in tightly closed containers or packages away from moisture.

The recommended temperature for stprage is less than 30 degrees C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE CONTROLS:

No permissible exposure limils established by SmithKline Beecham, Australia, Belgium, Denmark, France, Germany, Uniied Kingdom (HSE) or Uniied Stales (ACGIH,OSHA).

INDUSTRIAL HYGIENE METHOD:

For SmithKline Beecham operations, conlaci the site Occupational or Industrial Hygienist or regional Corporate health and safety group, as appropriate, for advice on suitable monitoring methods.

For other operations, induslrial hygiene monitoring advice may be obtained from the health and safety group identitied in section 1.

PERSONAL PROTECTION:

RESPIRATORS:

If dust is present, a laboratoty fume hood, local exhaust ventilation or an appropriate respirator should be used. The specitic type used will be determined by air concentrations present. Follow local regulations for respirator use in the workplace.

GLOVES:

Latex rubber gloves are expected to protect against occasional skin conlaci with this malerial. Additional protection may be required based on mechanical, thermal, chemical, biological br electrical hazards present. Additional recommendations can be obtained from glove manufacturers.

EYE PROTECTION:

Wear safety glasses with sideshields when handling this material.

HYGIENE PRACTICES:

Wash hands and arms thoroughly after handling this material.

Clean up spills immediately.

OTHER PROTECTIVE EQUIPMENT:

None required for the normal use of this material.

R2-0003990

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:
Yellow powder.
FLASH POINT:
Not expected to be easily ignited.
AUTOIGNITION TEMPERATURE:
Greater than **350** degrees C.
MELTING POINT:
Not determined.
BOILING POINT:
Not determined.
PH OF AQUEOUS SOLUTIONS:
Not determined.
WATER SOLUBILITY:
This material is sparingly soluble in water.
OTHER SOLUBILITY:
Not determined.
TRAIN FIRE:
This material has not been train fire tested. Therefore, it should be assumed to burn in bulk quantities.
DUST EXPLOSION:
The dust explosion characteristics have not been determined for this material.
DUST ELECTROSTATIC PROPERTIES:
The electrostatic characteristics have not been determined for this material.

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:
Avoid direct sunlight, conditions that might generate heat and dispersion as a dust cloud.
INCOMPATIBILITY:
Strong oxidisers.
STABILITY:
This material is expected to be stable.
THERMAL STABILITY:
Not determined.
HAZARDOUS POLYMERIZATION:
This material will not polymerise.
HAZARDOUS DECOMPOSITION PRODUCTS:
Toxic, corrosive or flammable thermal decomposition products are expected when this material is exposed to fire.
FIRE AND EXPLOSION HAZARDS:
Not identified. As with many dusts, explosions might result when excessive dust concentrations are present in the vicinity of an ignition source.

11. TOXICOLOGY INFORMATION

ORAL TOXICITY:

R2-0003991

The oral LD50 is greater than 2000 mg/kg in rats, based on information from the supplier.

INHALATION TOXICITY:
No studies have been conducted. Inhalation toxicity is not expected.

SKIN TOXICITY:
This material was classified by the supplier as a non-irritant to skin.

EYE EFFECTS:
This material was classified as a non-irritant to eyes, based on information from the supplier.

SENSITISATION:
No studies have been conducted.

GENETIC TOXICITY:
No studies have been conducted.

CARCINOGENICITY:
This material is not listed as a carcinogen by SB, IARC, NTP or US OSHA.

REPRODUCTIVE EFFECTS:
Insufficient information available to categorise this material according to SB criteria for reproductive or developmental hazard.

OTHER TOXICOLOGIC OR ADVERSE EFFECTS:
None known for this material in humans.

12. ECOLOGICAL INFORMATION

SUMMARY:
No information is available about the potential of this material to produce adverse environmental effects. Refer to local procedures and regulations prior to release.

13. DISPOSAL CONSIDERATIONS

Collect for recycling or recovery, if possible. For waste disposal purposes, this material can be regarded as non-hazardous; however, any local and national requirements must be observed when disposing of this material.

14. TRANSPORT INFORMATION

The MSDS should accompany all shipments for reference in the event of spillage or accidental release.

TRANSPORT CLASSIFICATION AND LABELLING:
Transportation and shipping of this material is not restricted. It has no known, significant hazards requiring special packaging or labelling for air, maritime, US ground or European ground transport purposes.

15. REGULATORY INFORMATION

EUROPEAN UNION CLASSIFICATION AND LABELLING REQUIREMENTS:
No European Union labelling requirements.

16. OTHER INFORMATION

INFORMATION ON HAZARD LABELLING:
**** NOT CLASSIFIED AS A SIGNIFICANT FIRE HAZARD ****

R2-0003992

**** NOT CLASSIFIED AS A SIGNIFICANT HEALTH HAZARD ****
**** CAUTION - ENVIRONMENTAL HAZARD NOT FULLY IDENTIFIED ****

** TARGET ORGAN- NO SPECIFIC TARGET ORGAN EFFECTS KNOWN.
REFERENCES:
SB HAZARD DETERMINATION
'This information coniained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the resulls to be obtained from the use thereof. The publisher, its parent, subsidiaries ahd affiliates assume no responsibility for personal injuty or property damage to vendees, users or third parties caused by die material. Such persons assume all risks associated wilh the use of the malerial. '

R2-0003993

SmithKline Beecham

MATERIAL SAFETY DATA SHEET 20000257

SUBSTANCE/PREPARATION : OPADRY PINK OY-S-24900

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/ UNDERTAKING

SUBSTANCE/PREPARATION :
OPADRY PINK OY-S-24900
TRADENAME/SYNONYMS :
COLORCON PINK OY-S-24900 * D1000583
CHEMICAL FAMILY:
Mixture.
COMPANY:
SMITHKLINE BEECHAM, CORPORATE ENVIRONMENT & SAFETY

U.S. OFFICE:	U.K. OFFICE:
2200 RENAISSANCE BLVD	NORFOLK HOUSE
KING OF PRUSSIA, PA, 19406	SOUTHDOWNVIEW WAY, WORTHING
U.S.A.	WEST SUSSEX, BN14 8NQ, ENGLAND

PHONE NUMBERS:
+1-610-239-5229 +44-(0)1903-822650
EMERGENCY AND AFTER HOURS CONTACT:
++1-612-221-3999, EXTENSION 221 (Outside North America)
++1-800-228-5635, EXTENSION 221 (Toll Free USA/Canada)

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS RN	PERCENT
NON HAZARDOUS INGREDIENTS	UNASSIGNED	100

CONTAMINANTS
No significant hazardous contaminants.

3. HAZARDS IDENTIFICATION

HEALTH EFFECTS:
SKIN CONTACT:
Allergic skin reaction and irritation are not expected following direct conlaci wilh this malerial. However, skin contact should be avoided.
EYE CONTACT:
Irritation following direct contact with this material is not expected. However, eye contact should be avoided.
INHALATION:
Not expected wilh the recommended use of this material. Effects of breathing dust are nol known. Avoid inhalation.
INGESTION:
Toxicity following ingestion is not expected. However, ingestion should be avoided.
CONDITIONS AGGRAVATED BY EXPOSURE:
None for occupational exposure.

R2-0003994

4. FIRST-AID MEASURES

SKIN CONTACT:

Remove contaminated clothing and flush exposed area with large amounts of water. Obtain medical assistance if skin reacfion occurs, which may be immediate or delayed. Do not use a chemical neutraliser.

NOTES TO PHYSICIAN:

None.

EYE CONTACT:

Flush eyes confinuously wilh water for at least 15 minutes. Do nol use a chemical neutraliser. Obtain medical assistance if symptoms occur.

NOTES TO PHYSICIAN:

Consider further flushing of eyes with large amounts of water or saline.

INHALATION:

Move exposed person lo fresh air. Seek medical assistance in case of known or possible overexposure to this material or with symptoms including chest pain, difficulty breathing, loss of consciousness or other adverse effects which may be delayed. IF BREATHING HAS STOPPED, START BASIC LIFE SUPPORT AND SEEK IMMEDIATE MEDICAL ATTENTION.

NOTES TO PHYSICIAN:

For combustion products, refer to seclion number 10.

INGESTION:

In the event of swallowing this material, seek medical assistance. Do nol induce vomifing.

NOTES TO PHYSICIAN:

This malerial is not a corrosive agent.

ANTIDOTES:

No specific antidotes known.

5. FIRE-FIGHTING MEASURES

FIRE CONTROL

This material is expected to be combustible. Water, dry powder or foam extinguishers are recommended. Carbon dioxide extinguishers may be ineffective.

SPECIAL FIREFIGHTING PROCEDURES:

Since toxic, corrosive or flammable vapours thight be eyplved from fires involving this material, self contained breathing apparatus and full protecfive equipment are recommended for firefighters. Move containers from the fire area if possible wilhout increased personal risk. If possible, contain and collect firefighting water for later disposal.
Refer to MSDS Secfion 10 for expected thermal decomposition products.

6. ACCIDENTAL RELEASE MEASURES

SPILLS:

Prevent entry into waterways, sewers, and surface drainage systems. If spill is outdoors, cover with plastic sheel to minimise spreading or contact wilh rain. Fence or cordon the affected area and do nol allow individuals lo touch or walk through the spilled material unless wearing appropriate protecfive clothing. Avoid dust generafion. Collect material and place il in a suitable, properly labeled container for recovery or disposal. Following removal of spillage, wash down spillage area wilh copious amounts of water only if waste water can be directed

R2-0003995

to an on-site wasle water treatment system.

DECONTAMINATION PROCEDURES:

Water can be used for clean-up and decontamination operations. No specitic detoxitication procedures have been identitied for this substance.

7. HANDLING AND STORAGE

HANDLING:

No special control measures required for normal handling of this material. Normal room ventilation is expected to be adequate.

This material has not been tested for its dust explosion properties. However, like most dusts, it is expected lo explode when ignited as a dust cloud. Avoid dispersion as a dust cloud. Ensure that all items of plant and equipment used for handling this material are bonded and earthed (grounded). Avoid the presence of isolated conductors.

STORAGE:

Keep in tightly closed containers or packages away from moisture.

The recommended temperalure for storage is less lhan 30 degrees C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE CONTROLS:

No permissible exposure limils established by SmithKline Beecham, Australia, Belgium, Denmark, France, Germany, Uniied Kingdom (HSE) or United Stales (ACGIH,OSHA).

INDUSTRIAL HYGIENE METHOD:

For SmithKline Beecham operations, contact the site Occupational or Industrial Hygienist or regional Corporate health and safety group, as appropriate, for advice on suitable monitoring methods.

For olher operations, indusirial hygiene monitoring advice may be obtained from the health and safety group identitied in section 1.

PERSONAL PROTECTION:

RESPIRATORS:

If dust is present, a laboratory fiime hood, local exhaust ventilation or an appropriate respirator should be used. The specitic type used will be determined by air concentrations present. Follow local regulations for respirator use in the workplace.

GLOVES:

Latex rubber gloves are expected to proiect against occasional skin contact with this material. Additional protection may be required based on mechanical, thermal, chemical, biological or electrical hazards present. Additional recommendations can be obtained from glove manufacturers.

EYE PROTECTION:

Wear safety glasses with sideshields when handling this material.

HYGIENE PRACTICES:

Wash hands and arms thoroughly after handling this material.

Clean up spills immediately.

OTHER PROTECTIVE EQUIPMENT:

None required for the normal use of this material.

R2-0003996

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:
Pink powder.
FLASH POINT:
Not expected to be easily ignited.
AUTOIGNITION TEMPERATURE:
Greater than 350 degrees C.

MELTING POINT:
Not determined.
BOILING POINT:
Not determined.
PH OF AQUEOUS SOLUTIONS:
Not determined.
WATER SOLUBILITY:
This material is sparingly soluble in water.
OTHER SOLUBILITY:
Not determined.
TRAIN FIRE:
This material has not been train tire tested. Therefore, it should be assumed to bum in bulk quantities.
DUST EXPLOSION:
The dust explosion characteristics have not been determined for this material.
DUST ELECTROSTATIC PROPERTIES:
The electrostatic characteristics have not been determined for this material.

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:
Avoid direct suntight, conditions that might generate heat and dispersion as a dust cloud.
INCOMPATIBILITY:
Strong oxidisers.
STABILITY:
This material is expected to be stable.
THERMAL STABILITY:
Not determined.
HAZARDOUS POLYMERIZATION:
This material will not polymerise.
HAZARDOUS DECOMPOSITION PRODUCTS:
Toxic, corrosive or flammable thermal decomposition products are expected when this material is exposed to tire.
FIRE AND EXPLOSION HAZARDS:
Not identitied. As with many dusts, exptosions might result when excessive dust concentrations are present in the vicinity of an ignition source.

R2-0003997

11. TOXICOLOGY INFORMATION

ORAL TOXICITY:
The oral LD50 is greater than 2000 mg/kg in rats, based on information from the supplier.

INHALATION TOXICITY:
No studies have been conducted. Inhalation toxicity is not expected.

SKIN TOXICITY:
This material was classitied by the supplier as a non-irritant to skin.

EYE EFFECTS:
This material was ctassified as a non-irritant to eyes, based on information from the supplier.

SENSITISATION:
No studies have been conducted.

GENETIC TOXICITY:
No studies have been conducted.

CARCINOGENICITY:
This material is not listed as a carcinogen by SB, IARC, NTP or US OSHA.

REPRODUCTIVE EFFECTS:
Insufficient information available to categorise this material according to SB criteria for reproductive or developmental hazard.

OTHER TOXICOLOGIC OR ADVERSE EFFECTS:
None known for this material in humans.

12. ECOLOGICAL INFORMATION

SUMMARY:
No information is available about the potential of this material to produce adverse environmental effects. Refer to local procedures and regulations prior to release.

13. DISPOSAL CONSIDERATIONS

Collect for recycling or recovety, if possible. For waste disposal purposes, this material can be regarded as non-hazardous; however, any local and national reguirements must be observed when disposing of this materiat.

14. TRANSPORT INFORMATION

The MSDS should accompany all shipments for reference in the event of spillage or accidental release.

TRANSPORT CLASSIFICATION AND LABELLING:
Transportation and shipping of this material is not restricted. It has no known, signiticant hazards requiring special packaging or labelling for air, maritime, US ground or European ground transport purposes.

15. REGULATORY INFORMATION

EUROPEAN UNION CLASSIFICATION AND LABELLING REQUIREMENTS:
No European Union labelling requirements.

R2-0003998

16. OTHER INFORMATION

INFORMATION ON HAZARD LABELLING:

**** NOT CLASSIFIED AS A SIGNIFICANT FIRE HAZARD ****

**** NOT CLASSIFIED AS A SIGNIFICANT HEALTH HAZARD ****

**** CAUTION - ENVIRONMENTAL HAZARD NOT FULLY IDENTIFIED ****

** TARGET ORGAN- NO SPECIFIC TARGET ORGAN EFFECTS KNOWN.

REFERENCES:

SB HAZARD DETERMINATION

'This information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. The publisher, its parent, subsidiaries and affiliates assume no responsibility for personal injuty or property damage to vendees, users or third parties caused by the material. Such persons assume all risks associated with the use of the material. '

R2-0003999

SmithKline Beecham

MATERIAL SAFETY DATA SHEET 20000301

SUBSTANCE/PREPARATION : MAGNESIUM STEARATE

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/ UNDERTAKING

SUBSTANCE/PREPARATION :
MAGNESIUM STEARATE

TRADENAME/SYNONYMS :
OCTADECANOIC ACID, MAGNESIUM SALT * STEARIC ACID, MAGNESIUM SALT * MAGNESIUM DISTEARATE * DIBASIC MAGNESIUM STEARATE * RM 15 * 15 (RM) * 415057 (SIGMA-ALDRICH) * 415057 (SIGMA-ALDRICH)

CHEMICAL FAMILY:
Salt.

MOLECULAR FORMULA:
Mg-(C18-H35-O2)2

MOLECULAR WEIGHT:
591.25

EINECS NUMBER:
2091503

COMPANV:
SMITHKLINE BEECHAM, CORPORATE ENVIRONMENT & SAFETY

U.S. OFFICE:	U.K. OFFICE:
2200 RENAISSANCE BLVD	NORFOLK HOUSE
KING OF PRUSSIA, PA, 19406	SOUTHDOWNVIEW WAY, WORTHING
U.S.A.	WEST SUSSEX, BN14 8NQ, ENGLAND

PHONE NUMBERS:
+1-610-239-5229 +44-(0)1903-822650

EMERGENCY AND AFTER HOURS CONTACT:
++1-612-221-3999, EXTENSION 221 (Outside North America)
++1-800-228-5635, EXTENSION 221 (Toll Free USA/Canada)

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS RN	PERCENT
MAGNESIUM STEARATE	557-04-0	100

3. HAZARDS IDENTIFICATION

HEALTH EFFECTS:

SKIN CONTACT:
Irritation is not expected immediately following direct contact with this material. However, skin contact should be avoided. Potential lo produce allergic skin reaction is not known.

EYE CONTACT:
Mild irritation wilh redness or swelling might occur following direct contact with this material but adverse health effects are not expected.

INHALATION:
Effects of breathing dust are not known. Avoid inhating this malerial.

INGESTION:
Toxicity following ingestion is not expected. However, ingestion should be avoided. Ingestion of large amounts may cause diarrhea and abdominal pain.

CONDITIONS AGGRAVATED BY EXPOSURE:
None for occupational exposure.

R2-0004000

4. FIRST AID MEASURES

SKIN CONTACT:

Remove contaminated clothing and flush exposed area with large amounts of water. Obtain medical assistance if skin reacdpn occurs, which may be immediate or delayed. Do not use a chemical neutraliser.

NOTES TO PHYSICIAN:

None.

EYE CONTACT:

Flush eyes continuously with water for at least 15 minutes. Do not use a chemical neutraliser. Obtain iinnediate medical attention.

NOTES TO PHYSICIAN:

Consider further flushing of eyes with large amounts of water or saline.

INHALATION:

Move exposed subject to fresh air. Seek medical assistance in case of known or possible overexposure to this material or with symptoms including chest pain, difficult breathing, loss of consciousness or other adverse effects which may be delayed. IF BREATHING HAS STOPPED, START BASIC LIFE SUPPORT AND SEEK IMMEDIATE MEDICAL ATTENTION.

NOTES TO PHYSICIAN:

None.

INGESTION:

In the event of swaltowing this material, seek medical assistance. Do not induce vomiting.

NOTES TO PHYSICIAN:

This material is not a corrosive agent.

ANTIDOTES:

No specitic antidotes for occupationat exposure.

5. FIRE-FIGHTING MEASURES

FIRE CONTROL

This material is expected to support combustion. Water, dry powder or foam extinguishers are recommended. Carbon dioxide extinguishers may be ineffective. Toxic or corrosive vapours are expected if this material is exposed to tire.

SPECIAL FIREFIGHTING PROCEDURES:

Toxic or corrosive gases including oxides of carbon are expected in tires invoh ing this material. Self contained breathing apparatus and fiitl protective equipment are recommended for tiretighters. Move containers from tire area if possible without increased personat risk. Dike area if possibte to contain water for later disposal.

6. ACCIDENTAL RELEASE MEASURES

SPILLS:

Prevent entry into waterways, sewers, and surface drainage systems. If spill is outdoors, cover with plastic sheet to minimise spreading or contact with rain. Fence or cordon the affected area and do not allow

R2-0004001

individuals to touch or walk through the spilled material unless wearing appropriate protective clothing. Avoid dust generation. Collect material and place il in a suitable, properly labeled container for recovery or disposal. Following removal of spillage, wash down spillage area with copious amounts of water only if waste water can be directed to an on-site waste water treatment system.

DECONTAMINATION PROCEDURES:

Water can be used for clean-up and decontaminadon operations. No specitic detoxitication procedures have been identitied for this substance.

7. HANDLING AND STORAGE

HANDLING:

This material should be handled in conductive or anli-slalic liners (bags).

This material is of low conductivity and coupled with its appreciable charge decay time might represent a source of electrostatic charge accumulation.

Care should be taken to avoid dispersion as a dust cloud. Ensure that all items of plant and equipment used for handling this malerial are bonded and earthed (grounded). The presence of isolated conductors should be avoided.

Use only with adequate local exhaust ventilation or enclosure to routinely control airbo me dust levels.

STORAGE:

Avoid prolonged storage al elevated temperatures (greater lhan room temperature, approximately *20* degrees C). Keep in tightly closed containers or packages, away frolh moisture and away from sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE CONTROLS:

MAGNESRJM STEARATE:

United Stales(ACGIH):

10 MG/M3, TOTAL DUST

United States(OSHA):

5 MG/M3 (RESPIRABLE DUST); 15 MG/M3 (TOTAL DUST)

INDUSTRIAL HYGIENE METHOD:

For SmithKline Beecham operations, contact the site Occupational or Industrial Hygienist or regional Corporate health and safety group, as appropriate, for advice on suitable monitpring methods.

For olher operations, industrial hygiene monitoring advice may be obtained from the health and safety group identitied in seclion I.

PERSONAL PROTECTION:

*RE*SPIRATORS:

If dust is present, a laboratoty tinme hood, local exhaust ventilation or an appropriate respirator should be used. The specitic type used will be determined by air concentrations present. Follow local reguladons for respirator use in the workplace.

GLOVES:

R2-0004002

Wear impervious gloves.

EYE PROTECTION:

Wear safety glasses with sideshields when handling this material.

HYGIENE PRACTICES:

Wash hands and arms thoroughly after handling this material.
Clean up spills immediately.

OTHER PROTECTIVE EQUIPMENT:

Wear lab coat or other protective clothing with long sleeves.
An eye wash station should be available.

9. *PHYSICAL AND CHEMICAL PROPERTIES*

APPEARANCE:

Odourless, tasteless white powder.

FLASH POINT:

Greater than 150 degrees C.

AUTOIGNITION TEMPERATURE:

Greater lhan 374 degrees C.

LOWER EXPLOSIVE LIMIT:

Not applicabte for solids.

UPPER EXPLOSIVE LIMIT:

Not applicable for solids

MELTING POINT:

86 to 88 degrees C (187 to 190 degrees F).

BOILING POINT:

Not determined.

VAPOUR DENSITY:

Expected to be negligible.

VAPOUR PRESSURE:

Expected lo be negligible.

EVAPORATION RATE:

Expected to be negligibte.

VOLATILE COMPONENTS (%):

None expected.

VISCOSITY:

Not applicable for solids.

PH OF AQUEOUS SOLUTIONS:

Not determined.

RELATIVE DENSITY:

1.028

CONDUCTIVITY:

Not applicable for solids.

OCTANOL/WATER DISTRIBUTION COEFFICIENT:

Nol determined.

DISSOCIATION CONSTANT (pKA):

Not determined.

WATER SOLUBILITY:

Insoluble in water (0.003% at 15 degrees C).

OTHER SOLUBILITY:

Soluble in hot alcohol.

R2-0004003

Stightly soluble in ether and alcohol

OXYGEN BALANCE:

This material is considered to be of low energy hazard potential based on its oxygen balance. Oxygen balance is calculated as minus 279.

TRAIN FIRE TEST:

Since this material has not been train tire tested, it should be assumed to burn in bulk quantities.

DUST EXPLOSIVITY:

Classitication: A.
Minimum explosive concentration (grams/cubic metre): Not determined.
Minimum ignition temperature - ctoud (degrees C): 490.
Minimum ignition temperature - layer (degrees C): No exothermic activity.
Minimum oxygen concentration (% v/v): Not detennined.
Explosion characteristics:
Pmax (bar): Not detennined.
dP/dT (bar/second): Not determined.
Kst (bar metre/second): Not determined.
St class: Not determined.

DUST ELECTRICAL PROPERTIES:

Minimum ignition energy (mjoules): 3 to 5.
Resistivity at ambient humidity (ohm meter): Greater than Ixt0e14.
Charge decay time at ambient humidity (seconds): 77040.
Resistivity at tow humidity (ohm metre): 7.2xt0et4.
Charge decay time at low humidity (seconds): 17280.

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:

Avoid direct suntight, conditions that might generate heat and dispersion as a dust cloud.

INCOMPATIBILITY:

Dilute acids and strong oxidizers.

STABILITY:

This material is expected to be stabte.

THERMAL STABILITY:

Capillaty tube test: Not determined.
Differential scanning calorimetry: Not determined.
Accelerating rate calorimeter: Not determined.

HAZARDOUS POLYMERIZATION:

Not expected to occur.

HAZARDOUS DECOMPOSITION PRODUCTS:

Oxides of carbon and magnesium.

FIRE AND EXPLOSION HAZARDS:

Dust clouds are potentially vety highly sensitive to ignition from incendive electrostatic discharges.

11. TOXICOLOGY INFORMATION

ORAL TOXICITY

The oral LD50 is greater than 2000 mg/kg in rats, based on information from the supplier.

INHALATION TOXICITY

R2-0004004

Not determined for this material.

SKIN IRRITATION

This material was classitied as a non-irritant after direct application to intact and abraded rabbit skin.

EYE IRRITATION

This material was classitied as a mild irrilanl in rabbit eyes. Eyes appeared normal 2 days after treatment.

SENSITISATION

Not delermined for this material.

MUTAGENICITY

Nol determined for this material.

CARCINOGENICITY:

This material is not listed as a carcinogen by SB, IARC, NTP or US OSHA.

REPRODUCTIVE EFFECTS:

Not delermined for this material.

OTHER EFFECTS:

This material can affect cardiac timction through electrolytic imbalance.

12. ECOLOGICAL INFORMATION

SUMMARY:

No information is available about the potential of this material to produce adverse environmental effects. Refer lo local procedures and regulations prior to release.

13. DISPOSAL CONSIDERATIONS

Collect for recycling or recovery, if possible. Observe all local and national regulations when disposing of this material.

14. TRANSPORT INFORMATION

The MSDS should accompany all shipments for reference in the event of spillage or accidental release.

TRANSPORT CLASSIFICATION AND LABELING:

Transportation and shipping of this material is not restricted. Il has no knovm, signiticant hazards requiring special packaging or labelling for air, maritime, US ground or European ground transport purposes.

15. REGULATORY INFORMATION

EUROPEAN UNION CLASSIFICATION AND LABELLING REQUIREMENTS:

No European Union labelling requirements.

16. OTHER INFORMATION

INFORMATION ON HAZARD LABELLING:

**** NOT CLASSIFIED AS A SIGNIFICANT FIRE HAZARD ****
**** NOT CLASSIFIED AS A SIGNIFICANT HEALTH HAZARD ****
**** CAUTION - ENVIRONMENTAL HAZARD NOT FULLY IDENTIFIED ****

R2-0004005

** TARGET ORGAN- NO SPECIFIC TARGET ORGAN EFFECTS KNOWN.

REFERENCES:

SB HAZARD DETERMINATION

'This information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. The publisher, its parent, subsidiaries and affiliates assume no responsibility for personal injury or property damage to vendees, users or third parties caused by the material. Such persons assume all risks associated with the use of the material. '

R2-0004006

AVICEL PH 102

SmithKline Beecham

MATERIAL SAFETY DATA SHEET 20000122

SUBSTANCE/PREPARATION : AVICEL PH MICROCRYSTALLINE CELLULOSE

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/ UNDERTAKING

SUBSTANCE/PREPARATION :

AVICEL PH MICROCRYSTALLINE CELLULOSE

TRADENAME/SYNONYMS :

AVICEL PH101 * AVICEL PH102 * AVICEL PH103 * AVICEL PH105 * AVICEL PH112 * AVICEL PH200 * MICROCRYSTALLINE CELLULOSE * BETA-AMYLOSE * ALPHA-CELLULOSE * CRYSTALLINE CELLULOSE * POWDERED CELLULOSE * SOLKA FLOC BW200 * MCC * CELLULOSE (8CI9CI) * ABICEL * ARBOCEL * ARBOCELL BC 200 * ARBOCELL B 600/30 * CELLEX MX * CELLULOSE 248 * CELLULOSE CRYSTALLINE * CELLULOSE, FOOD GRADE * CELLULOSE I * CELLULOSE II * CELLULOSE III * CELUFI * 280399 (SIGMA-ALDRICH) * 310697 (SIGMA-ALDRICH) * 318094 (SIGMA-ALDRICH) * 435236 (SIGMA-ALDRICH) * C6429 (SIGMA-ALDRICH) * C8002 (SIGMA-ALDRICH) * S3504 (SIGMA-ALDRICH) * S3755 (SIGMA-ALDRICH) * S5504 (SIGMA-ALDRICH) * S6790 (SIGMA-ALDRICH) * 310697 (SIGMA-ALDRICH) * 11365 (SIGMA-ALDRICH) * 22181 (SIGMA-ALDRICH) * 22182 (SIGMA-ALDRICH) * 22183 (SIGMA-ALDRICH) * 22184 (SIGMA-ALDRICH) * 22197 (SIGMA-ALDRICH) * 280399 (SIGMA-ALDRICH) * 310697 (SIGMA-ALDRICH) * 318094 (SIGMA-ALDRICH) * 435236 (SIGMA-ALDRICH) * C6429 (SIGMA-ALDRICH) * C8002 (SIGMA-ALDRICH) * S3504 (SIGMA-ALDRICH) * S3755 (SIGMA-ALDRICH) * S5504 (SIGMA-ALDRICH) * S6790 (SIGMA-ALDRICH) * 310697 (SIGMA-ALDRICH) * 11365 (SIGMA-ALDRICH) * 22181 (SIGMA-ALDRICH) * 22182 (SIGMA-ALDRICH) * 22183 (SIGMA-ALDRICH) * 22184 (SIGMA-ALDRICH) * 22197 (SIGMA-ALDRICH)

CHEMICAL FAMILY:

Carbohydrate.

MOLECULAR FORMULA:

(C6-H10-O5)x

MOLECULAR WEIGHT:

(162.14)x

COMPANY:

SMITHKLINE BEECHAM, CORPORATE ENVIRONMENT & SAFETY

U.S. OFFICE:	U.K. OFFICE:
2200 RENAISSANCE BLVD	NORFOLK HOUSE
KING OF PRUSSIA, PA, 19406	SOUTHDOWNVIEW WAY, WORTHING
U.S.A.	WEST SUSSEX, BN14 8NQ, ENGLAND

PHONE NUMBERS:

+1-610-239-5229 +44-(0)1903-822650

EMERGENCY AND AFTER HOURS CONTACT:

++1-612-221-3999, EXTENSION 221 (Outside North America)

++1-800-228-5635, EXTENSION 221 (Toll Free USA/Canada)

R2-0004007

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS RN	PERCENT
AVICEL PH MICROCRYSTALLINE CELLULOSE	9004-34-6	100

CONTAMINANTS

None identified.

3. HAZARDS IDENTIFICATION

HEALTH EFFECTS:

SKIN CONTACT:

Irritation is not expected immediately following direct contact with this material. However, skin contact should be avoided.

EYE CONTACT:

Irritation following direct contact with this material is not expected. However, eye contact should be avoided.

INHALATION:

Toxicity or irritation following inhalation of this material is not expected. However, avoid inhaling this material.

INGESTION:

Toxicity following ingestion is not expected. However, ingestion should be avoided.

CONDITIONS AGGRAVATED BY EXPOSURE:

None known.

4. FIRST AID MEASURES

SKIN CONTACT:

Remove contaminated clothing and remaining material by flushing with water. Obtain medical assistance if immediate or delayed symptoms of skin reaction develop.

NOTES TO PHYSICIAN:

None.

EYE CONTACT:

Flush eyes continuously with water for at least 15 minutes then obtain medical assistance.

NOTES TO PHYSICIAN:

Consider further flushing of eyes with large amounts of water or saline.

INHALATION:

Move exposed subject to fresh air. Seek medical assistance in case of known or possible over exposure to this material or with symptoms including chest pain, difficulty breathing, loss of consciousness or other adverse effects which may be delayed. IF BREATHING HAS STOPPED, START BASIC LIFE SUPPORT AND SEEK IMMEDIATE MEDICAL ASSISTANCE.

NOTES TO PHYSICIAN:

For combustion products, refer to section number 5.

INGESTION:

In the event of swallowing this material, seek medical assistance. Do not induce vomtting.

NOTES TO PHYSICIAN:

This material is not a corrosive agent.

ANTIDOTES:

None known.

R2-0004008

5. FIRE-FIGHTING MEASURES

FIRE CONTROL

Toxic or corrosive gases are expected from fires involving this material. Use water, carbon dioxide, foam or dry chemical exfinguishers.

SPECIAL FIREFIGHTING PROCEDURES:

Toxic or corrosive gases including oxides of carbon are expected in fires invohring this malerial. Self coniained breathing apparatus and fiill protecfive equipment are recommended for firefighters. Move containers from fire area if possible without increased personal risk. Dike area if possible to contain water for later disposal.

6. ACCIDENTAL RELEASE MEASURES

SPILLS:

Instruct all personnel not involved in clean up operations to keep at a designated, safe distance. Do not allow this material to enter surface drainage systems. Wear protective clothing and equipment consistent with the degree of hazard. Carefiilly scoop up the spillage and place in a suitable, properly labeled container for recovery or disposal. Take care to avoid excessive dust diiring cleanup. Wash down spillage area with copious amounts of water. This must only be undertaken if waste water can be directed to an on-site waste water treatment system.

DECONTAMINATION PROCEDURES:

Detergent solutions can be used for clean-up and decontamination operafions. No specific detoxification procedures have been identified for this substance.

7. HANDLING AND STORAGE

HANDLING:

All plant and equipment must be earthed (grounded) to ensure that no isolated conductors are present. Consider earthing operators dealing with dusty operafions.

Use only with adequate local exhaust ventilation or enclosure to routinely control airbome dust levels.

STORAGE:

Avoid prolonged storage at elevated temperatures (greater than room temperature, approximately *20* degrees C).

Keep in fightly closed containers or packages away from moisture.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE CONTROLS:

No permissible exposure limits established by SmithKline Beecham, Australia, Belgium, Denmark, France, Germany, Uniied Kingdom (HSE) or Uniied Stales (ACGIH,OSHA).

INDUSTRIAL HYGIENE METHOD:

For SmithKline Beecham operations, conlaci the site Occupational or Industrial Hygienist or regional Corporate health and safety group, as appropriate, for advice on suitable monitoring methods.

For other operations, industrial hygiene monitoring advice may be obtained from the health and safety group identified in seclion 1.

PERSONAL PROTECTION:

RESPIRATORS:

R2-0004009

If dust is present, a laboratory fume hood, local exhaust ventilation or an appropriate respirator should be used. The specitic type used will be determined by air concentrations present. Follow local regulations for respirator use in the workplace.

GLOVES:
Wear impervious gloves.

EYE PROTECTION:
Wear safety glasses with sideshields when handling this material.

HYGIENE PRACTICES:
Wash hands and arms thoroughly after handling this material.
Clean up spills immediately.

OTHER PROTECTIVE EQUIPMENT:
Wear lab coat or other protective clothing with long sleeves.
An eye wash station should be available.

9. *PHYSICAL AND CHEMICAL PROPERTIES*

APPEARANCE:
White, odourless free flowing powder.

FLASH POINT:
Not applicable.

AUTOIGNITION TEMPERATURE:
420 degrees C.

LOWER EXPLOSIVE LIMIT:
Not applicable for solids.

UPPER EXPLOSIVE LIMIT:
Not applicable for solids

MELTING POINT:
260 - 270 degrees C (Decomposes).

BOILING POINT:
Decomposes prior to boiling.

VAPOUR DENSITY:
Not applicable.

VAPOUR PRESSURE:
Not applicable.

EVAPORATION RATE:
Not applicable.

VOLATILE COMPONENTS (%):
5 (water).

VISCOSITY:
Not applicable for solids.

PH OF AQUEOUS SOLUTIONS:
5.0 - 7.0 (11% solids dispersion).

RELATIVE DENSITY:
0.3.

CONDUCTIVITY:
Not applicable for solids.

OCTANOL/WATER DISTRIBUTION COEFFICIENT:
Not applicable.

DISSOCIATION CONSTANT (pKA):

R2-0004010

Not applicable.

SOLUBILITY:

Solubte in Scheitzer's reagent, concentrated zinc chloride solutions, ammoniacal copper hydroxide solution.
Partially soluble in dilute alkali.
Insoluble in water, organic solvents, ditute acids.

OXYGEN BALANCE:

Not determined for polymer.

TRAIN FIRE TEST:

This material is classified as a non-combustible solid. It is iherefore considered not to support combustion in butk quantities.

DUST EXPLOSIVITY:

Classification: 1.
Minimum explosive concentration (grams/cubic metre): Not determined.
Minimum ignition temperature - cloud (degrees C): Not determined.
Minimum ignition temperature - layer (degrees C): Not determined.
Minimum oxygen concentration (% v/v): 6.
Explosion characteristics:
Pmax (bar): 7.53.
dP/dT (bar/second): 204.
Kst (bar metre/second): 55.
St class: 1.

DUST ELECTRICAL PROPERTIES:

Minimum ignition energy (mjoules): 140.
Resistivity at ambient humidity (ohm meter): Not determined.
Charge decay time at ambient humidity (seconds): Not determined.
Resistivity at low humidity (ohm metre): Not determined.
Charge decay time at tow humidity (seconds): Not determined.

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:

Avoid direct sunlight, conditions that might generate heat and dispersion as a dust cloud.

INCOMPATIBILITY:

Bromine pentafluoride, fluorine, hydrogen peroxide, oxidizers, sodium hypochlorite, sodium nitrate.

STABILITY:

This material is expected to be stable.

THERMAL STABILITY:

Capillaty tube test: Not determined.
Differentiat scanning calorimetry: Not determined.
Accelerating rate calorimeter: Not determined.

HAZARDOUS POLYMERIZATION:

Not expected to occur.

HAZARDOUS DECOMPOSITION PRODUCTS:

Not identified.

FIRE AND EXPLOSION HAZARDS:

As with many organic dusts, explosions might result when excessive dust concentrations are present.

R2-0004011

11. TOXICOLOGY INFORMATION

ORAL TOXICITY:
The estimated oral LD50 was greater than 2000 mg/kg in rats. A 90 day animal study showed no adverse effects when administered in the diet.
INHALATION TOXICITY:
The estimated inhalation LC50 was greater than 5.05 mg/l in rats (4 hour exposure).
SKIN IRRITATION:
This material was classified as a non irritant to rabbit skin.
EYE IRRITATION:
This material was classified as a mild irrilanl in rabbit eyes.
SENSITISATION:
This material was classified as a non-sensitiser to guinea pig skin.
MUTAGENICITY:
This malerial was hon-mulagenic in bacteria (Ames test).
CARCINOGENiCITY:
This malerial is nol listed as a carcinogen by SB, IARC, NTP or US OSHA.
REPRODUCTIVE EFFECTS:
Not determined for this material.
OTHER EFFECTS:
The estimated dermal LD50 was greater than 2000 mg/kg in rabbits.

12. ECOLOGICAL INFORMATION

ACUTE AQUATIC EFFECTS:
48-hour LC50 for Daphnia = 100%, Saturated solution.
48-hour no-observed-effect-concentration for Daphnia = 100%, Saturated solution.
96-hour LC50 for Rainbow Trout = 100%, Saturated solution.
96-hour no-observed-effect-concentration for Rainbow Trout = 100%, Saturated solution.
96-hour EC50 for Algae = 100%, Saturated solution.
96-hour no-observed-effect-concentration for Algae = 12.5%.
BIODEGRADATION:
Biodegradation in soil: Inherently biodegradable.
ACTIVATED SLUDGE RESPIRATION INHIBITION (OECD 209 PROTOCOL):
Not deterntined.
SOIL ADSORPTION:
Not delermined.
OTHER EFFECTS:
Not determined.

13. DISPOSAL CONSIDERATIONS

Collect for recycling or recovery, if possible. Observe all local and national regulations when disposing of this material.

14. TRANSPORT INFORMATION

The MSDS should accompany all shipments for reference in the event of spillage or accidental release.
Proper Shipping Name: Flour cellulose, edible.
Technical Name: Microcryslalline cellulose.

R2-0004012

UN Number: Not applicable.

FOR AIR TRANSPORT (IATA REQUIREMENTS):

Non-hazardous according to IATA requirements.

FOR MARITIME TRANSPORT (IMDG REQUIREMENTS):

Non-hazardous according to IMDG requirements.

FOR UNITED STATES GROUND TRANSPORT (DOT REQUIREMENTS):

Non-hazardous according lo US DOT requirements.

FOR EUROPEAN GROUND TRANSPORT (ADR/RID REQUIREMENTS):

Non-hazardous according to ADR/RID requirements.

15. REGULATORY INFORMATION

EUROPEAN UNION CLASSIFICATION AND LABELLING REQUIREMENTS:

No European Union tabelling requirements.

16. OTHER INFORMATION

INFORMATION ON HAZARD LABELLING:

**** NOT CLASSIFIED AS A SIGNIFICANT FIRE HAZARD ****

**** NOT CLASSIFIED AS A SIGNIFICANT HEALTH HAZARD ****

**** NOT CLASSIFIED AS A SIGNIFICANT ENVIRONMENTAL HAZARD. ****

** TARGET ORGAN- NO SPECIFIC TARGET ORGAN EFFECTS KNOWN.

REFERENCES:

SB HAZARD DETERMINATION

'This information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. The publisher, its parent, subsidiaries and affiliates assume no responsibility for personal injury or property damage lo vendees, users or third parties caused by the material. Such persons assume all risks associated with the use of the material. '

R2-0004013

LACTOSE MONOHYDRATE NF

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MDL INFORMATION SYSTEMS, INC.
1281 Murfreesboro Road, Suite 300
Nashville, TN 37217-2423
1-615-366-2000

EMERGENCY TELEPHONE NUMBER:
1-800-424-9300 (NORTH AMERICA)
1-703-527-3887 (INTERNATIONAL)

SUBSTANCE: LACTOSE, MONOHYDRATE
TRADE NAMES/SYNONYMS:
D-GLUCOSE, 4-O.BETA.-D-GALACTOPYRANOSYL-, MONOHYDRATE;
4-O-.BETA.-D-GALACTOPYRANOSYL-D-GLUCOSE, MONOHYDRATE;
4-O-BETA-D-GALACTOPYRANOSYL-(I-4)-ALPHA-D-GLUCOPYRANESE MONOHYDRATE;
D-(+)-LACTOSE, MONOHYDRATE; D-(+)-LACTOSE, MONOHYDRATE, POWDER; D(+)-LACTOSE MONOHYDRATE; D-LACTOSE; LACTOSE MONOHYDRATE NF; BETA-D-GAL-(1-4)-D-GLC; ALPHA-LACTOSE; A-LACTOSE; MILK SUGAR; LACTOSE AR; C12H24O12; OHS34436
CHEMICAL FAMILY: carbohydrates/starches
CREATION DATE: Dec 18 1996
REVISION DATE: Dec 09 1997

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: LACTOSE, MONOHYDRATE
CAS NUMBER: 64044-51-5
EC NUMBER: Not assigned.
PERCENTAGE: 100

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=0 FIRE=1 REACTIVITY=0
EC CLASSIFICATION (CALCULATED): No classitication assigned.
EMERGENCY OVERVIEW:
CHANGE IN APPEARANCE: hygroscopic
COLOR: white to off-white
PHYSICAL FORM: crystals or powder
ODOR: odorless
MAJOR HEALTH HAZARDS: No significant target effects reported.
PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.
POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: no information is available
SKIN CONTACT:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: no information is available
EYE CONTACT:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: no information is available
INGESTION:
SHORT TERM EXPOSURE: digestive disorders
LONG TERM EXPOSURE: no information is available
CARCINOGEN STATUS:
OSHA: N
NTP: N
IARC: N

R2-0004014

SECTION 4 FIRST AID MEASURES

INHALATION: Remove from exposure immediately. Use a bag valve mask or similar device to perform artiticial respiration (rescue breathing) if needed. Get medical attention.
SKIN CONTACT: Remove contaminated clotiiing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical allention, if needed.
EYE CONTACT: Wash eyes immediately with large amounts of water or normal saline, occasionally tifting upper and lower lids, until no evidence of chemical remains. Get medical allention immediateiy.
INGESTION: if vomiting occurs, keep head lower lhan hips to help prevent aspiration. Gel medical allention, if needed.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Slight tire hazard. Dust/air mixtures may ignite or explode.
EXTINGUISHING MEDIA: regular dry chemical, carbon dtoxide, water, regular foam
Large fires: Use regular foam or flood with tine water spray.
FIRE FIGHTING: Move container from tire area if it can be done wilhout risk. Do nol scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding tire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.
HAZARDOUS COMBUSTION PRODUCTS:
Combustion products: oxides of carbon

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:
Collect spilled malerial in appropriate container for dispesal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny enfiy.

SECTION 7 HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards.
Store in a tightly closed container. Store in a cool, dry place. Store al room temperature. Ventilation required. Avoid conlact wilh light. Keep separated from incompatible substances.
Use methods to minimize dust.

SECTION S EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
LACTOSE, MONOHYDRATE:
No occupational exposure limits established.
VENTILATION: Ventilation equipment should be explosion-resistant if explosive concentrations of malerial are present. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.
EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency

eye wash fountain and quick drench shower in the immediate work area.
CLOTHING: Wear appropriate chemical resistant clothing.
GLOVES: Wear appropriate chemical resistant gloves.
PROTECTIVE MATERIAL TYPES: mbber
RESPIRATOR: Under condidons of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
Any chemical cartridge respirator with organic vapor cartridge(s) and dust and mist tilter(s).
Any chemical cartridge respirator with organic vapor carlridge(s) and high-eftiiciency particulate filter(s).
Any air-purifying respirator with a fiill facepiece, an organic vapor canister and a dust, mist, and fiime tilter.
Any powered, air-purifying respirator with a fiill facepiece and a high-efficiency particulate tilter.
For Unknown Concentrations or Immediately Dangerous lo Life or Health -
Any supplied-air respirator with full facepiece and operated in a pressure-demand or olher positive-pressure mode in combination wilh a separate escape supply.
Any self-contained breathing apparatus with a fiill facepiece.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: solid
COLOR: white to off-white
CHANGE IN APPEARANCE: hygroscopic
PHYSICAL FORM: crystals or powder
ODOR: odorless
TASTE: sweet taste
MOLECULAR WEIGHT: 360.32
MOLECULAR FORMULA: C12-H22-O11.H2-O
BOILING POINT: Not applicable
MELTING POINT: 394-426 F (201-219 C) (decomposes)
VAPOR PRESSURE: Not applicable
VAPOR DENSITY: Not applicable
SPECIFIC GRAVITY (water=1): 1.525
WATER SOLUBILITY: soluble
PH: 3.0-5.0 (0.5 M aqueous solution)
VOLATILITY: 0% @ 21 C
ODOR THRESHOLD: Not available
EVAPORATION RATE: Nol applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Nol available
SOLVENT SOLUBILITY:
Practically Insoluble: alcohol

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable al normal temperatures and pressure.
CONDITIONS TO AVOID: Avoid heal, flames, sparks and other sources of igiuition. Avoid contact with incompatible materials.
INCOMPATIBILITIES: acids, oxidizing materials
LACTOSE, MONOHYDRATE:
ACIDS (STRONG): Incompatible.
OXIDIZERS (STRONG): Fire and explosion hazard.
SULFURIC ACID: Reacts to produce heat and carbon monoxide.

R2-0004016

HAZARDOUS DECOMPOSITION:
Combustion products: oxides of carbon
Decomposition products on contact with acids: carbon compounds
POLYMERIZATION: Will not polymerize.

SECTION 11 TOXICOLOGICAL INFORMATION

LACTOSE, MONOHYDRATE:
TOXICITY DATA:
29700 mg/kg oral-rat LD50 (Caledon Laboratories Ltd. MSDS)
ACUTE TOXICITY LEVEL:
Relatively Non-toxic: ingestion
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: gastrointestinal disorders
HEALTH EFFECTS:
INHALATION:
ACUTE EXPOSURE:
LACTOSE, MONOHYDRATE: Dust may cause irrilalion.
CHRONIC EXPOSURE:
LACTOSE, MONOHYDRATE: No data available.
SKIN CONTACT:
ACUTE EXPOSURE:
LACTOSE, MONOHYDRATE: May cause irritation.
CHRONIC EXPOSURE:
LACTOSE, MONOHYDRATE: No data available.
EYE CONTACT:
ACUTE EXPOSURE:
LACTOSE, MONOHYDRATE: May cause irritation.
CHRONIC EXPOSURE:
LACTOSE, MONOHYDRATE: No data available.
INGESTION:
ACUTE EXPOSURE:
LACTOSE, MONOHYDRATE: Persons with lactose intolerance or who have ingested an extremely large dose of lactose may experience abdominal pain, diarrhea, distension and flatulence.
CHRONIC EXPOSURE:
LACTOSE, MONOHYDRATE: No data available.

SECTION 12 ECOLOGICAL INFORMATION

Nol available

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

SECTION 14 TRANSPORT INFORMATION

No classification assigned.
LAND TRANSPORT ADR/RID: No classification assigned.
AIR TRANSPORT IATA/ICAO: No classitication assigned.
MARITIME TRANSPORT IMDG: No classitication assigned.

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:

R2-0004017

LACTOSE MONOHYDRATE NF

TSCA INVENTORY STATUS: Y
TSCA 12(b) EXPORT NOTIFICATION: Not listed.
CERCLA SECTION 103 (40CFR302.4): N
SARA SECTION 302 (40CFR355.30): N
SARA SECTION 304 (40CFR355.40): N
SARA SECTION 313 (40CFR372.65): N
SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21):
ACUTE: N
CHRONIC: N
FIRE: N
REACTIVE: N
SUDDEN RELEASE: N
OSHA PROCESS SAFETY (29CFR1910.119): N
STATE REGULATIONS:
California Proposition 65: N
EUROPEAN REGULATIONS:
EC NUMBER: Not assigned.

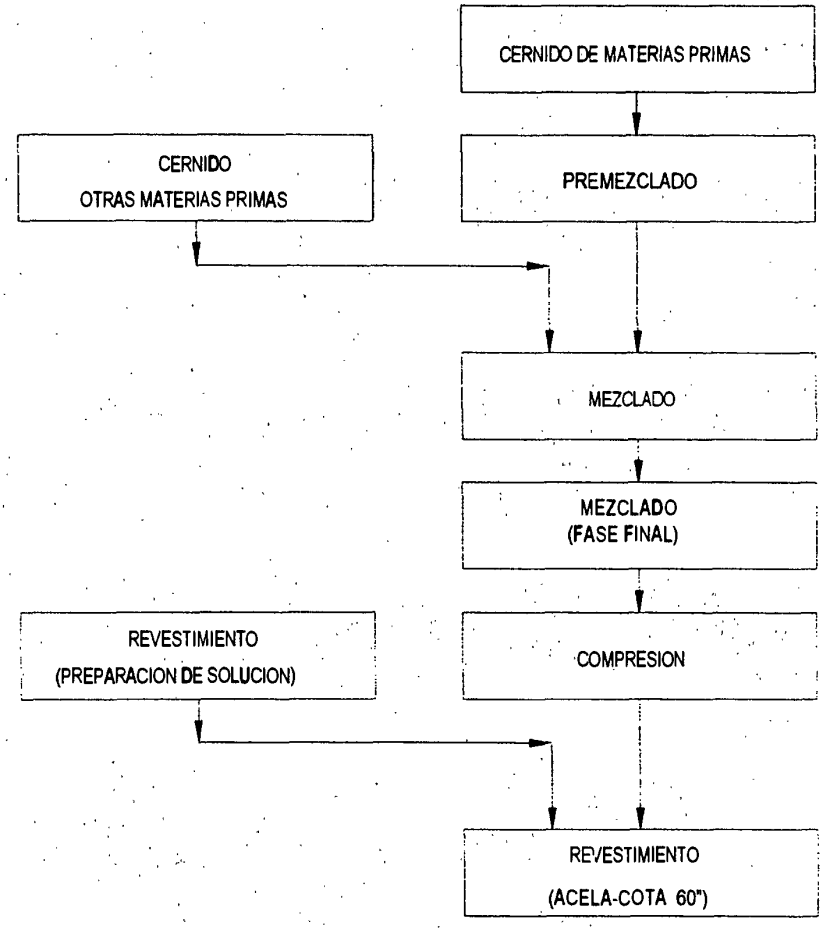
SECTION 16 OTHER INFORMATION

COPYRIGHT 1984-1998 MDL INFORMATION SYSTEMS, INC. ALL RIGHTS RESERVED.

ANEJO N

DIAGRAMA DE FLUJO - MANUFACTURA DE TABLETAS DE IDOXIFENE

R2-0004019



SMITHKLINE BEECHAM PHARMACEUTICALS
CIDRA, PUERTO RICO

ANEJO N

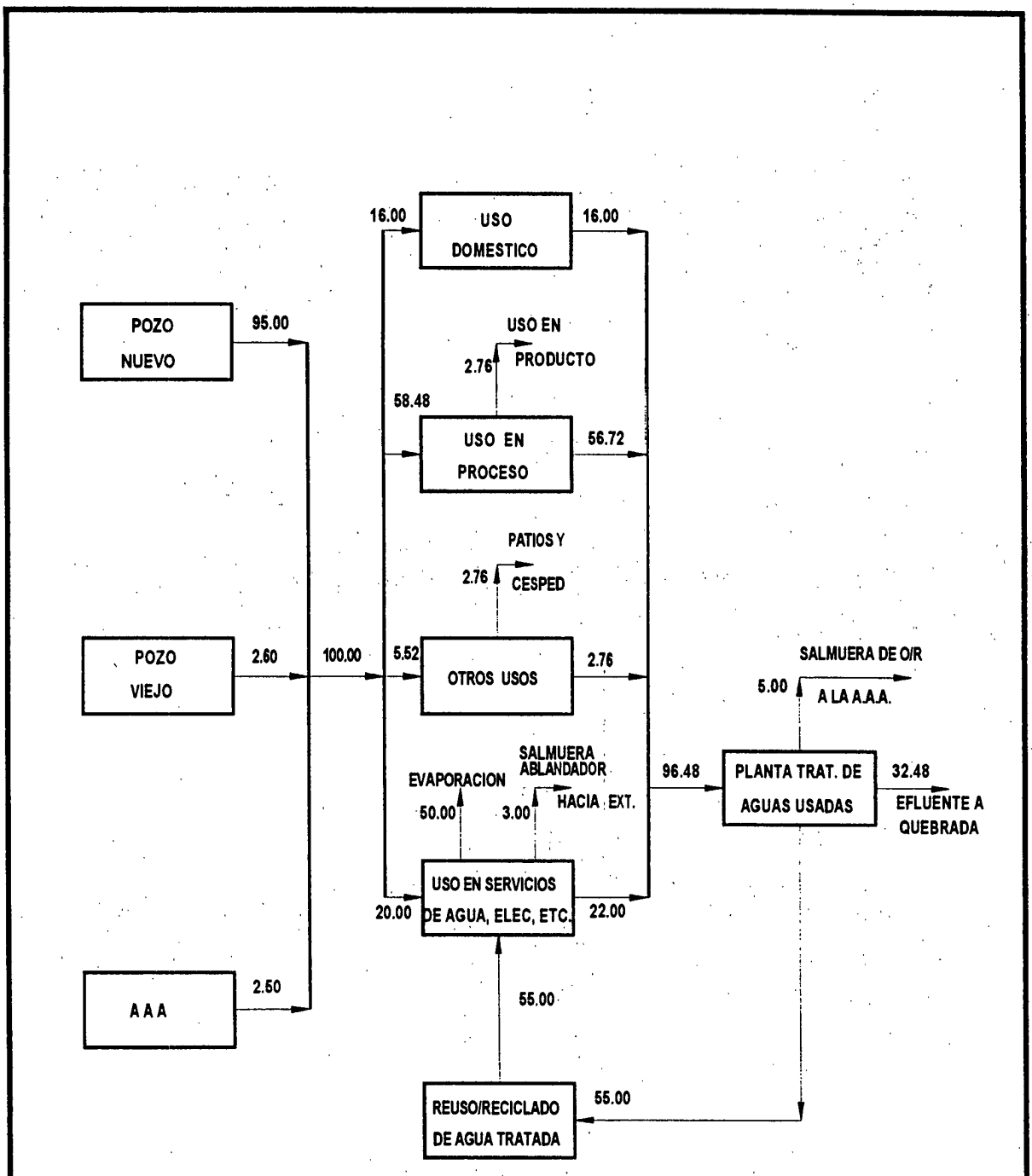
DIAGRAMA DE FLUJO: MANUFACTURA DE TABLETAS DE IDOXIFENE

R2-0004020

ANEJO O

DIAGRAMA DE BALANCE DE AGUA

R2-0004021



SB PHARMCO PUERTO RICO, INC. CIDRA, PUERTO RICO	ANEJO O DIAGRAMA DE BALANCE DE AGUA

R2-0004022

REFERENCE 80

GOBIEK O DE PUERTO RICO/OFICI DEL GOBERNADOR

Junta de Calidad Ambiental

23 de mayo de 2000

Sr. Josó Lajara
Director
Programa de Reglamentación sobre
Contaminación de Terreno

Wanda E. García Hemández
Wanda E. Garcia Hemández
Directora Interina
Area Calidad de Agua

INSPECCION MULTIMEDIA
SB PHARMCO PUERTO RICO, INC.
CARRETERA ESTATAL NUM. 172, KM. 9.1
CIDRA, PUERTO RICO
NPDES NUM. PR0021997

El 5 de mayo del 2000, el ingeniero graduado, Angel R. Melóndez, de la Seccidn de Permisos Industriales, realizó una inspección multimedia a SB Pharmco de Puerto Rico, Inc., (SBPPRI). Adjunto encontrará el formulario de Inspección Multimedia con las secciones que corresponde al Area de Calidad de Agua (ACA) debidamente completadas.

Durante dicha inspeceión, el Ing. Carlos Acevedo, Gerente de Cumplimiento Ambiental de SBPPRI acompaño al ingeniero Melóndez.

De tener alguna pregunta relacionada con lo incluido en el formulario favor de comunicarse con el ingeniero Melóndez a la extensión 2516, a su mejor conveniencia.

AM/dcc

R2-0004024

Environmental Quality Board
Commonwealth of Puerto Rico
Office of the Governor

INSPECTOR'S MULTI-MEDIA CHECKLIST

Facility Name	SB Pharmco de Puerto Rico, Inc.		
Facility Address	State Road No. 172, Km 9.1		
	Bayamón Ward		
	Cidra, Puerto Rico		
Facility ID No.			
Inspector's Name	Angel R. Meléndez		
Inspector's Phone	767-8181 X-2516	Division/Branch	Water Quality Area
Date of Inspection	May 5, 2000		

OFFICE OF THE BOARD: NAZIONEL BAEN PLEZA / 431 PONCE DE LEON AVE. / ERTO ENE FERRERO RICO 00917
P.O. BOX 11488 / RANTORCE, PUERTO RICO / TELEPHONE: (809) 767-8181

R2-0004025

INSPECTOR'S MULTI-MEDIA CBECKLIST

GENERAL VISUAL CUES OF POSSIBLE NONCOMPLIANCE WARRANTING FURTHER INQUIRY

1. Sloppy housekeeping or poor maintenance in work and storage areas or laboratories.

2. Stains or discoloration of soil, concrete, or floors in work areas.

3. Distressed vegetation - unhealthy, discolored, or dead.

4. Dark smoke or dust clouds, or smoke coming from other than a smoke stack.

5. Unusual odors or strong chemical smells.

6. Sheen on surface waters.

CHECK IT OUT!

1. If you see or hear something suspicious during an inspection, check it out! Ask probing questions:

   - What is it? Is it a waste product?
   - What process produced it?
   - Has it been tested?
   - Where do you normally dispose of it?
   - Do you have a permit for the disposal?
   - How long has the circumstance existed?
   - When did it begin?

2. Pay attention to the situation.

   - Note amount of pollutant that appears to be involved.
   - Note the location.
   - Take notes describing the situation, noting the source of the pollutant and its emission point.

PROGRAM-SPECIFIC QUESTIONS

Refer to program-specific questions in Attachment A appropriate for the facility you are inspecting.

REPORTING POSSIBLE NONCOMPLIANCE

Throughout this checklist, there are YES/NO questions. If you place an answer in a field marked with an asterisk (*), this means you should promptly refer the matter to the appropriate Region II program office. After you return from your inspection, immediately let your supervisor know that you observed possible noncompliance in another program area during your inspection. The information should then be referred to the appropriate Section Chief listed on Attachment B.

R2-0004026

ATTACHMENT A - FOLLOW-UP QUESTIONS

RCRA

If the facility has a RCRA permit or "interim status" as a treatment, storage or disposal facility (TSDF), do not complete this form but enter the facility's EPA ID number here _____.

1. A. Has the facility determined that it generates hazardous waste? [702(B) of RCHNHSW/262.11 of 40 CFR]

[] YES [] NO

If NO, skip Questions 2 to 8 and go to Question 9. If YES continue:

B. If the facility generates or transports hazardous waste, what it its EPA ID Number? [702(C) of RCHNHSW/262.12 of 40 CFR]

EPA ID No. [/ /][/ /][/ /][/ /]

[If the facility cannot produce an ID Number, *REFER*.]

2. A. Are there containers or tanks which hold hazardous waste?

[] YES [] NO

If NO, go to Question #3. If YES, continue:

B. Are the containers and/or tanks clearly marked with the words "Hazardous Waste", and are they marked with the accumulation start date? [704(D)(b)(c) of RCHNHSW/262.34 of 40 CFR]

[] YES [] NO*

C. Do hazardous waste storage tanks have secondary containment systems (i.e., berm, vault, double wall tank)? (813(D) of RCHNHSW/265.193 of 40 CFR]

[] YES [] NO*

D. Does the facility store hazardous waste in containers or tanks for longer than 90 days? (704(D)(2) of RCHNHSW/262.34 of 40 CFR]

[] YES* [] NO

3. Does the facility store, treat or dispose of hazardous waste in lagoons, pits, piles or landfills? (816,817,818 of RCHNHSW/265.220 to 265.316 of 40 CFR]

[] YES* [] NO

REFER to progras office if you check an answer marked with *.

R2-0004027

4. Does the facility treat hazardous waste by incineration, precipitation, neutralization or other means to change the physical or chemical nature of the waste? [814 of RCHNHSW/265.340 of 40 CFR]

( ] YES* [ ] NO

5. Does the facility accept hazardous waste for treatment, storage or disposal from off-site locations (including off-site facilities owned by the same company)? [702 (A)(2) of RCHNHSW/262.10 (NOTE 2) of 40 CFR]

[ ] YES* [ ] NO

6. Does the facility maintain copies of hazardous waste manifests on-site? [704 (E)(2) of RCHNHSW/262.40 (a) of 40 CFR]

[ ] YES [ ] NO*

7. Are there any indications that hazardous waste storage or treatment units (i.e., containers or tanks) are poorly maintained and may cause the release of hazardous waste to the environment? (812 (C) of RCHNHSW/265.172 of 40 CFR]

[ ] YES* [ ] NO

8. Are there any indicators that chemicals or waste have been discharged to the environmental through improper handling, leaks, spills, dumping or other discharges. [812 (D) of RCHNHSW/265.173) of 40 CFR]

[ ] YES* [ ] NO

9. A. Does the facility claim to generate non-hazardous process wastes (i.e., excluding office paper wastes, cafeteria wastes, etc.)?

( ] YES* [ ] NO

If NO, go to Question 10. If YES continue:

B. What type of non-hazardous wastes does the facility handle? (E.g., treatment sludge, ash, solvents, waste oils, etc.)

_____

_____

_____

C. Very briefly describe the process (es) that generate the wastes in Question 9B.

_____

_____

_____

REFER to program office if you check an answer marked with *.

R2-0004028

10. Are there any indications that waste generation, handling, management or disposal practices have resulted in environmental damage or pose the threat of such damage. [302 (E) of RCHNHSW/2S2 (10)(e) of 40 CFR]

[] YES* () NO

REFER to progras office if you check as answer marked with *.

R2-0004029

UNDERGROUND STORAGE TANKS (UST)

Ask:

1. Does the facility have regulated USTs?

[ ] YES [✓] NO

[A regulated UST has more than 10% of tank volume, including piping, located underground; and contains petroleum products or hazardous substances (as defined under CERCLA). Note: USTs containing fuel oil for on-site heating are exempt from UST requirements.]

If YES, ask:

2. Are the USTs registered with the State?

[ ] YES [ ] NO*

3. What kind of petroleum product or hazardous substance does UST contain?

_____

4. Is there any evidence of UST leakage/spillage?

[ ] YES* [ ] NO

5. When was the UST installed? _____

6. All USTs must have leak detection according to the following schedule:

Installation Date	Leak Detection By December of
Before 1965 or unknown	1989
1965 - 1969	1990
1970 - 1974	1991
1975 - 1979	1992
1980 - Dec. 1988	1993

All USTs installed after December 1988 must currently be equipped with leak detection.

Leak detection systems include monitoring wells (water or yapor), automatic tank gauging system, interstitial monitoring, manual tank gauging or inventory control plus tank tightness testing.

7. Is some form of leak detection in use for every UST required (based or above schedule) to have it?

[ ] YES [ ] NO*

8. Are required records available on-site (e.g., documenting registratior and leak detection)?

[ ] YES [ ] NO*

R2-0004030

AIR
Stationary Source Compliance

1. With sun BEHIND you, observe: Is opaque smoke being emitted from a smokestack, vent or opening?

   [ ] YES* [ ] NO

   ["Opaque smoke" is smoke -- not steam -- dark enough to obscure anything behind the plume for five minutes or more. (Steam dissipates at a given point; smoke trails off.) The sun [if not obscured by clouds) should be in a 140° arc behind the observer. Please note whether sun was obscured; if sun was not obscured, note the relative positions of the sun, the observer and the emission point observed.]

2. If YES, ask:

   A: Which process or process line is smoke coming from? [Try to be specific, e.g., "Boiler No. 4" or "Coating Line C").

   _____

   B. What is the cause of the smoke emission? E.g.--

      i. Is any air pollution control equipment out of service or turned off while production is ongoing?

         [ ] YES [ ] NO

      ii. If YES: When will it be back on line? _____

      iii. Is the facility operating under an unusual load, using different fuels or process feed materials?

         [ ] YES [ ] NO

   C. Note color of smoke: _____

3. A. Has the facility added any processes or expanded any pre-existing processes in the last two years?

      [ ] YES [ ] NO

   B. If YES: Did the facility obtain any state or federal air pollution permits for the expansion?

      [ ] YES [ ] NO*

4. A. Does the facility have any coating or printing operations?

      [ ] YES [ ] NO

REFER to program office if you check an answer marked with *.

8

R2-0004031

B. If YES:

i. If solvent based, are all process lines controlled, or are coating formulations in use which comply with applicable limits?

[] YES [] NO*

ii. Are the coating or inks used: _____ water-based or _____ solvent-based?

iii. What are the principal solvents or chemical compounds used in process lines? _____
(Ask for copies of MSDS, if available.)

5. Observe: Are there strong solvent odors at the facility?

[] YES* [] NO

6. Does the facility emit any of the following pollutants: mercury, beryllium, lead or asbestos?

[] YES* [] NO

7. A. Does the facility emit, or use in its processes, vinyl chloride or benzene?

[] YES* [] NO

B. If YES:

i. From which process lines? _____

ii. Does the facility check for leaks on such process equipment?

[] YES [] NO*

8. A. Has the facility undergone any renovations or demolitions during the last 18 months which involved the removal or disturbance of asbestos-containing materials?

[] YES [] NO

If YES:

B. Approximately how many square feet or linear feet of asbestos-containing materials were removed? _____

REFER to program office if you check an answer marked with *.

R2-0004032

C. If the amount exceeded 260 linear feet, or 160 square feet, *REFER* To Air program office; and Ask: was EPA notified of removal?

[] YES [] NO*

9. A. Does the facility operate a hazardous waste combustion unit?

[] YES [] NO*

B. Does the facility operate any control equipment, such as thermal oxidizer, scrubbers, etc., where hazardous waste stream pass through?

[] YES [] NO

RADIATION

Ask:

1. Are any radioactive materials used or store at this facility?

[] YES [] NO

2. If YES, does the facility have a state or federal radiation license?

[] YES [] NO*

REFER to program office if you check an answer marked with *.

R2-0004033

WATER

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) And PRE-TREATMENT/UNDERGROUND INJECTION CONTROL (UIC)

1. Observe/Ask: Does the facility dispose of any wastewater (e.g., from its manufacturing processes, wash water or other industrial wastes)?

[✓] YES [ ] NO

2. If YES:

a) Does the facility discharge wastewater into a --

. receiving stream? Unnamed creek tributary to Quebrada Las Quebradillas [✓] YES [ ] NO

. municipal sewer (sanitary or storm) system? [ ] YES [✓] NO

. subsurface disposal system (septic system, drywell or cesspool)? [✓] YES [ ] NO

As applicable, ascertain the name of the stream or sewer system.

b) Does the facility discharge stormwater into a --

. receiving stream? Unnamed creek tributary to Quebrada Las Quebradillas [✓] YES [ ] NO

. municipal sewer system? [ ] YES [✓] NO

. subsurface disposal system? [ ] YES [✓] NO

3. An NPDES permit is required for discharge to a waterbody; a pretreatment permit is usually issued by the municipality authorizing the discharge to a sanitary sewer system; and a UIC permit is required for subsurface disposal. Does the facility have a permit for each discharge?

[✓] YES [ ] NO* NPDES No PR0021997 NPDES No. PRR05A659 UIC No. 84-0288

A. Has the facility obtained a Water Quality Certification for its NPDS?

[✓] YES [ ] NO*

4. Does the facility treat wastewater prior to discharge?

[✓] YES [ ] NO They treat there wastewater (process and SANITARY) prior to discharge it to the unnamed creek tributary of Quebrada Las Quebradillas

If YES:

a) Does the facility has a Treatment or Pretreatment Permit for its system?(Resolution R-91-15-11)

[ ] YES [✓] NO

R2-0004034

5. Observe:

a. Is the effluent from the wastewater treatment facilities clear and free or solids?

[✓] YES [ ] NO*

b. Is equipment clean and well maintained?

[✓] YES [ ] NO*

c. Are there any unusual odors?

[ ] YES [✓] NO

6. Ask: Is the effluent currently in compliance with the limitations established in the permit, or the terms of an administrative or judicial compliance order?

[ ] YES [✓] NO* Please refers to Attachment A for the EPA Administrative Order No. CWA-02-2000-3066

NPDES and UIC, Continue

7. Observe/Ask:

a. How are waste fluids disposed of? Treated process and sanitary waste waters through discharge serial #001 to an unnamed creek tributary to Quebrada Las Cuebradillas authorized by the NPDES Permit No PR0021741.

b. Does the facility have floor or storm drains?

[✓] YES [ ] NO

If YES:

Is there fluid in the drains? Is there evidence [staining, etc.) of fluid entering drains? Are storm drains situated so that they could receive spills from truck loading accidents, etc?

c. Does the facility operator indicate, or is there any evidence that any wastewater, or waste/spills go into drains?

[ ] YES* [✓] NO

PUBLIC WATER SUPPLY

1. Observe/Ask: Does the facility have its own water supply (i.e., a well)?

[✓] YES [ ] NO They have two (2) wells authorized by the permit FRI-11-392-96

2. If YES:
a) Does the facility provide potable water for 25 or more persons?

[✓] YES [ ] NO

R2-0004035

b) Does the facility has a Water Extraction Permit from the P.R. Natural Resource Dept. (DRN)? See Attachment Franquicia No. RFI-11-392-96

[✓] YES [ ] NO

3. If YES: Is the facility sampling and analyzing for contaminants in its water supply and reporting the results to the state?

[✓] YES [ ] NO* See Attachment for the sampling performed on March 2, 2000.

REFER to progres office if you check an answer marked with *.

EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT [EPCRA)

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW

Ask:

1. A. Does the facility have present any of the 360 "Extremely Hazardous Substances" in excess of established threshold planning quantities?

[] YES [] NO

[Threshold planning quantities are established by regulation, vary by chemical, and range from 1 lb. to 5000 lbs.]

B. If YES: Was the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC) notified of their presence for local planning purposes?

[] YES [] NO*

2. A. Has the facility had a release of an Extremely Hazardous Substance or a CERCLA hazardous substance in excess of the Superfund reportable quantity?

[] YES* [] NO

[Reportable quantities vary by aubstance, ranging from 1 lb. to 5000 lbs. For the purpose of this checklist, assume 1 lb.]

B. If YES: Was notification of the release provide?

[] YES [] NO*

C. If YES:

i. To whom was the notification given?

ii. Was notification oral or written?

iii. If oral, was a written, follow-up report submitted?

[] YES [] NO*

[If facility cannot identify to whom notification was given, cannot specify whether notification was written or oral, or is not certain whether oral notification was followed by a written follow-up report, *REFER*.]

REFER to program office if you check an answer marked with *.

R2-0004037

EPCRA, Continued

3. A. Does the facility have on site Material Safety Data Sheets (MSDS) for all hazardous chemicals used, as required under OSHA's Hazard Communication Standard?

[ ] YES [ ] NO*

B. If any hazardous chemicals are present in excess of 10,000 lbs., or Extremely Hazardous Substances are present in excess of the threshold planning quantities, have the MSDS (or a list of MSDS), along with chemical inventory forms, been submitted to state and local emergency planning authorities and the local fire department?

[ ] YES [ ] NO*

TOXIC RELEASE INVENTORY [TRI)

Ask:

1. Does the facility have 10 or more full-time employees?

[ ] YES [ ] NO

2. Is the facility classified under SIC codes 20 through 39?

[ ] YES [ ] NO

If the response to either 1. or 2. is "NO", no further questions are required.

3. If both 1. and 2. are YES:

Did the facility file a Section 313 Toxic Chemical Release Inventory Form R for the chemical?

[ ] YES [ ] NO*

For more EPCRA information, call 1-800-535-0202; or the Region II program offices for EPCRA-Emergency and Community Right To Know at 908-321-6194 or for EPCRA-Toxic Release Inventory at 908-906-6890.

REFER to program office if you check an answer marked with *.

R2-0004038

SPILL PREVENTION, CONTROL AND COUNTERMEASURS [SPCC)

Ask:

1. A. Does the facility store oil?

[✓] YES [ ] NO

[Note that oil is not limited to petroleum products; for example, vegetable oil is covered.]

B. If YES, does the storage capacity exceed --

i. 660 gallons in any one above-ground tank? [✓] YES [ ] NO

ii. 1320 gallons in all above-ground tanks? [ ] YES [✓] NO

iii. 42,000 gallons in underground tank [s)? [ ) YES [✓] NO

2. If the answer to any part of #1. B. was YES, does the facility have a Spill Prevention, Control, and countermeasure (SPCC) Plan?

[✓] YES [ ] NO*

3. (For aboveground storage tank only) Does the SPCC has been submitted to and approved by EQB? (Articulo 11 [14), Ley No. 9 y Seccidn 6.5 del RECA)

[✓] YES [ ] NO EQB approval on 1991. At this moment, is under reviewed and will be submitted to EQB on June 2000.

4. Did the facility have an oil spill within the last 12 months?

[ ] YES* [✓] NO

WETLANDS

1. Observe:

A. Are there any wet areas (i.e., marshes, swamps, bogs) on or adjacent to the site, with or without wetlands-type vegetation such as cattails, rushes, or sedges?

[ ] YES [✓] NO

[Sketches of several common wetlands plants are attached. Note that there need not be standing water in order for an area to be designated a federal wetland; and some wetlands have shrubs and trees present.]

B. Are there any waterbodies or waterways on or adjacent to the site?

[✓] YES [ ] NO Unnomed creek tributary to Quebrada Las Quebradillas AND Lago de Cidra

2. If answer to #1. A or B was "YES",is there any work [clearing, filling,

R2-0004039

dredging, ditching, construction on or over the area, etc.) being conducted in these areas, or is there any evidence that such activities have occurred very recently?

[ ] YES [X] NO

3. If YES:

A. When was the work undertaken? _____

B. Does the facility have any permits for this work?

[ ] YES [ ] NO*

4. If YES:

A. What agency(s) issued such permits? _____
(E.g., U.S. Army Corps of Engineers; State environmental agency.)

B. For any federal Permits, What specific type of permits are they (i.e., nationwide, regional, individual)? _____

_____

If facility is unable to provide adequate information in response to #4., *REFER* to program office.

Others State Requireaents

1. Has the facility submitted an Environmental Impact Statement after 1970?

[ ] Yes [ ] NO

2. Has their document been amended or revised?

[ ] YES [ ] NO

A. When the last revision was done?

_____.

R2-0004040

TOXIC SUBSTANCES CONTROL ACT (TSCA)

Ask:

1. A. Does the facility use electrical equipment that contains polyclorinated biphenyls (PCBs) (excluding small capacitors and florescent light ballasts)?

[] YES* [] NO

B. If YES:

i. How many oil filled electrical transformers does the facility have?

ii. How many PCB Transformers does the facility have (transformers which contain PCBs at concentrations of 500 ppm or greater)?

2. A. Dbes the facility have any high temperature hydraulic systems?

B. If YES:

i. Have PCBs ever been used in these systems?

[] YES* () NO

ii. What is the current PCB concentration in these systems?

3. A. Does the facility have any oil filled heat transfer systems?

B. If YES:

i. Have PCB ever been used in these systems?

[] YES* [] NO

ii. What is the current PCB concentration in these systems?

4. A. OBSERVE PCB Items (transformers, capacitors, containers)

. Are any leaking? [] YES* [] NO

. Do all have a PCB label? [] YES [] NO*

5. A. ASK: Does the facility have a PCB storage for disposal area?

[] YES* [] NO

REFER to program office if you check an answer marked with *.

R2-0004041

B. If YES, OBSERVE the PCB storage area. Does it have --

. PCBs stored for disposal in it?.	[] YES*	[] NO
. a roof and walls to keep out rain?	[] YES	[] NO*
. a 6" high impervious containment berm?	[] YES	[] NO*
. a PCB label?	[] YES	[] NO*
. Is it in the 100-year flood plain?	[] YES*	[] NO
. Do all items show the date "removed from service for disposal"?	[] YES	[] NO*

6. ASK: Does the facility manufacture or import into the United States "new commercial chemicals" [i.e., chemicals which were previously manufactured in or imported into the United States]?

[] YES* [] NO

[Note: Specific information on such chemicals is protected by TSCA as Confidential Business Information, and should not be obtained.]

7. Has any of these PCB items had any incident such as leaks, spills, fire, etc.?

[] YES* [] NO

8. Has the facility disposed PCB items in the last three years?

[] YES* [] NO

For further TSCA information, call the TSCA Assistance Office in Washington at 202-554-1404 or the Region II TSCA program office at 908 321-6759.

R2-0004042

DEPARTAMENTO DE RECURSOS NATURALES Y AMBIENTALES

FRANQUICIA PARA EL USO Y APROVECHAMIENTO DE LAS AGUAS DE PUERTO RICO

SmithKline Beecham :
Pharmaceuticals, Co. :
P.O. Box 11975 :
Cidra, P.R. 00739 :
..... Franquicia Núm. RFI-11-392-96

R-E-S O-L-U-C-I-O-N

El Solicitante de epigrafe radicó en este Departamento una Solicitud de Franquicia para aprovechar las aguas de de dos (2) pozos ubicados en terrenos de su propiedad sita en Carr. Nóm. 172, Km. 9.1, Finca 4785, Sector Certenejas, Bo. Bayamón del municipio de Cidra.

El agua extraida será utilizada para uso industrial.

Vista la solicitud, ios estudios realizados por el personal de este Departamento y en virtud de las facultades y deberes que nos confiere la Ley Núm. 23 del 20 de junio de 1972 y la Ley Núm. 136 del 3 de junio de 1976, según enmendadas, por la presente resolveinos Conceder esta Franquicia de Agua al Solicitante (en adelante Concesionario) por la cantidad de 125,000 galones diarios, 365 dias al año para un caudal anual de 45,625,000 galones para los fines y propdsitos antes mencionados y sujeto a las siguientes condiciones:

CONDICIONES GENERALES

1) Esta Franquicia para el uso de aguas eonstituye una autorizacidn para aprovechar o extraer ciertas y determinadas cantidades de agua y no un derecho sobre una iiuente en particular. El Secretario no garantiza la calidad o cantidad de las aguas cuyo aprovechamiento permite.

2) Esta Franquicia no podrá ser transferida sin la autorización previa del Departamento de Recursos Naturales y Ambientales y estará sujeta a las normas y reglamentos que apiiquen a la misma.

3) La descarga de las aguas usadas, si alguna, no debe contribuir a la degradación de la calidad de los recursos de agua y su disposición debe estar en conformidad con las leyes, reglamentos y estatutos locales y federales aplicables.

4) El Concesionario permitirá al personal del Departamento tomar muestras o medir flujo u otro parámetro con el propósito de asegurar el cumplimiento con las disposiciones de esta Franquicia. Someterá, además, cualquier información que el Secretario solicite con relación a la extracción y uso de agua.

5) El Concesionario vendrá obligado a responder por los daños que pueda irrogarle a terceras personas o a la propiedaó pública o privada en el goce y disfrute del privilegio que mediante esta Franquicia se le concede.

6) El Concesionario deberá, dentro de los treinta (30) dias a partir de la fecha de aprobación de esta Franquicia, aceptar por escrito los términos y condiciones establecidas en la misma.

7) El Concesionario vendrá obhgado a notificar al Departamento de cualquier situaeión anormal que estó afectando el aprovechamiento de agua que autoriza esta Franquicia.

8) El Concesionario podrá solicitar la renovación de esta Franquicia con, por lo menos, noventa (90) dias de antelación a su vencimiento. La renovación estará sujeta a una evaluación de la condición actual de las aguas cuyo aprovechamiento solicita.

20

R2-0004043

9) El Concesionario venórá obligado a ciausurar o cerrar a satisfacción del Departamento toóa facilidad de aprovechamiento de agua autorizado bajo esta Franquicia cuando la misma no esté en uso o al expirar su vigencia.

10) El caudal de agua aquí autorizado podrá ser reducido o prohibidó de encontrarse que el mismo está afectando adversamente algún sistema hidrológico o usuario.

11) El Concesionario deberá utilizar los recursos de agua eficientemente y en armonia con las circunstancias y condiciones hidrológicas particulares del área donde se llevará a cabo la actividad.

12) El Secretario podrá requerir o imponer cualesquiera otras condiciones y requisitos que entienda pertinente durante la vigencia de esta Franquicia a los fines de garantizar la protección del recurso y el interés público, y en conformidad con la ley y la reglamentación vigente.

CONDICIONES ESPECIALES

1) Se autoriza al Concesionario a extraer un caudal diario, promeóiado anualmente, no mayor de 125,000 galones de agiia de sus pozos a nivel freático.

2) Esta Franquicia se concede por un término de tres (3) afios el cual comenzard a partir de la fecha de aprobación. El desuso del caudal de agua aqui autorizado durante un término de doce (12) meses consecutivos, sin causa que lo justifique, extinguirá la vigencia de esta Franquicia.

3) El Concesionario realizará un análisis de calidad de las aguas de sus pozos que incluya carbón orgánico total (TOC, por sus siglas en inglés) por lo menos una vez al año, y enviará copia de los resultados al Secretario.

4) El concesionario someterá un análisis mensual de la calidad de las aguas extraidas de los pozos, certificadas por un químico licenciado con el resultado de los siguientes parámetros:

pH en unidades estandar	Alcalinidad en mg/l de $CaCO_3$
Cloruros en mg/l de Cl^-	Dureza Total en mg/l de $CaCO_3$
Calcio en mg/l de Ca^{2+}	Sólidos disueltos totales en mg/l
Magnesio en mg/l de Mg^{2+}	Conductividad en µmhos/cm
Sodio en mg/l de Na^+	Nitrato en mg/l de NO_3^-
Potasio en mg/l de K^+	Carbonato en mg/l de CO_3^{2-}
Bicarbonate en mg/l de HCO_3^-	Hierro en mg/l de Fe^{2+}
Silice en mg/l de SiO_2	Sulfato en mg/l de SO_4^{-2}
Manganeso en mg/l de Mn^{2+}	Bromuro en mg/l Br

5. El Concesionario mantendrá en un lugar accesible y antes de cualquier desviación del agua extraida del (los) pozo(s), metros de flujo instantáneo y caudal acumulativo o combinación de éstos. A estos metros se les dará un mantenimiento adecuado, según las recomendaciones del manufacturero. Cualquier rotura, falla y/o cese de fimcionamiento de estos metros se anotarán en los registros requeridos. Se someterá un informe escrito al Secretario, dentro de un término no mayor de 15 dias contados a partir de la fecha del cese de fimcionamiento de estos metros, en el cual se detallarán las fallas ocurridas y las acciones remediativas tomadas.

6) El Concesionario pagará 1/5 de centavo ($0.002) por cada galón de agua extraido al amparo de esta Franquicia. La Autoridad de Acueductos y Alcantarillados leerá los metros y facturará mensualmente el cargo correspondiente. El tenedor de esta franquicia enviará mensualmente al Departamento de Recursos Naturales y Ambientales un cheque o giro postal a la orden del Secretario de Hacienda por concepto de tarifa, seguin la factura que emita la Autoridad de Acueductos y Alcantarillados en cumplimiento con el Articulo 8.13.1 (b), según enmendado, del Reglamento de la Ley de Aguas (Ley 136 del 3 de junio de 1976, según enmendada). El cheque o giro postal deberá estar acompaiiado del talonario de pago correspondiente. De no recibir la factura de la Autoridad de

R2-0004044

Acueductos y Alcantarillados, el Concesionario deberá radicar en el Departamento de Recursos Naturales y Ambientales dentro de los primeros quince (15) dias laborables de cada mes, una certificacidn en la cual se establezca la cantidad de agua extraida durante el mes anterior. Esta deberá venir acompaiiada de cheque o giro postal a nombre del Secretario de Hacienda, por una suma de dinero equivalente a 1/5 de centavo por galdn de agua extraída según informada en la certificacidn. Esta certificacidn deberá enviarse aún cuando no haya extracción durante el mes informado. El incumplimiento en el pago de los derechos establecidos por Ley podrá conllevar la suspensión o revocacidn de esta Franquicia.

Esta tarifa está sujeta a cambio mediante nueva legislacidn o reglamentación en cuyo caso la nueva tarifa aplicará de inmediato a esta Franquicia.

7) El Concesionario someterá un informe mensual al Secretario en donde detallard la extraccidn de agua mensual medida con metros. Este informe consistirá del volumen total extraido en galones, la razdn promedio de extraccidn en galones por minutos y el promedio de horas de operación (mensual) del sistema de extraccidn. Estos informes se prepararán basado en los récords diarios que llevará el Concesionario según el formulario anejo. (DRNA-Fa-Inf. 01-95)

El Concesionario tendrá derecho a solicitar una vista administrativa de acuerdo con las disposiciones del Articulo 10 del Reglamento para el Aprovechamiento, Uso, Conservacidn y Administracidn de las Aguas de Puerto Rico, de no estar de acuerdo con algunas de las Condiciones de la presente Resolucidn. La Solicitud deberd ser radicada por escrito dentro de un tórmino de treinta (30) dias a partir de la fecha de aprobacidn de esta Resolucidn en la Oficina de Secretaria Adjudicativa del Departamento.

CUALQUIER VIOLACION A LA LEY NUM. 23 DEL 20 DE JUNIO DE 1972, A LA LEY NUM. 136 DEL 3 DE JUNIO DE 1976, A LA LEY NUM. 9 DEL 18 DE JUNIO DE 1970, SEGUN ENMENDADAS, O EL INCUMPLIMIENTO DE CUALESQUIERA DE LAS CONDICIONES EN LA PRESENTE RESOLUCION PODRA CONLLEVAR LA REVOCACION DE ESTA FRANQUICIA.

NOTIFIQUESE:

José A. González Liboy
Administrador
Administración de Recursos Naturales

Aprobada hoy día 21 de noviembre de 1997.

R2-0004045

21997

SmithKline Beecham
Pharmaceuticals

CARTA CERTIFICADA Z 037 902 184
CON ACUSE DE RECIBO

7 de abril de 2000

Sra. Sara Cortez
Departamento de Recursos Naturales y Ambientales
Franquicias de Agua
Apartado 9066600, Puerta de Tierra Station
San Juan, PR 00906-6600

RE: Franquicia RFI-11-392-96

Estimada Sra. Cortez:

En cumplimiento con lo dispuesto en la franquicia de agua RFI-11-392-96 estamos sometiendo los siguientes documentos:

- Infonne diario de consumo de agua y reporte de análisis quimicos del Pozo de Producción y Pozo Original Interior Planta. La muestra fue tomada el dia 2 de marzo de 2000.

En caso de dudas favor de comunicarse conmigo al teléfono 766-4000 extensión 3784.

Atentamente,

Carlos Acevedo
Safety & Environmental Compliance Consultant

c: A. Ramirez

23

x:03-00

SK & B CO.
PO BOX 11975
CIDRA, P.R. 00739-1975

ATTN: MR.FRANCISCO PEREZ

Order # 18910
Work ID: Groundwater-Grab
Date Received: 03/02/00
Date Complete: 03/21/00
Client Code: 141-01

DS #: 2000-01813
Sample collected by EQ Lab Technician
Limli = Detection Limit

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Numbsr	Sample Description
01	Original Well Inside Plant		

ISMAEL MARTINEZ JIMENEZ Químico Licenciado Estado Libre Asociado de Puerto Rico LICENCIA NUM. 1486

Certified by
Ismael Martinez

A 644749

24

R2-0004047

TEST RESULTS BY SAMPLE

Sample: 01 Original Well Inside Plant Collected: 03/02/00
Job: 01-47 Groundwater - Grab

Test Description	Result	Limit	Units	Analyzed	By
Bicarbonate Alkalinity	133	10	mg/L as CaCo3	03/08/00	LS
Carbonate Alkalinity	<10	10	mg/L as CaCo3	03/08/00	LS
Total Alkalinity	134	10	mg/L as CaCo3	03/08/00	LS
Total Hardness	142	5.0	mg/L as CaCo3	03/08/00	MG
pH	7.61	1.0	S.U.	03/02/00	FT
Silicon Dioxide	26.6	1.0	mg/L	03/03/00	DSA
Specific Conductance	307	0.5	pmhos/cm	03/10/00	MG
Nitrate	0.33	0.01	mg/L	03/03/00	KV
Chloride	10.0	3.0	mg/L	03/08/00	LS
Sulfate	12.9	1.0	mg/L	03/09/00	MG
Total Dissolved Solids	184	5.0	mg/L	03/03/00	JR
Total Calcium	26,000	10	µg/L	03/07/00	JAG
Total Iron	180	10	µg/L	03/07/00	JAG
Total Magnesium	17,300	10	µg/L	03/07/00	JAG
Total Manganese	180	10	µg/L	03/07/00	JAG
Total Potassium	980	10	µg/L	03/07/00	JAG
Total Sodium	14,000	10	µg/L	03/07/00	JAG
Total Organic Carbon	0.220	0.05	mg/L	03/08/00	JR
Temperature	23	1.0	°C	03/02/00	FT
Total Bromide	<2.0	2.0	mg/L	03/06/00	MG

R2-0004048

REPORTS COMMENTS

PARAMETERS	METHODS
Bicarbonate Alkalinity	EPA 310.2
Carbonate Alkalinity	EPA 310.2
Total Alkalinity	EPA 310.2
Total Hardness	SM 2340C
pH	EPA 150.1
Silicon Dioxide	EPA 370.1
Specific Conductance	EPA 120.1
Nitrate	EPA 353.2
Chloride	EPA 325.2
Sulfate	EPA 375.4
Total Dissolved Solids	EPA 160.1
Total Calcium	EPA 200.7
Total Iron	EPA 200.7
Total Magnesium	EPA 200.7
Total Manganese	EPA 200.7
Total Potassium	EPA 200.7
Total Sodium	EPA 200.7
Total Organic Carbon	EPA 415.2
Temperature	EPA 170.1
Total Bromide	EPA 320.1

R2-0004049

SK & B CO.
PO BOX 11975
CIDRA, P.R. 00739-1975

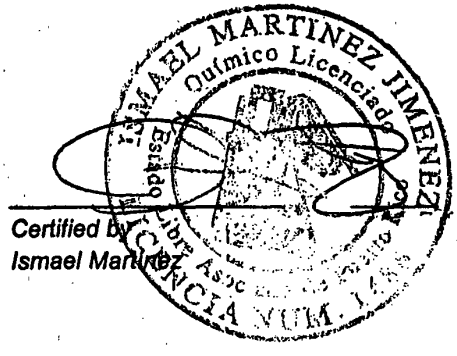
Order # 18910
Work ID: Groundwater-Grab
Date Received: 03/02/00
Date Complete: 03/21/00
Client Code: 141-01

ATTN: MR.FRANCISCO PEREZ

DS #: 2000-01814
Sample collected by EQ Lab Technician
Limit = Detection Limit

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	New Production Well		



Certified by:
Ismael Martinez

A 644747

R2-0004050

TEST RESULTS BY SAMPLE

Sample: 01 — New Production Well — Collected: 03/02/00
Job: 01-47 — Groundwater - Grab

Test Description	Result	Limit	Units	Analyzed	By
Bicarbonate Alkalinity	97	10	mg/L as CaCo3	03/08/00	LS
Carbonate Alkalinity	<10	10	mg/L as CaCo3	03/08/00	LS
Total Alkalinity	97.7	10	mg/L as CaCo3	03/08/00	LS
Total Hardness	116	5.0	mg/L as CaCo3	03/08/00	MG
pH	6.74	1.0	S.U.	03/02/00	FT
Silicon Dioxide	12.2	1.0	mg/L	03/03/00	DSA
Specific Conductance	302	0.5	pmhos/cm	03/10/00	MG
Nitrate	4.17	0.01	mg/L	03/03/00	KV
Chloride	20.2	3.0	mg/L	03/08/00	LS
Sulfate	<1.0	1.0	mg/L	03/09/00	MG
Total Dissolved Solids	198	5.0	mg/L	03/03/00	JR
Total Calcium	25,500	10	µg/L	03/07/00	JAG
Total Iron	340	10	µg/L	03/07/00	JAG
Total Magnesium	17,800	10	µg/L	03/07/00	JAG
Total Manganese	20	10	µg/L	03/07/00	JAG
Total Potassium	1,920	10	µg/L	03/07/00	JAG
Total Sodium	16,500	10	µg/L	03/07/00	JAG
Total Organic Carbon	0.337	0.05	mg/L	03/08/00	JR
Temperature	24	1.0	°C	03/02/00	FT
Nitrate + Nitrite	4.17	0.01	mg/L	03/03/00	KV
Total Bromide	<2.0	2.0	mg/L	03/06/00	MG

R2-0004051

REPORTS COMMENTS

PARAMETERS	METHODS
Bicarbonate Alkalinity	EPA 310.2
Carbonate Alkalinity	EPA 310.2
Total Alkalinity	EPA 310.2
Total Hardness	SM 2340C
pH	EPA 150.1
Silicon Dioxide	EPA 370.1
Specific Conductance	EPA 120.1
Nitrate	EPA 353.2
Chloride	EPA 325.2
Sulfate	EPA 375.4
Total Dissolved Solids	EPA 160.1
Total Calcium	EPA 200.7
Total Iron	EPA 200.7
Total Magnesium	EPA 200.7
Total Manganese	EPA 200.7
Total Potassium	EPA 200.7
Total Sodium	EPA 200.7
Total Organic Carbon	EPA 415.2
Temperature	EPA 170.1
Nitrate + Nitrite	EPA 353.2
Total Bromide	EPA 320.1

Departamento de Recursos Natu es
División de Franquicias de Agua
Informe Diario de Uso de Agua

Usuario: SmithKline Beecham Pharmaceuticals Co.
Municipio: Cidra
Mes y año: MARZO 2000

Identificacidn Sistema de Extracción:RF-188-93
POZO ORIGINAL
INTERIOR PLANTA

Dia	Tiempo de Operación del Pozo (horas)	Lectura del Metro 1225022	Razón de Extracción Diaria
1	0.06	1,225,405	383
2	0.00	1,225,405	0
3	0.00	1,225,405	0
4	0.00	1,225,405	0
5	0.00	1,225,405	0
6	0.00	1,225,405	0
7	0.00	1,225,405	0
8	0.00	1,225,405	0
9	0.00	1,225,405	0
10	0.00	1,225,405	0
11	0.00	1,225,405	0
12	0.00	1,225,405	0
13	0.00	1,225,405	0
14	0.00	1,225,405	0
15	0.00	1,225,405	0
16	0.00	1,225,405	0
17	0.00	1,225,405	0
18	0.00	1,225,405	0
19	0.00	1,225,405	0
20	0.00	1,225,405	0
21	0.00	1,225,405	0
22	0.00	1,225,405	0
23	0.00	1,225,405	0
24	0.00	1,225,405	0
25	0.00	1,225,405	0
26	2.66	1,241,381	15,976
27	0.33	1,243,384	2,003
28	0.00	1,243,384	0
29	0.00	1,243,384	0
30	0.00	1,243,384	0
31	0.00	1,243,384	0

Volumen Total Extraido: 18,362.00 galones
Razón promedio de Extracción: 592.32 gal/dia
Promedio horas/dfa operadas por la bomba: 0.10

4/10/2000
Fecha

Firma Ingeniero/Persona Autorizada

30

R2-0004053

Departamento de Recursos Naturales
División de Franquicias de Agua
Informe Diario de Uso de Agua

Usuario: SmithKline Beecham Pharmaceuticals Co.
Mumicipio: Cidra
Mes y año: MARZO 2000

Identificación Sistema
de Extracción:RF-188-93
POZO PRODUCCION

Día	Tiempo de Operación del Pozo (horas)	Lectura del Metro	Razón de Extracción Diaria
1	11.64	100,044,290	108,308
2	11.64	100,114,130	69,840
3	21.31	100,241,990	127,860
4	16.70	100,342,174	100,184
5	10.84	100,407,185	65,011
6	7.51	100,452,250	45,065
7	18.48	100,563,140	110,890
8	16.02	100,659,232	96,092
9	18.86	100,772,400	113,168
10	18.84	100,885,460	113,060
11	19.09	1,001,246	114,539
12	12.12	1,073,990	72,744
13	11.60	1,143,570	69,580
14	17.14	1,246,392	102,822
15	15.61	1,340,050	93,658
16	18.71	1,452,321	112,271
17	17.44	1,556,974	104,653
18	13.90	1,640,362	83,388
19	9.96	1,700,138	59,776
20	8.28	1,749,830	49,692
21	16.45	1,848,550	98,720
22	17.68	1,954,610	106,060
23	14.75	2,043,118	88,508
24	15.71	2,137,350	94,232
25	14.27	2,222,991	85,641
26	9.71	2,281,225	58,234
27	5.78	2,315,910	34,685
28	19.24	2,431,352	115,442
29	17.26	2,534,910	103,358
30	15.87	2,630,110	95,200
31	17.54	2,735,330	105,220

Volumen Total Extraido: 2,798,101.00 galones
Razón promedio de Extracción: 90,261.32 gal/día
Promedio horas/dia operadas por la bomba: 14.84

4/10/2000
Fecha

Firma Ingeniero/Persona Autorizada

31/31

R2-0004054

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 81

SB Pharmco Puerto Rico Inc.
PO Box 11975
Cidra, Puerto Rico
00739-1975

Tel. 787 766 4000

CARTA CERTIFICADA #7001 1940 0006 1786 6536
CON ACUSE DE RECIBO

15 de marzo de 2002

#5182

'02 MAR 26 A9:10

Ing. Luz Dary Sánchez
Jumta de Calidad Ambiental
División de Permisos para Fuentes Precisadas
Area de Calidad de Agua
Apartado 11488
Santurce, PR 00910
Atención: Sección de Permisos No-Industriales

Estimada señora Sánchez:

RE: C-AG-01-21-0004

Cumpliendo con los requerimientos del Permiso de Operacidn para Sistema de Tratamiento de Aguas Usadas sin Descarga a um cuerpo de Agua, incluyo:

- Informe correspondiente al mes de febrero de 2002, para notificar el flujo diario máximo descargado a la Planta Regional de Tratamiento de Aguas Usadas de Cayey (PRTAUC) NPDES Número PR 0025356.

Cualquier duda al respecto, favor llamar al 787-250-3866.

Atentamente,

Antonio García Márquez, Lfder
Seguridad Ocupacional y Ambiental

ICA 02-02

anexos

c Daniel Sepúlveda

'02 MAR 25 P2:48

1/2 LDS 04/mar/2002

R2-0004057

REPORTE DE FLUJO DIARIO MAXIMO DESCARGADO A LA PLANTA DE TRATAMIENTO DE AGUAS USADAS DE CAYEY (PRTAUC)

C-AG-01-21-0004

FEBRERO 2002

Fecha	Flujo (GPD)
02/01/2002	103,680
02/02/2002	7,664
02/03/2002	76,969
02/04/2002	0
02/05/2002	87,194
02/06/2002	95,907
02/07/2002	73,341
02/08/2002	67,996
02/09/2002	84,938
02/10/2002	50,844
02/11/2002	63,014
02/12/2002	64,430
02/13/2002	58,265
02/14/2002	87,663
02/15/2002	61,157
02/16/2002	91,396
02/17/2002	83,241
02/18/2002	62,134
02/19/2002	47,347
02/20/2002	71,185
02/21/2002	99,978
02/22/2002	83,758
02/23/2002	79,373
02/24/2002	74,419
02/25/2002	49,634
02/26/2002	53,110
02/27/2002	75,360
02/28/2002	64,019
Total	1,918,716
Máximo	103,680
Mínimo	0
Promedio	68,526

JR Vargas 03-14-02

03/14/2002

2/2

R2-0004058

REFERENCE 82

F. 7

SK&F

SK&F CO.
P. O. Box 1983 - Carolina, Puerto Rico 00630 - Tel. 768-1570

CERTIFIED MAIL

March 10, 1982

Mr. Miles Morse
Waste Characterization branch
Hazardous and Industrial Waste Division
U. S. Environmental Protection Agency
Km. 2115, 401 M St. N. W.
Washington, D. C. 20460

Re: SK&F CO. RCRA Permit
No. PRT000040758

Dear Mr. Morse:

When filling the RCRA permit application for the above mentioned facility we listed the sludge from our Wastewater Treatment Plant as presumptively hazardous based on the mixture rule which applied at that time (please refer to attached copy of November 14, 1980 letter which accompanied our permit application).

Subsequently on Tuesday, November 17, 1981, Federal Register Vol. 46 No. 221 was published, which amended Part 261.3 and changed the mixture rule.

Based on this ammendment, we now belief that the original presumption of hazardousness no longer applies to our sewage treatment plant sludges. To substantiate this position we offer the following information:

A. Original reason for listing:

1. F002 was listed because tetrachioroethylene, methyline chloride, trichloroethylene and chlorobenzene were used as reagents in our analytical laboratories.

2. F003 was listed because xylene, acetone, ethyl acetate, ethyl ether, N-butyl alcohol were used as reagents in our analytical laboratories and methanol was used in our tablet coating process.

3. F004 was listed because nitrobenzene was occasionally used as a reagent in our analytical laboratories.

1/3

R2-0004060

4. FOOS was listed because toluene, carbon disulfide and pyridine were used as reagents in our analytical laboratories.

It was our presumption that all of these materials would flow into our drainage system and be contained as a mixture in the sewage treatment plant sludges and the quantity of waste delineated on our RCRA Permit Application was the weight of sludge containing these constituents.

B. Annual Use (Based on Inventory Records):

1. Reagents used in laboratory which are identified in 261.31 as toxic (T):

Constituent	1981 Annual Use (Kg/Yr)	Disposal
Tetrachloroethylene	0.12	Drain
Methylene Chloride	2.70	Drain
Trichloroethylene	None*	N/A**
Chlorobenzene	None*	N/A
Nitrobenzene	0.12	Drain
Toluene	20.0	Collected & Disposed under manifes
Carbon Disulfide	None*	N/A
Pyridine	1.8	Drain
Total	4.74	Drain
	20.00	Disposed under manifes

2. Solvents used in production which are identified in 261.31 as ignitable (I):

Constituent	1981 Annual Use Kg/Yr)	Disposal
Methyl Alcohol	42	Scrubbed from air stream them to drain

* Laboratory analyses requiring the usage of this solvents not longer needed.

** Not applicable.

R2-0004061

C. Rationale for Current non-hazardous presumption

1. Applying paragraph 261.3 (a) (2) (iv) (E) to the waste flow from our laboratory:

   The average annualized waste flow to the headworks of our Wastewater Treatment Plant according to DMR'S submitted during 1982 to EPA for our NPDES approved discharge (PR0021997) is 4262 gal/day x 365 days/year x 3.785 liters per gallons = 5,888,060 liters / year.

   The annual constituents wasted to drain according to paragraph B (1) is 4.74 kilograms.

   Thus, the level of these constituents in our wastewaters on an annualized basis is 0.805 mg/l which is less than the Ippm level prescribed in 261.3 (a) (2) (iv) (E).

2. Applying paragraph 261.3 (a) (2) (iii) to our Waste Treatment Plant sludge:

   The sludge was presumed a hazardous mixture due to the inclusion of wastes which were ignitable such as methanol that is used in our process and tolvene used in our analytical laboratory that could occasionally be spilled to the drain system.

   Tests of our waste water treatment sludges (see attachment) indicates it does not exhibit ignitability, thus this waste can no longer be presumed hazardous according to paragraph 261.3 (a) (2) (iii) .

Based on the previous information, we will dispose off the Wastewater Treatment Plant sludge from our facility, as indicated in paragraph 1 of our November 14, 1980 letter, in an approved subtitle D facility rather than on a subtitle C facility as originally proposed in our RCRA Permit Application.

We will continue to dispose off any hazardous waste generated at our facility, as indicated in paragraph 2 of our November 14, 1980 letter, by appropriate manifest to an approved TSD facility.

If you have any question regarding this matter please contact me at your earliest convenience.

Cordially yours,

José M. García
Vice-President
GENERAL SVCS. & ENG. DEPT.

Enclosure

cc: Mr. Harry Ruisi - EPA, N.Y.
Mr. Luis de la Cruz - EQB

3/3

R2-0004062

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 83

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

DEC 26 2000

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Carlos A. Acevedo
Environmental Compliance Manager
SB Pharmco Puerto Rico Inc.
P.O. Box 11975
Cidra, Puerto Rico 00739-1957

Re: Notice of Issuance of Final Permit Decision
NPDES Permit No. PR0021997 - SB Pharmco Puerto Rico, Inc.

Dear Mr. Acevedo :

Pursuant to authority granted by Section 402 of the Clean Water Act (the Act), you are hereby served with this Notice of Issuance of a Final National Pollutant Discharge Elimination System (NPDES) permit for the above-indicated facility.

Please read the fmal permit carefully, since it may contain changes from the draft permit which you received. If comments were received in a timely manner as a result of the U.S. Environmental Protection Agency's (EPA's) Public Notice of its preparation of the draft permit, they have been considered in making the final pennit decision and a copy of a memorandum is enclosed which explains EPA's position on issues raised by any comments submitted.

EPA will not subject the changes from the draft to the fmal NPDES permit to another public review.

The final permit decision shall become effective thirty (30) days from the date of service of the notice of issuance. Within this (30) day period after service, the final permit decision may be appealed by the filing of a notice of appeal and petition for review with the Agency's Environmental Appeals Board (EAB) in accordance with 40 Code of Federal Regulations (CFR)§124.19.

Any person who filed comments on the draft pennit or participated in the public hearing may file the above referenced notice of appeal and petition for review to the EAB within those thirty (30) days to review any condition of the permit decision. Any person who failed to file comments or failed to participate in the public hearing on the draft may appeal for review only to the extent of the changes from the draft to the final permit decision. The 30 day-period within which a person may request review begins with service of this notice of the EPA Region 2 final permit decision.

This petition for review shall include a statement of the reasons supporting that review, including a demonstration that any issues being raised were raised during the public comment period

1/86

R2-0004065

(including any public hearing) to the extent required by these regulations and, when appropriate, a showing that the condition in question is based on:

(1) A finding of fact or conclusion of law which is clearly erroneous; or

(2) An exercise of discretion or an important policy consideration which the EAB should, in its discretion, review.

The original and one copy of all requests for appeal of the final permit decision niust be addressed to:

United State Environmental Protection Agency
Enviromnental Appeals Board (MC-1103B)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

A copy of the request must be sent to:

Mr. Patrick J. Harvey, Chief
Compliance Assistance and Program Support Branch
United States Environmental Protection Agency- Region II
290 Broadway, 21st Floor
New York, New York 10007-1866

Upon notification from the EAB of the filing of a notice bf review, the Regional Administrator of EPA Region 2 will notify the EAB, the applicant and all other interested parties of the uncontested (and severable) conditions of the final permit that will become fully effective enforceable obligations of the permit thirty (30) days after the date of the Regional Administrator's notice.

The force and effect of the contested conditions of the final permit shall be stayed until final agency action under 40 CFR§124.19(f). Uncontested conditions which are not severable from those contested shall be stayed together with contested conditions.

In accordance with 40 CFR§124.16, if the permit involves a new facility, new injection well, new source, new discharger or a recommencing discharger, the applicant shall be without a pennit pending final agency action. A permittee holding an existing permit must comply with conditions in the existing permit that correspond to the stayed conditions of the new permit.

Once the final permit has become effective, the final permit decision will be considered final Agency action for the purpose of judicial review.

You will also find enclosed three (3) copies of EPA Discharge Monitoring Reports (DMRs)

2

Form 3320-1 (9-88) for this permit. In the future, pre-printed DMR forms will be sent to you on a quarterly basis.

Please be advised that violation of any of the conditions of the enclosed permit may subject your organization and its officials to the civil and criminal penalties provided for in Section 309 of the Clean Water Act.

Thank you for your cooperation in the development of this permit. I encourage you or your staff to contact Mr. Philip Sweeney, Chief of the Permits and Pretreatment Section, at (212) 637-3873 with any questions about the terms and conditions of this permit.

Sincerely yours,

Patrick J. Harvey, Chief
Compliance Assistance and Program Support Branch

Enclosures

cc: Hector Russe Martinez, Chairman, EQB
Carl A. Soderberg, Dir., USEPA, CEPD
Roberto Ayala, Director, Environmental Quality Board
Wanda E. Garcia, Environmental Quality Board

3

NPDES PERMIT NO. PR0021997

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended, 33 U.S.C. § 1251 et. seq. (the "Act"),

SB Pharmco Puerto Rico, Inc.
P.O. Box 11975
Cidra, Puerto Rico 00739

hereinafter referred to as "the permittee" is authorized to discharge from a facility located at

SB Pharmco Puerto Rico, Inc.
Road 172 K.M. 9.1
Cidra, Puerto Rico

to receiving water

unnamed creek tributary to Quebrada las Quebradillas

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I and II hereof. All references to Title 40 of the Code of Federal Regulations are to regulations that are in effect on the effective date of this permit, including all amendments thereto published in the Federal Register. Unless otherwise specified herein, all terms are defined as provided in the applicable regulations under Title 40 of the Code of Federal Regulations.

This permit shall become effective on March 1, 2001.
This permit and the authorization to discharge shall expire at midnight, February 28, 2006.

Signed this 14 day of December, 2000

for Kathleen C. Callahan
Director
Division of Environmental Planning
and Protection
U.S. Environmental Protection Agency
Region II

4

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning March 1, 2001 and lasting through February 28, 2006, the permittee is authorized to discharge from outfall serial number 001 (treated process, sanitary, utility, and miscellaneous wastewater). Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Gross Discharge Limitations				Monitoring Requirements	
	kg/day (lbs/day)		Other Units (specified)		Measurement Frequency	Sample Type
	Monthly Avg	Daily Max.	Monthly Avg	Daily Max.		
Boron (Cu) (ug/l) [2,3]				1,000	Quarterly	Grab
BOD_5 (mg/l) [2,3]	12.0 (26.4)			15.0	Monthly	Composite
Cadmium (Cd) (ug/l) [2,3,4]				1.03	Monthly	Grab
COD (mg/l)			65.2	126.0	Monthly	Composite
Color (Pt-Co units) [2,3]				10.0	Monthly	Grab
Copper (Cu) (ug/l) [2,3,4]				12.0	Monthly	Grab
Cyanide (CN) (ug/l) [2,3]	See Special Condition number 18.				Monthly	Grab
Dissolved Oxygen (mg/l) [2,3]	Shall not contain less than 5.0.				Daily	Grab
Fecal Coliforms (colonies/100ml) [1,2,3]	The coliform geometric mean of a series of representative samples (at least five samples), of the waters taken sequentially shall not exceed 2,000 colonies/100 ml. Not more than 20 percent of the samples shall exceed 4,000 colonies/100 ml.				Monthly	Grab
Flow M^3/day (MGD) [3,5]				613.36 (0.162)	Continuous Recording	
Fluorides (F) (ug/l) [2,3]				700.0	Monthly	Grab
Lead (Pb) (ug/l) [2,3,4]				3.0	Monthly	Grab

R2-0004069

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Effluent Characteristics	Gross Discharge Limitations				Monitoring Requirements	
	kg/day (lbs/day)		Other Units (specified)		Measurement Frequency	Sample Type
	Monthly Avg	Daily Max.	Monthly Avg	Daily Max.		
Manganese (Mn) (ug/l) [2,3]				50.0	ϕ	Grab
Mercury (Hg) (ug/l) [2,3,4**]	See Special Condition number 18.				Monthly	Grab
Nitrate plus Nitrite (as N) (ug/l)[2,3]				10,000	Monthly	Grab
Oil and Grease (mg/l) [2,3]			10.0	15.0	2/Month	Grab
Other Pathogenic Organisms	These waters shall be free of pathogenic organisms.				—	—
pH (SU) [2,3]	Shall always lie between 6.0 and 9.0.				Daily	Grab
Phenolic Substances (ug/l) [2,3 **]	See Special Condition number 18.				Monthly	Grab
Residual Chlorine (mg/l) [2,3 *]				0.5	Daily	Grab
Selenium (Se) (ug/l) [2,3]				10.0	Quarterly	Grab
Solids and Other Matter [2]	The waters of Puerto Rico shall not contain floating debris, scum and other floating material attributable to in amounts sufficient to be unsightly or deleterious to the existing or designated uses of the waterbody.				—	—
Sulfide (S) (ug/l) [2,3*** ++] (undissociated H_2S)				2.0	Monthly	Grab
Surfactants as MBAS [2,3] (ug/l)				100	Monthly	Grab

R2-0004070

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Effluent Characteristics	Gross Discharge Limitations				Monitoring Requirements	
	kg/day (lbs/day)		Other Units (specified)		Measurement Frequency	Sample Type
	Monthly Avg	Daily Max.	Monthly Avg	Daily Max.		
Suspended, Colloidal or Settleable Solids (ml/l) [1,2,3]	Solids from wastewater sources shall not cause deposition in or be deleterious to the existing or designated uses of the waters.				Daily	Grab
Taste and Odor Producing Substances [2]	Shall contain none in amounts that will render any undesirable taste or odor to edible aquatic life.				—	—
Temperature °F (°C) [2,3]	Except by natural causes, no heat may be added to the waters of Puerto Rico which would cause the temperature of any site to exceed 90°F (32.2°C). No thermal discharge or combination of thermal discharges into or onto the surface, estuarine and coastal waters shall be injurious to fish or shellfish or the culture or propagation of a balanced indigenous population there of nor in any way affect the designated uses.				Daily	Grab
Total Ammonia (NH_3) (mg/l) [2,3]			—		Monthly	Grab
Total Chromium (Cr) (ug/l) [2,3]			50.0		Quarterly	Grab
Total Coliforms (colonies/100ml) [1,2,3]	The coliform geometric mean of a series of representative samples (at least five samples), of the waters taken sequentially shall not exceed 10,000 colonies/100 ml.				Monthly	Grab
Total Dissolved Solids (mg/l) [2,3]			500.0		Monthly	Grab
Total Phosphorous (P) [2,3] (mg/l)			1.0		Monthly	Grab
Total Suspended Solids (mg/l)	22.4 (44.9)		60.0		Monthly	Composite
Turbidity (NTU) [2,3]			50.0		Monthly	Grab
Zinc (Zn) (ug/l) [2,3,4]			50.0		Quarterly	Grab

R2-0004071

Notes:

To comply with the monitoring requirements specified above, samples shall be taken at point of discharge 001.

All flow measurements shall achieve accuracy within the range of + 10%.

* See Special Condition number 10.

** See Special Condition number 11.

*** See Special Condition number 12.

ϕ See Special Condition number 16.

1, 2, 3, 4 and 5 see page 6 of the Special Conditions.

++ The permittee shall use the approved EPA analytical method with the lowest possible detection limit, currently, EPA Method 376.2, Standard Methods 4500-S^{2-} D (18* Edition), or HACH Company Method 8131 for the determination of the dissolved Sulfide (as S) concentration in the sample. Using the dissolved Sulfide concentration, the permittee shall calculate the Undissociated Hydrogen Sulfide concentration using Standard Methods Method 4500-S^{2-} F (18th Edition). If the sample result for dissolved Sulfide is below the detection limit of EPA Method 376.2 or Standard Methods 4500-S^{2-} D (18* Edition), i.e., $\leq$ 100 ug/L, then the permittee has demonstrated that the sample result for Undissociated Hydrogen Sulfide is below that same detection limit, and that compliance with the permit limit of 2 ug/L for Undissociated Hydrogen Sulfide was achieved.

R2-0004072

SPECIAL CONDITIONS

These special conditions are an integral part of the permit.

1. The flow of discharge 001 shall not exceed the limitation of 613.36 m^3/day (0.162 MGD) as daily maximum. No increase in flow shall be authorized without a recertification from the Puerto Rico Environmental Quality Board (EQB). 5

2. No toxic substances shall be discharged in toxic concentrations other than those allowed as specified in the NPDES permit. Those toxic substances included in the Permit Application, but not regulated by the NPDES permit. shall not exceed those concentrations as specified by the applicable Rules and Regulations. 2,3,4

3. Prior to the construction of any additional treatment system or the modification of the existing one, the permittee shall obtain the approval of the engineering report, plans and specifications from the Environmental Quality Board (EQB). 5

4. The permittee shall install, maintain and operate all water pollution control equipment in such a manner as to be in compliance with Applicable Rules and Regulations. 3

5. All sample collection, preservation, and analysis shall be carried out in accordance with the Code of Federal Regulation (CFR) Number 40, Part 136. All chemical analyses shall be certified by a chemist licensed to practice the profession in Puerto Rico. All bacteriological tests shall be certified by a microbiologist or a medical technician licensed to practice the profession in Puerto Rico. 1,3

6. The flow measuring device for the discharge 001 shall be periodically calibrated and properly maintained. Calibration and maintenance record must be kept. 3

7. The sampling points for discharge 001 shall be located immediately after the primary flow measuring device. 3

8. The sampling points for discharge 001 shall be labeled with a 18 in. X 12 in (minimum dimensions) sign that reads as follows. 4

"Punto de Muestreo para la Descarga 001"

9. The discharge 001 shall not cause the presence of oil sheen in the receiving water body. 2

10. The waters of Puerto Rico shall not contain any substance at such concentration which, either alone or as result of synergistic effects with other substances is toxic or produces undesirable physiological response in human, fish or other fauna or flora. 2

11. The samples for the analysis of phenolic substances and mercury should be taken at the sampling points for discharge 001. The results obtained from analysis of these samples shall reflect that the parameters are not detectable using the analytical method approved by the Environmental Protection Agency (EPA) with the lowest possible detection level, in accordance with Section 6.8 of the Water Quality Standards Regulation (WQSR). 3

R2-0004073

12. If the results obtained from the analyses of dissolved sulfide reflect that the parameter is not detectable using the analytical method approved by the EPA with the lowest possible detection level, in accordance with Section 6.8 of the WQSR, as amended, the permittee shall indicate in the Discharge Monitoring Report (DMR) that the parameter of sulfide (undissociated H_2S) is not detectable. 3

[EPA Clarification: Notwithstanding this Special Condition, the permittee shall perform the analytical test and calculations specified by EPA (see footnote ++ in Table A-1) and shall report on the monthly Discharge Monitoring Report the results of such procedure. Compliance with the terms of this Special Condition should be provided in the cover letter submitted with the Discharge Monitoring Report.]

13. Following the issuance of licenses by the Potable Water and Wastewater Treatment Plant Operators Examining Board of the Government of Puerto Rico, all water and wastewater treatment facilities, whether publicly or privately owned, must be operated by a person licensed by such Examining Board. 3,5

14. The sludge produced within the facility due to the operation of the system shall be analyzed and all constituents shall be identified as required by "Resource Conservation and Recovery Act" (RCRA) and by "Toxic Substances Control Act" (TSCA). The permittee shall obtain appropriate federal and state permits prior to the final disposal of such wastes. The sludge shall be disposed properly in such manner that water pollution or other adverse effects to surface waters or to ground waters do not occur. 3,5

15. A log book must be kept for the material removed from the treatment plant detailing the following items:

a. Removed material, date and source of it.
b. Approximate volume and weight.
c. Method by which it is removed and transported.
d. Final disposal and location
e. Person that performs the service.

A copy of the Non-Hazardous Solid Waste Collection and Transportation Services Permit issued by the authorized official from EQB must be attached to the log book. 3

16. The permittee shall implement a monthly monitoring program for discharge 001, and analyze the samples using the analytical method approved by EPA with the lowest possible detection level, pursuant to Section 6.2.3 of the WQSR, for one year period after which they will be conducted annually for the following parameter:

Parameter	Unit	Sample Type
Manganese (Mn)	ug/l	Grab

The monitoring program shall commence not later than thirty (30) days after March 1, 2001. The results of the monitoring program shall be submitted to EQB and EPA Region II not later than sixty (60) days after the completion of the one (1) year monitoring program or annual monitoring. Based on the evaluation of the results obtained, EQB will determine if more frequent monitoring is necessary for the aforementioned parameter. In

R2-0004074

such case, dhe WQC wtll be re-opened to revise that monitoring fiequency for the aforementioned parameter if considered necessary. 2,3,5

17. Within thirty (30) days after March 1, 2001, the pennittee shall sulmsit to the EQB a revised copy of the Emergency Plan, wluch shall be signed and certifiell by a professional engineer llcensed in Puerto Rico and in accordance with Article 11, Item 14 of the Public Policy Environmsntal Act, Law No. 9 of June 18, 1970, as amended, and Section 6.5 of the Water Quallty Standanis Regulation to prevent antl control sptlls. 3

18. The permit shall comply with the following monitoring requirements and interim and final limits fir the discharge 001 for dhe following parameters:

Parameter	bnterim Limits	Final Limits	Monitcsing Frequency	Sample Type
Cyanide (CN)	20.0 ug/l	5.2 ug l	Monthly	Grab
Mocury (Hg)	1.0 ug/l	0.012 ug/l	Mondily	Grab
Phenolic Substances	10.0 ug/l	1.0 ug/l	Monthly	Grab

The interim limits shall be effective during the period beginning on March 1, 2001 and lasting through Feimary 28. 2003.

The final limits shall be effective during the period beginning on March 1, 2003 and lasting through February 28, 2006.

19. Wdhin thirty (30) days afler March 1, 2001, dhe permittee chall submit to EQB and EPA a Compliance Plan for dhe conesponding evaluation and approval, which shall include a schethle of activities with their respective dates directed to perfonn dhe corresponding adjustments at the facifity in order to achieve compliance at the point of discharge 001 with dhe final effluent limits established in Special Condition number 18 not later than February 28, 2003. 3

20. The EQB may revoke the approval of a Compliance Plan for any of dhe following reasons:

a The pennittee has not revealed all dhe relevant facts in the request or has provided false representation of any of dhe relevant facts during the evaluation of such request.

b. Non-compliance with any applicable provision of the Compliance Plan,

c. Changes in fhe conditfion, without due authorization fiom this Board, under which the Compliance Plan was approved.

d. There exists an inminent hazard to pnblic health or the envinonment. 3

21. This special condition shall not become in effect until EQB has determined the applicability to the respective facility and has notified the permittee and EPA, in writing, of the necessity to comply with this special condition.

The permittee shall conduct quarterly acute toxicity tests, for a period of one (1) year of its wastewater discharge through Outfall Serial Number 001.

a. The toxicity tests shall be conducted in accordance with the most recent edition of the EPA publication, EPA 600/4-90/027F Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (Fourth Edition), August 1993.

b. The test shall provide a measure of the acute toxicity as determined by the wastewaters concentration which cause 50 percent mortality of the organisms over a 48 hour period. Test results shall be expressed in terms of Lethal Concentration (LC) and reported as 48 hour LC50.

c. The test species should be the "Fathead Minnow" (Pimephales promelas) and "Cladocera" (Daphnia magna). The test should be non-renewal type.

d. A procedure report shall be submitted ninety (90) days after the effective date of this NPDES permit condition (EDPC). The following information shall be included in the procedure report.

(1) An identification of the organizations responsible for the conduct of the tests and the species to be tested.

(2) A detailed description of the methodology to be utilized in the conduct of the tests, including equipment, sample collection and source of test organisms.

(3) A schematic diagram which depicts the effluent sampling location. The diagram shall indicate the location of effluent sampling in relation to wastewater treatment facility and discharge monitoring point.

e. Test shall be conducted quarterly for a period of one (1) year and shall commence no later than one hundred eighty (180) days after EDPC. The results shall be submitted to EPA Region II and EQB within thirty (30) days of completion of each test. Based upon a review of the test results the Regional Administration may require additional toxicity tests, including chronic tests and toxicity/ treatability studies, and may impose toxicity limitations. 3,5

R2-0004076

Notes

1. According to Article 1, Water Quality Standards Regulation and Amendments.

2. Acoording to Aiticle 3, Water Quality Standards Regulation and Amendments.

3. According to Article 6, Water Quality Standards Regulation and Amendments.

4. According to dhe Code of Federal Regulations Number 40 (40 CFR) Part 131.36 as amended (Federal Register/Vol.57, No.246/Tuesday, Decernber 22, 1992).

5. According to dhe Public Policy Environmental Act of June 18, 1970, as amended, Act No. 9, 12 LPRA SS, 1121 - 1142.

A.2 REOPENER CLAUSE FOR WATERSHED PROTECTION STRATEGY

This permit may be modified or revoked and reissued based on dhe findings of EPA or EQB related to dhe EPA/EQB Waer Quality Issuance Strategy which calls for action in tiis receiving water basin in dhe year 2001.

A.3 STORM WATER MANAGEMENT

The permittee must maintain coverage under EPA's Multi-Sector storm water general permit which establishes requirements related to storm water management. Failure to maintain such permit coverage may result in dhe modification or revocation and re-issuance of tiis permit to incorporate storm water requirements.

R2-0004077

B. MONITORING AND REPORTING REQUIREMENTS

1. Monitoring and records See Part II.B.10.

2. Discharge monitoring reports.

a. See Part II.B.12.d.

b. Monitoring results obtained during the previous month shall be summarized and reported on a Discharge Monitoring Report Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed reporting period. The first report is due on April 28, 2001. Duplicate signed copies of these, and all other reports required herein, shall be submitted to the Regional Administrator and State Director at the following addresses:

COMPLIANCE ASSISTANCE
PROGRAM SUPPORT BRANCH
REGION II
U.S. ENVIRONMENTAL PROTECTION
AGENCY
290 BROADWAY - 21ST FLOOR
NEW YORK, NEW YORK 10007-1866

DIRECTOR
US EPA REGION E
CARIBBEAN ENVIRONMENTAL
PROTECTION DIVISION
EDIF CENTRO EUROPA APT 417
1492 AVENIDA PONCE DE LEON
SAN JUAN, PUERTO RICO 00907-4127

ENVIRONMENTAL QUALITY BOARD OF
PUERTO RICO
P.O. BOX 11488
SANTURCE, PUERTO RICO 00910
ATTN: WATER QUALITY BUREAU

3. Quality assurance practices. The permittee is required to show the validity of all data by requiring its laboratory to adhere to the following minimum quality assurance practices:

a. Duplicate (1) and spiked (2) samples must be run for each constituent analyzed for permit compliance on 5% of the samples, or at least on one sample per month, whichever is greater. If the analysis frequency is less than one sample per month, duplicate and spiked samples must be run for each analysis.

(1) Duplicate samples are not required for the following parameters: Color, Temperature, Turbidity.

(2) Spiked samples are not required for the following parameters listed in Table 1 of 40 C.F.R. 136: Acidity, Alkalinity, Bacteriological, Benzidine, Chlorine, Color, Dissolved Oxygen, Hardness, pH, Oil and Grease, Radiological, Residues, Temperature, Turbidity. Procedures for spiking samples and spiked sample requirements for parameters not listed on the above-referenced table are

R2-0004078

available through the U.S. Environmental Protection Agency's (EPA's) Regional Quality Assurance Coordinator

b. For spiked samples, a known amount of each constituent is to be added to the discharge sample. The amount of constituent added should be approximately the same amount present in the unspiked sample, or must be approximately that stated as maximum or average in the discharge permit.

c. The data obtained in a. shall be summarized in an annual report submitted at the end of the fourth quarter of reporting in terms of precision, percent recovery, and the number of duplicate and spiked samples run.

d. Precision for each parameter shall be calculated by the formula, standard deviation $s = (d^2/2K)^{½}$, where d is the difference between duplicate results, and k is the number of duplicate pairs used in the calculation.

e. Percent recovery for each parameter shall be calculated by the formula $R = 100 (F-I)/A$, where F is the analytical result of the spiked sample, I is the result before spiking of the sample, and A is the amount of constituent added to the sample.

f. The percent recovery, R, for each parameter in e. above shall be summarized yearly in terms of mean percent recovery and standard deviation from the mean. The formula, $s = ((x-x)^2/(n-1))^{½}$, where "s" is the standard deviation around the mean "x", "x" is an individual recovery value, and "n" is the number of data points, shall be applied.

g. The permittee or his contract laboratory is required to annually analyze an external quality control reference sample for each pollutant. These are available through the Regional Quality Assurance Coordinator, Region II, U.S. Environmental Protection Agency, Edison Environmental Laboratory, Edison, New Jersey 08817.

h. The permittee and/or his contract laboratory is required to maintain records of the specific analytical methods used, including options employed, if any, within a particular method, and of reagent standardization and equipment calibration operations.

i. If a contract laboratory is utilized, the permittee shall submit the name and address of the laboratory and the parameters analyzed at the time it submits its discharge monitoring reports (see Section 2.b above). Any change in the contract laboratory being used or the parameters analyzed shall be reported prior to or together with the monitoring report covering the period during which the change was made.

4. Twenty-four hour reporting.

a. The permittee must report violations of maximum daily discharge limitations in accordance with the reporting requirements set forth in Part II.B.12.f (24 hour reporting followed by 5 day written submission) for the following pollutants:

Not Applicable

15

R2-0004079

5. Additional repoxting requirements. The pennitee shali notify tne Regional Adrhinistrator and State Direclor as soon as it knows or has reasnn to believe:

a. That any activity has occurred or will ocenr which would resuh in tne discharge, on a routine or frequent basis, of any toxic poliutant which is not linated in tne permit, if that discharge will exceed the highest (except as specified in part (4)) of tne foliowing "notification levels":

(1) One hundred mierograms per liter (100 ug/l);

(2) Two hundred micrograms per liter (200 ug/l) fix aerolcln and acrylonitrile; five hundred nicrognms per liter (500 ug/l) for 2, 4-dinitrophenol and fix 2-medhyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/l) fnr antimony;

(3) Five (5) times tne maximum concentration value reported for tnat poliutant in the permit application; or

(4) The notification levels, if any, established by tne Director in tne permit.

b. That any activity has oeruned or will occur which would resuh in any discharge, on a non-routine or infiequent basis, of a toxic pollutant which is not limited in tne permit, if that discharge will exceed the highest of tne foliowing "notification levels":

(1) Five hundred micrograms per liter (500 ug/l);

(2) One milligram per liter (1 mg/l) for antimony;

(3) Ten (10) times tne maximum concentration value reported fnr tnat poliutant in the permit application; or

(4) The notification levels, if any, established by tne Director in tne permit.

R2-0004080

A. DEFINITIONS

1. "Average monthly discharge limitation" means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

2. "Average weekly discharge limitation" means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

3. "Bypass" means the intentional diversion of wastes from any portion of a treatment facility.

4. "Composite" means a combination of individual (or continuously taken) samples obtained at regular intervals over the entire discharge day. The volume of each sample shall be proportional to the discharge flow rate. For a continuous discharge, a minimum of 24 individual grab samples (at hourly intervals) shall be collected and combined to constitute a 24-hour composite sample. For intermittent discharges of more than four (4) hours duration, grab samples shall be taken at a minimum of 30 minute intervals.

5. "Daily discharge" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharge over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of pollutant over the day. For purposes of sampling "daily" means an operating day or 24-hour period.

6. "Director" means the "Regional Administrator" or the "State Director", as the context requires, or an authorized representative. Until the State has an approved State program authorized by EPA under 40 C.F.R. Part 123, "Director" means the Regional Administrator. When there is an approved State program, "Director" normally means the State Director. Even in such circumstances, EPA may retain authority to take certain action (see, for example, 40 C.F.R. 123.1(d), 45 Federal Register 14178, April 1, 1983, on the retention of jurisdiction over permits EPA issued before program approval). If any condition of this permit requires the repeating of information or other actions to both the Regional Administrator and the State Director, regardless of who has permit-issuing authority, the terms "Regional Administrator" and "State Director" will be used in place of "Director".

7. "Discharge Monitoring Report" or "DMR" means the EPA uniform national form, including any subsequent additions, revisions, or modifications, for the reporting of self monitoring results by permittees.

8. "Grab" means an individual sample collected in less than 15 minutes.

9. "Gross" means the weight or the concentration contained in the discharge. (Unless a limitation is specified as a net limitation, the limitation contained in this permit is a gross limitation).

10. "Maximum daily discharge limitation" means the highest allowable "daily discharge".

R2-0004081

11. "Monthly" means one day each month (the same day each month) and a normal operating day (e.g., the 2nd Tuesday of each month).

12. "Net" means the amount of a pollutant contained in the discharge measured in appropriate units as specified herein, less the amount of a pollutant contained in the surface water body intake source, measured in the same units, over the same period of time, provided:

    a. The intake water source must be drawn for the same body of water into which the discharge is made; and

    b. In cases where the surface water body intake source is pretreated for the removal of pollutants, the intake level of a pollutant to be used in calculating the net is that level contained after the pretreatment steps.

13. "Regional Administrator" means the Regional Administrator of Region II of EPA or the authorized representative of the Regional Administrator.

14. "Severe property damage" means that substantial physical damage to the treatment facilities which would cause them to become inoperable or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production

15. "State Director" means the chief administrative officer of the State water pollution control agency, or the authorized representative of the State Director.

16. "Toxic pollutant" means any of the pollutants listed in 40 CFR 401.15 (45 F.R. 44503, July 30, 1979) and any modification to that list in accordance with Section 307 (a)(1) of the Clean Water Act.

17. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

18. "Weekly" means every seventh day (the same day of each week) and a normal operating day.

B. GENERAL CONDITIONS

1. Duty to Comply.

    a. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

R2-0004082

b. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

c. The Clean Water Act provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405, of the Clean Water Act is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who negligently violates permit conditions implementing Section 301, 302, 306, 307, 308, 318 or 405 of the Clean Water Act is subject to a fine not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates permit conditions implementing section 301, 302, 306, 307, 308, 318 or 405 of the Clean Water Act is subject to a fine not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

2. Duty to Reapply. This permit and the authorization to discharge shall terminate on the expiration date indicated on the first page. In order to receive authorization to discharge after the expiration date of this permit, the permittee must apply for and obtain a new permit. If the permit issuing authority remains EPA, the permittee shall complete, sign, and submit an application to the Regional Administrator no later than 180 days before the expiration date.

3. Need to Halt or Reduce not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, installed by the permittee, when the operation is necessary to achieve compliance with the conditions of the permit.

6. Permit actions.

a This permit may be modified, revoked and reissued, or terminated during its term for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

b. Causes for modification, revocation and reissuance, and termination are set forth in 40 C.F.R. 122.62 and 122.64.

(I) Specified causes for modification, revocation and reissuance, and termination include:

R2-0004083

(a) Noncompliance by the permittee with any condition of the permit;

(b) The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;

(c) A determination that the permitted discharge endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; or

(d) There is a change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit.

(2) Specified causes for modification and, upon request or agreement of the permittee, revocation and reissuance of the permit include material and substantial alterations or additions to the permittee's operation which occurred after permit issuance and which justify the application of permit conditions that are different or absent from this permit, (e.g., production changes, relocation or combination of discharge points, changes in the nature or mix of products produced) provided the reconstruction activities do not cause the new source permit issuance provisions of 40 C.F.R. 122.29 to be applicable

c. With the exception of permit modifications which satisfy the criteria in 40 C.F.R. 122.63 for "minor modifications," the applicable procedures required by 40 C.F.R. Part 124, including notice and opportunity for a hearing, shall be followed before this permit is modified, revoked and reissued, or terminated.

7. Property rights. The issuance of this permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local laws or regulations.

8. Duty to provide information. The permittee shall furnish to the Director within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

9. Inspection and Entry. The permittee shall allow the Regional Administrator, the head of the State water pollution control agency, or any other authorized representative(s), upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

10. Monitoring and records.

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, for a period of at least 3 years from the date of the sample, measurement report or application. This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurement;

(2) The individual(s) who performed the sampling or measurements;

(3) The date(s) analyses were performed;

(4) The individual(s) who performed the analyses;

(5) The analytical techniques or methods used;

(6) The quality assurance information specified in Part I of this permit; and

(7) The results of such analyses.

d. Monitoring shall be conducted according to test procedures approved under 40 C.F.R. Part 136.

e. The Clean Water Act provides that any person who knowingly falsifies, tampers with, or renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or by both.

11. Signatory requirements.

a. All permit applications shall be signed as follows:

(1) For a corporation, by a responsible corporate officer; or

R2-0004085

(2) For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

(3) For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.

b. All reports required by this permit, and other information requested by the Regional Administrator or State Director pursuant to the terms of this permit, including DMRs and reports of noncompliance, shall be signed as follows:

(1) By a person described in subsection a. or by a duly authorized representative of that person.

(2) A person is a duly authorized representative only if:

(a) The authorization is made in writing by a person described on subsection a.;

(b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company.

(c) The written authorization is submitted to the Regional Administrator, U.S. Environmental Protection Agency, Region II, 290 Broadway, New York, New York, 10007-1866, Attention: Compliance Assistance Program Support Branch, and to the State Director.

(3) If a written authorization submitted pursuant to subsection b. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph b. must be submitted to the Regional Administrator and State Director prior to or together with any reports or information to be signed by an authorized representative

c. Certification. Any person signing a document under subsection a. or b. shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under the direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

d. The Clean Water Act provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained

R2-0004086

under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or by both.

12. Repeating Requirements.

a. Planned changes. The permittee shall give notice to the Regional Administrator and State Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a "new source" in 40 C.F.R. 122.29(b);

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification requirement applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under Part I.B.5, above; or

(3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. Anticipated noncompliance. The permittee shall give advance notice to the Regional Administrator and State Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements as soon as it becomes aware of the circumstances.

c. Transfers.

(1) This permit is not transferable to any person except after notice to the Regional Administrator and State Director. Except as provided in paragraph (2), a permit may be transferred by the existing permittee to a new owner or operator only if the permit has been modified or revoked and reissued, or a minor modification made, to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

(2) This permit may be automatically transferred to a new permittee if

(a) The existing permittee notifies the Regional Administrator and State Director at least 30 days in advance of the proposed transfer date in subparagraph (b);

(b) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

R2-0004087

(c) The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify or revoke and reissue the permit. (A modification under this subparagraph may also be a minor modification under 40 C.F.R. 122.63.) If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in subparagraph (b).

(3) If this permit is automatically transferred in accordance with the provisions of paragraph (2), the permit may be modified to reflect the automatic transfer after its effective date.

d. Monitoring reports.

(1) Monitoring results shall be reported at the intervals specified in Part I of this permit.

(2) Monitoring results shall be reported on a Discharge Monitoring Report (DMR).

(3) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 C.F.R. 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

(4) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.

e. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

f. Twenty-four hour reporting.

(1) The following information shall be reported orally to the Regional Administrator at (732) 548-8730 and State Director within 24 hours from the time the permittee becomes aware of the circumstances:

(a) Any noncompliance which may endanger health or the environment;

(b) Any unanticipated bypass (see 13 below) which violates any effluent limitation in the permit;

(c) Any upset (see 14 below) which violates any effluent limitation in the permit; or

(d) The violation of a maximum daily discharge limitation for any of the pollutants listed in Part I of this permit is required to be reported within 24 hours. This list includes any toxic pollutant or hazardous substance, or any pollutant specifically identified as the method to control a toxic pollutant or hazardous substance.

R2-0004088

(2) In addition to the oral 24-hour report, the permittee shall also provide a written submission to the Regional Administrator and State Director within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

(3) Except with respect to written reports required under paragraph (1)(a) of subsection f., above, the Director may waive the written report on a case-by-case basis if the oral report has been received within twenty-four hours.

g. Other noncompliance. The permittee shall report to the Regional Administrator and State Director all instances of noncompliance not reported under subsections d, e, and f at the time the monitoring report covering the period of noncompliance is submitted. The reports shall contain the information listed in paragraph (2) of subsection f, above.

h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator and State Director, it shall promptly submit such facts or information to the Regional Administrator and State Director.

13. Bypassing

a. Bypass not violating limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be violated, but only if it also is for essential maintenance to assure efficient operation These bypasses are not subject to the provisions of subsections b. and c.

b. Notice.

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass

(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in subsection f of section 12 above.

c. Prohibition of bypass.

(1) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of unheated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or maintenance; and

(c) The permittee submitted notices as required under subsection b.

(2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph (1).

14. Upset.

a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based permit effluent limitations if the requirements of subsection b. are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;

(2) The permitted facility was at the time being properly operated;

(3) The permittee submitted notice of the upset as required in subsection f of section 12 above; and

(4) The permittee complied with any remedial measures required under section 4 above (duty to mitigate).

c. Burden of proof In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof

15. Removed substances. Solids, sludges, filter backwash or other pollutants removed in the course of treatment or control of wastewaters and/or the treatment of intake waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters. The following data shall be reported together with the monitoring data required in Part I, B.2.:

a. The sources of the materials to be disposed of;

b. The approximate volumes and weights;

c. The method by which they were removed and transported; and

d. Their final disposal locations.

16. Oil and hazardous substance liability. The imposition of responsibilities upon, or the institution of any legal action against the permittee under Section 311 of the Act shall be in conformance with regulations promulgated pursuant to Section 311 to discharger from facilities with NPDES permits.

17. Reopener clause for toxic effluent limitations. Notwithstanding any other condition of this permit, if any applicable toxic effluent standard or prohibition is promulgated under Section 301(b)(2)(C) and (D), 304(b)(2) and 307(a)(2) of the Clean Water Act and that effluent standard or limitation is more stringent than any effluent limitation in the permit or controls a pollutant not limited in the permit, this permit shall be promptly modified or revoked and reissued to conform to that effluent standard or prohibition.

18. State laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Act. The issuance of this permit does not preempt any duty to obtain State or local assent required by law for the discharge.

19. Availability of information.

a NPDES permits, effluent data, and information required by NPDES application forms provided by the Director under 40 C.F.R. 122.21 (including information submitted on the forms themselves and any attachments used to supply information required by the forms) shall be available for public inspection at the offices of the Regional Administrator and State Director.

b. In addition to the information set forth in subsection a, any other information submitted to EPA in accordance with the conditions of this permit shall be made available to the public without further notice unless a claim of business confidentiality is asserted at the time of submission in accordance with the procedures in 40 C.F.R. Part 2 (Public Information).

c. If a claim of confidentiality is made for information other than that enumerated in subsection a, that information shall be treated in accordance with the procedures in 40 C.F.R. Part 2. Only information determined to be confidential under those procedures shall not be made available by EPA for public inspection.

20. Severability. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

C. EFFECTIVENESS OF PERMIT

1. This permit shall become effective in its entirety on the date indicated on the first page of this permit unless a petition has been filed with the Environmental Appeals Board to review any condition of the permit decision pursuant to the provisions of 40 CFR Part 124.19. All contested conditions and any uncontested condition(s) that are inseverable from the contested conditions shall be stayed. All other conditions shall become effective thirty (30) days after the date of the notification specified in 40 CFR 124.16(a)(2)(ii).

2. For purposes of judicial review under Section 509(b) of the Clean Water Act, final agency action on a permit does not occur unless and until a party has exhausted its administrative remedies under 40 CFR 124. Any party which neglects or fails to seek review under 40 CFR 124.19, thereby waives its opportunity to exhaust available agency administrative remedies.

R2-0004092

Response to Comments and
Description of Changes to the Final Permit for
SB Pharmco Puerto Rico, Inc. (SB Pharmco)
NPDES Pennit Number PR0021997

Changes have been made in the final permit as follows. The page numbers in the left column refer to the pages in the final permit.

Final Permit Page No.	Description of Change
Page 1	EPA changed the Effective Date of Permit (EDP) to the date calculated. Calculated this date by taking the approximate date permittee is expected to be served notice of the final permit decision (use approximate date notice is to be sent (~12/20/00), adding 2 months to this date, and rounding the date calculated up to the first of the month (March 1, 2001). EPA changed "EDP + 5 years" to February 28, 2006.
Page 2	EPA changed "EDP" to March 1, 2001 and "EDP + 5 years" to February 28, 2006.
Pages 2 and 3	The applicant commented that text in Table A-1 should be changed from "See Special Condition number 17" to "See Special Condition number 18". EPA agrees with this comment, and has made the correction.
Page 4	The Daily Measurement Frequency and Grab Sample Type for Temperature have been added to correct an oversight and conform to the requirements of the final Water Quality Certificate.
Page 5	The applicant commented that the footnote to the Sulfide effluent limit should provide for the use of a different analytical method for Total Sulfides. EPA has reviewed the method that SB Pharmco submitted (Hach Method 8131), and agrees that the HACH method achieves an equivalent detection lintit as the method previously included in the footnote (Standard Methods 4500-S^{2-} D (18th Edition). In addition, a third equivalent method (EPA Method 376.2) has been included in the footnote. Currently, these are the three analytical methods with the lowest possible detection limits.

R2-0004093

Final Permit Page No.	Description of Change
Page 7	EPA changed "EDP" to March 1, 2001.
Page 8	EPA changed all references to "EDP" to March 1, 2001, all references to "EDP + 2 years" to Febmary 28, 2003, "EDP + 2 years + 1 day" to March 1, 2003, and "EDP + 5 years" to February 28, 2006.
Page 11	EPA changed "EDP + 1 month + 28 days" in Part I.B.2.b to April 28, 2001.

R2-0004094

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION II
290 Broadway
New York, New York 10007-1866

FACT SHEET
DRAFT NPDES PERMIT TO DISCHARGE
INTO THE WATERS OF THE UNITED STATES

#11397
'00 NOV 29 P3:36
RECIBIDO
NEGOCIADO PERMISOS Y CUMPLIMIENTO

NPDES No. Application No. PR0021997 Date:

Name and Address of Applicant:

SB Pharmco Puerto Rico, Inc.
P.O. Box 11975
Cidra, Puerto Rico 00739

Name and Address of Facility
where Discharge Occurs:

SB Pharmco Puerto Rico, Inc.
Road 172 K.M. 9.1
Cidra, Puerto Rico

Receiving Water: unmamed creek tributary to Quebrada las Quebradillas

Classification: SD

I. LOCATION OF DISCHARGE

The above-named applicant has applied for a National Pollutant Discharge Elimination System (NPDES) permit, to the U.S. Enviromnental Protection Agency (EPA) to discharge into the designated receiving waters. The location of each discharge is described by the following U.S.G.S. Coordinates:

	Latitude	Longitude
Outfall 001	N 18° 11' 41.74"	W 66° 07' 32.69"

A description and/or sketch of the location of the discharges is appended as Attachment I.

R2-0004095

II. DESCRIPTION OF APPLICANT'S FACILITY AND DISCHARGE

The applicant manufactures pharmaceutical drug products. Materials are weighed, mixed, or blended and then manufactured into commercial presentations like capsules, tablets, injections, oral liquids, ointments, creams, and suppositories. Final products are packed and distributed. This activity has a Standard Industrial Classification (SIC) code of 2834.

The facility proposes to discharge 613.36 m^3/day (0.162 MGD) as a daily maximum of treated wastewaters consisting of process wastewater, utility wastewater, sanitary wastewater, and miscellaneous waste from the SB Phannco Puerto Rico Inc. facility through discharge point 001 to Quebrada las Quebradillas. The receiving water has been classified SD by the Environmental Quality Board (EQB) of Puerto Rico.

A description of the type and quantity of pollutants which are to be discharged is listed in Table A-1 of the draft permit.

III. DESCRIPTION OF LIMITATIONS AND CONDITIONS

A brief summary of the basis of each effluent limitation and other conditions in the draft permit is provided in Attachment II.

IV. STATE CERTIFICATION REQUIREMENTS

State Certification requirements, based upon a Water Quality Certificate (WQC) issued by the Environmental Quality Board (EQB) of the Commonwealth of Puerto Rico, are described in Attachment HI. Review and appeals of limitations and conditions attributable to this certification shall be made through the applicable Commonwealth procedures and may not be through EPA procedures.

V. PROCEDURES FOR REACHING A FINAL DECISION ON THE DRAFT PERMIT

These procedures, which are set forth in 40 CFR 124, are described in the public notice of preparation of this draft permit. Included in the public notice are requirements for the submission of comments by a specified date, procedures for requesting a hearing and the nature of the hearing, and other procedures for participation in the final agency decision.

R2-0004096

VI. EPA CONTACT

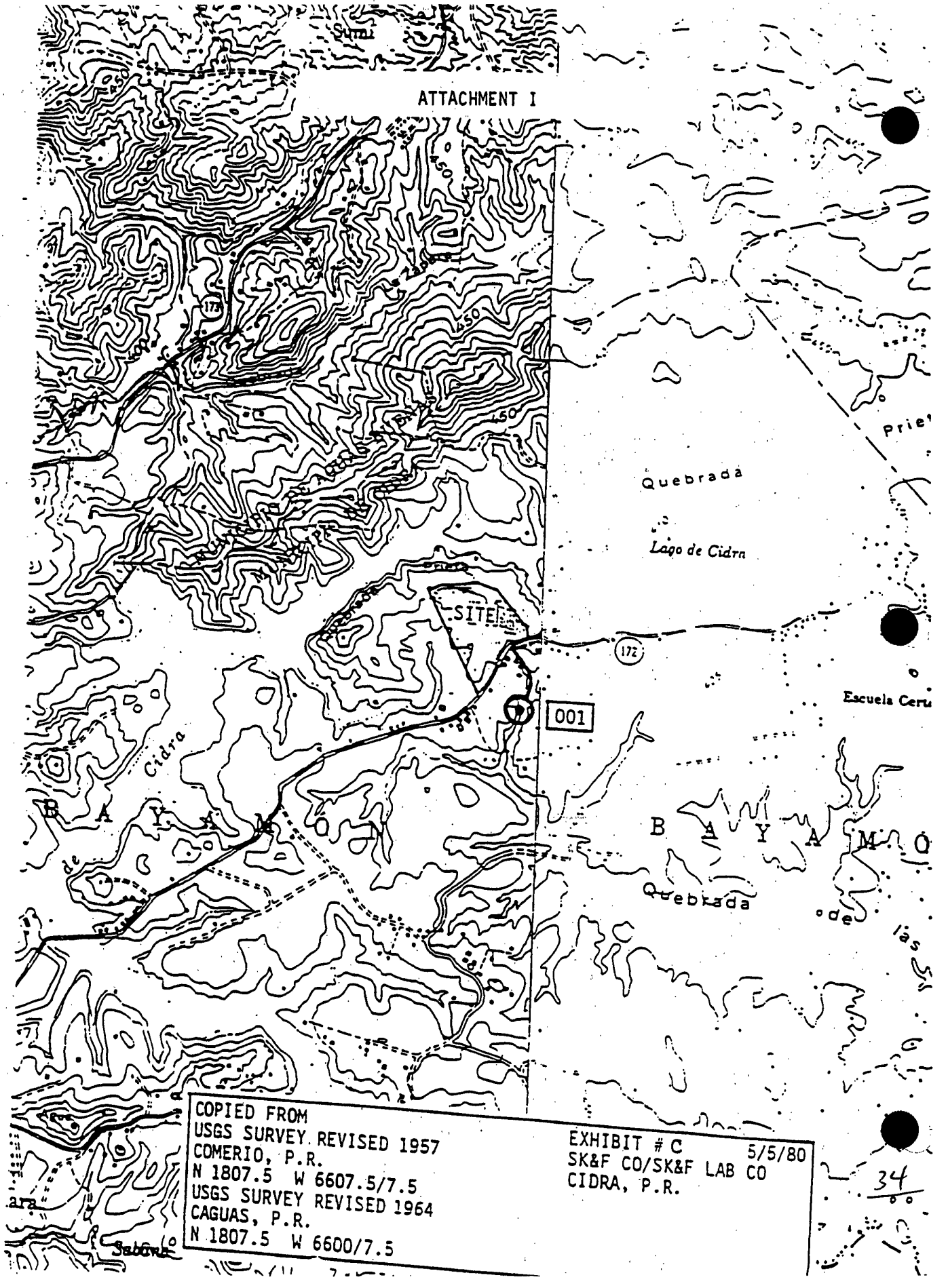
Additional information concerning the draft permit may be obtained between the hours of 8:00 A.M. and 4:30 P.M., Monday through Friday from:

Walter E. Andrews, Chief
Water Programs Branch
U.S. Environmental Protection Agency
290 Broadway, 24th Floor
New York, New York 10007
(212) 637-3876

Carl-Axel Soderberg, Director
U.S. Environmental Protection Agency
Caribbean Environmental Protection Division
EDIF Centro Europa Apt 417
1492 Avenida Ponce De Leon
San Juan, Puerto Rico 00907-4127
(787) 729-6951

R2-0004097

ATTACHMENT I



COPIED FROM
USGS SURVEY REVISED 1957
COMERIO, P.R.
N 1807.5 W 6607.5/7.5
USGS SURVEY REVISED 1964
CAGUAS, P.R.
N 1807.5 W 6600/7.5

EXHIBIT # C 5/5/80
SK&F CO/SK&F LAB CO
CIDRA, P.R.

34

R2-0004098

ATTACHMENT II

Description of Limitations And Conditions

The effluent limitations, monitoring requirements, and other conditions of this permit are described in the draft permit. The effluent limitations in the pennit are equivalent to the most stringent values specified in the applicable technology-based guidelines (Pharmaceutical Manufacturing Point Source Category, 40 CFR Part 439 Subpart D - Formulating, Mixing, and Compounding Subcategory) or water quality-based limitations included in the WQC issued by the Puerto Rico Environmental Quality Board (EQB), dated June 16, 2000, as modified September 15, 2000. All anti-backsliding decisions are made in accordance with EPA Region II Antibacksliding Policy.

Discharge Outfall 001: Process wastewater, utility wastewater, sanitary wastewater, and miscellaneous waste

BOD_5 - The mass-based monthly average effluent limit has been established based on the Pharmaceutical Manufacturing Point Source Category, 40 CFR Part 439 Subpart D - Formulating, Mixing, and Compounding. (See Attachment IV)

The daily maximum limitation is based on the more stringent previous permit limitation rather than water quality based daily maximum limitation to comply with the anti-backsliding provision (402(o)) of the Clean Water Act. Existing effluent quality analysis was performed to determine ability to comply with the more stringent limit. (See Attachment V).

COD - The monthly average effluent limitation has been established based on the Pharmaceutical Manufacturing Point Source Category, 40 CFR Part 439 Subpart D - Formulating, Mixing, and Compounding. (See Attachment IV).

The daily maximum limitation is based on the more stringent previous pennit limitation rather than that of the applicable technology-based guidelines referenced above, to comply with the anti-backsliding provision (402(o)) of the Clean Water Act. Existing effluent quality analysis was performed to determine ability to comply with the more stringent limit. (See Attachment V).

TSS - The mass-based monthly average effluent limitation has been established based on the applicable technology-based guidelines (Pharmaceutical Manufacturing Point Source Category, 40 CFR Part 439 Subpart D - Formulating, Mixing, and Compounding). The daily maximum concentration limit is based on the previous permit limitation to comply with the anti-backsliding provision (402(o)) of the Clean Water Act.

R2-0004099

The effluent limitations listed in Table A-1 for Boron, Cyanide, Dissolved Oxygen, Fecal Coliforms, Flow, Fluorides, Manganese, Mercury, Nitrate plus Nitrite, Oil and Grease, Other Pathogenic Organisms, pH, Phenolic Substances, Residual Chlorine, Selenium, Solids and Other Matter, Sulfide (undissociated H_2S), Surfactants as MBAS, Suspended, Colloidal or Settleable Solids, Taste and Odor Producing Substances, Temperature, Total Ammonia, Total Chromium, Total Coliforms, Total Dissolved Solids, Total Phosphorous, Turbidity, and Zinc, and all special conditions are as imposed in the WQC issued by the EQB, dated June 16, 2000, as modified September 15, 2000. These limitations are equal to or more stringent than the effective permit requirements. The WQC was issued by the EQB for the purpose of assuring compliance with EQB's water quality standards and compliance with other appropriate requirements of State law as provided by Section 401(d) of the Clean Water Act.

The effluent limitations for daily maximum Cadmium, Color, Copper, and Lead are based on the results of EEQ analysis, as the water quality-based effluent limits included in the WQC were less stringent than previous permit limitations for these parameters. In accordance with the anti-backsliding provision (402(o)) of the Clean Water Act, limits for these parameters are based on previous permit limitations for Cadmium and Color, WQC limitations for Copper, and the EEQ analysis result for Lead. (See Attachment V).

Watershed Protection Strategy Program Requirements

EPA and EQB have developed a Watershed Protection Strategy for WQC issuance. The Strategy will result in synchronization of permit issuance within a watershed. SB Pharmco facility has been included in the program for permit issuance within a watershed scheduled for the year 2001. EPA has included a Reopener Clause in the permit stating that if, on the basis of new information, EPA may modify or revoke and reissue the permit following these watershed activities.

Storm Water Management Requirements

EPA has included a condition in the permit stating that EPA may modify or revoke and reissue the permit to incorporate storm water requirements if the pennittee fail to maintain coverage under EPA's Multi-Sector storm water general permit.

General Conditions

These conditions apply to ali permits as required by 40 CFR Part 122.41.

R2-0004100

GOVERN: :NT OF PUERTO RICO/OFFI :: OF THE GOVERNOR

Environmental Quality Board

ATTACHMENT III

Water Quality Certificate

U.S. EPA
2000 SEP 25 PM 5:06

September 15, 2000

Mr. José L. Rosado
General Manager
SB Pharmco Puerto Rico, Inc.
P.O. Box 11975
Cidra, Puerto Rico 00739-1975

Dear Mr. Rosado:

RE: WATER QUALITY CERTIFICATE
SB PHARMCO PUERTO RICO, INC.
STATE ROAD NO. 172, KM. 9.1
CIDRA, PUERTO RICO
NPDES NO. PR0021997

We have received and reviewed the Petition for Reconsideration submitted by SB Pharmco Puerto Rico, Inc. (SBPPRI) regarding the referenced Water Quality Certificate (WQC).

The Governing Board of the Environmental Quality Board (EQB), instructed the Water Quality Area (WQA), by Resolution #R-00-27-1 (copy enclosed), to modify the referenced WQC in accordance with the recommendations submitted by the WQA in the memorandum dated August 11, 2000 (copy enclosed).

Therefore, enclosed please find the modified pages, which should be substituted, for the corresponding pages in the referenced WQC. The modified WQC constitutes the final WQC issued by EQB for the referenced facility.

If you have any objection to the final WQC, you have the right to request a review to the Superior Court of Puerto Rico within the statutory period (thirty (30) calendar days from the date that the Resolution is received).

This Agency reserves the right to comment at a later date concerning other environmental aspects of the discharge.

Cordially,

Héctor Russe Martínez
Chairman

Enclosures

C: Mr. Walter E. Andrews, EPA Region II
Eng. Carl-Axel P. Soderberg, EPA-CEPD

R2-0004102

GOBIERNO DE PUERTO RICO/OFICINA DEL GOBERNADOR

Junta de Calidad Ambiental

11 de agosto de 2000

Junta de Gobiemo

Roberto Ayala Praab
Director
Area de Calidad de Agua

Solicitud de Reconsideracidn
Certificado de Calidad de Agua
SB Pharmco, Puerto Rico, Inc.
NPDES Núm. PR0021997

Hacemos referencia a la solicitud de reconsideración del Certificado de Calidad de Agua (CCA) emitido el 16 de junio de 2000, para SB Pharmco, Puerto Rico, Inc. (SBPPRI), la cual fue sometida en carta fechada el 11 de julio de 2000.

En la solicitud de reconsideración, SBPPRI trae ante nuestra atención nuevamente su preocupación sobre la metodologia de análisis para sulfuro total y la limitación de sulfuro (H_2S no ionizado) presentada en el CCA.

Primeramente, deseamos establecer que coincidimos con el proponente en que no existe un método analitico capaz de alcanzar un limite de detección de 0.007 mg/l para sulfiiro total. Segundo, el parámetro regulado en nuestro CCA corresponde al sulfuro (H_2S no ionizado) en vez del sulfuro total. Sin embargo, existe un ***procedimiento*** (cómputo matemático) que permite calcular la concentración de sulfuro (H_2S no ionizado) de la descarga desde la concentración de sulfiiro disuelto. Este procedimiento se encuentra en el método 4500 S^{-2} F *Calculation of Un-ionized Hydrogen Sulfide* de la edición número 18 del *Standard Method for the Examination of Water and Wastewater*. El cómputo de la concentración del H_2S no ionizado está basado en el equilibrio quimico de la reacción entre sulfuro y los iones de hidrógeno donde se toma en consideración la constante de ionización (pk), conductividad, pH y la temperatura. Por lo cual, el peticionario se ve en la obligación de determinar la concentración de sulfuro disuelto para poder calcular la concentración de H_2S no ionizado. A tales efectos, si del análisis realizado la concentración de sulfuro disuelto es no detectable, utilizando el método analitico aprobado por la EPA con nivel de detección más bajo posible, en conformidad con la Sección 6.8 del Reglamento de Estándares de Calidad de Agua (RECA), el peticionario deberá indicar en los Reportes de Monitoria de la Descarga (DMR, por sus siglas en inglés) que la concentración equivalente para H_2S no ionizado es no detectable.

Por lo cual, recomendamos a esta Honorable Junta incluir la siguiente condición especial para el parámetro de sulfuro no ionizado:

> *Si los resultados obtenidos del análisis para sulfuro disuelto reflejan que el parámetro no es detectable utilizando el método analitico aprobado por la Agencia Federal para la Protección Ambiental (EPA, por sus siglas en inglés) con el nivel de detección más bajo posible, en conformidad con la Sección 6.8 del Reglamento de Estándares de Calidad de Agua (RECA), el peticionario deberá indicar en los Reportes de Monitoria de la Descarga (DMR, por sus siglas en inglés) que el parámetro de sulfuro (H_2S no ionizado) es no detectable.*

Solicitamos que la decisión tomada por la Honorable Junta de Gobiemo sobre la solicitud presentada, nos sea notificada con la mayor brevedad posible, ya que al tratarse de un compromiso de certificación contraido con la Agencia Federal para la Protección Ambiental, nos urge informarles y someterles cualquier cambio que resulte de su decisión, para que éste a su vez sea incorporado en el permiso NPDES.

F:\USERDATA\AGUA\PERIND\WordAngel\RECON\SB_PR0021997.doc

R2-0004104

11. The samples for the analysis of phenolic substances and mercury should be taken at the sampling points for discharge 001. The resulis obtained from the analyses of these samples shall reflect that the parameters are not detectable using the analytical method approved by the Environmental Protection Agency (EPA) with the lowest possible detection level, in accordance with Sectlon 6.8 of the Water Quality Standards Regulation (WQSR). 3

12. If the results obtained from the analyses of dissolved sulf de reflect that the parameter is not detectable using the analytical method approved by Environmental Protection Agency (EPA) with the lowest possible detection level, in accordance with Section 6.8 of the Water Quality Standards Regulations (WQSR), as amended, the permittee shall indicated in the Discharge Monitoring Report (DMR) that the parameter of sulfide (undissociated H_2S) is not detectable. 3

13. Following the issuance of licenses by the Potable Water and Wastewater Treatment Plant Operators Examining Board of the Government of Puerto Rico, all water and wastewater treatment facilities, whether publicly or privately owned, must be operated by a person licensed by such Examining Board. 3,5

14. The sludge produced within the facility due to the operation of the system shall be analyzed and all constituents shall be identified as required by "Resources Conservation and Recovery Act" (RCRA) and by "Toxic Substances Control Act" (TSCA). The permittee shall obtain appropriate federal and state permits prior to the final disposal of such wastes. The sludge shali be disposed properly in such manner that water pollution or other adverse effects to surface waters or to ground waters do not occur. 3,5

15. A log book must be kept for the material removed from the treatment plant detailing the following items:

    a. Material removed, date and source of it.
    b. Approximate volume and weight.
    c. Method by which it is removed and transported.
    d. Final disposal and location.
    e. Person that performs the service.

    A copy of the Non-Hazardous Solid Waste Collection and Transportation Services Permit issued by the authorized official from EQB must be attached to the log book. 3

R2-0004105

16. The permittee shall implement a monthly monitoring program for discharge 001, and analyze the samples using the analytical method approved by EPA with the lowest possible detection level, pursuant Section 6.2.3 of the WQSR, for one year period after which they will be conducted annually for the following parameter:

Parameter	Unit	Sample Type
Manganese (Mn)	µg/l	Grab

The monitoring program shall commence not later than thirty (30) days after the Effective Date of the NPDES Permit (EDP). The results of the monitoring program shall be submitted to EQB and EPA Region II not later than sixty (60) days after the completion of the one (1) year monitoring program or annual monitoring. Based on the evaluation of the results obtained, EQB will determine if more frequent monitoring is necessary for the aforementioned parameter. In such case, the WQC will be re-open to revise that monitoring frequency for the aforementioned parameter if considered necessary. 2,3,5

17. Within thirty (30) days after the Effective Date of the NPDES Permit (EDP), SBPPRI shall submit to the EQB a revised copy of the Emergency Plan, which shall be signed and certified by a professional engineer license in Puerto Rico and in accordance with Article 11, Item 14 of the Public Policy Environmental Act, Law No. 9 of June 18, 1970 as amended and Section 6.5 of the Water Quality Standards Regulation to prevent and control spills. 3

18. The permit shall comply with the following monitoring requirements and interim and final limits for the discharge 001 for the following parameters:

Parameter	Interim Limits	Final Limits	Monitoring Frequency	Sample Type
Cyanide (CN)	20 µg/l	5.2 µg/l	Monthly	Grab
Mercury (Hg)	1.0 µg/l	0.012 µg/l	Monthly	Grab
Phenolic Substances	10.0 µg/l	1.0 µg/l	Monthly	Grab

The interim limits shall be effective during the period beginning on Effective Date of Permit (EDP) and lasting through EDP + 2 years.

The final limits shall be effective during the period beginning on EDP + 2 years + 1 day and lasting through EDP plus 5 years.

R2-0004106

19. Within thirty (30) days after EDP, SBPPRI shall submit to EQB and EPA a Compliance Plan for the corresponding evaluation and approval, which shall include an schedule of activities with their respective dates directed to perform the corresponding adjustments at the facility in order to achieve compliance at the point of discharge 001 with the final effluent limits established in Special Condition number 17 not later than EDP + 2 years. 3

20. This Board may revoke the approval of a Compliance Plan for any of the following reasons:

a. SBPPRI has not revealed all the relevant facts in the request or has provided false representation of any of the relevant facts during the evaluation of such request

b. Non-compliance with any applicable provision of the Compliance Plan,

c. Changes in the condition, without due authorization from this Board, under which the Compliance Plan was approved.

d. There exist an imminent hazard to public health or the enviromnent. 3

21. This special condition shall not become in effect until EQB has determined the applicability to the respective facility and has notified the permittee and EPA, in writing, of the necessity to comply with this special condition.

The permittee shall conduct quarterly acute toxicity test, for a period of one (1) year, of the wastewater discharge through Outfall Serial Number 001.

a. The toxicity tests shall be conducted in accordance with the most recent edition of the Environmental Protection Agency (EPA) publication, EPA 600/4-90/027F Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (Fourth Edition), August 1993.

b. The test shall provide a measure of the acute toxicity as determined by the wastewaters concentration which cause 50 percent mortality of the orgamsms over a 48 hour period. Test results shall be expressed in terms of Letinal Concentration (LC) and reported as 48 hour LC50.

c. The test species should be the "Fathead Minnow" (Pimephales promelas) and "Cladocera" (Daphnia magna). The test with should be non-renewal type.

R2-0004107

d. A procedure report shall be submitted ninety (90) days after the effective date of this NPDES permit condition (EDPC). The following information shall be included in the procedure report:

1. An identification of the organizations responsible for conducting the tests and the species to be tested.

2. A detailed description of the methodology to be utilized in the conduct of the tests, including equipment, sample collection and source of test organisms.

3. A schematic diagram which depicts the effluent sampling location. The diagram shall indicate the location of effluent sampling in relation to wastewater treatment facility and discbarge mcnitoring point.

4. If stream flow monitoring is required, the method used to obtain the stream flow data in estimating the seven-day two-year low flow (7Q2).

e. Test shall be conducted quarterly for a period of one (1) year and shall commence not later than one hundred eighty (180) days after EDPC. The results shall be submitted to EPA Region II and EQB within thirty (30) days of completion of each test. Based on the review of the test results, the Regional Administration of EPA or the EQB can require additional toxicity tests, including chronic tests and toxicity/ treatability studies, and may impose toxicity limitations.

22. Each condition of this WQC is considered as separate. Therefore, if the applicability of any condition of this WQC is stayed due to any circumstance, the remaining conditions of this WQC will not be affected. 5

23. The EQB by the issuance of the WQC does not relieve the applicant from its responsibility to obtain additional permits or authorizations from the EQB as required by law. The issuance of the WQC shall not be constmed as an authorization to conduct activities not specifically covered in the WQC, which will cause water pollution as determined by the Water Quality Standards Regulation. 5

1,2,3,4,5 see next page

R2-0004108

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS NPDES NO. PR0021997 SD

Effluent Characteristics	Gross Discharge Limitations		Monitoring Requirements	
	Monthly Average	Daily Maximum	Measurements Frequency	Sample Type
Other Pathogenic Organisms	These waters shall be free of other pathogenic organisms.		----	----
pH (SU) [2,3]	Shall always lie between 6.0 – 9.0.		Daily	Grab
Phenolic Substances (µg/l) [2,3]**	See Special Condition number 17.		Monthly	Grab
Residual Chlorine (mg/l) [2,3] *		0.50	Daily	Grab
Selenium (Se) (µg/l) [2,3]		10.0	Quarterly	Grab
Solids and Other Matter [2]	The waters of Puerto Rico shall not contain floating debris, scum and other floating materials attributables to discharges in amounts sufficient to be unsightly or deleterious to the existing or designated uses of the water body.		----	----
Sulfide (S) (undissociated H_2S) (µg/l) [2,3 ***]		2	Monthly	Grab
Surfactants as MBAS (µg/l) [2, 3]		100	Monthly	Grab
Suspended, Colloidal or Settleable Solids (ml/1) [1,2,3]	Solids from wastewater sources shall not cause deposition in or be deleterious to the existing or designated uses of the waters.		Daily	Grab

SH

R2-0004109

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS NPDES NO. PR0021997 SD

Effluent Characteristics	Gross Discharge Limitations		Monitoring Requirements	
	Monthly Average	Daily Maximum	Measurements Frequency	Sample Type
Total Dissolved Solids (mg/l) [2,3]		500	Monthly	Grab
Total Phosphoms (P) (mg/l) [2,3]		1.00	Monthly	Grab
Turbidity (NTU) [2,3]		50	Monthly	Grab
Zinc (Zn) (µg/l) [2,3,4]		50.00	Quarterly	Grab
Special Conditions	See attached sheet which contains special conditions part of this certification.		----	----

Notes:

To comply with the monitoring requirements specified above, samples shall be taken at point of discharge 001.

All flow measurements shall achieve accuracy within the range ± 10%.

* See Special Condition number 10.

** See Special Condition number 11.

*** See Special Condition number 12.

ϕ See Special Condition number 16.

1,2,3,4, and 5 see page 6 of the Special Conditions.

46

R2-0004110

GOVERN NT OF PUERTO RICO/OFF E OF THE GOVERNOR
Environmental Quality Board

RETURN RECEIPT REQUESTED

COPY IN ENGLISH OF THE ORIGINAL LETTER

June 16, 2000

Mr. José L. Rosado
General Manager
SB Pharmco Puerto Rico, Inc.
P. O. Box 11975
Cidra, Puerto Rico 00739-1975

Dear Mr. Rosado:

Re: **WATER QUALITY CERTIFICATE**
SB PHARMCO PUERTO RICO, INC.
STATE ROAD NO. 172, KM. 9.1
CIDRA, PUERTO RICO
NPDES NO. PR0021997

We have received and reviewed the application for a permit under Section 402, National Pollutant Discharge Elimination System (NPDES), of the Federal Clean Water Act, as amended (33 U.S.C. 466 et. seq.) (the Act) for the referenced discharge.

Pursuant to Section 401(a) (1) of the Act, after due consideration of the applicable provisions established in the Water Quality Standards Regulation (WQSR), as amended and in Sections 208(e), 301, 302, 303, 304(e), 306 and 307 of the Act, it is certified that there is reasonable assurance as determined by the Environmental Quality Board (EQB) that the alluded discharge will not cause violations to the applicable water quality standards at the receiving water body if the limitations and monitoring requirements on Table A-1 are met. The conditions specified in the aforementioned table shall be incorporated into the NPDES permit in order to satisfy the provisions of Section 301(b) (1) (C) of the Act.

If you have any objection to the Water Quality Certificate (WQC), you have the right to request a reconsideration to EQB within the statutory period (twenty (20) calendar days from the date that the WQC is received).

This Agency reserves the right to comment at a later date conceming other environmental aspects of the discharge.

Maribelle Marrero Vázquez
Associated Member

Genaro Torres León
Alternate Member

Héctor Russe Martínez
Chairman

R2-0004112

SPECIAL CONDITIONS

NPDES NO. PR0021997

These special conditions are an integral part of the Water Quality Certificate (WQC):

1. The flow of discharge 001 shall not exceed the limitation of 613.36 m^3/day (0.162 MGD) as daily maximum. No increase in flow shall be authorized without a recertification from the Puerto Rico Environmental Quality Board (EQB). 5

2. No toxic substances shall be discharged in toxic concentrations other than those allowed as specified in the NPDES permit. Those toxic substances included in the Permit Application, but not regulated by the NPDES permit, shall not exceed the concentration specified in the applicable regulatory limitations. 2,3,4

3. Prior to the construction of any additional treatment system or the modification of the existing one, the permittee shall obtain the approval of the engineering report, plans and specifications from EQB. 5

4. The permittee shall install, maintain and operate all water pollution control equipment in such a manner as to be in compliance with the applicable Rules and Regulations. 3

5. All sample collection, preservation, and analysis shall be carried out in accordance with the Code of Federal Regulation (CFR) Number 40, Part 136. All chemical analyses shall be certified by the chemist licensed to practice the profession in Puerto Rico. All bacteriological tests shall be certified by a microbiologist or a medical technician licensed to practice the profession in Puerto Rico. 1,3

6. The flow measuring device for the discharge 001 must be periodically calibrated and properly maintained. Calibration and maintenance record must be kept. 3

7. The sampling point for discharge 001 shall be located immediately after the primary flow measuring device. 3

8. The sampling point for discharge 001 shall be labeled with a 18 in. X 12 in. (minimum dimensions) sign that read as foliow: 5

"Punto de Muestreo para la Descarga 001"

9. The discharge 001 shall not cause the presence of oil sheen in the receiving water body. 2

10. The waters of Puerto Rico shall not contain any substance at such concentration which, either alone or as result of synergistic effects with other substances is toxic or produces undesirable physiological responses in human, fish or other fauna or flora. 2

R2-0004113

11. The samples for the analysis of phenolic substances and mercury should be taken at the sampling points for discharge 001. The results obtained from the analyses of these samples shall reflect that the parameters are not detectable using the analytical method approved by the Environmental Protection Agency (EPA) with the lowest possible detection level, in accordance with Section 6.8 of the Water Quality Standards Regulation (WQSR). 3

12. Following the issuance of licenses by the Potable Water and Wastewater Treatment Plant Operators Examining Board of the Govemment of Puerto Rico, all water and wastewater treatment facilities, whether publicly or privately owned, must be operated by a person licensed by such Examining Board. 3,5

13. The sludge produced within the facility due to the operation of the system shall be analyzed and all constituents shall be identified as required by "Resources Conservation and Recovery Act" (RCRA) and by "Toxic Substances Control Act" (TSCA). The permittee shall obtain appropriate federal and state permits prior to the final disposal of such wastes. The sludge shall be disposed properly in such manner that water pollution or other adverses effects to surface waters or to ground waters do not occur. 3,5

14. A log book must be kept for the material removed from the treatment plant detailing the following items:

    a. Material removed, date and source of it.
    b. Approximate volume and weight.
    c. Method by which it is removed and transported.
    d. Final disposal and location.
    e. Person that performs the service.

    A copy of the Non-Hazardous Solid Waste Collection and Transportation Services Permit issued by the authorized official from EQB must be attached to the log book. 3

15. The permittee shall implement a monthly monitoring program for discharge 001, and analyze the samples using the analytical method approved by EPA with the lowest possible detection level, pursuant Section 6.2.3 of the WQSR, for one year period after which they wili be conducted annually for the foliowing parameter:

Parameter	Unit	Sample Type
Manganese (Mn)	µg/l	Grab

R2-0004114

The monitoring program shall commence not later than thirty (30) days after the Effective Date of the NPDES Permit (EDP). The resulis of the mentoring program shall be submitted to EQB and EPA Region II not later than sixty (60) days after the completion of the one (1) year monitoring program or annual monitoring. Based on the evaluation of the results obtained, EQB will determine if more frequent monitoring is necessary for the aforementioned parameter. In such case, the WQC will be re-open to revise that monitoring frequency for the aformentioned parameter if considered necessary. 2,3,5

16. Within thirty (30) days after the Effective Date of the NPDES Permit (EDP), SBPPRI shall submit to the EQB a revised copy of the Emergency Plan, which shall be signed and certified by a professional engineer license in Puerto Rico and in accordance with Article 11, Item 14 of the Public Policy Environmental Act, Law No. 9 of June 18, 1970 as amended and Section 6.5 of the Water Quality Standards Regulation to prevent and control spills. 3

17. The permit shall comply with the following monitoring requirements and interim and final limits for the discharge 001 for the following parameters:

Parameter	Interim Limits	Final Limits	Monitoring Frequency	Sample Type
Cyanide (CN)	20 µg/l	5.2 µg/l	Monthly	Grab
Mercury (Hg)	1.0 µg/l	0.012 µg/l	Monthly	Grab
Phenolic Substances	10.0 µg/l	1.0 µg/l	Monthly	Grab

The interim limits shall be effective during the period beginning on Effective Date of Permit (EDP) and lasting through EDP + 2 years.

The final limits shall be effective during the period beginning on EDP + 2 years + 1 day and lastmg through EDP plus 5 years.

18. Within thirty (30) days after EDP, SBPPRI shali submit to EQB and EPA a Compliance Plan for the corresponding evaluation and approval, which shall include an schedule of activities with their respectives dates directed to perform the corresponding adjustments at the facility in order to achieve compliance at the point of discharge 001 with the final effluent limits established in Special Condition number 17 not later than EDP + 2 years. 3

R2-0004115

19. This Board may revoke the approval of a Compliance Plan for any of the following reasons:

a. SBPPRI has not revealed all the relevant facts in the request or has provided false representation of any of the relevant facts during the evaluation bf such request

b. Non-compliance with any applicable provission of the Compliance Plan,

c. Changes in the condition, without due authorization from this Board, under which the Compliance Plan was approved.

d. There exist an imminent hazard to public health or the environment. 3

20. This special condition shall not become in effect until EQB has determined the applicability to the respective facillty and has notified the permittee and EPA, in writing, of the necessity to comply with this special condition.

The permittee shall conduct quarterly acute toxicity test, for a period of one (1) year, of the wastewater discharge through Outfall Serial Number 001.

a. The toxicity tests shall be conducted in accordance with the most recent edition of the Environmental Protection Agency (EPA) publication, EPA 600/4-90/027F Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (Fourth Edition), August 1993.

b. The test shall provide a measure of the acute toxicity as determined by the wastewaters concentration which cause 50 percent mortality of the orgamisms over a 48 hour period. Test results shall be expressed in terms of Lethal Concentration (LC) and reported as 48 hour LC50.

c. The test species should be tne "Fathead Minnow" (Pimephales promelas) and "Cladocera" (Daphnia magna). The test witn should be non-renewal type.

d. A procedure report shall be submitted ninety (90) days after the effective date of this NPDES permit condition (EDPC). The following mformation shall be mcluded in the procedure report:

1. An identification of the organizations responsible for conducting the tests and the species to be tested.

R2-0004116

2. A detailed description of the methodology to be utilized in the conduct of the tests, including equipment, sample collection and source of test organisms.

3. A schematic diagram which depicts the effluent sampling location. The diagram shall indicate the location of effluent sampling in relation to wastewater treatment facility and discharge monitoring point.

4. If stream flow monitoring is required, the method used to obtain the stream flow data in estimating the seven-day two-year low flow (7Q2).

e. Test shall be conducted quarterly for a period of one (1) year and shall commence not later than one hundred eighty (180) days after EDPC. The results shall be submitted to EPA Region II and EQB witiun thirty (30) days of completion of each test. Based on the review of the test results, the Regional Administration of EPA or the EQB can require additional toxicity tests, including chrome tests and toxicity/ treatability studies, and may impose toxicity limitations.

21. Each condition of this WQC is considered as separate. Therefore, if the applicability of any condition of this WQC is stayed due to any circumstance, the remaining conditions of this WQC wili not be affected. 5

22. The EQB by the issuance of the WQC does not relieve the applicant from its responsibility to obtain additional permits or authorizations from the EQB as required by law. The issuance of the WQC shall not be construed as an authorization to conduct activities not specifically covered in the WQC, which will cause water pollution as determined by the Water Quality Standards Regulation. 5

1,2,3,4,5 see next page

R2-0004117

1. According to Article 1, Water Quality Standards Regulation and Amendments.

2. According to Article 3, Water Quality Standards Regulation and Amendment.

3. According to Article 6, Water Quality Standards Regulation and Amendments.

4. According to the Code of Federal Regulations Number 40 (40 CFR) Part 131.36 as amended (Federal Register/Vol. 57, No. 246/Tuesday, December 22, 1992).

5. According to the Public Policy Environmental Act of June 18, 1970, as amended, Act. No. 9, 12 LPRA SS. 1121-1142.

R2-0004118

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS NPDES NO. PR0021997 SD

During the period beginning on and lasting through the permittee is authorized to discharge from outfall serial number 001 (treated process and sanitary wastewaters) to an unnamed creek tributary to Quebrada Las Quebradillas. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Gross Discharge Limitations		Monitoring Requirements	
	Monthly Average	Daily Maximum	Measurements Frequency	Sample Type
BOD_5 (mg/l) [2,3]		30.0	Monthly	Composite
Boron (B) (µg/l) [2,3]		1000	Quarterly	Grab
Cadmium (Cd) (µg/l) [2,3,4]		1.2	Monthly	Grab
Color (Pt-Co Units) [2,3]		15	Monthly	Grab
Copper (Cu) (µg/l) [2,3,4]		12	Monthly	Grab
Cyanide (CN) (µg/l) [2,3]	See Special Condition number 17.		Monthly	Grab
Dissolved Oxygen (mg/l) [2,3]	Shall not contain less than 5.0.		Daily	Grab

55

R2-0004119

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS NPDES NO. PR0021997 SD

Effluent Characteristics	Gross Discharge Limitations		Monitoring Requirements	
	Monthly Average	Daily Maximum	Measurements Frequency	Sample Type
Fecal Coliforms (colonies/100 ml) [1,2,3]	The coliform geometric mean of a series of representative samples (at least five samples), of the waters taken sequentially shall not exceed 2,000 colonies/100 ml. Not more than 20 percent of the samples shall exceed 4,000 colonies/100 ml.		Monthly	Grab
Flow m^3/day (MGD) [3,5]		613.36 (0.162)	Continuous Recording	----
Fluorides (F) (pg/l) [2,3]		700	Monthly	Grab
Lead (Pb) (µg/l) [2,3,4]		3.3	Monthly	Grab
Manganese (Mn) (pg/l) [2,3]		50.0	ϕ	Grab
Mercury (Hg) (µg/l) [2,3,4]**	See Special Condition number 17.		Monthly	Grab
Nitrate plus Nitrite (as N) (µg/l) [2,3]		10,000	Monthly	Grab
Oil and Grease (mg/l) [2,3]	10.0	15.0	Twice per month	Grab

96

R2-0004120

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS NPDES NO. PR0021997 SD

Effluent Characteristics	Gross Discharge Limitations		Monitoring Requirements	
	Monthly Average	Daily Maximum	Measurements Frequency	Sample Type
Other Pathogenic Organisms	These waters shall be free of other pathogenic organisms.		----	----
pH (SU) [2,3]	Shall always lie between 6.0 – 9.0.		Daily	Grab
Phenolic Substances (µg/l) [2,3]**	See Special Condition number 17.		Monthly	Grab
Residual Chlorine (mg/l) [2,3] *		0.50	Daily	Grab
Selenium (Se) (µg/l) [2,3]		10.0	Quarterly	Grab
Solids and Other Matter [2]	The waters of Puerto Rico shall not contain floating debris, scum and other floating materials attributables to discharges in amounts sufficient to be unsightly or deleterious to the existing or designated uses of the water body.		----	----
Sulfide (S) (undissociated H_2S) (µg/l) [2,3]		2	Monthly	Grab
Surfactants as MBAS (µg/l) [2, 3]		100	Monthly	Grab
Suspended, Colloidal or Settleable Solids (ml/l) [1,2,3]	Solids from wastewater sources shall not cause deposition in or be deleterious to the existing or designated uses of the waters.		Daily	Grab

57

R2-0004121

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS NPDES NO. PR0021997 SD

Effluent Characteristics	Gross Discharge Limitations		Monitoring Requirements	
	Monthly Average	Daily Maximum	Measurements Frequency	Sample Type
Taste and Odor Producing Substances [2]	Shall not be present in amounts that will interfere with the use for potable water supply, or will render any undesirable taste and/or odor to edible aquatic life.		----	----
Temperature °F (°C) [2,3]	Except by natural causes, no heat may be added to the waters of Puerto Rico which would cause the temperature of any site to exceed 90°F (32.2°C). No thermal discharge or combination of thermal discharges into or onto de surface, estuarine and coastal waters shall be injurious to fish or shellfish or the culture or propagation of a balanced indigenous population there of nor in any way affect the designated uses.		Daily	Grab
Total Ammonia (NH_3) (mg/l) [2,3]		----	Monthly	Grab
Total Chromium (µg/l) [2,3]		50.0	Quarterly	Grab
Total Coliforms (colonies/100 ml) [1,2,3]	The colifonn geometric mean of a series of representative samples (at least five samples), of the waters taken sequentially shali not exceed 10,000 colonies/100 ml.		Monthly	Grab

85

R2-0004122

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS NPDES NO. PR0021997 SD

Effluent Characteristics	Gross Discharge Limitations		Monitoring Requirements	
	Monthly Average	Daily Maximum	Measurements Frequency	Sample Type
Total Dissolved Solids (mg/l) [2,3]		500	Monthly	Grab
Total Phosphorus (P) (mg/l) [2,3]		1.00	Monthly	Grab
Turbidity (NTU) [2,3]		50	Monthly	Grab
Zinc (Zn) (µg/l) [2,3,4]		50.00	Quarterly	Grab
Special Conditions	See attached sheet whieh contains special conditions part of this certification.		----	----

Notes:

To comply with the monitoring requirements specified above, samples shall be taken at point of discharge 001.

All flow measurements shall achieve accuracy within the range ± 10%.

* See Special Condition number 10.

** See Special Condition number 11.

ϕ See Special Condition number 15.

1,2,3,4, and 5 see page 6 of the Special Conditions.

59

ATTACHMENT IV

Determining Permit Limits for Pollutants Regulated under
Pharmaceutical Manufacturing Point Source Category (40 CFR Part 439)

Type of Discharger: Direct
Subcategory: Subcategory D - Mixing, Compounding, and Formulating
Applicable ELGs: BPT (40 CFR Part 439.42)
BCT (40 CFR Part 439.43, same as BPT requirements)
BAT (40 CFR Part 439.44, same as BPT requirements)

	Waste Stream	Flow (gpd)
1.	Process Water Regeneration	55,720 (Regulated Sub. D)
2.	Utility Wastewater	22,000 (Dilute)
3.	Sanitary Wastewater	16,000 (Dilute)
4.	Other Use	2,760 (Dilute)

Total Wastewater Flow:	96,480 gpd
Total Regulated Process Flow:	55,720 gpd
Total Dilute Flow:	40,760 gpd

The allowable wastewater (WW) discharge flow used to establish the mass-based limitations is calculated as follows:

Process WW discharge	= 55,720 gpd
Allowable WW discharge	= Process WW discharge / (0.75) = 55,720 gpd / (0.75) = 74,293 gpd

When calculating mass-based effluent limitations, 74,293 gpd of total WW will be used.

R2-0004124

Five-day Biochemical Oxygen Demand (BOD_5)

As per technology requirements included in Effluent Limitations Guidelines (ELG) referenced above, the average monthly effluent limitations for BOD_5 must reflect 90 % reduction multiplied by a variability factor of 3.0, expressed as mass loading. The long term average influent BOD_5 concentration, over a period of 12 months during the most recent 36 month period shall be used to calculate this limit. The highest 12-month average influent BOD_5 occurred during the period December 1998 to November 1999, with a 12-month average value of 142 mg/l.

142 mg/l x 74,293 gpd x 8.34 x 10^{-6} (l x lb / gal x mg) x 0.10 x 3.0 = 26.4 lb/day = 12.0 kg/day

Total Suspended Solids (TSS)

The average monthly effluent limitations for TSS must reflect 1.7 times the calculated monthly average BOD_5 limitations:

26.4 lb/day x 1.7 = 44.9 lb/day = 20.4 kg/day

Chemical Oxygen Demand (COD)

Under the 1998 revised best practical control technology currentiy available (BPT) COD regulations, facilities must comply with the hew COD concentration limitations. For Subcategory D, the technology-based daily maxiunum limit for COD is 228 mg/l.

For Subcategory D, the monthly average effluent limit for COD is 86 mg/l, or the 74 % reduction of COD multiplied by a variability factor of 2.2, whichever is more stringent. The long term average value for influent COD shall be used to calculate 74% reduction. The highest 12-month average influent COD concentration occurred during the period December 1998 to November 1999, at a value of 250.7 mg/l.

74% Reduction x Variability Factor = 0.26(250.7 mg/l) x 2.2 = 65.2 mg/l

65.2 mg/l is more stringent than 86 mg/l, and is therefore the controliing limit for monthly average COD.

R2-0004125

ATTACHMENT V

Existing Effluent Quality Analysis

In accordance with EPA Region II Anti-backsliding Policy, if water quality-based effluent limits included in a Water Quality Certificate (WQC) are less stringent than those of the existing permit, a limit may be developed based on the permittee's existing effluent quality (EEQ). An analysis of EEQ for SB Pharmco Puerto Rico, Inc. was performed for BOD_5, Cadmium, Color, Copper, and Lead. The EEQ daily maximum limit is based on the 95th percentile of the lognormal distribution of the monitoring data. Monthly monitoring results for SB Pharmco from the period August 1995 to July 2000 were used in this analysis.

The 95th percentile daily maximum value of the EEQ analysis was used for comparison with both the existing limit, and the WQC limit. Where the EEQ result is less than the existing limit, the existing limit controls. Where the EEQ result is greater than the existing limit, but less than the WQC limit, the EEQ result controls. Finally, where the EEQ result is greater than the WQC limit, the WQC limit controls. The results of the EEQ analysis are presented below, along with existing and WQC limits. The controlling limit, based on the rule described above, is shown in bold text.

The daily maximum limit for COD, as calculated according to the applicable technology-based effluent limitations guidelines (ELG) (Pharmaceutical Manufacturing Point Source Category, 40 CFR Part 439 Subpart D - Formulating, Mixing, and Compounding), is less stringent than the existing permit limitation. An EEQ analysis was performed for COD, and using the same decision making process as described for WQC limit comparison, the existing, more stringent permit limit was retained. The COD limit comparison is also included in the table below.

Parameter	Existing daily max.	WQC daily max.	ELG daily max.	EEQ 95th Percentile daily max.	Controlling Limit
BOD_5 (mg/l)	15.0	30.0		10.47	15.0
Cadmium (ug/l)	1.03	1.2		0.3	1.03
Color (Pt-Co Un.)	10.0	15.0		5.0	10.0
Copper (ug/l)	10.6	12		15.8	12.0
Lead (ug/l)	2.7	3.3		3.0	3.0
COD (mg/l)	126.0		228.0	42.3	126.0

R2-0004126

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning EDP and lasting through EDP + 5 years, the permittee is authorized to discharge from outfall serial number 001 (treated process, sanitary, utility, and miscellaneous wastewater). Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Gross Discharge Limitations				Monitoring Requirements	
	kg/day (lbs/day)		Other Units (specified)		Measurement Frequency	Sample Type
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.		
Boron (Cu) (μg/l) [2,3]				1,000	Quarterly	Grab
BOD_5 (mg/l) [2,3]	12.0 (26.4)			15.0	Monthly	Composite
Cadmium (Cd) (μg/l) [2,3,4]				1.03	Monthly	Grab
OOD (mg/l)			65.2	126.0	Monthly	Composite
Color (Pt-Co units) [2,3]				10.0	Monthly	Grab
Copper (Ca) (μg/l) [2,3,4]				12.0	Monthly	Grab
Cyanide (CN) (μg/l) [2,3]	See Special Condition number 17.				Monthly	Grab
Dissolved Oxygen (mg/l) [2,3]	Shall not contain less than 5.0.				Daily	Grab
Fecal Coliforms (colonies/100ml) [1,2,3]	The coliform geometric mean of a series of representative samples (at least five samples), of the waters taken sequentially shall not exceed 2,000 colonies/100 ml. Not more than 20 percent of the samples shall exceed 4,000 colonies/100 ml.				Monthly	Grab
Flow M^3/day (MGD) [3,5]				613.36 (0.162)	Continuous Recording	
Fluorides (F) (μg/l) [2,3]				700.0	Monthly	Grab
Lead (Pb) (μg/l) [2,3,4]				3.0	Monthly	Grab

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Effluent Characteristics	Gross Discharge Limitations				Monitoring Requirements	
	kg/day (lbs/day)		Other Units (specified)		Measurement Frequency	Sample Type
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.		
Manganese (Mn) (μg/l) [2,3]				50.0	ϕ	Grab
Mercury (Hg) (μg/l) [2,3,4]**	See Special Condition number 17.				Monthly	Grab
Nitrate plus Nitrite (as N) (μg/l)[2,3]				10,000	Monthly	Grab
Oil and Grease (mg/l) [2,3]			10.0	15.0	2/Month	Grab
Other Pathogenic Organisms	These waters shall be free of pathogenic organisms.				—	—
pH (SU) [2,3]	Shall always lie between 6.0 and 9.0.				Daily	Grab
Phenolic Substances (μg/l) [2,3] **	See Special Condition number 17.				Monthly	Grab
Residual Chlorine (mg/l) [2,3] *				0.5	Daily	Grab
Selenium (Se) (μg/l) [2,3]				10.0	Quarterly	Grab
Solids and Other Matter [2]	The waters of Puerto Rico shall not contain floating debris, scum and other floating material attributable to in amounts sufficient to be unsightly or deleterious to the existing or designated uses of the waterbody.				—	—
Sulfide (S) (μg/l) [2,3]*** ++ (undissociated H_2S)				2.0	Monthly	Grab
Surfactants as MBAS [2,3] (μg/l)				100	Monthly	Grab

69

R2-0004128

TABLE A-1 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Effluent Characteristics	Gross Discharge Limitations				Monitoring Requirements	
	kg/day (lbs/day)		Other Units (specified)		Measurement Frequency	Sample Type
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.		
Suspended, Colloidal or Settleable Solids (ml/l) [1,2,3]	Solids from wastewater sources shall not cause deposition in or be deleterious to the existing or designated uses of the waters.				Daily	Grab
Taste and Odor Producing Substances [2]	Shall contain none in amounts that will render any undesirable taste or odor to edible aquatic life.					
Temperature °F (°C) [2,3]	Except by natural causes, no heat may be added to the waters of Puerto Rico which would cause the temperature of any site to exceed 90°F (32.2°C). No thermal discharge or combination of thermal discharges into or onto the surface, estuarine and coastal waters shall be injurious to fish or shellfish or the culture or propagation of a balanced indigenous population there of nor in any way affect the designated uses.					
Total Ammonia (NH_3) (mg/l) [2,3]				—	Monthly	Grab
Total Chromium (Cr) (μg/l) [2,3]				50.0	Quarterly	Grab
Total Coliforms (colonies/100ml) [1,2,3]	The coliform geometric mean of a series of representative samples (at least five samples), of the waters taken sequentially shall not exceed 10,000 colonies/100 ml.				Monthly	Grab
Total Dissolved Solids (mg/l) [2,3]				500.0	Monthly	Grab
Total Phosphorous (P) [2,3] (mg/l)				1.0	Monthly	Grab
Total Suspended Solids (mg/l)	22.4 (44.9)			60.0	Monthly	Composite
Turbidity (NTU) [2,3]				50.0	Monthly	Grab
Zinc (Zn) (μg/l) [2,3,4]				50.0	Quarterly	Grab

R2-0004129

Notes:

To comply with the monitoring requirements specified above, samples shall be taken at point of discharge 001.

All flow measurements shall achieve accuracy within the range of + 10%.

* See Special Condition number 10.

** See Special Condition number 11.

*** See Special Condition number 12.

ϕ See Special Condition number 16.

1, 2, 3, 4 and 5 see page 6 of the Special Conditions.

++ The permittee shall use the approved EPA test method in 40 Code of Federal Regulations Part 136 for Sulfide (as S) and shall complete the calculations specified in Method 4500-S^{-2} F, Calculation of Un-ionized Hydrogen Sulfide, of Standard Methods 18th Edition to establish the concentration of Sulfide (undissociated H_2S). Further, compliance with the limit of 2 μg/l for Sulfide (undissociated H_2S) shall be demonstrated by a "non-detectable" or "less than" value using the applicable "method detection limit" (MDL) in the method (As of the date of this permit, the MDL for Sulfide is approximately 100 μg/l.) When the detection limit decreases below 100 μg/l, the pennittee shall notify EPA Region II.

R2-0004130

SPECIAL CONDITIONS

These special conditions are an integral part of tie permit:

1. The tlow of dischaige 001 shall not exceed die limitation of 613.36 m^3/day (0.162 MGD) as datly maximum No increase in tlow shall be authorized witiout a recertification fiom tie Puerto Rico Environmental Quality Board (EQB). 5

2. No toxic substances ciiall be discharged in toxic concentiations other than tiose allowed as specified in the NPDES permit: Those toxic substances included in the Permit Application, but not regulated by the NPDES permit, shall not exceed diose concentiations as ipecified by die applicable Rules and Regulations. 2,3,4

3. Prior to die construction of any additional treatment system or the modification of tie existing one, the permittee shali obtain the spproval of the engineering report, plans and specifications fiom the Environmental Quality Board (EQB). 5

4. The permittee shali instali, maintain and operate ali water poliution control equipment in such a manner as to be in compliance witii Applicable Rules and Regulations. 3

5. Ali sample collection, preservation, and analysis shall be canied out in accordance witii tie Code of Federal Regulation (CFR) Number 40, Part 136. Ali chemical analyses shall be certified by a chemist licensed to practice the profession in Puerto Rico. Ali bacteriological tests shall be certified by a microbiologist or a medical technician licensed to practice tie profession in Puerto Rico. 1,3

6. The tlow measuring device for the discharge 001 shali be periodicaliy calibiated and properiy maintained Calibration and maintenance record must be kept 3

7. The sampling pointe for dischaige 001 shali be located immediately afler tie primary tlow measuring device. 3

8. The sampling pointe for discharge 001 shali be labeled widi a 18 in. X 12 in. (minimum dimensions) sign that reads as follows. 4

"Punto de Muestreo para la Descarga 001"

9. The discharge 001 shall not cause tie presence of otl sheen in die recciving waterbody. 2

10. The waters bf Puerto Rico shall not contain any substance at sucii concentiation which, citier alone or as result of synergistic effects with other substances is toxic or produces undesirable physiological response in human, fish or other fauna or tlora. 2

11. The samples for the analysis of phenolic substances and mercury should be taken at die sampling points for discharge 001. The results obtained fiom analysis of tiese samples shall reflect that the parameters are not detectable using the anaiyticai metiiod approved by die Environmental Protection Agency (EPA) widi the lowest possible detection level, in accordance with Section 6.8 of the Water Quality Stantiards Regulation (WQSR). 3

R2-0004131

12. If the results obtained fiom the analyses of dissolved sulfide retlect that the parameter is not detectable using the analytical metlxxl spproved by the EPA with the lowest possible detection level, in accortlance with Section 6.8 of the WQSR, as amenxled, tie permittee shall indicate in tie Dischaige Monitoring Report (DMR) that the parameter of sulfide (undissociated H_2S) is not detectable. 3

[EPA Clarification Notwidistanding tiis Special Condition, tie permittee shall perform the analytical test and caiculations specified by EPA (see footnote ++ in Table A-1) and shall report on the monthly Discharge Monltcaing Repeat tie results of such procedure. Compllance witii die terms of tiis Special Condition should be provided in tie cover letter submitted with the Discharge Monitoring Report.]

13. Following the issuance of llcenses by tie Potable Water and Wastewater Treatment Plant Operators Examining Boartl of the Government of Puerto Rico, all water and wastewater treatment facillties, whether publicly or privately owned, must be operated by a person licensed by such Examining Board. 3,5

14. The sludge produced within die facility due to die operation of the system sliall be analyzed and all constituente shall be identified as required by "Resoiace Conservation aixl Recovery Act" (RCRA) and by "Toxic Substances Control Act" (TSCA). The permittee shall obtain appropriate federal and state permits prior to the final disposal of such wastes. The sliidge shall be disposed properly in such manner that water pollution or otiier adverse effects to sui face waters or to ground waters do not occur. 3,5

15. A log book must be kept for tie material removed from tie treatment plant detailing tie following items:

a. Removed material, date and source of it.
b. Approximate volume and weight.
c. Method by which it is removed and transported.
d. Final disposal and location
e. Person fiat performs the service.

A copy of the Non-Hazartlous Solid Waste Collection and Transportation Services Permit issued by the autiiorized official from EQB must be attached to the tog book. 3

16. The permittee shall implement a monthly monitoring program for dischaige 001, and analyze the samples using the analytical metlxxl approved by EPA with die towest possible detection level, pursuant to Section 6.2.3 of the WQSR, fix one year period afler which they will be conducted annually fix the following parameter:

Parameter	Unit	Sample Type
Manganese (Mn)	µg/l	Grab

The monitoring program shall commence not later tian thirty (30) days afler tie Effective Date of the NPDES Pennit (EDP). The results of the monitoring program shall be submitted to EQB and EPA Region II not later than sixty (60) days afler the completion of the one (1) year monitoring program or annual monitoring Based on the evaltiation of the resuhs obtained, EQB will detennine if more frequent monitoring is necessary for the

R2-0004132

aforementioned parameter. In sush case, the WQC will be re-opened to revise tliat nionitoring frequency for the aforementioned parameter if considered necessary. 2,3,5

17. Within thirty (30) days afler the Effective Date of the NPDES Permit (EDP), the permittee shali submit to the EQB a revised copy of the Emergency Plan, which shall be signed and certified by a professional engineer licensed in Puerto Rico and in accordance with Article 11, Item 14 of the Public Policy Environmental Act, Law No. 9 of June 18, 1970, as amended, and Section 6.5 of the Water Quality Standards Regulation to prevent and control spills. 3

18. The permit shall comply with the foliowing monitoring requirements and interim and final limits for the discharge 001 for the foliowing parameters:

Parameter	Interim Limite	Final Limits	Monitoring Frequency	Sample Type
Cyanide (CN)	20.0 µg l	5 2 µg/l	Monthly	Grab
Mercury (Hg)	1.0 µg l	0.012 µg/l	Monthly	Grab
Phenolic Substances	10.0 µg/l	1.0 µg/l	Monthly	Grab

The interim limits shali be effective during the period beginning on Effective Date of Permit (EDP) and lasting through EDP + 2 years.

The final limits shall be effective during the period beginning on EDP + 2 years + 1 day and lasting through EDP plus 5 years.

19. Within thirty (30) days afler EDP, the permittee shall submit to EQB and EPA a Compliance Plan for the corresponding evaluation and approval, which shali include a schedule of activities with their respective dates directed to perfonn the correspondling adjustments at the facility in order to achieve compliance at the point of discharge 001 with the final effluent limits established in Special Condition number 17 not later than EDP + 2 years. 3

20. The EQB may revoke the approval of a Compliance Plan for any of the following reasom:

a. The permittee has not revesled all the relevant facts in the request or has provided false representation of any of the relevant facts during the evaluation of such request

b. Non-compliance with any applicable provision of the Compliance Plan,

c. Changes in the condition, without due authorization from this Board, under which the Compliance Plan was approved.

d. There exists an imminent hazard to public health or the environment. 3

R2-0004133

21. This special condition shali not become in effect until EQB has detennined tne applicability to the respective facility and has notified dne permittee and EPA, in writing, of dne necessity to conmply with dnis special condition.

The pennittee shali conduct quarteriy acute toxicity tests, fix a period of one (1) year of ite wastewater dischange dnough Outfali Serial Number 001.

n. The toxicity teste shall be conducted in accordance widn dne most recent edition of dne EPA publication, EPA 600/4-90/027F Medxods for Measuring dne Acute Toxicity of Effluente and Recciving Waters to Freshwater and Marine Organisms (Fourdn Edition), August 1993.

b. The test shall provicte a measure of tne acute toxicity as detennined by dne wastewaters concentration which cause 50 percent moitality of dne organisms over a 48 hour period. Test resuits shali be expressed in terms of Lethal Concenttation (LC) and reported as 48 hour LC50.

c. The test species should be the "Fatnead Minnow" (Pimephales promelas) and "Cladocera" (Daphnia magna). The test should be non-renewal type.

d. A procedure report shall be submitted ninety (90) days afler tne effective date of tnis NPDES permit condition (EDPC). The following infixmation shall be incinded in tne procedure report:

(1) An identification of tne organizations reappnsinle for dne conduct of tne teste and tne npecies to be tested.

(2) A detailed description of tne methodology to be utilized in tne conduct of the tests, including equipment, sample coliection and source of test organisms.

(3) A schematic diagram which depicte tne effluent sannpling location. The diagram shali inxlicate tne location of effluent sannpling in relation to wastewater tteatnent facility and discharge monitoring point.

e. Test shali be conciucted quarteriy for a period of one (1) year and shali commerce no later than one hundred cighty (180) days atler EDPC. The resuits shall be submitted to EPA Region II and EQB wiihin thirty (30) days of conplction of eacn test. Based npon a review of tne test resuhs the Regional Administration may require additional toxicity tests, including chronic teste and toxicity/ tteatability stndies, and may inpose toxicity limitations. 3,5

22. Each condition of the WQC are considered as separate. Therefore, if the applicability of any condition of ihe WQC is stayed due to any circumstance, the remaining conditions of the WQC wtll not be affected. 5

23. Tne EQB, by tne issuance of the WQC, does not relieve tne applicant fnom ite responsibtlity to obtain additicnal pennite or authorizations fiom tne EQB as required by law. Tne issuance of tne WQC shall not be ccanstiued as an authorization to conduct activities not specifically covered in dne WQC which will cause water poliution as determined by dne WQSR. 5

R2-0004134

Notes

1. According to Article 1, Water Quality Standards Regulation and Amendmente.

2. According to Article 3, Water Quality Standards Regulation and Amendmente.

3. According to Article 6, Water Quality Standards Regulation and Amendmente.

4. According to the Code of Federal Reguiations Number 40 (40 CFR) Part 131.36 as amended (Federal Register/Vol.57, No 246/Tuesday, December 22, 1992).

5. According to the Public Policy Environmental Act of June 18, 1970, as amended, Act No. 9, 12 LPRA SS, 1121 - 1142.

A.2 REOPENER CLAUSE FOR WATERSHED PROTECTION STRATEGY

This permit may be modified or revoked and reissued based on the findings of EPA or EQB related to the EPA/EQB Water Quality Issuance Strategy which calls for action in this receiving water basin in the year 2001.

A.3 STORM WATER MANAGEMENT

The permittee must maintain coverage under EPA's Multi-Sector storm water general permit which establishes requirements related to storm water management. Failure to maintain such permit coverage may result in the modification or revocation and re-issuance of this permit to incorporate storm water requirements.

R2-0004135

B. MONITORING AND REPORTING REQUIREMENTS

1. Monitoring and records. See Part II.B.10.

2. Discharge monitoring reports.

a See Part II.B.12.d.

b. Monitoring results obtained during the previous month shall be summarized and reported on a Discharge Monitoring Report Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed reporting period. The first report is due on EDP + 1 month + 28 days. Duplicate signed copies of these, and all other reports required herein, shall be submitted to the Regional Administrator and State Director at the following addresses:

COMPLIANCE ASSISTANCE
PROGRAM SUPPORT BRANCH
REGION II
U.S. ENVIRONMENTAL PROTECTION
AGENCY
290 BROADWAY - 21ST FLOOR
NEW YORK, NEW YORK 10007-1866

DIRECTOR
US EPA REGION II
CARIBBEAN ENVIRONMENTAL
PROTECTION DIVISION
EDIF CENTRO EUROPA APT 417
1492 AVENEDA PONCE DE LEON
SAN JUAN, PUERTO RICO 00907-4127

ENVIRONMENTAL QUALITY BOARD OF
PUERTO RICO
P.O. BOX 11488
SANTURCE, PUERTO RICO 00910
ATTN: WATER QUALITY BUREAU

3. Quality assurance practices. The permittee is required to show the validity of all data by requiring its laboratory to adhere to the following minimum quality assurance practices:

a Duplicate (1) and spiked (2) samples must be run for each constituent analyzed for permit compliance on 5% of the samples, or at least on one sample per month, whichever is greater. If the analysis frequency is less than one sample per month, duplicate and spiked samples must be run for each analysis.

(1) Duplicate samples are not required for the following parameters: Color, Temperature, Turbidity.

(2) Spiked samples are not required for the following parameters listed in Table 1 of 40 C.F.R. 136: Acidity, Alkalinity, Bacteriological, Benzidine, Chlorine, Color, Dissolved Oxygen, Hardness, pH, Oil and Grease, Radiological, Residues, Temperature, Turbidity. Procedures for spiking samples and spiked sample requirements for parameters not listed on the above-referenced table are

R2-0004136

available through the U.S. Environmental Protection Agency's (EPA's) Regional Quality Assurance Coordinator.

b. For spiked samples, a known amount of each constituent is to be added to the discharge sample. The amount of constituent added should be approximately the same amount present in the unspiked sample, or must be approximately that stated as maximum or average in the discharge permit.

c. The data obtained in a shall be summarized in an annual report submitted at the end of the fourth quarter of reporting in terms of precision, percent recovery, and the number of duplicate and spiked samples run.

d. Precision for each parameter shall be calculated by the formula, standard deviation $s = (\sum d^2/2K)^{1/2}$, where d is the difference between duplicate results, and k is the number of duplicate pairs used in the calculation.

e. Percent recovery for each parameter shall be calculated by the formula $R = 100 (F-I)/A$, where F is the analytical result of the spiked sample, I is the result before spiking of the sample, and A is the amount of constituent added to the sample.

f. The percent recovery, R, for each parameter in e above shall be summarized yearly in terms of mean percent recovery and standard deviation from the mean. The formula, $s = (\sum(x-x)^2/(n-1))^{1/2}$, where "s" is the standard deviation around the mean "x", "x" is an individual recovery value, and "n" is the number of data points, shall be applied.

g. The permittee or his contract laboratory is required to annually analyze an external quality control reference sample for each pollutant. These are available through the Regional Quality Assurance Coordinator, Region II, U.S. Environmental Protection Agency, Edison Environmental Laboratory, Edison, New Jersey 08817.

h. The permittee and/or his contract laboratory is required to maintain records of the specific analytical methods used, including options employed, if any, within a particular method, and of reagent standardization and equipment calibration operations.

i. If a contract laboratory is utilized, the permittee shall submit the name and address of the laboratory and the parameters analyzed at the time it submits its discharge monitoring reports (see Section 2.b above). Any change in the contract laboratory being used or the parameters analyzed shall be reported prior to or together with the monitoring report covering the period during which the change was made.

4. Twenty-four hour reporting.

a. The permittee must report violations of maximum daily discharge limitations in accordance with the reporting requirements set forth in Part II.B.12.f (24 hour reporting followed by 5 day written submission) for the following pollutants:

Not Applicable

R2-0004137

5. Additional reporting requirements. The penrtitee shali notify tie Regional Administrator and State Director as soon as it knows or has reason to believe:

a That any activity has occurred or will occur which would result in tie discharge, on a routine or fiequent basis, of any toxic poliutant which is not limited in dne permit, if dnat dischaige will exceed dne highest (except as specified in part (4)) of dne following "notification levels":

(1) One hundred micrograms per liter (100 μg/l);

(2) Two hundred micrograms per liter (200 μg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 μg/l) for 2, 4-dinitrophenol and for 2-medhyl-4, 6-dinitrophenol; and one milligram per liter (1 mg l) for antimony;

(3) Five (5) times the maximum concentration value reported for dnat poliutant in dne permit application; or

(4) The notification levels, if any; established by dne Direetor in dne permit,

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infiequent basis, of a toxic poliutant which is not limited in dne permit, if dnat discharge will exceed dne highest of dne foliowing "notification levels":

(1) Five hundred micrograms per liter (500 μg l);

(2) One milligram per liter (1 mg/l) for antimony;

(3) Ten (10) times dne maximum concentration value reported for tinat poliutant in dne permit application; or

(4) The notification levels, if any, established by dne Director in tine permit.

74

A. DEFINITIONS

1. "Average monthly discharge limitation" means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

2. "Average weekly discharge limitation" means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

3. "Bypass" means the intentional diversion of wastes from any portion of a treatment facility.

4. "Composite" means a combination of individual (or continuously taken) samples obtained at regular intervals over the entire discharge day. The volume of each sample shall be proportional to the discharge flow rate. For a continuous discharge, a minimum of 24 individual grab samples (at hourly intervals) shall be collected and combined to constitute a 24-hour composite sample. For intermittent discharges of more than four (4) hours duration, grab samples shall be taken at a minimum of 30 minute intervals.

5. "Daily discharge" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of pollutant over the day. For purposes of sampling, "daily" means an operating day or 24-hour period.

6. "Director" means the "Regional Administrator" or the "State Director", as the context requires, or an authorized representative. Until the State has an approved State program authorized by EPA under 40 C.F.R. Part 123, "Director" means the Regional Administrator. When there is an approved State program, "Director" normally means the State Director. Even in such circumstances, EPA may retain authority to take certain action (see, for example, 40 C.F.R. 123.1(d), 45 Federal Register 14178, April 1, 1983, on the retention of jurisdiction over permits EPA issued before program approval). If any condition of this permit requires the reporting of information or other actions to both the Regional Administrator and the State Director, regardless of who has permit-issuing authority, the terms "Regional Administrator" and "State Director" will be used in place of "Director".

7. "Discharge Monitoring Report" or "DMR" means the EPA uniform national form, including any subsequent additions, revisions, or modifications, for the reporting of self-monitoring results by permittees.

8. "Grab" means an individual sample collected in less than 15 minutes.

9. "Gross" means the weight or the concentration contained in the discharge. (Unless a limitation is specified as a net limitation, the limitation contained in this permit is a gross limitation).

10. "Maximum daily discharge limitation" means the highest allowable "daily discharge".

R2-0004139

11. "Monthiy" means one day each month (the same day each month) and a nonnal operating day (e.g., the 2nd Tuesday of each month).

12. "Net" means the anrount of a poliutant contained in the discharge measured in appropriate unite as specified herein, less the amount of a poliutant contained in the surface water body intake source, measured in the same units, over the same period of time, provided:

    a Tbe intake water source must be drawn for the same body of water into which the discharge is made; and

    b. lo cases where the surface water body intake source is pretreated for the removal of poliutants, the intake levcl of a poliutant to be used in calculating the net is that level contained afler the pretreatment steps.

13. "Regional Administiator" means the Regional Administiator of Region II of EPA ca the authorized representative of the Regional Administrator.

14. "Severe property damage" means that substantial physical damage to the treatment factlities which would cause them to become inxperable or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

15. "State Director" means the chief administiative officer of the State water poliution control agency, or the authorized representative of the State Director.

16. "Toxic poliutant" means any of the poliutante listed in 40 CFR 401.15 (45 F.R. 44503, July 30, 1979) and any modification to that list in accordance with Section 307 (a)(1) of the Clean Water Aet.

17. "Upset" means an exceptional incident in which there is unintentional and tenporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the pennitee. An upset does not include noncompliance to the extent caused by operational error, improperiy designed treatment factlities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation

18. "Weckly" means every seventh day (the same day of each week) and a normal operating day.

B. GENERAL CONDITIONS

1. Duty to Ccmply.

    a The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for pennit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

R2-0004140

b. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

c. The Clean Water Act provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405, of the Clean Water Act is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who negligently violates permit conditions implementing Section 301, 302, 306, 307, 308, 318 or 405 of the Clean Water Act is subject to a fine not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates permit conditions implementing section 301, 302, 306, 307, 308, 318 or 405 of the Clean Water Act is subject to a fine not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

2. Duty to Reapply. This permit and the authorization to discharge shall terminate on the expiration date indicated on the first page. In order to receive authorization to discharge after the expiration date of this permit, the permittee must apply for and obtain a new permit. If the permit issuing authority remains EPA, the permittee shall complete, sign, and submit an application to the Regional Administrator no later than 180 days before the expiration date.

3. Need to Halt or Reduce not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, installed by the permittee, when the operation is necessary to achieve compliance with the conditions of the permit.

6. Permit actions.

a. This permit may be modified, revoked and reissued, or terminated during its term for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

b. Causes for modification, revocation and reissuance, and termination are set forth in 40 C.F.R. 122.62 and 122.64.

(I) Specified causes for modification, revocation and reissuance, and termination include:

R2-0004141

(a) Noncompliance by the permittee with any condition of the permit;

(b) The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;

(c) A determination that the permitted discharge endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; or

(d) There is a change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit.

(2) Specified causes for modification and, upon request or agreement of the permittee, revocation and reissuance of the permit include material and substantial alterations or additions to the permittee's operation which occurred after permit issuance and which justify the application of permit conditions that are different or absent from this permit, (e.g., production changes, relocation or combination of discharge points, changes in the nature or mix of products produced) provided the reconstruction activities do not cause the new source permit issuance provisions of 40 C.F.R. 122.29 to be applicable.

c. With the exception of permit modifications which satisfy the criteria in 40 C.F.R. 122.63 for "minor modifications," the applicable procedures required by 40 C.F.R. Part 124, including notice and opportunity for a hearing, shall be followed before this permit is modified, revoked and reissued, or terminated.

7. Property rights. The issuance of this permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local laws or regulations.

8. Duty to provide information. The permittee shall furnish to the Director within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

9. Inspection and Entry. The permittee shall allow the Regional Administrator, the head of the State water pollution control agency, or any other authorized representative(s), upon the presentation of credentials and other documents as may be required by law, to:

a Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

R2-0004142

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substences or parameters at any location.

10. Monitoring and records.

a. Samples and measurements taken for the puqpose of monitoring shall be representative of the monitored activity.

b. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, for a period of at least 3 years from the date of the sample, measurement report or application. This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurement;

(2) The individual(s) who performed the sampling or measurements;

(3) The date(s) analyses were performed;

(4) The individual(s) who performed the analyses;

(5) The analytical techniques or methods used;

(6) The quality assurance information specified in Part I of this permit; and

(7) The results of such analyses.

d Monitoring shall be conducted according to test procedures approved under 40 C.F.R. Part 136.

e. The Clean Water Act provides that any person who knowingly falsifies, tampers with, or renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or by both.

11. Signatory requirements.

a All permit applications shall be signed as follows:

(1) For a corporation, by a responsible corporate officer, or

R2-0004143

(2) For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

(3) For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.

b. All reports required by this permit, and other information requested by the Regional Administrator or State Director pursuant to the terms of this permit, including DMRs and reports of noncompliance, shall be signed as follows:

(1) By a person described in subsection a or by a duly authorized representative of that person.

(2) A person is a duly authorized representative only if

(a) The authorization is made in writing by a person described on subsection a;

(b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company.

(c) The written authorization is submitted to the Regional Administrator, U.S. Environmental Protection Agency, Region II, 290 Broadway, New York, New York, 10007-1866, Attention: Compliance Assistance Program Support Branch, and to the State Director

(3) If a written authorization submitted pursuant to subsection b. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph b. must be submitted to the Regional Administrator and State Director prior to or together with any reports or information to be signed by an authorized representative.

c. Certification. Any person signing a document under subsection a or b. shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under the direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

d. The Clean Water Act provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained

R2-0004144

under this pennit, including monitoring reports or reports of oompliance or noncompliance shall, upon conviction, be punished by a fine of not more dian $10,000, or by imprisonment for not more than 2 years, or by bedi.

12. Reporting Requiremente.

a. Planned changes. The permittee shall give notice to the Regional Administrator and State Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a "new source" in 40 C.F.R 122.29(b);

(2) The alteration or addition could significantly change the nature or increase the quantity of poliutante discharged. This notification requirement spplies to poliutante which are subject neither to effluent limitations in the permit, nor to notification requirements under Part I.B.5, above; or

(3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan

b. Anticipated noncompliance. The permittee shall give advance notice to the Regional Administrator and State Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements as soon as it becomes aware of the circumstances.

c. Transfers.

(1) This permit is not transferable to any person except after notice to the Regional Administrator and State Director. Except as provided in paragraph (2), a permit may be transferred by the existing permittee to a new owner or operator only if the permit has been modified or revoked and reissued, or a minor modification made, to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

(2) This permit may be automatically transferred to a new permittee if:

(a) The existing permittee notifies the Regional Administrator and State Director at least 30 days in advance of the proposed transfer date in subparagraph (b);

(b) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

R2-0004145

(c) The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify or revoke and reissue the permit. (A modification under this subparagraph may also be a minor modification under 40 C.F.R. 122.63.) If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in subparagraph (b).

(3) If this permit is automatically transferred in accordance with the provisions of paragraph (2), the permit may be modified to reflect the automatic transfer after the effective date.

d. Monitoring reports.

(1) Monitoring results shall be reported at the inter- vals specified in Part I of this permit.

(2) Monitoring results shall be reported on a Discharge Monitoring Report (DMR).

(3) If the permittee monitors any pollutant more fre-quently than required by the permit, using test procedures approved under 40 C.F.R. 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

(4) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.

e. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

f Twenty-four hour reporting

(1) The following information shall be reported orally to the Regional Administrator at (732) 548-8730 and State Director within 24 hours from the time the permittee becomes aware of the circumstances:

(a) Any noncompliance which may endanger health or the environment;

(b) Any unanticipated bypass (see 13 below) which violates any effluent limitation in the permit;

(c) Any upset (see 14 below) which violates any effluent limitation in the permit; or

(d) The violation of a maximum daily discharge limitation for any of the pollutants listed in Part I of this permit is required to be reported within 24 hours. This list includes any toxic pollutant or hazardous substance, or any pollutant specifically identified as the method to control a toxic pollutant or hazardous substance.

R2-0004146

(2) In addition to the oral 24-hour report, the permittee shall also provide a written submission to the Regional Administrator and State Director within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

(3) Except with respect to written reports required under paragraph (1)(a) of subsection f., above, the Director may waive the written report on a case-by-case basis if the oral report has been received within twenty-four hours.

g. Other noncompliance. The permittee shall report to the Regional Administrator and State Director all instances of noncompliance not reported under subsections d, e, and f at the time the monitoring report covering the period of noncompliance is submitted. The reports shall contain the information listed in paragraph (2) of subsection f, above.

h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator and State Director, it shall promptly submit such facts or information to the Regional Administrator and State Director.

13. Bypassing

a. Bypass not violating limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be violated, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of subsections b. and c.

b. Notice.

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in subsection f of section 12 above.

c. Prohibition of bypass.

(1) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

R2-0004147

(b) There were no feaeible ahematives to die bypass, such as the use of auniliaty treatment facilities, retention of unheated wastes, or maintenance during normal periods of equipment downtime. This ccandition is not satisfied if adequate back-up equipment should have been installed in die exercise of reasonable engineering judgement to prevent a bypass which occuned during normal periods of equipment downtime or maintenance; and

(c) The permittee submitted notices as required under subsection b.

(2) The Direetor may approve an anticipated bypass, ailer considering ite adverse effects, if die Direetor determines diat it will meet the diree conditions listed above in paragraph (I).

14. Upset.

a Effeet of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based permit effluent limitations if the requirements of subsection b. are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;

(2) The permitted facility was at the time being properly operated;

(3) The permittee submitted notice of the upset as required in subsection f of section 12 above; and

(4) The permittee complied with any remedial measures required under section 4 above (duty to mitigate).

c. Burden of proof In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof

15. Removed substances. Solids, sludges, filter backwash or other pollutants removed in the course of treatment or control of wastewaters and/or the treatment of intake waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters. The following data shall be reported together with the monitoring data required in Part I, B.2.:

a The sources of the materials to be disposed of;

R2-0004148

b. Tbe approximate volumes anid weights;

c. The metiod by which tiey were removed and ttansported; and

di Their final disposal locations.

16. Oil and hazardous substance liability. The imposition of responsibilities upon, or the institution of any legal action against the permittee under Section 311 of the Act shall be in conformance with regulations promulgated pursuant to Section 311 to discharges from facilities with NPDES permits.

17. Reopener clause for toxic effluent limitations. Notwithstanding any other condition of this permit, if any applicable toxic effluent standard or prohibition is promulgated under Section 301(b)(2)(C) and (D), 304(b)(2) and 307(a)(2) of the Clean Water Act and that effluent standard or limitation is more stringent than any effluent limitation in the permit or controls a pollutant not limited in the permit, this permit shall be promptly modified or revoked and reissued to conform to that effluent standard or prohibition.

18. State laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Act. The issuance of this permit does not preempt any duty to obtain State or local assent required by law for the discharge

19. Availability of information.

a. NPDES permits, effluent data, and information required by NPDES application forms provided by the Director under 40 C.F.R. 122.21 (including information submitted on the forms themselves and any attachments used to supply information required by the forms) shall be available for public inspection at the offices of the Regional Administrator and State Director.

b. In addition to the information set forth in subsection a., any other information submitted to EPA in accordance with the conditions of this permit shall be made available to the public without further notice unless a claim of business confidentiality is asserted at the time of submission in accordance with the procedures in 40 C.F.R. Part 2 (Public Information).

c. If a claim of confidentiality is made for information other than that enumerated in subsection a., that information shall be treated in accordance with the procedures in 40 C.F.R. Part 2. Only information determined to be confidential under those procedures shall not be made available by EPA for public inspection.

20. Severability. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

R2-0004149

C. EFFECTIVENESS OF PERMIT

1. This permit shall become effective in its entirety on the tlate indicated on the first page of this permit unless a petition has been filed with tne Environmental Appeals Board to review any condition of tne permit decision pursuant to the provisions of 40 CFR Part 124.19. All contested conthitions and any uncontested condition(s) that are inseverable fiom the contested condltions shall be stayed. All otner conditions shall become effective thirty (30) days after the date of the notification specified in 40 CFR 124.16(a)(2)(ii).

2. For purposes of judicial review under Section 509(b) of the Clean Water Act, final agency action on a permit does not occur unless and until a party has exhausted its adminisiiative remedies under 40 CFR 124. Any party which neglects or fails to secic review under 40 CFR 124.19, tiereby waives its opportunity to exhaust available agency administiative remedies.

86/86

REFERENCE 84

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
CARIBBEAN ENVIRONMENTAt PROTECTION DIVISION
CENTRO EUROPA BUILDING, SUITE 417
1492 PONCE DE LEON AVENUE, STOP 22
SAN JUAN, PR 00907-4127

SEP 12 2001

CERTIFIED MAIL- RETURN RECEIPT REQUESTED

José L. Rosado
President and General Manager
SB Phannco
PO Box 11975
Cidra, Puerto Rico 00739-1975

Subject: Compliance Evaluation Inspection
SB Pharmco - NPDES Permit No. PR0021997

Dear Mr. Rosado:

This is in reference to the United States Environmental Protection Agency's (USEPA), Compliance Evaluation Inspection (CEI) at the subject facility on June 4, 2001. The purpose of the CEI was to assess the facility compliance with the National Pollutant Discharge Elimination System (NPDES) Program. The CEI was based on records review, evaluation of the operation and maintenance of the waste water treatnient plant, and the storin water collection and discharge system.

SB Pharmco has two permits under the NPDES Program that authorizes discharges to the waters of the United Staes. The first one is its individual NPDES permit, which authorizes the discharge of treated process, sanitary, utility, and miscellaneous wastewater, and the second one is its NPDES Multi-Sector General Permit, which authorizes the discharge of storm water runoff associated with industrial activities. Be advised that even though the treated process, sanitary, utility, and miscelianeous wastewater are being discharged throughout the sewer system under the pre-treatment program, SB Pharmco is required to comply with all the terms and conditions of its individual NPDES permit while it remain open.

Enclosed, please find a copy of the completed inspection report, which summarizes the findings of the CEI. The results of the CEI indicate that SB Pharmco is in compliance with its NPDES permits.

RECIBIDO
'01 SEP 14 P2:29
NEGOCIADO DE PERMISOS
CUMPLIMIENTO
'01 SEP 14 P1:33

R2-0004152

Should you have any questions feel free to contact Eng. Evelyn Rivera-Ocasio of my staff at (787) 977-5859 or through electronic mail at "rivera-ocasio.evelyn@epa.gov."

Sincerely yours,

Carlos E. O'Neill, P.E., Chief
Enforcement and Superfund Branch
Caribbean Environmental Protection Division

Enclosures

xc: Wanda E. Garcia, EQB

R2-0004153

EPA

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Form Approved.
OMB No. 2040-0057
Approval expires 8-31-98

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NPDES	yr/mo/day	Inspection Type	Inspector	Fee Type
1 N 2	3 PR0021979711	12 010604 17	18 C	19 R	20 2

Remarks: 21 ____ 66

Inspection Work Days	Facility Self-Monitoring Evaluation Rating	B1	OA	Reserved
67 2.0 69	70	71	72	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (for industrial users discharging to POTW, also include POTW name and NPDES permit number)

SB Pharmco
Road 172, Km 9.1 Certenejas Ward
Cidra, Puerto Rico

Entry Time/Date	Permit Effective Date
June 4, 2001 10:00 am	March 1, 2001
Exit Time/Date	**Permit Expiration Date**
June 4, 2001 2:00 pm	February 28, 2006

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)

Daniel Sepulveda - Environmental Engineering Director
Antonio Garcia - Health and Safety Manager
Mayra Vazquez - Laboratory Technologist

Other Facility Data

Administrative Order
CWA-02-2000-3066

Name, Address of Responsible Official/Title/Phone and Fax Number(s)

Jose L. Rosado - President and Plant Manager

Contacted: [ ] Yes [X] No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

[X] Permit	[X] Flow Measurement	[X] Operations & Maintenance	[ ] CSO/SSO (Sewer Overflow)
[X] Records/Reports	[X] Self-Monitoring Program	[X] Sludge Handling/Disposal	[X] Pollution Prevention
[X] Facility Site Review	[ ] Compliance Schedules	[ ] Pretreatment	[ ] Multimedia
[X] Effluent/Receiving Water	[ ] Laboratory	[X] Storm Water	[ ] Other:

Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists as necessary)

1. No discharge is taking place since March 14, 2001. The permittee discharges the treated process wastewater to the sewer system as authorized by their pre-treatment permit No.GDA-01-505-044.
2. SB Pharmco applied for the Final Reissuance of the NPDES MSGP on January 29, 2001. The MSGP became effective on January 31, 2001. The permit Number is PRR05A784. The Storm Water Pollution Prevention Plan (SWPPP) was last updated in November 2000.
3. The rain gage was dirty. SB Pharmco needs to maintain the rain gage clean in order to have an accurate level reading when a rain event occurs.
4. EPA has determine that you have complied with all the Ordered Provisions of Order No. CWA-02-2000-3066; therefore, the Order has been close-out.

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Evelyn Rivera-Ocasio, Environmental Engineer	CEPD-ESB	9/04/2001
	Phone (787) 977-5859 / Fax (787) 729-7747	
Signature of Management Q A Reviewer	Agency/Office/Phone and Fax Numbers	Date
Carlos O'Neill, Chief Enforcement & Superfund Branch	787.977-5821 / Fax (787)729-7747	9/04/2001

EPA Form 3560-3 (Rev 9-94) Previous editions are obsolete

3

R2-0004154

Form Approved
OMB No. 2040-0004
Expires 2-29-84

Sections F thru L: Complete on all inspections, as appropriate. N/A = Not Applicable

PERMIT NO. PR0021997

SECTION F - Facility and Permit Background

ADDRESS OF PERMITTEE IF DIFFERENT FROM FACILITY *(Including City, County and ZIP code)*

DATE OF LAST PREVIOUS INVESTIGATION BY EPA/STATE

FINDINGS

see report for findings

SECTION G - Records and Reports

RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT. ☑ YES ☑ NO ☐ N/A *(Further explanation attached ____)*

DETAILS:

(a) ADEQUATE RECORDS MAINTAINED OF:			
(i) SAMPLING DATE; TIME, EXACT LOCATION	☑ YES	☐ NO	☐ N/A
(ii) ANALYSES DATES, TIMES	☑ YES	☐ NO	☐ N/A
(iii) INDIVIDUAL PERFORMING ANALYSIS	☑ YES	☐ NO	☐ N/A
(iv) ANALYTICAL METHODS/TECHNIQUES USED	☑ YES	☐ NO	☐ N/A
(v) ANALYTICAL RESULTS *(e.g., consistent with self-monitoring report data)*	☐ YES	☐ NO	☐ N/A
(b) MONITORING RECORDS *(e.g., flow, pH, D.O., etc.)* MAINTAINED FOR A MINIMUM OF THREE YEARS INCLUDING ALL ORIGINAL STRIP CHART RECORDINGS *(e.g. continuous monitoring instrumentation, calibration and maintenance records)*.	☑ YES	☐ NO	☐ N/A
(c) LAB EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS KEPT.	☑ YES	☐ NO	☐ N/A
(d) FACILITY OPERATING RECORDS KEPT INCLUDING OPERATING LOGS FOR EACH TREATMENT UNIT.	☐ YES	☐ NO	☑ N/A
(e) QUALITY ASSURANCE RECORDS KEPT.	☑ YES	☐ NO	☐ N/A
(f) RECORDS MAINTAINED OF MAJOR CONTRIBUTING INDUSTRIES *(and their compliance status)* USING PUBLICLY OWNED TREATMENT WORKS.	☐ YES	☐ NO	☑ N/A

SECTION H - Permit Verification

INSPECTION OBSERVATIONS VERIFY THE PERMIT. ☐ YES ☐ NO ☑ N/A *(Further explanation attached ____)*

DETAILS:

(a) CORRECT NAME AND MAILING ADDRESS OF PERMITTEE.	☑ YES	☐ NO	☐
(b) FACILITY IS AS DESCRIBED IN PERMIT.	☑ YES	☐ NO	☐ N/A
(c) PRINCIPAL PRODUCT(S) AND PRODUCTION RATES CONFORM WITH THOSE SET FORTH IN PERMIT APPLICATION.	☐ YES	☐ NO	☑ N/A
(d) TREATMENT PROCESSES ARE AS DESCRIBED IN PERMIT APPLICATION.	☑ YES	☐ NO	☐ N/A
(e) NOTIFICATION GIVEN TO EPA/STATE OF NEW, DIFFERENT OR INCREASED DISCHARGES.	☐ YES	☐ NO	☑ N/A
(f) ACCURATE RECORDS OF RAW WATER VOLUME MAINTAINED.	☐ YES	☐ NO	☑ N/A
(g) NUMBER AND LOCATION OF DISCHARGE POINTS ARE AS DESCRIBED IN PERMIT.	☑ YES	☐ NO	☐ N/A
(h) CORRECT NAME AND LOCATION OF RECEIVING WATERS.	☑ YES	☐ NO	☐ N/A
(i) ALL DISCHARGES ARE PERMITTED.	☑ YES	☐ NO	☐ N/A

SECTION I - Operation and Maintenance

TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED. ☑ YES ☐ NO ☐ N/A *(Further explanation attached ____)*

DETAILS:

(a) STANDBY POWER OR OTHER EQUIVALENT PROVISIONS PROVIDED.	☐ YES	☐ NO	☑ N/A
(b) ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE.	☐ YES	☐ NO	☑ N/A
(c) REPORTS ON ALTERNATE SOURCE OF POWER SENT TO EPA/STATE AS REQUIRED BY PERMIT.	☐ YES	☐ NO	☑ N/A
(d) SLUDGES AND SOLIDS ADEQUATELY DISPOSED.	☑ YES	☐ NO	☐ N/A
(e) ALL TREATMENT UNITS IN SERVICE.	☐ YES	☐ NO	☐ N/A
(f) CONSULTING ENGINEER RETAINED OR AVAILABLE FOR CONSULTATION ON OPERATION AND MAINTENANCE PROBLEMS.	☐ YES	☐ NO	☑ N/A
(g) QUALIFIED OPERATING STAFF PROVIDED.	☑ YES	☐ NO	☐ N/A
(h) ESTABLISHED PROCEDURES AVAILABLE FOR TRAINING NEW OPERATORS.	☐ YES	☐ NO	☑ N/A
(i) FILES MAINTAINED ON SPARE PARTS INVENTORY, MAJOR EQUIPMENT SPECIFICATIONS, AND PARTS AND EQUIPMENT SUPPLIERS.	☐ YES	☐ NO	☑ N/A
(j) INSTRUCTIONS FILES KEPT FOR OPERATION AND MAINTENANCE OF EACH ITEM OF MAJOR EQUIPMENT.	☐ YES	☐ NO	☐
(k) OPERATION AND MAINTENANCE MANUAL MAINTAINED.	☑ YES	☐ NO	☐ N/A
(l) SPCC PLAN AVAILABLE.	☐ YES	☐ NO	☑ N/A
(m) REGULATORY AGENCY NOTIFIED OF BY PASSING. *(Dates ____ ____)*	☐ YES	☐ NO	☑ N/A
(n) ANY BY-PASSING SINCE LAST INSPECTION.	☐ YES	☐ NO	☐ N/A
(o) ANY HYDRAULIC AND/OR ORGANIC OVERLOADS EXPERIENCED.	☐ YES	☑ NO	☐ N/A

R2-0004155

Form Approved
OMB No. 158-R0078

PERMIT NO. PR002197

SECTION J - Compliance Schedules

PERMITTEE IS MEETING COMPLIANCE SCHEDULE. ☐ YES ☐ NO ☑ N/A *(Further explanation attached _____)*

CHECK APPROPRIATE PHASE(S):

- ☐ (a) THE PERMITTEE HAS OBTAINED THE NECESSARY APPROVALS FROM THE APPROPRIATE AUTHORITIES TO BEGIN CONSTRUCTION.
- ☐ (b) PROPER ARRANGEMENT HAS BEEN MADE FOR FINANCING *(mortgage commitments, grants, etc.)*.
- ☐ (c) CONTRACTS FOR ENGINEERING SERVICES HAVE BEEN EXECUTED.
- ☐ (d) DESIGN PLANS AND SPECIFICATIONS HAVE BEEN COMPLETED.
- ☐ (e) CONSTRUCTION HAS COMMENCED.
- ☐ (f) CONSTRUCTION AND/OR EQUIPMENT ACQUISITION IS ON SCHEDULE.
- ☐ (g) CONSTRUCTION HAS BEEN COMPLETED.
- ☐ (h) START-UP HAS COMMENCED.
- ☐ (i) THE PERMITTEE HAS REQUESTED AN EXTENSION OF TIME.

SECTION K - Self-Monitoring Program

Part 1 – Flow measurement *(Further explanation attached _____)*

PERMITTEE FLOW MEASUREMENT MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS:	☑ YES	☐ NO	☐ N/A
(a) PRIMARY MEASURING DEVICE PROPERLY INSTALLED.	☑ YES	☐ NO	☐ N/A
TYPE OF DEVICE: ☐ WEIR ☑ PARSHALL FLUME ☐ MAGMETER ☐ VENTURI METER ☐ OTHER *(Specify _____)*			
(b) CALIBRATION FREQUENCY ADEQUATE. *(Date of last calibration _____)*	☐ YES	☐ NO	☐ N/A
(c) PRIMARY FLOW MEASURING DEVICE PROPERLY OPERATED AND MAINTAINED.	☐ YES	☐ NO	☐ N/A
(d) SECONDARY INSTRUMENTS *(totalizers, recorders, etc.)* PROPERLY OPERATED AND MAINTAINED.	☐ YES	☐ NO	☐ N/A
(e) FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGES OF FLOW RATES.	☐ YES	☐ NO	☐ N/A

Part 2 – Sampling *(Further explanation attached _____)*

PERMITTEE SAMPLING MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS:	☐ YES	☑ NO	☐ N/A
(a) LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES.	☑ YES	☐ NO	☐ N/A
(b) PARAMETERS AND SAMPLING FREQUENCY AGREE WITH PERMIT.	☑ YES	☐ NO	☐ N/A
(c) PERMITTEE IS USING METHOD OF SAMPLE COLLECTION REQUIRED BY PERMIT. IF NO: ☐ GRAB ☐ MANUAL COMPOSITE ☐ AUTOMATIC COMPOSITE FREQUENCY _____	☑ YES	☐ NO	☐ N/A
(d) SAMPLE COLLECTION PROCEDURES ARE ADEQUATE. Not evaluated	☐ YES	☐ NO	☐ N/A
(i) SAMPLES REFRIGERATED DURING COMPOSITING	☐ YES	☐ NO	☐ N/A
(ii) PROPER PRESERVATION TECHNIQUES USED	☐ YES	☐ NO	☐ N/A
(iii) FLOW PROPORTIONED SAMPLES OBTAINED WHERE REQUIRED BY PERMIT	☐ YES	☐ NO	☐ N/A
(iv) SAMPLE HOLDING TIMES PRIOR TO ANALYSES IN CONFORMANCE WITH 40 CFR 136.3	☐ YES	☐ NO	☐ N/A
(e) MONITORING AND ANALYSES BEING PERFORMED MORE FREQUENTLY THAN REQUIRED BY PERMIT.	☐ YES	☑ NO	☐ N/A
(f) IF (e) IS YES, RESULTS ARE REPORTED IN PERMITTEE'S SELF-MONITORING REPORT.	☐ YES	☐ NO	☐ N/A

Part 3 – Laboratory *(Further explanation attached _____)*

PERMITTEE LABORATORY PROCEDURES MEET THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS:	☑ YES	☐ NO	☐ N/A
(a) EPA APPROVED ANALYTICAL TESTING PROCEDURES USED. *(40 CFR 136.3)*	☑ YES	☐ ND	☐ N/A
(b) IF ALTERNATE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED.	☑ YES	☐ NO	☐ N/A
(c) PARAMETERS OTHER THAN THOSE REQUIRED BY THE PERMIT ARE ANALYZED.	☐ YES	☑ NO	☐ N/A
(d) SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT.	☑ YES	☐ ND	☐ N/A
(e) QUAUTY CONTROL PROCEDURES USED.	☑ YES	☐ ND	☐ N/A
(f) DUPLICATE SAMPLES ARE ANALYZED. _____ % OF TIME.	☐ YES	☐ NO	☐ N/A
(g) SPIKED SAMPLES ARE USED. _____ % OF TIME.	☐ YES	☐ ND	☑ N/A
(h) COMMERCIAL LABORATORY USED.	☑ YES	☐ NO	☐ N/A
(i) COMMERCIAL LABORATORY STATE CERTIFIED.	☑ YES	☐ NO	☐ N/A

LAB NAME _____

LAB ADDRESS _____

R2-0004156

OMB No. 2040-0004
Expires 2-89-84

PERMIT NO. PR0021997

SECTION L - Effluent/Receiving Water Observations *(Further Explanation attached _____)*

OUTFALL NO.	OIL SHEEN	GREASE	TURBIDITY	VISIBLE FOAM	VISIBLE FLOAT SOL	COLOR	OTHER
001	NO DISCHARGE						

(Sections M and N: Complete as appropriate for sampling inspections)

SECTION M - Sampling Inspection Procedures and Observations *(Further explanation attached _____)*

- ☐ GRAB SAMPLES OBTAINED
- ☐ COMPOSITE OBTAINED
- ☐ FLOW PROPORTIONED SAMPLE
- ☐ AUTOMATIC SAMPLER USED
- ☐ SAMPLE SPLIT WITH PERMITTEE
- ☐ CHAIN OF CUSTODY EMPLOYED
- ☐ SAMPLE OBTAINED FROM FACILITY SAMPLING DEVICE

COMPOSITING FREQUENCY _____ PRESERVATION _____

SAMPLE REFRIGERATED DURING COMPOSITING: ☐ YES ☐ NO

SAMPLE REPRESENTATIVE OF VOLUME AND NATURE OF DISCHARGE _____

SECTION N - Analytical Results *(Attach report if necessary)*

R2-0004157

REFERENCE 85

Commonwealth of Puerto Rico
Office of the Governor
Environmental Quality Board

Compliance Sampling Report On
SK & F Co.
Cidra, Puerto Rico
NPDES Permit PR-0021997

Water Quality Area
FY-1990

1/20

R2-0004159

Table of Contents

	Page
Introduction	1
Background, Summary and Conclusions	2
Recommendations	5
Discussion of Methods and Results	6
Appendix:	
Table 1: Violations to NPDES Permit Effluent Limitations as Reported on Discharge Monitoring Reports (DMR's)	10
Table 2 : Field Measurements and Analytical Results from Grab Samples for Station 001	11
Table 3 : Analytical Results of Composite Samples for Conventional Pollutants.	13
Table 4 : Analytical Results of Composite Samples for Toxic Pollutants.	14
Table 5 : Field Measurements and Analytical Results from Grab Samples for Station 002	15
Table 6 : Bacteriological Results and Effluent Flow Measurements	16
Figure 1: Location Plan	17
Figure 2: Schematic Waste Water Flow	18

R2-0004160

Introduction

Environmental Quality Board (EQB) personnel from the Field Monitoring and Sampling Division of the Water Quality Bureau (WQB) carried out a National Pollutant Discharge Elimination System (NPDES) permit compliance sampling inspection of the effluent from SK & F, NPDES permit PR-0021997, located in Cidra Puerto Rico.

The facility discharges its treated wastes into Quebrada de las Quebradillas, a tributary of Rio Turabo, a water body with an SD use classification under Puerto Rico's Water Quality Standards Regulation (WQSR).

A plant compliance evaluation inspection was carried out concurrently by personnel from the Permits and Engineering Division of the WQB.

The sampling inspection covered a period of twenty-four (24) consecutive hours during February 6-7, 1990. Samples were taken for the analysis of the following parameters: color, turbidity, total dissolved solids (TDS), total suspended solids (TSS), chlorides (Cl), cyanide (CN), nitrates plus nitrites as nitrogen (NO_3+NO_2 as N), total phosphorous (total P), sulfate (SO_4), biochemical oxygen demand (BOD_5), chemical oxygen demand (COD), oil and grease, phenolic substances, arsenic (As), selenium (Se), cadmium (Cd), copper (Cu), surfactants, mercury (Hg), lead (Pb), zinc (Zn), total chromium (Total Cr), chromium hexavalent (Cr^{+6}), iron (Fe), barium (Ba) and boron (B). The following parameters were measured on site: temperature, pH, dissolved oxygen (DO), residual chlorine and settleable solids (SS).

A previous 24-hour sampling inspection was performed by EQB during April 22 and 23, 1986.

The objectives of the sampling inspection were to determine:

1) effluent quality being discharged into the receiving waters, and

2) effluent compliance with NPDES permit limitations.

R2-0004161

Background, Summary and Conclusions

The industry Smith Kline & French Lab. Co. (SK & F Co.), is located on State Road PR-172, Km. 8.6, Bayamón Ward, in Cidra. It produces pharmaceutical products which includes tranquilizers, diuretics, antidepressants and antihistaminics. The Standard Industrial Classification (SIC) code for these operations is 2834.

The wastewaters generated at SK & F Co. consist of process, utility and sanitary wastes. The wastewaters receive tertiary treatment in an activated sludge treatment plant. The treatment system consists of activated carbon, reverse osmosis, carbon absorption, equalization, neutralization, nitrification, denitrification, clarification, microstraining, disinfection, aerobic digestion, landfill sludge disposal and reverse osmosis at pilot scale. Process and utility wastes are pretreated in a sand filter and two (2) carbon filters. The treated wastewaters are discharged into Quebrada de las Quebradillas, a tributary of Rio Turabo, a water body with an SD use classification under Puerto Rico's WQSR.

In the compliance sampling report for the 24 hour sampling inspection of SK & F Co., carried out during Fy-86, information is presented on discharge monitoring reports (DMR's) submitted up to April 1986 and on EQB plant site compliance evaluation inspections performed up to April 1986. For this reason the discussion in this report is limited to events that occurred after May 1986, except where it is necessary to refer to earlier events.

During the present 24-hour sampling inspection, SK & F was under a second round NPDES permit issued on August 30, 1984 and which expired on November 30, 1989. The permit continues administratively extended until the renewal of it by EPA. In addition, SK & F was, until March 1, 1990, under interim effluent limitations contained in a stipulation dated March 7, 1988 between EQB and SK & F.

On March 3, 1987 SK & F was referred to the EQB's Legal Affairs Division for the violations found during the 24-hour sampling inspection of April 22-23, 1936. Results of the samples taken on that occasion indicated that the industry violated the NPDES permit limitations for TDS and Cl. An evaluation of the discharge monitoring reports submitted by the industry until April 1986 revealed that the industry violated NPDES permit limitations for Zn, TDS, fecal coliforms and total coliforms; and the Puerto Rico's WQSR standard for Total P. EQB issued an Order to Do and Show Cause (DL-87-003-010) against SK & F on June 11, 1987 for the violations above mentioned. On March 7, 1988 EQB and SK & F agreed on a stipulation. The following points were stated in the Stipulation:

1. SK & F would investigate and carry out studies to identify the adequate technology to improve the control

R2-0004162

of the parameters pointed in the Order along with Hg, phenolic substances, surfactants and fluorides.

2. SK & F would execute the actions described in Annex A of the stipulation.

3. SK & F would comply with Special Conditions described in Annex B of the stipulation.

The following were the main points contained in Annex A of the stipulation.

1. SK & F would start studies to identify actions, alternatives and/or technology by November 2, 1987.

2. By June 30, 1988, SK & F would submit a report indicating actions, alternatives and/or selected technology.

   (i) If the studies indicate that the selected option was the development and construction of a new technology, SK & F would develop, construct and/or have operational the new technology for August 31, 1989.

   (ii) If the studies indicated that the technology was not feasible, and/or the selected option did not involved the development or construction of a new technology SK & F would submit an internal plan with a schedule of compliance.

3. On March 1, 1990 SK & F would certify, in case of option 2(1), that the new technology would comply with the objective of control of the discharge within the NPDES permit limits. However, if, after the compliance plan was executed diligently, the new technology did not control the discharge within the NPDES permit limitations, SK & F would submit a report and present an alternate action plan with a compliance schedule.

The Annex B of the stipulation contained interim effluent limitations for Hg, phenolic substances, surfactants, TDS, Zn, Cl, Total P, BOD_5, color, nitrates plus nitrites and Ag. These interim effluent limitations would be in effect until March 1, 1990.

On June 28, 1988 SK & F notified EQB that they had selected a granular activated carbon system.

On August 30, 1989 SK & F notified EQB that the granular activated carbon system had been constructed, and the system was being evaluated to determine if it complies with the objective of controlling the discharge within the limits of the NPDES permit.

5

R2-0004163

On November 27, 1989 SK & F submitted to EQB plans of the installation of an oil separator and carbon filter proposed for a facility expansion project. The project would not include changes and modifications to the existing treatment plant.

On November 1, 1989 SK & F submitted to EPA an NPDES permit application to amend the previous one submitted on May 28, 1989. The NPDES permit application was amended in order to include flows from new products that would be manufactured at the SK & F plant, starting sometime in 1990.

On February 14, 1990 EQB approved the plans and specifications on the installation of an oil separator and carbon filter for the pretreatment of the wastewaters resulting from the new processes involved in the facility's expansion. EQB warned the permittee of the responsibility to notify EQB on the installation of the equipment in order to perform an evaluation of the installed equipment according to plans and specifications approved by EQB.

On November 11, 1989 SK & F Co. submitted to EPA an NPDES permit renewal application.

Review of DMR's submitted to EQB by SK & F from May 1986 through January 1990, indicated violations of NPDES permit effluent limitations for color (2 times), BOD_5 (one (1) time), silver (one (1) time), and boron (on (1) time). These violations are summarized in Table 1.

On February 6, 1990 concurrently with the 24-hour sampling inspection, EQB carried out a plant site compliance evaluation inspection of the treatment facilities. The following were the findings of this inspection:

1. The permittee had installed a carbon filter and a small reverse osmosis (Ro) system (10,000 gpd capacity) in its tertiary treatment system.

2. They were not adding lime.

In the previous 24-hour sampling inspection carried out at SK & F Co. during April 22 - 23, 1986 it was found that the permittee had violated NPDES permit limitations for TDS, Zn and Cl.

In the present 24-hour sampling inspection, carried out on February 6 -7, 1990 it was found that the permittee violated NPDES permit limitations for As and Se.

R2-0004164

CONFIDENCIAL

R2-0004165

Discussion of Methods and Results:

The sampling inspection carried out by EQB personnel at SK & F Co., in Cidra, during February 6-7, 1990 covered a period of 24 consecutive hours. The sampling stations established by EQB were as follows:

Station 001 - Effluent. This station was located at the exit of the treatment plant and after the effluent had received complete treatment. The samples were taken manually at the entrance of the Parshall Flume flow meter which is installed at the exit of the treatment plant.

Station Inf - This station was located at the entrance of the treatment plant and the waters consist of raw wastewaters before receiving any treatment. The raw waters are received in a pit that has two (2) compartments in which the process and sanitary influents are receive separately. The samples were taken manually using two (2) "Isco" automatic samplers.

Station 002 - Stormwater. This station was located at the storm sewer near the fence that separates the property with the Road #172 in front of the industry.

Samples were taken for the determination of the following parameters: biochemical oxygen demand (BOD_5), total suspended solids (TSS), chemical oxygen demand (COD), cyanides, surfactants, boron (B), sulfates (SO_4), phenolic substances, flow, oil & grease, chlorides, color, turbidity, total dissolved solids (TDS), nitrates + nitrites as nitrogen (NO_3 + NO_2)-N, total phosphorus (total P), fecal coliform, total coliform and the metals: arsenic (As), barium (Ba), cadmium (Cd), zinc (Zn), copper (Cu), lead (Pb), mercury (Hg), selenium (Se), silver (Ag), trivalent chromium (Cr^{+3}) and hexavalent chromium (Cr^{+6}). Parameters measured on site were: temperature, pH, dissolved oxygen (DO), residual chlorine and settleable solids (SS).

Sampling methods used during the inspection were as follows:

1. Grab samples were obtained every hour at Station 001 - Effluent for the "in situ" determination of temperature, pH, DO and residual chlorine.

   At the 14:00 and 08:00 hours of February 6 and 7 respectively, grab samples were taken at the Station 001 - Effluent for the "in situ" determination of SS.

   Thermometers used in the field were standardized by authorized personnel from the Field Monitoring and Sampling Division utilizing and ERTCO thermometer certified by NBS. The pH was measured using a portable pH meter calibrated in the field every 3 to 4 hours,

R2-0004166

using commercially available standard buffers of pH 4.0 and 7.0. Dissolved oxygen was measured following the 360.2 "Modified Winkler" method. Residual chlorine was determined following the method #330.1 "Titrimetric Amperometric". Both methods are in the EPA's manual, "Methods for Chemical Analysis of Water and Wastes", 16 th Edition (1985).

All solutions, except standard buffers, used for field measurements and for preservation of collected samples were prepared by EQB laboratory technicians. All chemical and bacteriological analyses were performed in accordance with the appropriate methods included in "Standard Methods for the Examination of Water and Wastewaters", 16th Edition (1985); "EPA Methods for Chemical Analysis of Water and Wastes" March 1979; and "EPA Microbiological Methods for Monitoring and Environment, Water and Wastes", 1978.

2. At the 14:00 and 07:00 hours of February 6 and 7, respectively, grab samples were taken at Station 001 for the analysis of chlorides, color, turbidity, total dissolved solids (TDS), oil & grease, nitrates + nitrites as nitrogen (NO_3 + NO_2)-N ahd total phosphorus.

   At the 10:45 hours of February 6, 1990, grab samples were taken at Station 002 for the analysis of oil & grease and the metals copper (Cu), iron (Fe), lead (Pb) and cadmium (Cd). Also, samples were taken for the in situ determination of temperature, residual chlorine, pH and dissolved oxygen.

3. A flow proportional, 24 consecutive hour composite sample was taken at Station 001 for the analysis of biochemical oxygen demand (BOD_5), total suspended solids (TSS), chemical oxygen demand (COD), cyanides, surfactants, boron, sulfates (SO_4), phenolic substances and the metals arsenic (As), barium (Ba), cadmium (Cd), zinc (Zn), copper (Cu), lead (Pb), mercury (Hg), selenium (Se), silver (Ag), trivalent chromium (Cr^{+3}) and chromium hexavalent (Cr^{+6}).

   A 24 consecutive hour composite sample was taken at station INF by mixing equal volume portion samples, for the analysis of BOD_5, TSS and COD.

4. All samples were identified, properly preserved, packed in ice, and kept under the custody of Mr. Reynaldo Matos and Mr. Edwin Martinez of the Field Monitoring and Sampling Division until they were delivered to the EQB Laboratory and custody was relinquished to authorized laboratory personnel.

R2-0004167

5. Five (5) grab samples were taken in sterilized collection bottles at Station 001 on April 17 and 24 and May 1, 8 and 15, 1990, for the determination of total coliforms and fecal coliforms. Samples for bacteriological analyses were sent, packed in ice, to the Laboratory within six (6) hours of collection.

6. Hourly measurements of effluent flow at Station 001, were taken during the 24-hour sampling period from the Fisher & Porter totalizer installed in the device room. The total flow during the sampling period was .071 million gallons per day (MGD).

   There was no rainfall during the sampling period.

Field measurements of temperature, pH, dissolved oxygen (DO), settleable solids (SS) and residual chlcrine from grab samples and analytical results of composite samples taken at Station 001 (Effluent) and Station 002 (Stormwater) are presented in Table 2 and Table 5 respectively. Analytical results of grab samples taken at Station 001 and INF for conventional pollutants are presented in Table 3. In Table 4 are presented results of the analyses for toxic pollutants in Station 001. Results of bacteriological samples and effluent flow measurements are shown in Table 6. These tables also include the NPDES permit limitations on the effluent and applicable standard for the various parameters covered under Puerto Rico's Water Quality Standards Regulation (WQSR). Parameters not included in the NPDES permit, were analyzed in the effluent and compared with WQSR to determine their effect on its quality.

The following observations were made based upon the results obtained from field measurements:

The permittee complied with the NPDES permit limitations for temperature, pH, DO, SS and residual chlorine.

Analytical results of grab and composite samples revealed the following:

Compliance with the NPDES permit effluent limitations was achieved for color, TDS, NO_3 + NO_2 as N, total P, BOD_5, surfactants, Hg, phenolic substances and AG.

Total Cr, not limited by the NPDES permit nor the stipulation of March 7, 1988, complied with the WQSR standard.

NPDES permit effluent limitations were found to be violated by the permittee for the parameters As and Se by compliance factors of 1.36 and 1.98 respectively. The parameter Cu, at the Station 002 violated the WQSR standard by a compliance factor of 1.1.

R2-0004168

Results of bacteriological analyses revealed compliance with the NPDES permit limitation.

A comparison between the previous 24-hour sampling inspection of April 22-23, 1986 and the present, on February 6-7, 1990 shows that:

In the previous sampling the permittee exceeded the NPDES permit limitations for Zn, TDS and Cl. In the present inspection the parameter Zn continues in violation with the NPDES permit; it was found at a higher concentratioh. The parameter Cl was found complying with the NPDES permit limitation in the present inspection. In the present inspection, the parameter TDS was under the limitations contained in the stipulation between SK + F and EQB. The limitation for TDS in the stipulation is higher than in the NPDES permit. The concentrations found in the present 24-hour sampling inspection were complying with the stipulation limitation.

Other two (2) parameters that exceeded the NPDES permit limitation in the present inspectien were As and Se. These parameters were not analyzed in the previous inspection.

11

R2-0004169

Table 1: Violations of NPDES Permit Effluent Limitations as Reported by SK & F Co. on DMR's for the Monitoring Period of May 1986 through January 1990.

Monitoring Period	Parameter NPDES Permit Limitation	Reported Value	Compliance Factor
May 1986	Color 10.Pt-Co	15 Pt-Co	1.5
October, 1986	BOD_5 15 mg/l	39 mg/l	2.6
February, 1987	Color 10 Pt-Co	15 Pt-Co	1.5
May, 1989	Silver .001 mg/l	1.4 ug/l (0.00014 mg/l)	1.4
September, 1989	Boron 1.0 mg/l	155 mg/l	155

R2-0004170

Table 2a: Field Measurements of Grab Samples and Analytical Results of Grab Samples from the Effluent of SK & F Co., in Cidra, Compared to NPDES Permit Limitations and WQSR for SD Waters.

FIELD MEASUREMENTS					
	Temperature °C (°F)	pH SU	Dissolved Oxygen mg/l	Residual Chlorine (Cl) mg/l	Settleable Solids (SS) mg/l
NPDES Permit Limitation Outfall 001	34.5 (94.0)	6.0-9.0	5.0 Min.	0.5 Max.	(b)
Station 001 Effluent	23-24.5 (73.4-76.1)	6.9-7.8	10.0-11.0	0.0-0.2	0.0 0.0
WQS for SO Waters	34.5 (94.0)	6.0-9.0	5.0 Min.	(a)	(b)

Min. = Daily Minimum

Max. = Daily Maximum

(a) = There is no WQSR for residual chlorine. However, EQB, recommends a maximum concentration of 0.5 mg/l.

(b) = NPDES permit and Section 2.1.6 of Puerto Rico's WQSR states that "Solids from wastewater sources shall not cause deposition in or be deleterious to the designated uses of the waters".

R2-0004171

Table 2b: Field Measurements of Grab Samples and Analytical Results of Grab Samples from the Effluent of SK & F Co., in Cidra, Compared to NPDES Permit Limitations and WQSR for SD Waters.

ANALYTICAL RESULTS							
	Color Pt/Co	Turbidity NTU	TDS (mg/l)	Chlorides (Cl) mg/l (ug/l)	NO_3+NO_2 as N mg/l (ug/l)	Oil and Grease ug/l	Total P mg/L (ug/l)
NPDES Permit Limitations Outfall	20.0* Max.	50.0 Max.	750.0* Max.	300.0* Max.	15.0* Max.	15.0 Max.	4* Max.
Station 001 Effluent	0 0	2.0 1.4	526 342.5	(84,240) (81,890)	(4,420) (4,790)	<5 <5	(2,500) (2,750)
WQSR for SD Waters	10.0 Max.	50.0 Max.	500.0 Max.	250.0 Max.	N/S	N/S	Ippm

Max. = Daily Maximum

* = Interim effluent limitation contained in stipulation reached between EQB and SK & F on March 7, 1988. The stipulation was negotiated to finalize the case initiated by the Order to Do and to Show Cause (DL-87-003-010) against SK & F, issued on June 11, 1987. The interim limitations would be effective until March 1st., 1990.

14

R2-0004172

Table 3: Analytical Results of Composite Samples for Conventional Pollutants from the Effluent and Influent of SK & F Co., in Cidra Compared to NPDES Permit Limitations and WQSR for SD Waters.

	TSS mg/l	BOD_5 mg/l	COD mg/l	B mg/l (ug/l)	Ba mg/l (ug/l)	SO_4 mg/l (ug/l)	Surfactants mg/l (ug/l)
NPDES Permit Limitation Outfall 001	60.0 Max.	20.0* Max.	126.0 Max.	1.0 Max.	1.0 Max.	250.0 Max.	0.5* Max.
Station 001 (Effluent)	4	3.07	24.53	(130)	(0)	(21,860)	(163)
Station INF	83.3	234.2	375.4	-	-	-	-
WQSR for SD Waters	(a)	N/S	N/S	(1,000.0) Max.	(1,000) Max.	(250.0) Max.	(100.0) Max.

LEGEND:

Max. = Daily Minimum.

N/S = No Standard.

N/L = Not Limited.

(a) = NPDES permit and Section 2.1.6 of Puerto Rico's WQSR states that "solids from wastewater sources shall not cause deposition in, or be deleterious, to the designated uses of the waters".

* = Interim effluent limitation contained in stipulation reached between EQB and SK & F on March 7, 1988. The stipulation was negotiated to finalize the case initiated by the Order to Do and to Show Cause (DL-87-003-010) against SK & F, issued by EQB on June 11, 1987. The interim limitations would be effective until March 1st., 1990.

51

R2-0004173

Table 4: Analytical Results of Composite Samples for Toxic Pollutants, from the Effluent of SK & F Co., in Cidra, Compared to NPDES Permit Limitations and WQSR for SD Waters.

	CN mg/l (ug/l)	Pb mg/l (ug/l)	Cd mg/l (ug/l)	Zn mg/l (ug/l)	Cu mg/l (ug/l)	Ag mg/l (ug/l)	As mg/l (ug/l)	Se mg/l (ug/l)	Hg mg/l (ug/l)	Total Cr mg/l (ug/l)	Cr^{+6} ag/l (ug/l)	Phenolic Substances mg/l (ug/l)
NPDES Permit Limitation Outfall 001	0.2 Max.	0.05 Max.	0.005 Max.	0.11* Max.	0.04 Max.	0.003* Max.	0.5 Max.	0.01 Max.	0.0015* Max.	N/L	0.5 Max.	0.012* Max.
Station 001	(0.0)	(4.23)	(0.0)	(131)	(37.8)	(0.16)	(0.68)	(19.8)	(<0.20)	(0)	(0)	(10.3)
WQSR for SD Waters	(200.0) Max.	(50.0) Max.	(5.0) Max.	(50.0) Max.	(40.0) Max.	(2.0) Max.	(50.0) Max.	(10.0) Max.	(1.00) Max.	(50.0) Max.	(50.0) Max.	(1.00) Max.

LEGEND:

Max. = Daily Maximum.

N/L = Not Limited.

* = Interim effluent limitation contained in stipulation reached between EQB and SK & F Co. on March 7, 1988. The stipulation was negotiated to finalize the case initiated by the Order to Do and to Show Cause (DL-87-003-010), issued by EQB on June 11, 1987. The interim limitations would be effective until March 1st., 1990.

16

R2-0004174

Table 5: Field Measurements of Grab Samples and Analytical Results of Grab Samples from the Stormwater Discharge of SK & F Co., in Cidra, Compared to WQSR for SD Waters.

	Field Measurements				Analytical Results				
	Temperature °C (°F)	pH SU	Dissolved Oxygen mg/l	Residual Chlorine mg/l	Cd mg/l (ug/l)	Cu mg/l (ug/l)	Pb mg/l (ug/l)	Fe mg/l (ug/l)	Oil & Grease mg/l (ug/l)
Station 002 Effluent	24.0 (75.2)	7.4	9.3	0.0	(0.0)	(43.9)	(3.86)	(1,262)	6.9
WQSR for SD Waters	34.5 (94.0)	6.0-9.0	5.0 Min.	(a)	(5.0) Max.	(40.0) Max.	(50.0) Max.	(300.0) Max.	N/S

Min. = Daily Minimum

Max. = Daily Maximum

N/S = No Standard

(a) = There is no WQSR for residual chlorine. However, EQB recommends a maximum concentration of 0.5 mg/l.

R2-0004175

Table 6: Bacteriological Results and Flow Measurements from the Effluent of SK & F Co. Inc., in Cidra, Compared to NPDES Permit Limitations and WQSR for SD Waters.

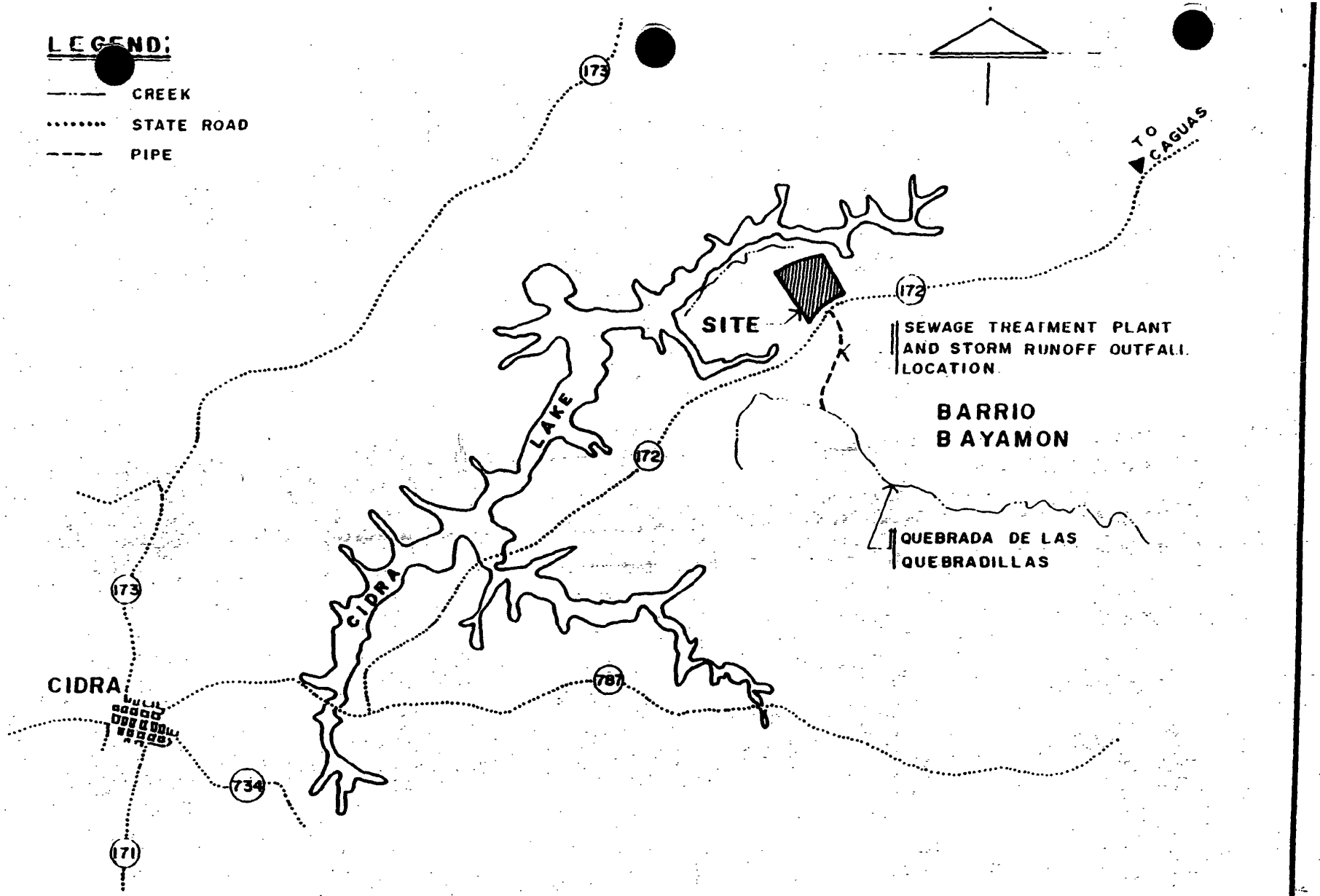
	Coliforms (Geometric Mean)		Flow MGD
	Total MPN/100ml	Fecal MPN/100ml	
NPDES Permit Effluent Limitations Outfall 001	10,000 Max.	2,000* Max.	0.071
Station 001 Effluent	82	33	0.072
WQSR for SD Waters	10,000 Max.	2,000* Max.	N/S

LEGEND:

N/S = No Standard.

* = The NPDES permit and the WQSR State that "not more than 20 percent of the samples shall exceed 4,000 colonies/100 ml of fecal coliforms.

R2-0004176



LOCATION PLAN

SK&F CC – CIDRA, P.R.

FIGURE 1

R2-0004177

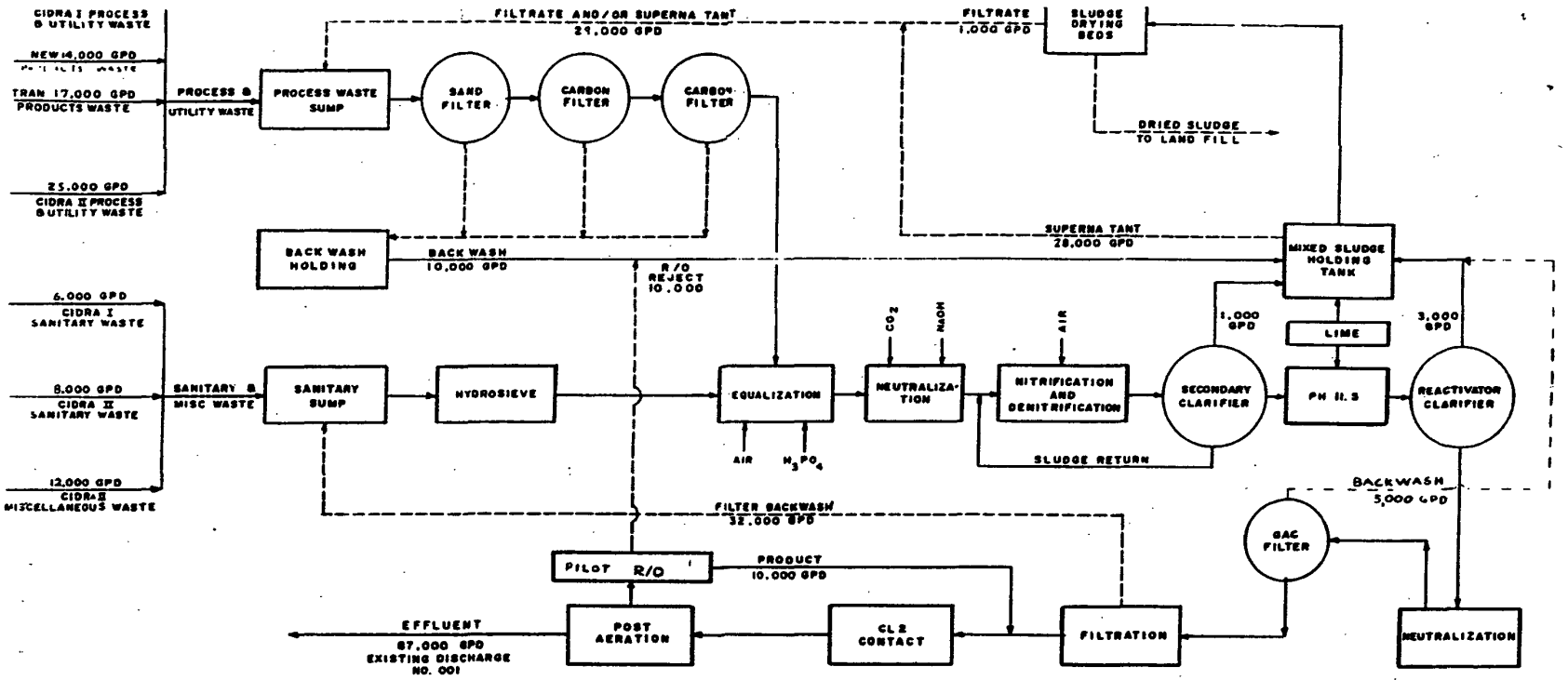


FIGURE 2

SCHEMATIC WASTE WATER FLOW

SK&F CO / SK&F LAB CO.

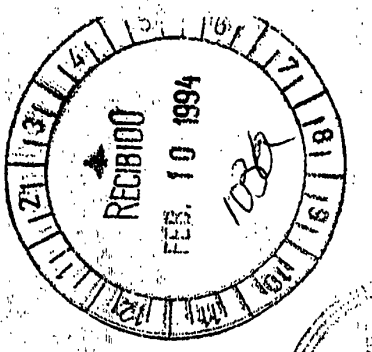
CIDRA, P. R.

ORIGINAL: 5/80
REV' 1 3/84
REV: 2 5/89

R2-0004178

20/20

REFERENCE 86



FEB 4 1994

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Ismael Guzmán
Director of Engineering Services
SB Pharmco
P.O. Box 11975
Cidra, Puerto Rico 00639-1975

Re: Compliance Evaluation Inspection
SB Pharmco (formerly SmithKline Beecham Pharmaceuticals)
NPDES Permit No. PR0021997
NPDES Stormwater General Permit No. PRR00A040

Dear Mr. Guzmán:

This letter is in reference to the Compliance Evaluation Inspection (CEI) performed at SB Pharmco (formerly SmithKline Beecham Pharmaceuticals) on November 16, 1993 by Marcus Zobrist of my staff. The CEI evaluated compliance with the above mentioned NPDES Permits for treated process wastewater (Permit No. PR0021997) and stormwater (Permit No. PRRR00A040).

NPDES Storm Water General Permit No. PRR00A040

SB Pharmco has developed and is in the process of implementing a Storm Water Pollution Prevention Plan in accordance with the conditions of the storm water general permit. Construction of a new storm sewer and a first-flush storm water holding tank was not complete at the time of the inspection. Pursuant to the terms of the Storm Water General Permit, the deadline for completing all structural modifications that are part of facility's Storm Water Pollution Prevention Plan was October 1, 1993.

NPDES Permit No. PR0021997

The results of the CEI indicated that the subject facility is in non-compliance with the effluent limitations of the referenced NPDES Permit. The table below lists the parameters which have been exceeded during the period from July 1992 through November 1993.

1/7

R2-0004180

Month	Parameter Violated	Meas. Units	Permit Limit	Reported Result
7/92	Total Dissolved Solids	mg/l	500	604
10/92	Total Dissolved Solids	mg/l	500	780
	Fecal Coliforms	MPN	4,000	4600
12/92	Cadmium	µg/l	5.0	14
	Copper	µg/l	40.0	61
2/93	Flow Rate	GPD	87,000	95,600
	Fecal Coliforms	MPN	4,000	14,422
	Total Coliforms	MPN	10,000	57,236
3/93	Flow Rate	GPD	87,000	93,270
5/93	Flow Rate	GPD	87,000	115,230
	Chlorides	mg/l	250	387.6
6/93	Flow Rate	GPD	87,000	99,090
	Chlorides	mg/l	250	435.4
7/93	Total Dissolved Solids	mg/l	500	1,024
	Chlorides	mg/l	250	492.8
8/93	Flow Rate	GPD	87,000	98,090
	Color	Pt/Co	10	15
	Total Dissolved Solids	mg/l	500	665
	Chlorides	mg/l	250	301.1
9/93	Total Dissolved Solids	mg/l	500	576
	Fecal Coliforms	MPN	4,000	100000
11/93	Flow Rate	GPD	87,000	114,030
	Total Dissolved Solids	mg/l	500	622

SB Pharmco is currently in the process of significantly upgrading its wastewater treatment plant to a tertiary treatment system. These upgrades include: improvements to the Granular Activated Carbon Filtration System that were to be completed by December 1993; a full scale Reverse Osmosis Treatment Unit that is expected to be operational by February 1994; and a pilot project to recycle treated wastewater to the cooling tower that is scheduled to begin in March 1993. Once the Reverse Osmosis treatment is operational, feasibility studies to treat the Reverse Osmosis brine by evaporator or crystallizer will commence.

R2-0004181

Enclosed, please find a copy of the completed inspection report which describes the results of the CEI. Should you have any questions, please contact Mr. Zobrist at (212) 264-4350.

Thank you for your cooperation during the inspection.

Sincerely,

John S. Kushwara, Chief
Compliance Section

Enclosure

cc: Wanda Garcia, EQB

3

R2-0004182

Form 3560-3 (Rev. 3-85)

United States Environmental Protection Agency
Washington, D.C. 20460

EPA NPDES Compliance Inspection Report

Form Approved
OMB No. 2040-0003
Approval Expires 7-31-85

Section A: National Data System Coding

Transaction Code	NPDES	Yr/mo/day	Inspection Type	Inspector	Fac Type
5	PR0021997	930111	C	R	2

Remarks

Reserved	Facility Evaluation Rating	BI	QA	Reserved
		N	N	

Section B: Facility Data

Name and Location of Facility Inspected	Entry Time	Permit Effective Date
SB Pharmco (formerly SmithKline Beecham Pharmaceuticals) State Road No 172 Km 9.1 Cidra, Puerto Rico 00639	9:30 AM PM	NOVEMBER 1, 1993
	Exit Time/Date 1:30 11/16/93	Permit Expiration Date OCTOBER 31, 1998

Name(s) of On-Site Representative(s)	Title(s)	Phone No(s)
Antonio Garcia	Plant & Environmental Service Manager	809-250-3866

Name, Address of Responsible Official	Title	Phone No.	Contacted
Ismael Guzmán	Director of Engineering Services	809-250-3866	Yes

Section C: Areas Evaluated During Inspection

(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

S	Permit	S	Flow Measurement	N/A	Pretreatment	S	Operations & Maintenance
S	Records/Reports	S	Laboratory	N/A	Compliance Schedules	S	Sludge Disposal
S	Facility Site Review	S	Effluent/Receiving Waters	S	Self-Monitoring Program	—	Other:

Section D: Summary of Findings/Comments (Attach additional sheets if necessary)

See cover letter for details

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Telephone	Date
Marcus Zabriskie	US EPA/Compliance Section/ 212 264-4350	JANUARY 28, 1994

Signature of Reviewer	Agency/Office	Date
Orlando Quintana	EPA/WPM-WPC	2/2/94

Regulatory Office Use Only

Action Taken	Date	Compliance Status
		☐ Noncompliance ☐ Compliance

EPA Form 3560-3 (Rev. 3-85) Previous editions are obsolete.

4

R2-0004183

Sections F thru L: Complete on all inspections, as appropriate. N/A = Not Applicable | PR00 21997

SECTION F - Facility and Permit Background

ADDRESS OF PERMITTEE IF DIFFERENT FROM FACILITY (Including City, County and ZIP code)

SB Pharmco
P.O Box 11975
Cidra, Puerto Rico 00639

DATE OF LAST PREVIOUS INVESTIGATION BY EPA/STATE
March 16, 1993 - Storm Water

FINDINGS
See report for findings

SECTION G - Records and Reports

RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT. ☑ YES ☐ NO ☐ N/A (Further explanation attached ____)

DETAILS:

(a) ADEQUATE RECORDS MAINTAINED OF:			
(i) SAMPLING DATE, TIME, EXACT LOCATION	☑ YES	☐ NO	☐ N/A
(ii) ANALYSES DATES, TIMES	☑ YES	☐ NO	☐ N/A
(iii) INDIVIDUAL PERFORMING ANALYSIS	☑ YES	☐ NO	☐ N/A
(iv) ANALYTICAL METHODS/TECHNIQUES USED	☑ YES	☐ NO	☐ N/A
(v) ANALYTICAL RESULTS (e.g., consistent with self-monitoring report data)	☑ YES	☐ NO	☐ N/A
(b) MONITORING RECORDS (e.g., flow, pH, D.O., etc.) MAINTAINED FOR A MINIMUM OF THREE YEARS INCLUDING ALL ORIGINAL STRIP CHART RECORDINGS (e.g. continuous monitoring instrumentation, calibration and maintenance records).	☑ YES	☐ NO	☐ N/A
(c) LAB EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS KEPT.	☑ YES	☐ NO	☐ N/A
(d) FACILITY OPERATING RECORDS KEPT INCLUDING OPERATING LOGS FOR EACH TREATMENT UNIT.	☑ YES	☐ NO	☐ N/A
(e) QUALITY ASSURANCE RECORDS KEPT.	☑ YES	☐ NO	☐ N/A
(f) RECORDS MAINTAINED OF MAJOR CONTRIBUTING INDUSTRIES (and their compliance status) USING PUBLICLY OWNED TREATMENT WORKS.	☐ YES	☐ NO	☑ N/A

SECTION H - Permit Verification

INSPECTION OBSERVATIONS VERIFY THE PERMIT. ☑ YES ☐ NO ☐ N/A (Further explanation attached ____)

DETAILS:

(a) CORRECT NAME AND MAILING ADDRESS OF PERMITTEE.	☑ YES	☐ NO	☐ N/A
(b) FACILITY IS AS DESCRIBED IN PERMIT.	☑ YES	☐ NO	☐ N/A
(c) PRINCIPAL PRODUCT(S) AND PRODUCTION RATES CONFORM WITH THOSE SET FORTH IN PERMIT APPLICATION.	☐ YES	☐ NO	☐ N/A
(d) TREATMENT PROCESSES ARE AS DESCRIBED IN PERMIT APPLICATION.	☑ YES	☐ NO	☐ N/A
(e) NOTIFICATION GIVEN TO EPA/STATE OF NEW, DIFFERENT OR INCREASED DISCHARGES.	☑ YES	☐ NO	☐ N/A
(f) ACCURATE RECORDS OF RAW WATER VOLUME MAINTAINED.	☑ YES	☐ NO	☐ N/A
(g) NUMBER AND LOCATION OF DISCHARGE POINTS ARE AS DESCRIBED IN PERMIT.	☑ YES	☐ NO	☐ N/A
(h) CORRECT NAME AND LOCATION OF RECEIVING WATERS.	☑ YES	☐ NO	☐ N/A
(i) ALL DISCHARGES ARE PERMITTED.	☑ YES	☐ NO	☐ N/A

SECTION I - Operation and Maintenance

TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED. ☑ YES ☐ NO ☐ N/A (Further explanation attached ____)

DETAILS:

(a) STANDBY POWER OR OTHER EQUIVALENT PROVISIONS PROVIDED.	☑ YES	☐ NO	☐ N/A
(b) ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE.	☐ YES	☐ NO	☐ N/A
(c) REPORTS ON ALTERNATE SOURCE OF POWER SENT TO EPA/STATE AS REQUIRED BY PERMIT.	☐ YES	☐ NO	☐ N/A
(d) SLUDGES AND SOLIDS ADEQUATELY DISPOSED.	☐ YES	☐ NO	☐ N/A
(e) ALL TREATMENT UNITS IN SERVICE.	☑ YES	☐ NO	☐ N/A
(f) CONSULTING ENGINEER RETAINED OR AVAILABLE FOR CONSULTATION ON OPERATION AND MAINTENANCE PROBLEMS.	☑ YES	☐ NO	☐ N/A
(g) QUALIFIED OPERATING STAFF PROVIDED.	☑ YES	☐ NO	☐ N/A
(h) ESTABLISHED PROCEDURES AVAILABLE FOR TRAINING NEW OPERATORS.	☑ YES	☐ NO	☐ N/A
(i) FILES MAINTAINED ON SPARE PARTS INVENTORY, MAJOR EQUIPMENT SPECIFICATIONS, AND PARTS AND EQUIPMENT SUPPLIERS.	☐ YES	☐ NO	☐ N/A
(j) INSTRUCTIONS FILES KEPT FOR OPERATION AND MAINTENANCE OF EACH ITEM OF MAJOR EQUIPMENT.	☑ YES	☐ NO	☐ N/A
(k) OPERATION AND MAINTENANCE MANUAL MAINTAINED.	☑ YES	☐ NO	☐ N/A
(l) SPCC PLAN AVAILABLE.	☑ YES	☐ NO	☐ N/A
(m) REGULATORY AGENCY NOTIFIED OF BY PASSING. (Dates ____)	☐ YES	☐ NO	☑ N/A
(n) ANY BY-PASSING SINCE LAST INSPECTION.	☐ YES	☑ NO	☐ N/A
(o) ANY HYDRAULIC AND/OR ORGANIC OVERLOADS EXPERIENCED.	☐ YES	☑ NO	☐ N/A

5

R2-0004184

Form Approved
OMB No. 155-R0073

PERMIT NO. PR0021997

SECTION J - Compliance Schedules

PERMITTEE IS MEETING COMPLIANCE SCHEDULE. ☐ YES ☑ NO ☐ N/A (Further Explanation attached ____)

CHECK APPROPRIATE PHASE(S):

- ☐ (a) THE PERMITTEE HAS OBTAINED THE NECESSARY APPROVALS FROM THE APPROPRIATE AUTHORITIES TO BEGIN CONSTRUCTION.
- ☐ (b) PROPER ARRANGEMENT HAS BEEN MADE FOR FINANCING (mortgage commitments, grants, etc.).
- ☐ (c) CONTRACTS FOR ENGINEERING SERVICES HAVE BEEN EXECUTED.
- ☐ (d) DESIGN PLANS AND SPECIFICATIONS HAVE BEEN COMPLETED.
- ☐ (e) CONSTRUCTION HAS COMMENCED.
- ☐ (f) CONSTRUCTION AND/OR EQUIPMENT ACQUISITION IS ON SCHEDULE.
- ☐ (g) CONSTRUCTION HAS BEEN COMPLETED.
- ☐ (h) START-UP HAS COMMENCED.
- ☐ (i) THE PERMITTEE HAS REQUESTED AN EXTENSION OF TIME.

SECTION K - Self-Monitoring Program

Part 1 – Flow measurement (Further explanation attached ____)			
PERMITTEE FLOW MEASUREMENT MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS:	☑ YES	☐ NO	☐ N/A
(a) PRIMARY MEASURING DEVICE PROPERLY INSTALLED.	☑ YES	☐ NO	☐ N/A
TYPE OF DEVICE: ☐ WEIR ☑ PARSHALL FLUME ☐ MAGMETER ☐ VENTURI METER ☐ OTHER (Specify) ____			
(b) CALIBRATION FREQUENCY ADEQUATE. (Date of last calibration ____)	☑ YES	☐ NO	☐ N/A
(c) PRIMARY FLOW MEASURING DEVICE PROPERLY OPERATED AND MAINTAINED.	☑ YES	☐ NO	☐ N/A
(d) SECONDARY INSTRUMENTS (totalizers, recorders, etc.) PROPERLY OPERATED AND MAINTAINED.	☑ YES	☐ NO	☐ N/A
(e) FLOW MEASURSMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGES OF FLOW RATES.	☑ YES	☐ NO	☐ N/A
Part 2 – Sampling (Further explanation attached ____)			
PERMITTEE SAMPLING MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS: – SAMPLING PROCEDURES NOT INSPECTED DURING CEI –	☐ YES	☐ NO	☑ N/A
(a) LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES.	☐ YES	☐ NO	☑ N/A
(b) PARAMETERS AND SAMPLING FREQUENCY AGREE WITH PERMIT.	☐ YES	☐ NO	☑ N/A
(c) PERMITTEE IS USING METHOD OF SAMPLE COLLECTION REQUIRED BY PERMIT. IF NO ☐ GRAB ☐ MANUAL COMPOSITE ☐ AUTOMATIC COMPOSITE FREQUENCY ____	☐ YES	☐ NO	☑ N/A
(e) SAMPLE COLLECTION PROCEDURES ARE ADEQUATE.	☐ YES	☐ NO	☑ N/A
(i) SAMPLES REFRIGERATED DURING COMPOSITING	☐ YES	☐ NO	☑ N/A
(ii) PROPER PRESERVATION TECHNIQUES USED	☐ YES	☐ NO	☑ N/A
(iii) FLOW PROPORTIONED SAMPLES OBTAINED WHERE REQUIRED BY PERMIT	☐ YES	☐ NO	☑ N/A
(iv) SAMPLE HOLDING TIMES PRIOR TO ANALYSES IN CONFORMANCE WITH 40 CFR 136.3	☐ YES	☐ NO	☑ N/A
(e) MONITORING AND ANALYSES BEING PERFORMED MORE FREQUENTLY THAN REQUIRED BY PERMIT.	☐ YES	☐ NO	☑ N/A
(f) IF (e) IS YES, RESULTS ARE REPORTED IN PERMITTEE'S SELF-MONITORING REPORT.	☐ YES	☐ NO	☑ N/A
Part 3 – Laboratory (Further explanation attached ____)			
PERMITTEE LABORATORY PROCEDURES MEET THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS: LI	☑ YES	☐ NO	☐ N/A
(a) EPA APPROVED ANALYTICAL TESTING PROCEDURES USED. (40 CFR 136.3)	☑ YES	☐ NO	☐ N/A
(b) IF ALTERNATE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED.	☑ YES	☐ NO	☐ N/A
(c) PARAMETERS OTHER THAN THOSE REQUIRED BY THE PERMIT ARE ANALYZED.	☑ YES	☐ NO	☐ N/A
(d) SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT.	☑ YES	☐ NO	☐ N/A
(e) QUALITY CONTROL PROCEDURES USED.	☑ YES	☐ NO	☐ N/A
(f) DUPLICATE SAMPLES ARE ANALYZED. ____ % OF TIME.	☑ YES	☐ NO	☐ N/A
(g) SPIKED SAMPLES ARE USED. ____ % OF TIME.	☑ YES	☐ NO	☐ N/A
(h) COMMERCIAL LABORATORY USED.	☐ YES	☑ NO	☐ N/A
(i) COMMERCIAL LASORATORY STATE CERTIFIED.	☐ YES	☐ NO	☑ N/A

LAB NAME on-site laboratory used

LAB ADDRESS ____

R2-0004185

Form Approved.
OMB No. 158-R1.

PERMIT NO. PR0021997

SECTION L - Effluent/Receiving Water Observations *(Further explanation attached ____)*

OUTFALL NO.	OIL SHEEN	GREASE	TURBIDITY	VISIBLE FOAM	VISIBLE FLOAT SOL	COLOR	OTHER
001	NO	NO	NO	NO	NO	NO	NO

(Sections M and N: Complete as appropriate for sampling inspections)

SECTION M - Sampling Inspection Procedures and Observations *(Further explanation attached ____)*

- ☐ GRAB SAMPLES OBTAINED
- ☐ COMPOSITE OBTAINED
- ☐ FLOW PROPORTIONED SAMPLE — SAMPLES NOT TAKEN DURING CEI —
- ☐ AUTOMATIC SAMPLER USED
- ☐ SAMPLE SPLIT WITH PERMITTEE
- ☐ CHAIN OF CUSTODY EMPLOYED
- ☐ SAMPLE OBTAINED FROM FACILITY SAMPLING DEVICE

COMPOSITING FREQUENCY _____ PRESERVATION _____

SAMPLE REFRIGERATED DURING COMPOSITING: ☐ YES ☐ NO

SAMPLE REPRESENTATIVE OF VOLUME AND NATURE OF DISCHARGE _____

SECTION N - Analysis/ Results *(Attach report if necessary)*

EPA Form 3560-3 (9-77)

PAGE 4 OF 4

7/7

R2-0004186

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 87

GOVERNMENT OF PUERTO RICO/OFFICE OF THE GOVERNOR
Environmental Quality Board

July 9, 1999

Mr. Patrick Durack
Chief
Water Compliance Branch
Division of Enforcement and Compliance Assistance
Environmental Protection Agency-Region II
209 Broadway-25th Floor
New York, New York 10007-1866

Dear Mr. Durack:

RE: NPDES WATER COMPLIANCE INSPECTION REPORT
SB PHARMCO CO.
NPDES PERMIT NUMBER PR0021997

This is in reference to the Compliance Evaluation Inspection (CEI) conducted on June 21, 1999, by engineer Angel R. Meléndez of the Water Quality Area at the referenced facility. Enclosed is a copy of the Water Comphance Inspection Report which describes the fmdings of the CEI.

If you have any questions regarding the report, please contact me at the phone numbers (787) 751-1891 or (787) 767-8181 ext. 2511.

Cordially,

Wanda E. García Hernández
Chief
Permits & Engineering Division

AM

c: Eng. Carl-Axel P. Soderberg, EPA, CEPD
Mr. Phillip Sweeney, EPA-Region II

Word/angel/Inspección/21997

GOBIERNO DE PUERTO RICO/OFICINA DEL GOBERNADOR
Junta de Calidad Ambiental

CERTIFICADA CON ACUSE DE RECIBO

9 de julio de 1999

Sr. Josó Luis Rosado
Gerente General
SB Pharmco Co.
Apartado Postal 11975
Cidra, Puerto Rico 00639-1975

Estimado señor Rosado:

RE: Inspección de Evaluación de Cumplimiento
SB Pharmco Co.
Carretera Estatal #172, km. 9.1
Barrio Centenejas
Cidra, Puerto Rico
NPDES Núm. PR0021997

Como parte de nuestro programa de inspecciones a las instalaciones reguladas bajo el Sistema Nacional para la Eliminacidn de Descargas de Contaminantes (NPDES, por sus siglas en inglós) el 21 de junio de 1999, personal tócnico de la División de Permisos e Ingenieria (DPI) del Area de Calidad de Agua (ACA) realizó una inspección a la instalación de referencia.

Durante dicha inspeceidn no se encontraron deficiencias con el cumplimiento de lo establecido en el permiso federal de descarga NPDES vigente. Sin embargo, una revisidn de los Reportes de Monitoria de la Descarga (DMR, por sus siglas en inglós) sometidos durante el periodo de enero 1998 hasta febrero de 1999, reflejan que la instalacidn de referencia ha estado en violación a los limites de efluente establecidos en el permiso federal de descarga NPDES vigente. El siguiente es un resumen de los resultados reportados:

PERIODO DE MUESTREO	PARAMETRO	LIMITE DE PERMISO	VALOR REPORTADO
Mayo 1998	Temperatura	32.2 °C	32.8 °C
Octubre 1998	pH	6.0 - 9.0 SU	10.7 SU
Febrero 1999	pH	6.0 - 9.0 SU	9.26 SU
Enero 1999	Nitrato y Nitrito	10.0 mg/l	18.8 mg/l

Agradeceró que nos someta las acciones correctivas que serán implantadas por SB Pharmco Co. para corregir las violaciones antes mencionadas. Por lo cual, el ACA le concede cuarenta y cinco (45) dias a partir de la fecha de recibo de esta carta para someter la informacidn aqui requerida.

Le incluimos copia del formulario de inspeceión debidamente completado para su información. De tener alguna duda o pregunta sobre este particular favor de comunicarse con el Ing. Angel R. Meléndez de la Seccidn de Permisos Industriales del ACA al teléfono 767-8181 extensidn 2516, a su mejor conveniencia.

Cordialmente,

Wanda E. García Hernández

Wanda E. Garcia Hemández
Jefe
División de Permisos e Ingenieria

e: Phillip Sweeney, EPA-Region II
Ing. Carl-Axel P. Soderberg, EPA-CEPD

word/angel/inspección/21997 cumpli

3

R2-0004191

EPA

Unhsd States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Form Approved.
OMB No. 2040-0057
Approval expires 8-31-98

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NPDES	yr/mo/day	Inspection Type	Inspector	Fac Type
1	2 5	3 PR0021997 11	12 990621 17	18 C	19 5	20 2

Remarks

21 66

Inspection Work Days	Facility Self-Monitoring Evaluation Rating	BI	QA	Reserved
67 25 69	70 4	71 N	72 N	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected *(For industrial users discharging to POTW, also include POTW name and NPDES permit number)*

SB Pharmco Co.
State Road 172 Km 9.1
Centenejo's Ward
Cidra, Puerto Rico

Entry Time/Date	Permit Effective Date
1:40 pm 99-06-21	93-11-01
Exit Time/Date	**Permit Expiration Date**
4:30 pm	98-10-31

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)

Eng. Carlos Acevedo - Environmental Health and Safety Manager
Abyra Vazquez - Lab. Technology
Francisco Perez Lab. Technology

Other Facility Data

Name, Address of Responsible Official/Title/Phone and Fax Number

José Luis Rosado (787) 766-4000

Contacted ☐ Yes ☑ No

Section C: Areas Evaluated During Inspection *(Check only those areas evaluated)*

✓ Permit	✓ Flow Measurement	Operations & Maintenance	CSO/SSO (Sewer Overflow)
✓ Records/Reports	✓ Self-Monitoring Program	✓ Sludge Handling/Disposal	Pollution Prevention
✓ Facility Site Review	Compliance Schedules	Pretreatment	Multimedia
✓ Effluent/Receiving Waters	Laboratory	Storm Water	Other:

Section D: Summary of Findings/Comments *(Attach additional sheets of narrative and checklists as necessary)*

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Angel R Melendez	(787) 751-1571 PREQB - Industrial Permit Section	June 25, 99

Signature of Management Q A Reviewer	Agency/Office/Phone and Fax Numbers	Date
Héctor Juan Vargas Rivera.	PREQB / Water Quality Area / Industrial Permits Section (787) 751-1891	July 2, 1999.

EPA Form 3560-3 (Rev 9-94) Previous editions are obsolete.

R2-0004192

Form Approved
OMB No. 158-R0073

Sections F thru L: Complete on all inspections, as appropriate. N/A = Not Applicable

PERMIT NO. PR0021997

SECTION F - Facility and Permit Background

ADDRESS OF PERMITTEE IF DIFFERENT FROM FACILITY (Including City, County and ZIP code)
SB Pharmco
P.O. Box 1975
Cidra, P.R. 00739-1975

DATE OF LAST PREVIOUS INVESTIGATION BY EPA/STATE
95-08-16

FINDINGS
See report for findings

SECTION G - Records and Reports

RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT. ☑ YES ☐ NO ☐ N/A (Further explanation attached ____)

DETAILS:

(a) ADEQUATE RECORDS MAINTAINED OF:			
(i) SAMPLING DATE, TIME, EXACT LOCATION	☑ YES	☐ NO	☐ N/A
(ii) ANALYSES DATES, TIMES	☐ YES	☐ NO	☐ N/A
(iii) INDIVIDUAL PERFORMING ANALYSIS	☑ YES	☐ NO	☐ N/A
(iv) ANALYTICAL METHODS/TECHNIQUES USED	☑ YES	☐ NO	☐ N/A
(v) ANALYTICAL RESULTS (e.g., consistent with self-monitoring report data)	☑ YES	☐ NO	☐ N/A
(b) MONITORING RECORDS (e.g., flow, pH, D.O., etc.) MAINTAINED FOR A MINIMUM OF THREE YEARS INCLUDING ALL ORIGINAL STRIP CHART RECORDINGS (e.g., continuous monitoring instrumentation, calibration and maintenance records).	☑ YES	☐ NO	☐ N/A
(c) LAB EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS KEPT.	☑ YES	☐ NO	☐ N/A
(d) FACILITY OPERATING RECORDS KEPT INCLUDING OPERATING LOGS FOR EACH TREATMENT UNIT.	☐ YES	☐ NO	☑ N/A
(e) QUALITY ASSURANCE RECORDS KEPT.	☑ YES	☐ NO	☐ N/A
(f) RECORDS MAINTAINED OF MAJOR CONTRIBUTING INDUSTRIES (and their compliance status) USING PUBLICLY OWNED TREATMENT WORKS.	☐ YES	☐ NO	☑ N/A

SECTION H - Permit Verification

INSPECTION OBSERVATIONS VERIFY THE PERMIT. ☑ YES ☐ NO ☐ N/A (Further explanation attached ____)

DETAILS:

(a) CORRECT NAME AND MAILING ADDRESS OF PERMITTEE.	☑ YES	☐ NO	☐ N/A
(b) FACILITY IS AS DESCRIBED IN PERMIT.	☑ YES	☐ NO	☐ N/A
(c) PRINCIPAL PRODUCT(S) AND PRODUCTION RATES CONFORM WITH THOSE SET FORTH IN PERMIT APPLICATION.	☑ YES	☐ NO	☐ N/A
(d) TREATMENT PROCESSES ARE AS DESCRIBED IN PERMIT APPLICATION.	☑ YES	☐ NO	☐ N/A
(e) NOTIFICATION GIVEN TO EPA/STATE OF NEW, DIFFERENT OR INCREASED DISCHARGES.	☐ YES	☐ NO	☑ N/A
(f) ACCURATE RECORDS OF RAW WATER VOLUME MAINTAINED.	☐ YES	☐ NO	☑ N/A
(g) NUMBER AND LOCATION OF DISCHARGE POINTS ARE AS DESCRIBED IN PERMIT.	☑ YES	☐ NO	☐ N/A
(h) CORRECT NAME AND LOCATION OF RECEIVING WATERS.	☑ YES	☐ NO	☐ N/A
(i) ALL DISCHARGES ARE PERMITTED.	☑ YES	☐ NO	☐ N/A

SECTION I - Operation and Maintenance

TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED. ☑ YES ☐ NO ☐ N/A (Further explanation attached ____)

DETAILS:

(a) STANDBY POWER OR OTHER EQUIVALENT PROVISIONS PROVIDED. 800Kw capacity	☑ YES	☐ NO	☐ N/A
(b) ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE.	☑ YES	☐ NO	☐ N/A
(c) REPORTS ON ALTERNATE SOURCE OF POWER SENT TO EPA/STATE AS REQUIRED BY PERMIT.	☐ YES	☐ NO	☑ N/A
(d) SLUDGES AND SOLIDS ADEQUATELY DISPOSED. PROTECO	☑ YES	☐ NO	☐ N/A
(e) ALL TREATMENT UNITS IN SERVICE.	☑ YES	☐ NO	☐ N/A
(f) CONSULTING ENGINEER RETAINED OR AVAILABLE FOR CONSULTATION ON OPERATION AND MAINTENANCE PROBLEMS.	☑ YES	☐ NO	☐ N/A
(g) QUALIFIED OPERATING STAFF PROVIDED.	☑ YES	☐ NO	☐ N/A
(h) ESTABLISHED PROCEDURES AVAILABLE FOR TRAINING NEW OPERATORS.	☑ YES	☐ NO	☐ N/A
(i) FILES MAINTAINED ON SPARE PARTS INVENTORY, MAJOR EQUIPMENT SPECIFICATIONS, AND PARTS AND EQUIPMENT SUPPLIERS.	☐ YES	☐ NO	☑ N/A
(j) INSTRUCTIONS FILES KEPT FOR OPERATION AND MAINTENANCE OF EACH ITEM OF MAJOR EQUIPMENT.	☑ YES	☐ NO	☐ N/A
(k) OPERATION AND MAINTENANCE MANUAL MAINTAINED.	☑ YES	☐ NO	☐ N/A
(l) SPCC PLAN AVAILABLE. July 1995	☑ YES	☐ NO	☐ N/A
(m) REGULATORY AGENCY NOTIFIED OF BY PASSING. (Dates ____)	☐ YES	☐ NO	☑ N/A
(n) ANY BY-PASSING SINCE LAST INSPECTION.	☐ YES	☐ NO	☑ N/A
(o) ANY HYDRAULIC AND/OR ORGANIC OVERLOADS EXPERIENCED.	☐ YES	☑ NO	☐ N/A

R2-0004193

PERMIT NO. PR0021417

SECTION J - Compliance Schedules

PERMITTEE IS MEETING COMPLIANCE SCHEOULE. ☐ YES ☐ NO ☑ N/A *(Further explanation attached _____)*

CHECK APPROPRIATE PHASE(S):

- ☐ (a) THE PERMITTEE HAS OBTAINED THE NECESSARY APPROVALS FROM THE APPROPRIATE AUTHORITIES TO BEGIN CONSTRUCTION.
- ☐ (b) PROPER ANRANGEMENT HAS BEEN MADE FOR FINANCING *(mortgage commitments, grants, etc.)*.
- ☐ (c) CONTRACTS FOR ENGINEERING SERVICES HAVE BEEN EXECUTED.
- ☐ (d) DESIGN PLANS AND SPECIFICATIONS HAVE BEEN COMPLETED.
- ☐ (e) CONSTRUCTION HAS COMMENCED.
- ☐ (f) CONSTRUCTION AND/OR EQUIPMENT ACQUISITION IS ON SCHEDULE.
- ☐ (g) CONSTRUCTION HAS BEEN COMPLETED.
- ☐ (h) START-UP HAS COMMENCED.
- ☐ (I) THE PERMITTEE HAS REQUESTED AN EXTENSION OF TIME.

SECTION K - Self-Monitoring Program

Part 1 – Flow measurement *(Further explanation attached _____)*			
PERMITTEE FLOW MEASUREMENT MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS:	☑ YES	☐ NO	☐ N/A
(a) PRIMARY MEASURING DEVICE PROPERLY INSTALLED.	☑ YES	☐ NO	☐ N/A
TYPE OF DEVICE: ☐ WEIR ☑ PARSHALL FLUME ☑ MAGMETER ☐ VENTURI METER ☐ OTHER *(Specify _____)*			
(b) CALIBRATION FREQUENCY ADEQUATE. *(Date of last calibration _____)*	☑ YES	☐ NO	☐ N/A
(c) PRIMARY FLOW MEASURING DEVICE PROPERLY OPERATED AND MAINTAINED.	☑ YES	☐ NO	☐ N/A
(d) SECONDARY INSTRUMENTS *(totalizers, recorders, etc.)* PROPERLY OPERATED AND MAINTAINED.	☑ YES	☐ NO	☐ N/A
(e) FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGES OF FLOW RATES.	☑ YES	☐ NO	☐ N/A
Part 2 – Sampling *(Further explanation attached _____)*			
PERMITTEE SAMPLING MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS:	☑ YES	☐ NO	☐ N/A
(a) LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES.	☑ YES	☐ NO	☐ N/A
(b) PARAMETERS AND SAMPLING FREQUENCY AGREE WITH PERMIT.	☑ YES	☐ NO	☐ N/A
(c) PERMITTEE IS USING METHOD OF SAMPLE COLLECTION REQUIRED BY PERMIT. IF NO, ☐ GRAB ☐ MANUAL COMPOSITE ☐ AUTOMATIC COMPOSITE FREQUENCY _____	☑ YES	☐ NO	☐ N/A
(d) SAMPLE COLLECTION PROCEDURES ARE ADEQUATE. NOT EVALUATED	☐ YES	☐ NO	☑ N/A
(I) SAMPLES REFRIGERATED DURING COMPOSITING	☐ YES	☐ NO	☐ N/A
(II) PROPER PRESERVATION TECHNIQUES USED	☐ YES	☐ NO	☑ N/A
(III) FLOW PROPORTIONED SAMPLES OBTAINED WHERE REQUIRED BY PERMIT	☐ YES	☐ NO	☑ N/A
(Iv) SAMPLE HOLDING TIMES PRIOR TO ANALYSES IN CONFORMANCE WITH 40 CFR 136.3	☐ YES	☐ NO	☑ N/A
(e) MONITORING AND ANALYSES BEING PERFORMED MORE FREQUENTLY THAN REQUIRED BY PERMIT.	☐ YES	☑ NO	☐ N/A
(f) IF (e) IS YES, RESULTS ARE REPORTED IN PERMITTEE'S SELF-MONITORING REPORT.	☐ YES	☐ NO	☑ N/A
Part 3 – Laboratory *(Further explanation attached _____)*			
PERMITTEE LABORATORY PROCEDURES MEET THE REQUIREMENTS ANO INTENT OF THE PERMIT. DETAILS: NOT EVALUATED	☐ YES	☐ NO	☐ N/A
(a) EPA APPROVED ANALYTICAL TESTING PROCEDURES USED. *(40 CFR 136.3)*	☐ YES	☐ NO	☑ N/A
(b) IF ALTERNATE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED.	☐ YES	☐ NO	☑ N/A
(c) PARAMETERS OTHER THAN THOSE REQUIRED BY THE PERMIT ARE ANALYZED.	☐ YES	☐ NO	☑ N/A
(d) SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT.	☐ YES	☐ NO	☑ N/A
(e) QUALITY CONTROL PROCEDURES USED.	☐ YES	☐ NO	☐ N/A
(f) DUPLICATE SAMPLES ARE ANALYZED. _____ % OF TIME.	☐ YES	☐ NO	☐ N/A
(g) SPIKED SAMPLES ARE USED. _____ % OF TIME.	☐ YES	☐ NO	☐ N/A
(h) COMMERCIAL LABORATORY USED.	☑ YES	☐ NO	☐ N/A
(I) COMMERCIAL LABORATORY STATE CERTIFIED.	☐ YES	☐ NO	☑ N/A

LAB NAME Beck Ton lab. and EQLAB

LAB ADDRESS Ponce and Santurce Puerto Rico, respectively

R2-0004194

Form Approved
OMB No. 158-R007

PERMIT NO. PR0001993

SECTION L - Effluent/Receiving Water Observations *(Further explanation attached _____)*

OUTFALL NO.	OIL SHEEN	GREASE	TURBIDITY	VISIBLE FOAM	VISIBLE FLOAT SOL	COLOR	OTHER
001	OK	OK	OK	OK	OK	OK	—

(Sections M and N: Complete as appropriate for sampling inspections)

SECTION M - Sampling Inspection Procedures and Observations *(Further explanation attached _____)*

- ☐ GRAB SAMPLES OBTAINED
- ☐ COMPOSITE OBTAINED
- ☐ FLOW PROPORTIONED SAMPLE
- ☐ AUTOMATIC SAMPLER USED
- ☐ SAMPLE SPLIT WITH PERMITTEE
- ☐ CHAIN OF CUSTODY EMPLOYED
- ☐ SAMPLE OBTAINED FROM FACILITY SAMPLING DEVICE

N/A

COMPOSITING FREQUENCY _____ PRESERVATION _____

SAMPLE REFRIGERATED DURING COMPOSITING: ☐ YES ☐ NO

SAMPLE REPRESENTATIVE OF VOLUME AND NATURE OF DISCHARGE _____

SECTION N - Analytical Results *(Attach report if necessary)*

R2-0004195

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 88

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

SEP 28 2000

2000 OCT 16 AM 11:53

10/20/00

CERTIFIED MAIL- RETURN RECEIPT REQUESTED
P-512-346-204
Mr. Carlos Acevedo
Safety & Environmental Compliance Consuhant
SB Pharmco
P.O. Box 11975
Cidra, Puerto Rico 00739-1975

Subject: Compliance Evaluation Inspection
SB Pharmco -NPDES Permit No. PR0021997

Dear Mr. Acevedo:

This is in reference to the United States Environmental Protection Agency's (USEPA), Compliance Evaluation Inspection (CEI) at the subject facility on June 29, 2000. The CEI Report indicates deficiencies which should be cortected to ensure compliance with the National Pollutant Discharge Elimination System Permit.

Enclosed, please find a copy of the completed inspection report. Within thirty (30) days of receipt of this letter, provide to USEPA the information requested and respond with actions that have been taken or will be taken to correct the noted deficiencies in the report. A copy of your letter should also be sent to the Puerto Rico Environmental Quality Board and USEPA's Caribbean Environmentai Protection Division.

Should you have any questions feel free to contact me at (212) 637- 4229 or my alternate work location (732) 906-6894 or have your staff contact Evelyn Rivera-Ocasio of my staff at (212) 637-3948.

Sincerely yours,

Henry Mazzucca, P.E., Chief
Caribbean Section
Water Compliance Branch
Division of Enforcement and Compliance Assistance

Enclosure

cc: Roberto Ayala, Director of Water, EQB w/enclosure

EPA

United States Environmental Protection Agency
Washington, D.C. 20460

Water Compliance Inspection Report

Form Approved.
OMB No. 2040-0057
Approval expires 8-31-98

Section A: National Data System Coding (i.e., PCS)

Transaction Code	NPDES	yr/mo/day	Inspection Type	Inspector	Fac Type
1 N	2 5 3 PR0021979 7 11	12 000629 17	18 C	19 R	20 2

Remarks: 21 ... 66

Inspection Work Days	Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved
67 2.0 69	70 1	71	72	73 74 75 80

Section B: Facility Data

Name and Location of Facility Inspected (for industrial users discharging to POTW, also include POTW name and NPDES permit number)	Entry Time/Date	Permit Effective Date
SB Pharmco State Road 172 Km 9.1, Certenejas Ward Cidra, Puerto Rico	June 29, 2000 1:30 PM	November 1, 1993
	Exit Time/Date	**Permit Expiration Date**
	June 29, 2000 4:30 PM	October 31, 1998

Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)	Other Facility Data
Ismael Guzman - Engineering and Technical Services Advisor Carlos Acevedo - Environmental and Compliance Manager Rosaly Vazquez - Treatment Plant Supervisor	Administrative Order CWA-02-2000-3066

Name, Address of Responsible Official/Title/Phone and Fax Number(s)

José L. Rosado - President and General Manager

Contacted: [X] Yes [ ] No

Section C: Areas Evaluated During Inspection (Check only those areas evaluated)

[X] Permit	[X] Flow Measurement	[X] Operations & Maintenance	[ ] CSO/SSO (Sewer Overflow)
[X] Records/Reports	[X] Self-Monitoring Program	[X] Sludge Handling/Disposal	[ ] Pollution Prevention
[X] Facility Site Review	[X] Compliance Schedules	[ ] Pretreatment	[ ] Multimedia
[X] Effluent/Receiving Water	[ ] Laboratory	[X] Storm Water	[ ] Other:

Section D: Summary of Findings/Comments (Attach additional sheets of narrative and checklists as necessary)

1. The secondary and tertiary clarifiers had some scum floating and there was some growth on the weirs, solids were not seen overflowing from the clarifiers.
2. The staff gauge (measuring tape for flow measurement) in the effluent Parshall Flume was worn out and could not be read. The staff gauge should be maintained to check accuracy of the automatic flow measurement devices.
3. SB Pharmco has complied with each provision set in the Administrative Order CWA-02-2000-3066. In a letter dated August 21, 2000, SB Pharmco submitted the Certification of Completion for the Plan of Action (POA). The POA indicated that SB Pharmco adopted HACH METHOD 8131 to determine the Sulfide concentration in the effluent starting the August 2000 monitoring period. Provide to EPA the results obtained for the August and September 2000 monitoring periods.
4. The QA/QC Plan has not been revised since 1996. Part I.B.3 of the permit requires the permittee to do annual QA/QC.

Name(s) and Signature(s) of Inspector(s)	Agency/Office/Phone and Fax Numbers	Date
Evelyn Rivera-Ocasio Evelyn Rivera Ocasio	DECA/WCB-CS Phone (212) 637-3948/Fax (212)637-4211	9/19/00
Signature of Management Q A Reviewer Henry Mazzucca, Chief Caribbean Section	Agency/Office/Phone and Fax Numbers (212) 637-4229 (ph) (212) 637-4211 (fax)	Date 9/28/00

EPA Form 3560-3 (Rev 9-94) Previous editions are obsolete

2

Form Approved
OMB No. 158-R0075

Sections F thru L: Complete on all inspections, as appropriate. N/A = Not Applicable

PERMIT NO. PR0021997

SECTION F - Facility and Permit Background

ADDRESS OF PERMITTEE IF DIFFERENT FROM FACILITY (Including City, County and ZIP code)

DATE OF LAST PREVIOUS INVESTIGATION BY EPA/STATE: June 21, 1999

FINDINGS: see report for findings

SECTION G - Records and Reports

RECORDS AND REPORTS MAINTAINED AS ACQUIRED BY PERMIT: ☑ YES ☐ NO ☐ N/A (Further explanation attached ____)

DETAILS:

(a) ADEQUATE RECORDS MAINTAINED OF:			
(i) SAMPLING DATE, TIME, EXACT LOCATION	☑ YES	☐ NO	☐ N/A
(ii) ANALYSES DATES, TIMES	☑ YES	☐ NO	☐ N/A
(iii) INDIVIDUAL PERFORMING ANALYSIS	☑ YES	☐ NO	☐ N/A
(iv) ANALYTICAL METHODS/TECHNIQUES USED	☑ YES	☐ NO	☐ N/A
(v) ANALYTICAL RESULTS (e.g., consistent with self-monitoring report data)	☑ YES	☐ NO	☐ N/A
(b) MONITORING RECORDS (e.g., flow, pH, D.O., etc.) MAINTAINED FOR A MINIMUM OF THREE YEARS INCLUDING ALL ORIGINAL STRIP CHART RECORDINGS (e.g. continuous monitoring instrumentation, calibration and maintenance records).	☑ YES	☐ NO	☐ N/A
(c) LAB EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS KEPT.	☑ YES	☐ NO	☐ N/A
(d) FACILITY OPERATING RECORDS KEPT INCLUDING OPERATING LOGS FOR EACH TREATMENT UNIT.	☐ YES	☐ NO	☑ N/A
(e) QUALITY ASSURANCE RECORDS KEPT. not updated since 1996. See comment 4	☑ YES	☐ NO	☐ N/A
(f) RECORDS MAINTAINED OF MAJOR CONTRIBUTING INDUSTRIES (and their compliance status) USING PUBLICLY OWNED TREATMENT WORKS.	☐ YES	☐ NO	☑ N/A

SECTION H - Permit Verification

INSPECTION OBSERVATIONS VERIFY THE PERMIT. ☑ YES ☐ NO ☐ N/A (Further explanation attached ____)

DETAILS:

(a) CORRECT NAME AND MAILING ADDRESS OF PERMITTEE.	☑ YES	☐ NO	☐ N/A
(b) FACILITY IS AS DESCRIBED IN PERMIT.	☑ YES	☐ NO	☐ N/A
(c) PRINCIPAL PRODUCTS AND PRODUCTION RATES CONFORM WITH THOSE SET FORTH IN PERMIT APPLICATION.	☑ YES	☐ NO	☐ N/A
(d) TREATMENT PROCESSES ARE AS DESCRIBED IN PERMIT APPLICATION.	☑ YES	☐ NO	☐ N/A
(e) NOTIFICATION GIVEN TO EPA/STATE OF NEW, DIFFERENT OR INCREASED DISCHARGES.	☐ YES	☐ NO	☑ N/A
(f) ACCURATE RECORDS OF RAW WATER VOLUME MAINTAINED.	☐ YES	☐ NO	☑ N/A
(g) NUMBER AND LOCATION OF DISCHARGE POINTS ARE AS DESCRIBED IN PERMIT.	☑ YES	☐ NO	☐ N/A
(h) CORRECT NAME AND LOCATION OF RECEIVING WATERS.	☑ YES	☐ NO	☐ N/A
(i) ALL DISCHARGES ARE PERMITTED.	☑ YES	☐ NO	☐ N/A

SECTION I - Operation and Maintenance

TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED. ☑ YES ☐ NO ☐ N/A (Further explanation attached ____)

DETAILS:

(a) STANDBY POWER OR OTHER EQUIVALENT PROVISIONS PROVIDED.	☐ YES	☐ NO	☑ N/A
(b) ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE. not evaluated	☐ YES	☐ NO	☐ N/A
(c) REPORTS ON ALTERNATE SOURCE OF POWER SENT TO EPA/STATE AS REQUIRED BY PERMIT.	☐ YES	☐ NO	☑ N/A
(d) SLUDGES AND SOLIDS ADEQUATELY DISPOSED.	☑ YES	☐ NO	☐ N/A
(e) ALL TREATMENT UNITS IN SERVICE.	☑ YES	☐ NO	☐ N/A
(f) CONSULTING ENGINEER RETAINED OR AVAILABLE FOR CONSULTATION ON OPERATION AND MAINTENANCE PROBLEMS.	☐ YES	☐ NO	☑ N/A
(g) QUALIFIED OPERATING STAFF PROVIDED.	☑ YES	☐ NO	☐ N/A
(h) ESTABLISHED PROCEDURES AVAILABLE FOR TRAINING NEW OPERATORS.	☑ YES	☐ NO	☐ N/A
(i) FILES MAINTAINED ON SPARE PARTS INVENTORY, MAJOR EQUIPMENT SPECIFICATIONS, AND PARTS AND EQUIPMENT SUPPLIERS. not evaluated	☐ YES	☐ NO	☑ N/A
(j) INSTRUCTIONS FILES KEPT FOR OPERATION AND MAINTENANCE OF EACH ITEM OF MAJOR EQUIPMENT. not evaluated	☐ YES	☐ NO	☑ N/A
(k) OPERATION AND MAINTENANCE MANUAL MAINTAINED. not evaluated	☐ YES	☐ NO	☑ N/A
(l) SPCC PLAN AVAILABLE. not evaluated	☐ YES	☐ NO	☑ N/A
(m) REGULATORY AGENCY NOTIFIED OF BY PASSING. (Date ____)	☐ YES	☑ NO	☐ N/A
(n) ANY BY-PASSING SINCE LAST INSPECTION.	☐ YES	☑ NO	☐ N/A
(o) ANY HYDRAULIC AND/OR ORGANIC OVERLOADS EXPERIENCED.	☐ YES	☑ NO	☐ N/A

EPA FORM 3560-3 (8-77)

3

R2-0004200

Form Approved
OMB No. 158-R0073

PERMIT NO. PR0021997

SECTION J - Compliance Schedules

PERMITTEE IS MEETING COMPLIANCE SCHEDULE. ☐ YES ☐ NO ☒ N/A (Further explanation attached ____)

CHECK APPROPRIATE PHASE(S):

- ☐ (a) THE PERMITTEE HAS OBTAINED THE NECESSARY APPROVALS FROM THE APPROPRIATE AUTHORITIES TO BEGIN CONSTRUCTION.
- ☐ (b) PROPER ARRANGEMENT HAS BEEN MADE FOR FINANCING (mortgage commitments, grants, etc.).
- ☐ (c) CONTRACTS FOR ENGINEERING SERVICES HAVE BEEN EXECUTED.
- ☐ (d) DESIGN PLANS AND SPECIFICATIONS HAVE BEEN COMPLETED.
- ☐ (e) CONSTRUCTION HAS COMMENCED.
- ☐ (f) CONSTRUCTION AND/OR EQUIPMENT ACQUISITION IS ON SCHEDULE.
- ☐ (g) CONSTRUCTION HAS BEEN COMPLETED.
- ☐ (h) START-UP HAS COMMENCED.
- ☐ (i) THE PERMITTEE HAS REQUESTED AN EXTENSION OF TIME.

SECTION K - Self-Monitoring Program

Part 1 – Flow measurement (Further explanation attached ____)			
PERMITTEE FLOW MEASUREMENT MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS:	☒ YES	☐ NO	☐ N/A
(a) PRIMARY MEASURING DEVICE PROPERLY INSTALLED.	☒ YES	☐ NO	☐ N/A
TYPE OF DEVICE. ☐ WBIR ☒ PARSHALL FLUME ☐ MAOMETER ☐ VENTURI METER ☐ OTHER (Specify) ____			
(b) CALIBRATION FREQUENCY ADEQUATE. (Date of last calibration 6/7.000)	☒ YES	☐ NC	☐ N/A
(c) PRIMARY FLOW MEASURING DEVICE PROPERLY OPERATED AND MAINTAINED.	☒ YES	☐ NC	☐ N/A
(d) SECONDARY INSTRUMENTS (totalizers, recorders, etc.) PROPERLY OPERATED AND MAINTAINED. see comment 2	☐ YES	☒ NO	☐ N/A
(e) FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGES OF FLOW RATES.	☒ YES	☐ NO	☐ N/A
Part 2 – Sampling (Further explanation attached ____)			
PERMITTEE SAMPLING MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS:	☒ YES	☐ NO	☐ N/A
(a) LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES.	☒ YES	☐ NO	☐ N/A
(b) PARAMETERS AND SAMPLING FREQUENCY AGREE WITH PERMIT.	☒ YES	☐ NO	☐ N/A
(c) PERMITTEE IS USING METHOD OF SAMPLE COLLECTION REQUIRED BY PERMIT. IF NO, ☐ GRAB ☐ MANUAL COMPOSITE ☐ AUTOMATIC COMPOSITE FREQUENCY ____	☒ YES	☐ NO	☐ N/A
(d) SAMPLE COLLECTION PROCEDURES ARE ADEQUATE.	☐ YES	☐ NO	☐ N/A
(i) SAMPLES REFRIGERATED DURING COMPOSITING	☐ YES	☐ NO	☐ N/A
(ii) PROPER PRESERVATION TECHNIQUES USED	☐ YES	☐ NO	☐ N/A
(iii) FLOW PROPORTIONED SAMPLES OBTAINED WHERE REQUIRED BY PERMIT	☐ YES	☐ NO	☐ N/A
(iv) SAMPLE HOLDING TIMES PRIOR TO ANALYSES IN CONFORMANCE WITH 40 CFR 136.3	☐ YES	☐ NO	☐ N/A
(e) MONITORING AND ANALYSES BEING PERFORMED MORE FREQUENTLY THAN REQUIRED BY PERMIT.	☐ YES	☒ NO	☐ N/A
(f) IF (e) IS YES, RESULTS ARE REPORTED IN PERMITTEE'S SELF-MONITORING REPORT.	☐ YES	☐ NC	☐ N/A
Part 3 – Laboratory (Further explanation attached ____)			
PERMITTEE LABORATORY PROCEDURES MEET THE REQUIREMENTS AND INTENT OF THE PERMIT. DETAILS: Not Evaluated	☐ YES	☐ NO	☐ N/A
(a) EPA APPROVED ANALYTICAL TESTING PROCEDURES USED. (40 CFR 136.3)	☐ YES	☐ NO	☐ N/A
(b) IF ALTERNATE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED.	☐ YES	☐ NO	☐ N/A
(c) PARAMETERS OTHER THAN THOSE REQUIRED BY THE PERMIT ARE ANALYZED.	☐ YES	☐ NO	☐ N/A
(d) SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT.	☐ YES	☐ NO	☐ N/A
(e) QUALITY CONTROL PROCEDURES USED.	☐ YES	☐ NO	☐ N/A
(f) DUPLICATE SAMPLES ARE ANALYZED. ____ % OF TIME.	☐ YES	☐ NO	☐ N/A
(g) SPIKED SAMPLES ARE USED. ____ % OF TIME.	☐ YES	☐ NO	☐ N/A
(h) COMMERCIAL LABORATORY USED.	☒ YES	☐ NO	☐ N/A
(i) COMMERCIAL LABORATORY STATE CERTIFIED.	☒ YES	☐ NO	☐ N/A

LAB NAME Beckton Laboratories and EQ Lab

LAB ADDRESS ____

R2-0004201

OMB No. 2040-0004
Expires 2-29-84

PERMIT NO. PR0021997

SECTION L - Effluent/Receiving Water Observations (Further explanation attached ____)

OUTFALL NO.	OIL SHEEN	GREASE	TURBIOITY	VISIBLE FOAM	VISIBLE FLOAT SOL	COLOR	OTHER
001	—	—	—	—	—	clear	—

(Sections M and N: Complete as appropriate for sampling inspections)

SECTION M - Sampling Inspection Procedures and Observations (Further explanation attached ____)

- ☐ GRAB SAMPLES OBTAINED
- ☐ COMPOSITE OBTAINED
- ☐ FLOW PROPORTIONED SAMPLE
- ☐ AUTOMATIC SAMPLER USED
- ☐ SAMPLE SPLIT WITH PERMITTEE
- ☐ CHAIN OF CUSTOBY EMPLOYED
- ☐ SAMPLE OBTAINED FROM FACILITY SAMPLING DEVICE

COMPOSITING FREQUENCY ____ PRESERVATION ____

SAMPLE REFRIGERATED DURING COMPOSITING ☐ YES ☐ NO

SAMPLE REPRESENTATIVE OF VOLUME AND NATURE OF DISCHARGE ____

SECTION N - Analytical Results (Attach report if necessary)

EPA Form 3560-3 (9-77)

PAGE ~~4 OF 6~~

5/5

R2-0004202

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 89

C. G.

AM
4/19/00
GA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

MAR 31 2000

April 27/9

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Carlos Acevedo
Safety & Environmental Compliance Consultant
SB Pharmco
P.O. Box 11975
Cidra, Puerto Rico 00739-1975

Re: Administrative Order CWA-02-2000-3066
SB Pharmco
NPDES Permit No. PR0021997

Dear Mr. Acevedo:

The United States Environmental Protection Agency (USEPA), Region 2, has made a finding that the above-named facility is in violation of the Clean Water Act (33 U.S.C. §1251 et seq). Enclosed are two (2) originals of ORDER, CWA-02-2000-3066 issued pursuant to Section 309 of the Act, which detail the findings.

Please acknowledge receipt of this ORDER on one of the originals and return it by mail in the enclosed envelope. Failure to comply with the enclosed ORDER may subject the facility to civil/criminal penalties pursuant to 309 of the Act. Failure to comply with this ORDER may also subject the facility to ineligibility for participation in work associated with Federal contracts, grants or loans.

If you have any questions regarding this ORDER, please contact Mr. Henry Mazzucca, Chief, Caribbean Section, at (212) 637-4229.

Sincerely yours,

George Pavlou, Director
Division of Enforcement and Compliance Assistance

Enclosures

cc: Roberto Ayala, PREQB (w/enclosure)

#548

2000 APR 12 PM 1:49

1/8

R2-0004205

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION II
290 Broadway
New York, New York 10007-1866

In the Matter of:	
SB Pharmco also know as - SmithKline Beecham Pharmaceuticals P.O. Box 11975 Cidra, Puerto Rico 00739-197503 NPDES Permit No. PR0021997	ORDER CWA-02-2000-3066
Proceeding pursuant to §309(a) of the Clean Water Act, 33 U.S.C.§1318 and §1319(a)	

The following FINDINGS, are made and ORDER issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency ("EPA") by the Clean Water Act, 33 U.S.C. § 1251 et seq. ("the Act") (more specifically Section 309(a) of the Clean Water Act ("CWA"), 33 U.S.C. §§1318 and 1319(a)), which authority has been duly delegated to the Regional Administrator of Region II, EPA, and since further redelegated to the Director, Division of Enforcement and Compliance Assistance, Region II, EPA.

FINDINGS

1. SB Pharmco ("SB Pharmco") owns and/or operates a facility that manufactures pharmaceutical products located at State Road 172, Km 9.1 Certenejas Ward, Cidra, Puerto Rico. Materials are weighed, mixed or blended and then manufactured into commercial presentations like capsules, tablets, injections, oral liquids, ointments, creams and suppositories. Final products are packed and distributed.

2. SB Pharmco is a "person" within the meaning of Section 502(5) of the Act, 33 U.S.C. §1362(5). The facility discharges its wastewater through Outfall 001, which is a point source that discharges to De Las Quebradillas Creek, a water of the United States, all within the respective definitions established in Section 502 of the Act, 33 U.S.C. §1362. The respondent therefore is subject to the provisions of the Act, 33 U.S.C. §1251 et seq.

R2-0004206

3. The National Pollutant Discharge Elimination System (NPDES) Permit No. PR0021997 ("the permit") regulated SB Pharmco past and present discharges into De Las Quebradillas Creek. There is one permit that was effective during the past three year period. The permit became effective on November 1, 1993 and expired on October 31, 1998; however, this Permit, based on SB Pharmco timely submittal of a Permit renewal application, was administratively extended until a new permit becomes effective. The permit was issued under section 402 of the Act, 33 U.S.C.§1342, to SB Phannco ("Permittee") for the discharge of pollutants from outfall 001.

4. Part I Table A-1 of the permit contain effluent limits and monitoring requirements which implement §301 and §309 of the Act. Based upon the Discharge Monitoring Reports ("DMRs") submitted to EPA by the permittee, EPA finds that the pennittee has not met the permitted effluent limitations. Attachment 1, contains a table of effluent limit violation for Outfalls 001 for the period of January 1997 through December 1999.

5. Below in Table 1 are the current effluent limitations at outfall 001 cointained in Table A-1 of the pennit for the parameters that have been violated by the permittee during the period covered by this order.

Table 1: Final Effluent Limitations and Monitoring Requirements from Table A-1 of Permit

Parameter	Final Effluent Limitations
pH	between 6-9 S.U.
Copper	0.0106 mg/l
Total Dissolved Solids	500 mg/l
Nitrite + Nitrate	10 mg/l
Fluoride	0.07 mg/l
Surfactants	0.1 mg/l
Zinc	0.05 mg/l
Sulfide	0.002 mg/l

R2-0004207

6. When submitting the DMRs to EPA, SB Pharmco typically reports < 1.0 mg/l for sulfide. SB Pharmco claims that the method detection limit (MDL) for sulfide is 1.0 mg/l. SB Pharmco's laboratory bench sheets of samples taken November 4, 1999, April 3, 1997, March 6, 1997, February 6, 1997 and January 9, 1997 indicate that the laboratory's results for sulfide are <0.047 mg/l, <0.010 mg/l, 0.200 mg/l, < 0.003 mg/l and 0.990 mg/l respectively. In addition, USEPA Method 376.2 indicates a method detection limit (MDL) of 0.100 mg/l. Based on this information SB Pharmco is inaccurately reporting its sulfide results on the DMRs.

7. 40 CFR §122.41(a) states that: "The permittee must comply with all conditions of this permit. Any permit non-compliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application."

8. EPA has authority to establish compliance schedules to achieve effluent limitations required by subsections 301(b)(1)(B) and (C) of the Act by issuing an enforcement order ("Order") pursuant to subsection 309(a) of the Act. The issuance of such an Order is a discretionary enforcement option available to EPA, is not subject to appeal, and does not insulate the discharger from other enforcement actions, including citizen suits pursuant to Section 505 of the Act, to enforce the permit's requirements to achieve effluent limitations required by Section 301 of the Act.

9. Section 308(a)of the Act , 33 U.S.C. §1318 (a), provides that whenever required to carry out the objectives of the Act, including developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard or standard of performance under this Act, the EPA shall require the submission of any information reasonably necessary.

10. Therefore, on the basis of the findings cited in the paragraphs above, the Permittee is in violation of §301 of the Act and the permit conditions implementing §301 of the Act contained in the permit issued pursuant to §402 of the Act.

ORDERED PROVISIONS

Upon a thorough investigation of all relevant facts, EPA determines, in accordance with §309(a) of the Act, that compliance with the following ordered provisions is reasonable.

Based upon the foregoing and pursuant to the authority of Section 309(a)(3) of the Act, it is hereby Ordered that:

1. That immediately upon receipt of the originals of this order, a responsible official of the permittee shall complete the acknowledgment of receipt on one of the originals of the ORDER and return said original to the Chief, Caribbean Section Water Compliance Branch to the address specified below.

R2-0004208

2. Relative to Paragraph 4 of the Findings, within thirty (30) days of receipt of this Order, SB Pharmco shall submit the following:
   a. A written report describing past and present efforts made by the Permittee to return each noncompliance item to compliance along with an implementation schedule(s);
   b. A list of all equipment installed or changes in operation and maintenance ("O&M") practices made in order to achieve compliance, along with the installation and start-up dates, and the capital and/or annual O&M costs for each piece of equipment or O&M practice instituted.

3. Relative to Paragraph 6 of the Findings, within thirty (30) days of receipt of this Order, SB Pharmco shall do the following:
   a. Immediately begin reporting at the level of the laboratory's MDL or 0.100 mg/l, whichever is lower;

   b. Submit records of all correspondence that justify the use of a 1.00 mg/l MDL, which includes correspondence with USEPA and/or the laboratory's derivation of MDLs;

   c. Submit all laboratories bench sheets for the period of March 1995 through the present;

   d. Submit a table for the period of March 1995 through the present indicating the sulfide results as reported by the laboratory in the bench sheets. The table should include the sample date, sample results, methods of analysis and the laboratory's MDL.

4. Relative to Paragraph 4 and 6 of the Findings, within forty five (45) days of receipt of this Order submit a Plan of Action ("POA") for achieving consistent compliance with all of the terms and conditions of the Permit. The submittal should include the following information:
   a. Description of improvements planned;
   b. Fixed-date schedules for completing construction to achieve consistent compliance with the terms and conditions of the Permit;
   c. The estimated costs of achieving compliance, including capital costs of any proposed facilities, plus the incremental O&M costs associated with the future POA improvements. O&M costs for each piece of equipment or O&M practice instituted.

5. Within a one hundred and twenty (120) days of receipt of this Order, the permittee shall have instituted the POA and achieved compliance.

R2-0004209

6. Within a one hundred and thirty-five (135) days of receipt of this Order, the permittee shall submit a written certification that the POA has been completed and whether the facility is in compliance with the final effluent limitations contained in the permit.

Any questions concerning this Order should be directed to Mr. Henry Mazzucca, Chief, Caribbean Section, at (212) 637-4229.

All information required to be submitted by this Order shall be sent by registered mail or its equivalent to the following addresses:

U.S. Environmental Protection Agency - Region 2
290 Broadway - 20th Floor
New York, New York 10007-1866
Attn.: Henry Mazzucca

Caribbean Environmental Protection Division
U.S. Environmental Protection Agency, Region II
Centro Europa Building, Suite 417
1492 Ponce de Le6n Avenue, Stop 22
San Juan, Puerto Rico 00907-4127
Attn.: Carlos E. O'Neill

All of the material that is sent to EPA shall also be sent to the Puerto Rico Environmental Quality Board at the following address:

Puerto Rico Environmental Quality Board
P.O. Box 11488
Santurce, Puerto Rico 00910
Attn.: Roberto Ayala

All certifications shall include the following language:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibihty of fine and imprisonment for knowing violations."

R2-0004210

This ORDER does not constitute a waiver from compliance with or a modification of the effective terms and conditions of the regulations and the Clean Water Act, which remain in full force and effect. This ORDER is an enforcement action taken by EPA to ensure swift compliance with the Act. Issuance of an Administrative Order shall not be deemed an election by EPA to forego any civil or criminal actions which seek penalties, fines, or other appropriate relief under the Act.

This ORDER shall become effective upon the date of execution by the Director, Division of Enforcement and Compliance Assistance.

Dated: 3/31/2000

Signed: _____

George Pavlou, Director
Division of Enforcement and
Compliance Assistance

R2-0004211

ATTACHMENT 1
TABLE OF EFFLUENT LIMIT VIOLATIONS

Date	Outfall	Parameter	Units	Days of Violation	Permit Limit	Reported
December-99	001	Sulfide	mg/l	1	0.002	<1.0*
November-99	001	Sulfide	mg/l	1	0.002	<1.0*
October-99	001	Sulfide	mg/l	1	0.002	<1.0*
September-99	001	Sulfide	mg/l	1	0.002	<1.0*
August-99	001	Sulfide	mg/l	1	0.002	<1.0*
July-99	001	Sulfide	mg/l	1	0.002	<1.0*
June-99	001	Sulfide	mg/l	1	0.002	<1.0*
May-99	001	Sulfide	mg/l	1	0.002	<1.0*
April-99	001	Sulfide	mg/l	1	0.002	<1.0*
March-99	001	Sulfide	mg/l	1	0.002	<1.0*
February-99	001	pH	S.U.	1	9 (MAX)	9.26
January-99	001	Sulfide	mg/l	1	0.002	<1.0*
December-98	001	Sulfide	mg/l	1	0.002	<1.0*
October-98	001	pH	S.U.	1	9 (MAX)	10.7
October-98	001	Sulfide	mg/l	1	0.002	<1.0*
September-98	001	Sulfide	mg/l	1	0.002	<1.0*
August-98	001	Sulfide	mg/l	1	0.002	<1.0*
July-98	001	Sulfide	mg/l	1	0.002	<1.0*
June-98	001	Sulfide	mg/l	1	0.002	<1.0*
May-98	001	Sulfide	mg/l	1	0.002	<1.0*
April-98	001	Sulfide	mg/l	1	0.002	<1.0*
March-98	001	Copper	mg/l	1	0.0106	0.0137
March-98	001	Sulfide	mg/l	1	0.002	<1.0*
February-98	001	Sulfide	mg/l	1	0.002	<1.0*
January-98	001	Sulfide	mg/l	1	0.002	<1.0*
January-98	001	Total Dissolved Solids	mg/l	1	500	676
January-98	001	Nitrite plus Nitrate	mg/l	1	10	18.8
December-97	001	Sulfide	mg/l	1	0.002	<1.0*
December-97	001	Copper	mg/l	1	0.0106	0.0196
December-97	001	Total Dissolved Solids	mg/l	1	500	598
November-97	001	Fluoride	mg/l	1	0.07	1.34
November-97	001	Copper	mg/l	1	0.0106	0.0244
November-97	001	Sulfide	mg/l	1	0.002	<1.0*
October-97	001	Sulfide	mg/l	1	0.002	<1.0*
August-97	001	Sulfide	mg/l	1	0.002	<1.0*
July-97	001	Sulfide	mg/l	1	0.002	<1.0*
June-97	001	Surfactants	mg/l	1	0.1	0.157
May-97	001	Sulfide	mg/l	1	0.002	<1.0*
April-97	001	Zinc	mg/l	1	0.05	0.1588
April-97	001	Sulfide	mg/l	1	0.002	<1.0*
March-97	001	Sulfide	mg/l	1	0.002	<1.0*
February-97	001	Sulfide	mg/l	1	0.002	<1.0*
January-97	001	Sulfide	mg/l	1	0.002	<1.0*

* This violation indicates reporting above the method detection limit

8/8

REFERENCE 90

GOBIERNO DE PUERTO RICO / OFICINA DEL GOBERNADOR
OFICINA REGIONAL DE GUAYAMA

JUNTA DE CALIDAD AMBIENTAL

Pozo Séptico

AUTORIZACION PARA INYECTAR CONFORME AL REGLAMENTO PARA EL CONTROL DE LA INYECCION SUBTERRANEA POR CERTIFICACION

Por la autoridad de la Junta de Calidad Ambiental (JCA), al amparo de la Ley de Politica Pública Ambiental (Ley Número 9 del 18 de junio de 1970), y por el Reglamento para el Control de la Inyección Subterrdnea (RCIS), la JCA autoriza a:

SMITHKLINE BEECHAM PHARMACEUTICALS
UIC-84-0288

referido más adelante como el "peticionario", a operar desde una instalacidn localizada en:

CARRETERA PR -172, KM. 9.1
BARRIO CERTENEJAS
CIDRA, PUERTO RICO

a operar un (1) sistema de inyección subterránea (SIS) Clase VC1,el cual consiste de un (1) tanque séptico con capacidad de 650 galones y un lecho de percolación de 9 pies por 9 pies con un área de percolación de 81 pies cuadrados para la disposicióh de aguas sanitarias en conformidad con las limitaciones del efluente, requisitos de monitoría y otras condiciones establecidas en las Partes I, II y iII de este permiso.

Este permiso será efectivo a partir del 2 de agosto de 1998 .

Este permiso y la autorización para operar expirará a la medianoche del 1 de agosto de 2000

Firmado el dia 30 de junio de 1998 .

Jorge Marrero Fluertas
Director
Oficina Regional de Guayama

1/1

R2-0004214

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 91

STADO LIBRE ASOCIADO/ OFICI DEL GOBERNADOR
OFICINA REGIONAL DE GUAYAMA

JUNTA DE CALIDAD AMBIENTAL

AUTORIZACION PARA INYECTAR CONFORME AL REGLAMENTO PARA EL CONTROL DE LA INYECCION SUBTERRANEA POR CERTIFICACION

Por la autoridad de la Junta de Calidad Ambiental (JCA), al amparo de la Ley de Política Pública Ambiental (Ley Número 9 del 18 de junio de 1970), y por el Reglamento para el Control de la Inyección Subterránea (RCIS), la JCA autoriza a:

SMITHKLINE BEECHAM PHARMACEUTICALS
RENOVACION UIC-84-0288

referido más adelante como el "peticionario", a operar desde una instalación localizada en:

Carretera FR-172, Km 9.1
Barrio Certenejas
Cidra, Puerto Rico

a operar un (1) sistema de inyección subterránea (SIS) Clase VC1, el cual consiste de un (1) tanque séptico con capacidad de 650 galones y un lecho de percolación de 9 pies por 9 pies con área de percolación de 81 pies^2 para la disposición de las aguas sanitarias en conformidad con las limitaciones del efluente, requisitos de monitoria y otras condiciones establecidas en las Partes I, II y III de este permiso.

Este permiso será efectivo a partir del 2 de agosto de 2000.

Este permiso y la autorización para operar expirará a la medianoche del 1ro de agosto de 2002.

Firmado el dia 9 de junio de 2000.

Ing. Angel Rivera Ramos
Director
Oficina Regional de Guayama

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 92

JUNTA DE CALIDAD AMBIENTAL

Permiso de Operación de Calidad de Aire
para una
Fuente de Emisidn Sintótica Menor

Número de Permiso: PFE-21-0996-1021-I-II-III-O
Fecha del Borrador: 17 de marzo de 1997
Fecha Propuesta de Expedición: 27 de marzo de 1997
Fecha de Expiración: 27 de marzo de 2002

La Junta de Calidad Ambiental al amparo de la Regla 211 del Reglamento para el Control de la Contaminación Atmosférica, vigente y de la Ley 170 de Procedimientos Administrativos Uniformes del 12 de agosto de 1993, dispone que:

SMITHKLINE BEECHAM PHARMACEUTICALS CO.
PO *B*ox 11975
Cidra, PR 00739

de ahora en adelante, **SMITHKLINE BEECHAM PHARMACEUTICALS CO.**, esta autorizado a operar como una Fuente Sintética **MEN*O*R** con todas las unidades de emisión , equipos de control y las condiciones descritas en el permiso. Hasta la fecha de vencimiento descrita en el epigrafe, la Fuente podrá operar sus unidades de emisión para los procesos y actividades relacionadas directamente o asociadas con los contaminantes regulados de acuerdo a los requisitos, limitaciones y las condiciones incluidas en el permiso. El permiso especifica las condiciones federalmente ejecutables y las condiciones que son ejecutables únicamente por la Junta. La fuente debe mantener accesible el permiso en todo momento.

Esta Junta se reserva el derecho de intervenir con esta fuente en cualquier otro aspecto no cubierto por esta autorización.

Expedido hoy, 31 de marzo de 1997, por la Junta de Calidad Ambiental.

Maribelle Marrero Vázquez
Miembro Asociado

Luis Rubén Rodríguez
Vice-Presidente

Héctor Rtisse Martinez
Presidente

Smithkline Beecham Pharmaceuticals Co.
PFE-21-0996-1021-I-II-III-O

I- Descripcion del proyecto :

Smithkline Beecham Pharmaceuticals, esta localizada en la carretera PR-172 en el Kilómetro 9.1 del Municipio de Cidra. Esta planta se dedica a la manufactura de varios productos farmaceúticos. La facilidad tiene el potencial de emitir los contaminantes atmósfericos regulados durante su operación sobre el umbral de la Regla 102-Fuente Mayor y estaría cubierta bajo el Programa de Operación Titulo V.

La industria ha decidido restringir sus emisiones por debajo de lo que establece el Programa Titulo V y será operada bajo las restricciones que se detallan en este Permiso para estar cubierta bajo las disposiciones de la Regla 211 del Reglamento para el Control de la comtaminación Atmosférica, vigente como una Fuente Sintética Menor.

II- Lista de las unidades de emisión con sus respectivos equipos de control

UNIDAD DE EMISION	DESCRIPCION	PUNTOS DE EMISION	EQUIPO DE CONTROL
MANUF	Operaciones de manufactura efectuadas dentro de la facilidad. Emiten 31.72 tpa de VOC; 7.42 tpa de cloruro de metileno; 6.55 tpa de cloruro de hidrógeno.	EP-PE1	NA
		EP-PE2	NA
		EP-DDC	DDC1, DDC2, DDC3
		EP-SDC	SDC1, SCC2
		EP-V/P1	V1, P1
		EP-H1	H1
		EP-H2	H2
		EP-H3	H3
		EP-PPGLATT	NA
		EP-PP1	DCPP1
		RP-PP2	DCPP2
		EP-PE3	NA
		EP-TDC2	TDC2.1, TDC2.2, TDC2.3
		EP-TDC3	TDC3

R2-0004221

UNIDAD DE EMISION	DESCRIPCION	PUNTOS DE EMISION	EQUIPO DE CONTROL
MANUF (cont.)		EP-TG1 EP-TG2 EP-TG3 EF-42 EF-51 EF-53 EF-54 EF-67 EF-68 EF-69 EF-DC6 EF-DC4 EF-DC5	NA NA NA NA NA NA NA NA N A NA DC6 DC4 DC5
THERMOX	Oxidador Termal Posee una capacidad de 7.0 MMBtu/hr; utiliza combustible queroseno a razón de 50 gph (80,000 gpa)	EP-THERMOX	DC-10, DC-7, DC-8 THERMOX SCRUB
CB1/2	Caldera 1 y 2 poseen una capacidad de 14.6 MMbtui/hr c/u; Utilizan combustible queroseno a raz6n de 104 gph c/u; 1,822,080 gpa el total por ambas.	EP-CB1/2	NA
ICENGS	Cuatro (4) generadores de emergencia de 1,515 BHP c/u; utilizan combustible a razón de 60 gph c/u. Un (1) generador de emergencia de 572 BHP que utiliza combustible a raz6n de 25 gph. Una (1) bomba de incendio de 170 BHP; Consume diesel a raz6n de 10.8 gph.	EP-DEG1 EP-DEG3 EP-DEG4 EP-DEG5 EP-DFP1	NA NA NA NA NA

R2-0004222

UNIDAD DE EMISION	DESCRIPCION	PUNTOS DE EMISION	EQUIPO DE CONTROL
CFCs	Refrigerantes (R12 y R22)	NA	NA
WI	Incinerador de desperdicios médicos; Razón de procesamiento es 170 lbs/hr (204 tpa). Consume diesel a razón 8 gph.	EP-WI	NA

III- Limites de emisión de los contaminantes regulados

CONTAMINANTES REGULADOS	RAZON DE EMISION PERMITIDA (TONS/AÑO)*
PM-10	13.51
SO2	74.41
NOx	53.00
VOC	31.72
CO	13.20
HAPS	15.42

* Año se refiere a un período de 365 dias

IV- Equipos afectados por NSPS: Ninguno

V- Equipos afectados por NESHAPS: Ninguno

R2-0004223

VI- Requisitos Aplicables Federales

A- Condiciones Operacionales Especificas:

1. La unidad de emisión lCENGS, compuesta por cinco (5) generadores de emergencia y una (1) bomba contra incendios, estará limitada a un consumo máximo total de combustible diesel de 137,900 galones por un período rotativo de 365 dias.

2. La unidad de emisión CB ½, compuesta por dos (2) calderas de 14.6 MMBtu/hr, estará limitada a un consumo máximo total de combustible queroseno de 1,822,080 galones por un período rotativo de 365 días.

3. La unidad de emisión THERMOX, compuesto por un (1) oxidador termal de 7.0 MMBtu/hr, estará limitada a un consumo total de queroseno de 80,000 galones por un período rotativo de 365 dias.

4. La unidad de emisión WI, compuesto por un (1) incinerador de desperdicios con capacidad de procesar 220 (lbs/hr); dicha unidad estará limitada a procesar 170 lbs/hr, para un total de 204 toneladas por un período rotativo de 365 dias. El consumo de queroseno estará limitado a 19,200 galones dentro del mismo periodo rotativo.

5. La unidad de emisión MANUF, compuesta por las operaciones de manufactura, deberán cumplir con lo siguiente:

   a. Las emisiones de PM, VOC y HAPs estaran limitadas a los valores de la tabla que aparece en la parte lII de esta autorización.

   b. Las emisiones de particulado de esta unidad de emsión no deben exceder 0.05 libras / libra de emisión que entre al equipo de control en una hora.

   c. Las emisiones de VOC proveniente de cada uno de los equipos incluidos en el proceso de esta unidad de emisión no deben exceder de 3 lbs/hr 6 15 lbs/dia; si se contemplara excederse a estos limites, dicho exceso se descargaría a los siguientes equipos de control: lavador de gases venturi (V1), Torre empacada (P1) o el Oxidador termal (THERMOX).

R2-0004224

d. El oxidador termal debe reducir la cantidad de VOCs y/o HAPs que entren a este de dos (2) manera:

1. La reducción de 90% por peso 6

2. A una concentración equivalente de 20 ppm por volumen, como propano.

e. Las emisiones de ácido Hidrocloridico serán cantroladas por un lavador de gases (SCRUB). El lavador de gases reducirá la cantidad de dcidos gaseosos a un 95% por peso.

6. SB mantendrá un registro de la cantidad de cada lote o tanda manufacturada mensualmente, que genere PM, VOC y HAPs; y de los lotes o tandas que utilicen solventes que contengan cloro.

7. Para la unidad de emisión CFCs se cumplirá con lo siguiente:

a. El dueño u operador deberá llevar y mantener expediente de cada unidad de emisión, los cuales serán suficientes para determinar las emisiones actuales. Dichos expedientes se mantendrán en el local por tres (3) años. Durante los 30 dias siguientes a partir de una petición escrita de la Junta o de la APA; el dueño u operador deberá mostrar que las emisiones de la fuente estacionaria o el rendimiento global (throughput) no exceden las cantidades aplicables.

8. Deberán llevar un registro diario del consumo de combustible de cada unidad de emisión y del uso de materia prima en los procesos. Los mismos deberán estar disponibles al personal de la Junta cuando scan solicitados.

9. Deberán someter a esta Junta un informe anual que contenga la siguiente información:

a. Consumo de combustible mensual y su contenido de azufre cada una de las unidades de emisión por combustión.

b. Consumo de combustible acumulado cada mes durante los pasados 365 dias en las unidades de emisión por combustión.

c. Cantidad de materia prima utilizada diariamente y la cantidad acumulada cada dia durante los pasados 365 dias.

R2-0004225

10. Deberán mantener, por un periodo de cinco(5) años, los recibos de compra del combustible diesel y de la materia prima listada en el Anejo A, asi como cualquier otro material que documente la informacidn requerida en la condicidn #6. Los mismos deberán estar disponibles al personal de la Junta cuando sean solicitados.

11. Deberán mantener, por un periodo de cinco (5) años, copia de los análisis del combustible suministrado por el suplidor. También, deberán mantener permanentemente, copia de las Hojas de Datos de Seguridad (MSDS por sus siglas en inglés) de la materia prima utilizada en los procesos. Los mismos deberán estar disponibles al personal de la Junta cuando sean solicitados.

12. La tonalidad de los gases generados en las unidades de emisión por combustión pueden exceder del 20% de opacidad excepto en los cuatro (4) minutos de cada periodo de treinta (3) minutos durante los cuales se permite una tonalidad hasta 60% de opacidad.

13. La facilidad podrá intercambiar emisiones equivalentes entre las unidades de emsión siempre y cuando no exceda ninguna condición restrictiva especifica aplicable a dicha unidad de emisión.

14. Esta facilidad de emisión nó puede reaiizar cambios operacionales que motiven que cualquier de sus unidades de emisión generen emisiones de contaminantes atmosféricos peligrosos ("HAPS, por sus siglas en ingles"). No obstante, se permiten los cambios operacionales que no excedan ninguna restricción especifica y que sean necesarios en la producción.

15. Cualquier cambio operacional no podrá incluir la adición de equipos nuevos sin que haya mediado una autorización de construcción de esta Junta.

VII- Requisitos Aplicables Estatales

1. Los equipos de control de contaminación de aire deberán operarse en todo momento en que las fuentes a las que brindan servicio estén en operación. Además, deberán conservarse y operarse dentro de los limites operacionales especificados por el fabricante.

2. Deberá ofrecerle mantenimiento preventivo a los colectores de polvo que aparecen en la lista de los equipos de control. Cualquier dato recopilado que sea generao durante la reparación y/o reemplazo de las piezas o del equipo de control debe estar disponibles para ser evaluados por personal de la Junta o de la Agencia Federal de Protección Ambiental (de asi solicitarlo) por periodo de dos (2) años a partir de la fecha de ser realizados.

R2-0004226

VIII- Condiciones Generales

1. De acuerdo a la regla 103 del RCCA, a representantes de la JCA, luego de identificarse debidamente mediante la presentación de credenciales se les permitirá llevar a cabo las siguientes actividades:

    a. Entrar a los predios del usuario del permiso donde se encuentra localizada una fuente o donde se lleva a cabo una actividad relacionada con emisiones, o donde se deben conservar expedientes según las condiciones del permiso.

    b. Tener acceso a y copiar, en horas razonables, cualquiera expedientes que deban mantenerse según las condiciones;

    c. Inspeccionar en horarios razonables, cualesquiera instalaciones, equipo (incluyendo equipo de muestreo y de control de la contaminación atmosférica), prácticas u operaciones reguladas o requisitos bajo el permiso;

    d. Según lo autoriza la Ley, muestrear en horarios razonables las substancias y los parámetros para fines de asegurar el cumplimiento con el permiso o los requisitos aplicables;

    e. Tendrán derecgo para entrar a, arribar a, o atravesar por cualquier lugar en el cual esté localizada una facilidad de emisidn en el cual estén localizadas cualesquiera registros que se requieran bajo el RCCA, o bajo la Ley de Aire Limpio;

    f. Tendrán, un momento apropiado, acceso a , y copia cualquier registro pertienente, inspeccionar y examinar cualquier equipo de monitoria a mótodo de detenninar su exactitud y tomar muestras de calidad de aire y combustibles.

2. De acuerdo a la Regla 103 del RCCA, todos los datos de emisiones obtenidos por y sometidos a la Junta, incluyendo los datos informados de acuerdo a la Regla 103 y los obtenidos de acualquier otra manera, estarán disponobles para inspeceión pública y podrán tambión hacerse accesibles al públicos en cualquier otra manera que la Junta considere apropiadas.

R2-0004227

3. De acuerdo a la Regla 107 del RCCA, deberá todo dueflo u operador de una feunte tendrá disponible un plan de emergencia, el cual será consistente con las prácticas adecuados de seguridad y proveerá para la reduccidn o detención de las emisiones en la planta durante periodos clasificados por la Junta coma alertas, avisos o emergencia. Dichos planes deberán identificar la fuente de contaminacidn, indicará la reducción a obtenerse y la forma en que se obtendrá dicha reduccidn. Estos planes deberán estas disponibles en esta autorizacidn, la Junta podrá suspender o revocar esta aiitorización.

4. De acuerdo a la Regla 115 del RCCA, cualquier violación a este Reglamento constituirá delito menos grave, y estará sujeta a la penalidad que establece la "Ley Sobre Política Pública Ambiental" (Ley No. 9 del 18 de junio de 1970, según enmendada). Además, en caso de infracción de cualesquiera de las reglas y reglamentos aplicables establecidos en esta autorización, la Junta podrá suspender o revocar esta autorizacidn.

5. De acuerdo a la Regla 201, del RCCA, nada en autorizacidn se interpretará como que autoriza o legaliza la creación o el mantenimiento de un estrobo públicos según se define en el Artículo 329 del Código Penal de Puerto Rico.

6. De acuerdo a la Regla 201 del RCCA, nada en esta autorizacidn se interpretará como que autoriza la localización o construcción de una fuente mayor de emisidn, ni la modificacidn de una fuente estacionaria mayor de emisión o modificacidn mayor o fuente significativa sin obtener una aprobacidn de ubicacidn de la Junta y sin haber probado cumplimiento previamente con las Normas Nacionales de Calidad de Aire Ambiental (NNCAA, NAAQS, por sus siglas en inglés). Tampoco se interpretará como que autoriza la construcción de fuentes menores sin la autorización previa que requiere la Regla 203, del RCCA.

7. De acuerdo a la Regla 402 del RCCA, no se permite la quema de desechos a campo abierto en los predios de Smithkline & Beecham Pharmaceuticals.

8. De acuerdo a la Regla 403 del RCCA, la tonalidad de los gases descargados a travós de los puntos de emisidn no pueden exceder del 20% de opacidad excepto en los cuatro (4) nunutos de cada periodo de treinta (30) minutos durante los cuales se permite una tonalidad hasta 60% de opacidad.

9. De acuerdo a la Regla 420 del RCCA, las operaciones de Smithkline & Beecham Pharmaceuticals no deben causar olores objetables más aliá de los limites del área industrial.

R2-0004228

10. De surgir en el futuro interés por cambiar estas condiciones, los equipos de emisión o sus respectivos equipos de control, deberán solicitarlo por escrito para su evaluación correspondiente.

R2-0004229

ANEJO A

USO MAXIMO DE MATERIA PRIMA PERMITIDO

MATERIA PRIMA	USO MAXIMO PERMITIDO (kg/año*)
Mixed Phermaceutical Formulations	4,692,039
Ethanol	41,099
Methanol	2,885
Methylene Chloride	67,332
Benzyl Alcohol	1,618
Cellulose Acetate Phthalate	9,252
Diethyl Phthalate	1,634
Chllsopropyl Alcohol 7,405oroform	4,260
sec-Butyl Alcohol	500
1,1,1,-Trichloroethane	1,896

* año se refiere a un período rotativo de 365 dias

11/11

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 93

GOBIERNO DE PUERTO RICO / OFICINA DEL GOBERNADOR
OFICINA REGIONAL DE GUAYAMA

JUNTA DE CALIDAD AMBIENTAL

22 de mayo de 1997

ING. CARLOS A. ACEVEDO KUINLAM
GERENTE DE PLANIFICACION
Y MANTENIMIENTO
SMITHKLINE BEECHAM
PHARMACEUTICALS CO.
PO BOX 11975
CIDRA, P.R. 00739

ASUNTO: CORRECCION ANEJO A
SMITHKLINE BEECHAM
PHARMACEUTICALS CO.
CIDRA, PR
PFE-21-0996-1021-I-II-III-O

Estimado ingeniero Acevedo:

El día 28 de abril del corriente año se recibió su comunicación, via facsimil, señalando el error cometido en el Anejo A de la autorizacidn de operación que aparece en el asunto. Le pedimos nos excuse y agradecemos su sefialamiento sobre el particular.

Adjunto encontrará el anejo corregido en todas sus partes.

De tener alguna duda sobre lo anterior, favor de comunicarse con el Ing. José F. Vega o con el que suscribe a los números de teléfono 864-0103/866-0222.

Cordialmente,

Jorge Marrero Huertas
Director Interino
Oficina Regional de Guayama

RG/jmh

R2-0004233

ANEJO A

USO MAXIMO DE MATERIA PRIMA PERMITIDO

MATERIA PRIMA	USO MAXIMO PERMITIDO (kg/año*)
Mixed Pharmaceutical Formulations	4,692,039
Ethanol	41,099
Methanol	2,885
Methylene Chloride	67,332
Benzyl Alcohol	1,618
Cellulose Acetate Phthalate	9,252
Diethyl Phthalate	1,634
Chloroform	4,260
sec-Butyl Alcohol	500
1,1,1,-Trichloroethane	1,896
Isopropyl Alcohol	7,405

* año se refiere a un periodo rotativo de 365 dias

R2-0004234

REFERENCE 94

GlaxoSmithKline

SB Pharmco Puerto Rico Inc.
PO Box 11975
Cidra, Puerto Rico
00739-1975

Tel. 787 766 4000

CARTA CERTIFICADA #7099 3400 0001 6868 1196
CON ACUSE DE RECIBO

2 de abril de 2001

Ing. José Vega
Junta de Calidad Ambiental
Sección Permisos de Aire
Avenida Los Veteranos #2000
Guayama, PR 00784

Estimado Ingeniero Vega:

Re: Demolición de las dos unidades de incineración
Permiso #PFE-21-0996-1021-I-II-III-O

Sirva este comunicado para informar que hemos comenzado el proceso para la demolición y eliminación de las dos unidades térmicas que se ubican dentro de nuestras facilidades. Una para la destrucción de desperdicios farmacéuticos no peligrosos; la otra para la destrucción de gases generados como parte del proceso farmacéutico de revestir tabletas, cuya definieión de servir como parte del "Loop" de manufactura, lo descalificó de constituir una fuente de desperdicio peligroso.

De tener algún comentario, favor comunicarse conmigo al Tel. 250-3866.

Atentamente,

Antonio García Márquez, Líder
Seguridad Ocupacional y Ambiental

Demolición Incineradores

anexo

1/16

R2-0004236

SB
SmithKline Beecham
Pharmaceuticals

ANNEX A - EMISSIONS UNITS

I. CIDRA I BULDING

ID	PROCESS OR OPERATION	RAW MATERIAL USED OR PROCESSED	CONTROL EQUIPMENT	VOLUME OF DISCHARGE OF EMISIONS	EMISSIONS
PILOT PLANT (25)	Side-vented coating pan used for continuous coatings of films and sugar systems. Connected to 7 process rooms. Granulación, pesado, compresión y revestimiento a nivel de lotes pilotos.	Powder mixture See exhibit II	Type: Torit Dust Collector Efficency: 99% Height: 60 ft Exhaust Diam: 12 in. Exhaust Temp: Amb Exhaust Veloc: 2,400 cfm		Estimated based on: Full Capacity Type of pollutant: Particulates Quantity: 0.25 kg/day Duration: 24 hrs/day
PILOT PLANT (24)	Glatt: Drug powder's are mixed, granulated and dryed on an air suspension chamber. Air pass through the chamber and then through a built-in bag house. Mayormente usado para la técnica de granulación de tabletas, nivel de lotes pilotos	Pharmaceuticals Tablets See exhibit II	Type: Filter Bag Efficiency: 99% Height: 60 ft. Exhaust Diam: 12 in. Exhaust Temp: 104°F Exhaust Veloc:1,7000 cfm.		Estimated based on: Materials balance at full capacity. Type of pollutant: Drug powder Quantity: 0.25 kg/day Duration: 24 hrs/day
PE-1 CAPSULES MANUF. AREA 1	Capsules filling. 2 rooms 4 machines	Pharmaceuticals Capsules Quantity: 6.8 kg/day See exhibit II	None	400 cu.ft./min extractor	Estimated based on: Usage – Capacity. Type of pollutant: Ink solvent and Isopropyl for cleaning. Quantity: 6.8 kg/day Duration: 24 hrs/day

Mjv

SmithKline Beecham
Pharmaceuticals

ANNEX A - EMISSIONS UNITS

ID	PROCESS OR OPERATION	RAW MATERIAL USED OR PROCESSED	CONTROL EQUIPMENT	VOLUME OF DISCHARGE OF EMISIONS	EMISSIONS
PE-2 TABLETS MANUF. AREA 2 opacode monogramming ink. (ethanol, n-butanol)	Printing of brand name on tablets/caplets Ink is butanol based. Alcohol (Isopropyl) is used on cleaning of equipment. Two printing machines in one room are used.	Pharmaceutical Tablets Quantity: 6.8 kg/day Exhibit II	Type: None Efficency: Height: Exhaust Diam: Exhaust Temp: Exhaust Veloc:	400 cu.ft./min No existe extractor. Utihza SDC1y2 Machine room	Estimated based on: Usage capacity Type of pollutant: Cleaning, Ink solvents Quantity: 6.8 kg/day Duration: 24 hrs/day
DDC-3 CAPSULES P/K MANUF. AREA (4)	Pharmaceutical granulation (P/K and blender) powder is mixed with edible nondrug material for Tablets compaction and pressing and/or capsule filling. During the powder transfer process some particles are lbst.	Powder Mixture Quantity: 16,850 kg/day	Type: Torit Dust Collector Efficency: 99.9 Height: 25 ft. Exhaust Diam: 15 in. Exdiaust Temp: amb Exhaust Veloc:41 ft/sec	3,000 cu.ft./min	Estimated based on: Data available - See attached fan HP10 Type of pollutant: Particulate Quantity: 4.0 kg/day Duration: 24 hrs/day
EF-52 ECOTRIN AREA (33)	Drying room #147 Exhaust Fan EF-52 to the atm.	See exhibit II	Type: None Efficency: Height: 3 ft above the roof. Exhaust Diam: 2³/16x16 in. Exhaust Temp: 70-90°F Exhaust Veloc: 13.81 ft/sec	1,950 cu.ft./min	Estimated based on: Full capacity Type of pollutant: Organic solvent Quantity: 3 lb/hr / 15lb/day Duration: 24 hr/day
EF-54 ECOTRIN AREA (34)	Eliminados Construcción Idoxifene	See exhibit II	Type: None Efficency: Height: 3 ft above the roof Exhaust Diam: 21³/16x16 in. Exhaust Temp: 70-90°F Exhaust Veloc: 22.31 ft/sec	3,150 cu.ft./min	Estimated based on: Type of pollutant: Organic Solvent Quantity: 3 lb/hr / 15 lb/day Duration: 24 hr/day

3

Mjv

R2-0004238

SmithKline Beecham
Pharmaceuticals

ANNEX A - EMISSIONS UNITS

ID	PROCESS OR OPERATION	RAW MATERIAL USED OR PROCESSED	CONTROL EQUIPMENT	VOLUME OF DISCHARGE OF EMISIONS	EMISSIONS
EF-69 ECOTRIN AREA (35)	Se eliminó la actividad	See exhibit II	Type: None Efficency: Height: 2 ft above the roof. Exhaust Diam: $14^{5}/16x10^{13/16}$ in. Exhaust Temp: 70-90°F Exhaust Veloc: 41.09 ft/sec	2,650 cu.ft./min	Estimated based on: Type of pollutant: Organic Solvent Quantity: 3 lb/hr / 15 lb/day Duration: 24 hr/day
EF-51 ECOTRIN AREA (36)	The process that emits through this source comes from wash room (162), blending (164), janitor (162a) and service room. Exhaust Fan EF-51 to the atm.	See exhibit 11	Type: None Efficency: Height: 2 ft above the roof. Exhaust Diam: $14^{5}/16x10^{13/16}$ in. Exhaust Temp: 70-90°F Exhaust Veloc: 13.18 ft/sec	850 cu.ft./min	Estimated based on: Maximum capacity Type of pollutant: Organic Solvent Quantity: 3 lb/hr / 15 lb/day Duration: 24 hr/day
EF-53 ECOTRIN AREA (37) Area nueva	Eliminado	See exhibit II	Type: None Efficency: Height: 4 ft above the roof. Exhaust Diam: 37 in. Exhaust Temp: 70-90°F Exhaust Veloc: 0.32 ft/sec		Estimated based on: Type of pollutant: Organic Solvent Quantity: 3 lb/hr / 15 lb/day Duration: 24 hr/day
EF-68 ECOTRIN AREA (42) Area nueva	Eliminado	See exhibit II	Type: None Efficency: Height: 2 ft above the roof. Exhaust Diam: Exhaust Temp: 70-90°F Exhaust Veloc: ft/sec	2,200 cu.ft./min	Estimated based on: Type of pollutant: Organic Solvent Quantity: 3 lb/hr / 15 lb/day Duration: 24 hr/day

Panel EF- 52,54,58,59,66,67,65,64,63,62,61,60

Mjv

SmithKline Beecham
Pharmaceuticals

ANNEX A - EMISSIONS UNITS

ID	PROCESS OR OPERATION	RAW MATERIAL USED OR PROCESSED	CONTROL EQUIPMENT	VOLUME OF DISCHARGE OF EMISIONS	EMISSIONS
EF-67 ECOTRIN AREA (43)	Services rooms (159,166) and coating rooms (158,165)	See exhibit II	Type: None Efficency: Height: 2.5 ft above the roof Exhaust Diam: $17^{7}/16x13^{3/16}$ in. Exhaust Temp: 70-90°F Exhaust Veloc: 38.62 ft/sec	3,700 cu.ft./min	Estimated based on: Type of pollutant: Organic Solvent Quantity: 3 lb/hr / 15 lb/day Duration: 24 hr/day
DC-10 ECOTRIN AREA (38)	The process that emits through this source comes from the following rooms: Mixing/Sifting (157), Blending (164), Weighihg (167), Tablet Press (160 & 160A) and Powder Weighing (140)	See exhibit II	Type: Dust Collector Efficiency: 95% Height: 30 ft. Exhaust Diam: 20 3/4 in. Exhaust Temp: 130°F max Exhaust Veloc: 12ft/sec		Estimated based on: Full capacity Type of pollutant: Particulate Quantity: Ver informe de producción. Duration: 24 hr/day
DC-7 ECOTRIN AREA (39)	Coating Area Ecotrin Tombola 1 a 4 Accela Cotta room direct to ambient.	See exhibit II	Type: Dust Collector Efficiency: 95% Height: 100 ft. Exhaust Diam: 38 in. Exhaust Temp: 130°F Exhaust Veloc: 47.53 ft/sec		Estimated based on: Type of pollutant: Particulate and Organic Solvents Quantity: Ver informe de producción. Duration: 24 hr/day

5

Mjv

R2-0004240

SmithKline Beecham
Pharmaceuticals

ANNEX A - EMISSIONS UNITS

ID	PROCESS OR OPERATION	RAW MATERIAL USED OR PROCESSED	CONTROL EQUIPMENT	VOLUME OF DISCHARGE OF EMISIONS	EMISSIONS
DC-8 ECOTRIN AREA (41)	Accela Cotta Room Tombola 5 a 8. Four coating units direct to ambient.	See exhibit II	Type: Dust Collector Efficiency: 95% Height: 100 ft. Exhaust Diam: 38 in. Exhaust Temp: 130°F Exhaust Veloc: 47.53 ft/sec		Estimated based on: Type of pollutant: Particulate and Organic Solvents Quantity: Ver informe de producción. Duration: 24 hr/day
DDC-1 &2 MACHINE ROOM (3)	Four capsule filling machine Four HK machines.	Powder mixture Quantity: 3,400 kg/day	Type: Two Torit Dust Collector Efficiency: 99.9% Height: 25 ft. Exhaust Diam: 24x24 in. Exhaust Temp: 80°F Exhaust Veloc: 43.79 ft/sec Torit Dust Collector System in paralell (DC-1 and 2).	10,510 cu.ft./min	Estimated based on: Data avalllable Type of pollutant: Particulate Quantity: 0.8 kg/day Duration: 24 hr/day
SDC i y 2 Machine room (5)	Pharmaceuticals powder is mixed with edible non-drug material for compaction and pressing. The tablets formed are then coated with edible hard setting substance. One P/K unit mixer and two compressions machines.	Pharmaceuticals Tablets Quantity: 1,050 kg/day	Type: Two Torit Dust Collector Efficiency: 99.9% Height: 25 ft. Exhaust Diam: 30x30 in. Exhaust Temp:amb °F Exhaust Veloc: 35.8 ft/sec	13,650 cu.ft./min	Estimated based on: Data avalllable on capacity Type of pollutant: Particulate Quantity: 1.5 kg/day Duration: 24 hr/day

Mjv

SmithKline Beecham
Pharmaceuticals

ANNEX A - EMISSIONS UNITS

ID	PROCESS OR OPERATION	RAW MATERIAL USED OR PROCESSED	CONTROL EQUIPMENT	VOLUME OF DISCHARGE OF EMISIONS	EMISSIONS
V-1 Equipment yard (6) Reeco	Eliminado	Tablets 5,652 kg/day See exhibit II	Type: Ventury/Cyclonic Separator Efficiency: 99.9% Height: 30 ft. Exhaust Diam: 24 in. Exhaust Temp: Amb. °F Exhaust Veloc: N/A Type: Packed Unit Efficiency: 90% Height: Exhaust Diam: Exhaust Temp: Exhaust Veloc		Estimated based on: Calculations on capacity Type of pollutant: Particulate Alcohol Quantity: 6.25 kg/day 5.8 kg/day, 0.24 kg/hrs Duration: 24 hr/day 24 hrs/day
H-1 Machine room (7)	During storage, handlIng and processing, the powder mixtures are lost in small amounts. The powder scattered around the processing machines, the employees clothing and the floor is collected by vacuum cleaning systems.	Collected Dust Quantity: 5.76 Ibs/hr See exhibit II	Type: Hoffman Dust Collector (2) en paralelo Efficiency: 98% Height: 25 ft. Exhaust Diam: 8 in. Exhaust Temp: -5 amb°F Exhaust Veloc: 95.6 ft./sec	4,000 cu.ft./min	Estimated based on: Data available Type of pollutant: Particulates Quantity: 0.1152 Ibs/hr Duration: 24 hrs/day
H-2 Machine Room (8)	During storage, handling and processing the powder mixtures are lost in small amounts. The powder scattered around the processing machines, the employee's clothing and the floor is collected by vacuum cleaning system.	Collected Dust Quantity: 5.65 Ibs/hr See exhibit II	Type: Hoffman Dust Collector (2) en paralelo Efficiency: 98% Height: 25 ft. Exhaust Diam: 8 in. Exhaust Temp: -5 amb°F Exhaust Veloc: 95.6 ft./sec	4,000 cu.ft./min	Estimated based on: Data avallable Type of pollutant: Particulates Quantity: 0.1152 Ibs/hr Duration: 24 hrs/day

Mjv

R2-0004242

SmithKline Beecham
Pharmaceuticals

ANNEX A - EMISSIONS UNITS

BOILERS

Se utiliza un generador y un compresor extra en época de Huracán. Para 1999 hay 2 generadores y un compresor spare.

LOCATION	PROCESS OR OPERATION	EMISSION FROM COMBUSTION
CB-1 Boiler room (9)	Steam boiler	1. Combustion Equipment: Type: Steam boiler BTU/hr: 11,761x10³ Or 350 HP 2. Fuel Type: Fuel Oil No. 5 Gals./hr: 98.0 %Sulfur: 2.0 3. Control Equipment for emissions: Combustion Control Equipment 4. Chimneys or stacks: Height: 36 ft. Exhaust Diam.:20 in. Exhaust Temp: 350°F Exhaust Veloc.: 21.60 ft./sec
CB-2 Boiler room (10)	Steam boiler	1. Combustion Equipment: Type: Steam boiler BTU/hr: 11,761x10³ or 350 HP 5. Fuel Type: Fuel Oil No. 5 Gals./hr: 98.0 %Sulfur: 2.0 6. Control Equipment for emissions: Combustion Control Equipment 7. Chimneys or stacks: Height: 36 ft. Exhaust Diam.:20 in. Exhaust Temp: 350°F Exhaust Veloc.: 21.60 ft./sec

Mjv

R2-0004243

SmithKline Beecham
Pharmaceuticals

ANNEX A - EMISSIONS UNITS

FUEL OIL TANKS

LOCATION	PROCESS OR OPERATION	RAW MATERIAL USED OR PROCESSED	EMISSIONS
FSTK (5) Fuel Oil Tank Farm (15)	One #2 Fuel Oil Storage Tank Capacity 10,000 gal.	F.O. #2 Quantity: 10,000 gal. Batch	Type: Hydrocarbons Quantity: 0.024 TPY
FSTK (4) Fuel Oil Tank Farm (14)	One #2 Fuel Oil Storage Tank Capacity 10,000 gal.	F.O. #2 Quantity: 10,000 gal. Batch	Type: Hydrocarbons Quantity: 0.024 TPY
FSTK (3) Fuel Oil Tank Farm (13)	One #2 Fuel Oil Storage Tank Capacity 10,000 gal.	Diesel Quantity: 10,000 gal Batch	Type: Hydrocarbons Quantity: 0.024 TPY
FSTK (2) Fuel Oil Tank Farm (12)	One diesel Storage Tank Capacity 10,000 gal.	Diesel Quantity: 10,000 gals. Batch	Type: Hydrocarbons Quantity: 0.024 TPY
FSTK (1) Fuel Oil Tank Farm (L1)	One diesel Storage Tank Capacity 10,000 gal.	Diesel Quantity: 10,000 gals. Batch	Type: Hydrocarbons Quantity: 0.024 TPY

Epoca de Huracán Junio a Noviembre todos los tanque contienen Diesel.
Epoca regular Tanques 1,2,3 Kerosene y 4,5 Diesel

Mjv

SmithKline Beecham
Pharmaceuticals

ANNEX A - EMISSIONS UNITS

GENERATOR SHELTER Se utiliza un generador y un compresor extra en época de Huracán. Para 1999 vamos a tener 1 generador y un compresor adicional spare.

LOCATION	PROCESS OR OPERATION	EMISSION FROM COMBUSTION
DEG-1 Generators Shelter 16	When electric power from PRWRA fails, this systems enters into operation keeping vital sections of the plant powered.	1. Combustion Equipment: Type: Detroit Diesel (STP & Process Generator Emergency) 575 HP 2. Fuel: Type: Diesel Oil Gals/hr: 25.0 Lbs/hr: 180 % Sulfur: 0.50 3. Control Equipment for emissions: Type: Combustion Control Equipt. 4. Chimneys or stacks: Heinght: 20 ft. Exhaust Diam: 6 in. Exhaust Temp: 865°F Exhaust Veloc.: 230 ft./sec
DEG-2 Generators Shelter (17)	When electric power from PRWRA fails, this systems enters into operation keeping vital sections of the plant powered. Cuatro generadores de electricidad DEG 2,3,4,5 Son Marca O'Brian Diesel, capacidad 1,515 HP c/u.	1. Combustion Equipment: Type:Electric Generating Plant 1,515 HP 2. Fuel Type: Diesel Gals./hr: 60 Lbs./hr: 447.6 %Sulfur: 0.50 3. Control equipment for emissions: Type: Combustion Control Eqpt. Height: 22 ft. Exhaust Diam.: 10 in. Exhaust Temp: 880°F Exhaust Veloc.: 151.3 ft./sec

10

Mjv

R2-0004245

SmithKline Beecham
Pharmaceuticals

ANNEX A - EMISSIONS UNITS

LOCATION	PROCESS OR OPERATION	EMISSION FROM COMBUSTION
DEG-3 Generators Shelter 18	When electric power from PRWRA fails, this systems enters into operation keeping vital sections of the plant powered.	1. Combustion Equipment: Type: Electric Generating Plant 1,515 HP 2. Fuel: Type: Diesel Gals./hr: 60.0 Lbs/hr: 447.6 %Sulfur: 0.50 3. Control Equipment for emission: Type: Combustion Control Eqpt. 4. Chimneys or stacks: Height: 22ft. Exhaust Diam.: 10 in. Exhaust Temp: 880°F Exhaust Veloc.: 151.3 ft./sec
DEG-4 Generator Shelter (19)	When electric power from PRWRA fails, this systems enters into operation keeping vital sections of the plant powered.	1. Combustion Equipment: Type: Electric Generating Plant 1,515 HP 2. Fuel: Type: Diesel Gals./hr: 60.0 Lbs/hr: 447.6 %Sulfur: 0.50 3. Control Equipment for emission: Type: Combustion Control Eqpt. 4. Chimneys or stacks: Height: 22ft. Exhaust Diam.: 10 in. Exhaust Temp: SS0°F Exhaust Veloc.: 151.3 ft./sec

Mjv

R2-0004246

SmithKline Beecham
Pharmaceuticals

ANNEX A - EMISSIONS UNITS

LOCATION	PROCESS OR OPERATION	EMISSION FROM COMBUSTION
DEG-5 Generators Shelter 20	When electric power from PRWRA falls, this systems enters into operation keeping vital sections of the plant powered.	1. Combustion Equipment: Type: Electric Generating Plant 1,515 HP 2. Fuel: Type: Diesel Gals./hr: 60.0 Lbs/hr: 447.6 %Sulfur: 0.50 3. Control Equipment for emission: Type: Combustion Control Eqpt. 4. Chimneys or stacks: Height: 22ft. Exhaust Diam.: 10 in. Exhaust Temp: 880°F Exhaust Veloc.: 151.3 ft./sec
DFP-1 Fire pump House 21	In case of fire this pump will enters in operation	1. Combustion Equipment: Type: Diesel Driven Fire pump 170 BHP 2. Fuel: Type: Diesel Oil Gals./hr: 10.8 Lbs/hr: 77 %Sulfur: 0.50 3. Control Equipment for emission: Type: Combustion Control Eqpt. 4. Chimneys or stacks: Height: 14ft. Exhaust Diam.: 4 in. Exhaust Temp: 950°F Exhaust Veloc.: 1460 ft./sec
LPGB-1 Between Oxidizer and STP 23	Propane storage Bullet 1-500# Raw Material used or processed: Propane LPG Quantity: 500# Batch	

Mjv

SmithKline Beecham
Pharmaceuticals

ANNEX A - EMISSIONS UNITS

II. CIDRA II BUILDING

ID	PROCESS OR OPERATION	RAW MATERIAL USED OR PROCESSED	CONTROL EQUIPMENT	VOLUME OF DISCHARGE OF EMISIONS	EMISSIONS
PE-3 Tablets Manuf Area (26) Tabletas 3 máquinas impresoras	Printing of brand name on tablets/caplets. Ink is butanol based. Alcohol (Isopropyl) is used for cleaning of equipment. Six printing equipment (PE-3) are used, two per room.	Pharmaceuticals Tablets	Type: Efficiency: Height: 30 ft. Exhaust Diam: Exhaust Temp: Exhaust Veloc:	400 cu.ft./min	Estimated based on: Usage capacity Type of pollutant: Cleaning ink solvents Quantity: 6.8 kg/day per room Duration: 24 hr/day
TDC 2.1,2.2,2.3 Second floor Machine room (27)	Tablet manufacturing process. Compressed powder is coated with edible hard setting substance. During the process dust is exhausted. Eight coating pans are used. (Pan 1-Pan 8)	Pharmaceutical Powder Quantity: 15,072 kg/day	Type: Torit Dust Collector Efficiency: 99.9% Height: 60 ft. Exhaust Diam: 18 in Exhaust Temp: 80°F Exhaust Veloc: 35.8 ft./sec.	32,000 cu.ft./min	Estimated based on: Mass balance at full capacity. Type of pollutant: Pharmaceutical dust Quantity: 3.3 kg/day Duration: 24 hrs
TDC-3 Second Floor Machine room (28) TDC-3 DC-1 verificar no aparece en el permiso	Powder are poured into granulation hoppers and weighed in two (2) weighing rooms. The mixture, after granulated, is dumped into tote bins at two (2) dumping rooms. The batches from eachgranulator are mixed in one (1) ribbon blender and then dumped back into tote bins. The mixture is then compacted by means of 9 compression machines.	Pharmaceuticals Powder Quantity: 16,200 kg/day See exhibit II	Type: Torit Dust Colector con una capacidad de 6,405 cfm Efficiency: 99.9% Height: 60 ft. Exhaust Diam: 18 in. Exhaust Temp: -5 amb °F Exhaust Veloc: 35.8 ft./sec		Estimated based on: Materials balance at full capacity Type of pollutant: Particulates Quantity: 3.5 kg/day Duration: 24 hrs/day

Mjv

R2-0004248

SmithKline Beecham
Pharmaceuticals

ANNEX A - EMISSIONS UNITS

ID	PROCESS OR OPERATION	RAW MATERIAL USED OR PROCESSED	CONTROL EQUIPMENT	VOLUME OF DISCHARGE OF EMISIONS	EMISSIONS
TG-1 Third floor Manuf.Area (29)	Glatt 1 Drug powder's are mixed, granulated and dryed on an air suspension chamber. Air pass through the chamber and then through a bullt-in bag house. Two Glatt Machines TG-1 and TG-2	Phramaceutical granulation Quantity: 4,050 kg/day See exhibit II	Type: Fllter bag Efficiency: 99.9% Height:60 ft. Exhaust Diam: 18 in. Exhaust Temp: 104°F Exhaust Veloc: 16.6 ft./sec	4,700 cu.ft./min	Estimated based on: Materials balance at full capacity Type of pollutant: Drug powder Quantity: 3.75 kg/day Duration: 24 hrs/day
TG-2 Third floor Manuf. Area (30)	Glatt No. 2: Drug powder's are mixed, granulated and dryed on an air suspension chamber. Air pass through the chamber and then through a bullt-in bag house.	Pharmaceuticals Granulations Quantity: 4,050 kg/day See exhibit II	Type: Fllter bag Efficiency: 99.9% Height:60 ft. Exhaust Diam: 18 in. Exhaust Temp: 104°F Exhaust Veloc: 16.6 ft./sec	4,700 cu.ft./min	Estimated based on: Materials badance at full capacity Type of pollutant: Drug powder Quantity: 3.75 kg/day Duration: 24 hrs/day
H-3 Waste Compactor Room (31)	During storage, handling and processing, the powder mixtures are lost in small amounts. The powder scattered around the processing machines, the employees clothing and the floor, is collected by vacuum system.	Collected dust Quantity: 6.38 lbs.hr See exhibit II	Type: Spencer dust collector Efficiency: 98% Height: 30 ft. Exhaust Diam: 12 in. Exhaust Temp: -5° amb F° Exhaust Veloc:	1,000 cfu.ft./min	Estimated based on: Data avallable Type of pollutant: Particulates Quantity: 0.1276 lbs/hr Duration: 24 hrs/day
LPGB-2 Cidra II Lateral Gate No.2 (32)	Propane storage bullets 1-250# Storage Capacity 250 lbs.	Propnae LPG Quantity: 250 lbs Batch			

Mjv 14

R2-0004249

SmithKline Beecham Pharmaceuticals

ANEJO A - EQUIPOS DE CONTROL - PM

UNIDAD DE EMISION	DESCRIPCION	PUNTOS DE EMISION	EQUIPO DE CONTROL	AREA	PM
MANUF	Operaciones de Manufactura efectuadas dentro de la facilidad. Emiten 31.72 tpa de VOC; 7.42 tpa de cloruro de metileno; 6.55 tpa de cloruro de Hidr6geno.	EP-PE1	NA		
		EP-PE2	NA		
		EP-DDC	DDC1,DDC2,DDC3	Machine Room, Capsules (Torit Dust Collector)	DC-1-3 TORIT LCD-013 DC-1-4 TORIT LDC-014 DC-PK TORIT LDC-015
		EP-SDC	SDC1,SCC2	Machine room (Torit Dust Collector)	DC-1-1 LDC-011 DC-1-2 LDC-012
		EP-V/P1	Vi,Pi		
		EP-H1	HI	Machine room Hoffman Dust	HOFFMAN A LDC-021
		EP-H2	H2	Machine room Hoffman Dust	HOFFMAN B LDC-021 (HV-02)
		EP-H3	H3	Waste Compactor Room (Spencer Dust Collector)	SPENCER DC-01
		EP-PPGLATT	NA		
		EP-PP1	DCPP1	Planta Piloto	TORIT DC-11
		EP-PP2	DCPP2	Planta Piioto	SIN DEFINIR AUN
		EP-PE3	NA		
		EP-TDC2	TDC2.1,TDC2.2,TDC2.3	2nd floor (Torit)	DC-1 C11 LDC-016 (CF-57) DC-2-1 C2 LDC-017 DC-2-2 LCD-018 DC-2-3 LCD-019
		EP-TDC3	TDC3	2nd floor, Machine room (Torit)	DC-3 C11 LDC-020
		EP-TG1	NA		
		EP-TG2	NA		
		EP-TG3	NA		
		EF-42	NA		
		EF-51	NA		
		EF-53	NA		
		EF-54	NA		
		EF-67	NA		
		EF-68	NA		
		EF-69	NA		
		EF-DC6	DC6		LDC-05
		EF-DC4	DC4		LDC-06
		EF-DC5	DC5		DC-10

DCI0 – AÑADIR
DC7 DC-07
DC8 DC-08

R2-0004250

SmithKline Beecham
Pharmaceuticals

EXHIBIT A. MATERIA PRIMA UTILIZADA EN SB PHARMACEUTICALS

NOMBRE	ESTADO	NOMBRE	ESTADO
Acacia	P	Microcrystalline Wax	S
Alginic Acid	S	Nabumetone	P
Antifoam	L	Nitrogen	G
Ascorbic Acid	P	Non Pareil Seeds	S
Aspirin	P	N-Butyl Alcohol	L
Auranofin	P	Opaspray Orange	L
Benzoic Acid	S	Phenol	S
Benzyl Alcohol	L	Phenoxibenzamine HCl	S
Benzylamine	L	Phenylpropanolamine HCl	P
Bone Gelatin	S	Polyethylene Glycol	L
Calcium Edetate, Disodium	P	Polysorbate	L
Cadcium Sulfate	P	Porkskin Gelatin	S
Caramiphen Edisylate	P	Povidone	P
Carbon Tetrachloride	L	Powdered Cellulose	P
Carnauba Wax	S	Prochlorperazine	P
Castorwax	S	Propylene Glycol	L
Cetylpyridinium Chloride	P	Propylparaben	P
Chloroform	L	SD30(Ethanol/Methanol)	L
Chlorpherinamine Maleate	P	Silicon Dioxide	P
Chlorpromazine	P	Sodium Benzoate	P
Cimetidine	P	Sodium Bisulfite	P
Citric Acid	S	Sodium Chloride	P
Croscarmellose Sodium	P	Sodium Citrate	P
Dextroamphetamine Sulfate	P	Sodium Docusate	S
Diethylphtalate	S	Sodium Hydroxide	L
Ethylcellulose	S	Sodium Lauryl Sulfate	P
Ferrous Sulfate	P	Sodium Phosphate Monobasic	P
Gelatin	S	Sodium Saccharin	P
Glyceryl Distereate	S	Sodium Sulfite	P
Glyceryl Monostereate	S	Sodium Tartrate	S
Glycine	P	Sodium Phosphate Dibasic	P
Hydrochlorothiazide	P	Sorbitol Solution	L
Hydrochloric Acid	L	Starch	P
Isopropyl Alcohol	L	Stearic Acid	S
Lactose	P	Sucrose	S
Lithium Carbonate	P	Talc	P
Magnesium Stereate	S	Toryn Edisylate	S
Mehtylene Chloride	L	Triamterene	P
Methylparaben	S	Trifluoperazine	P
Microcrystalline Cellulose	P	White Wax	S

S – Sdlido P – Polvo L – Liquido G – Gas

16/16

R2-0004251

REFERENCE 95

ESTADO LIBRE ASOCIADO DE PUERTO RICO / OFICINA DEL GOBERNADOR

JUNTA
DE CALIDAD
AMBIENTAL

Sr. Félix Delgado
Jefe, División de Permisos
Mejoramiento Calidad de Aire

Sr. Otomel Rodriguez
División de Permisos

SmithKline Beecham
Cidra, P.R.
PFE-21-0996-1021-I-II-III-O

8 de octubre de 1999

El **16** de septiembre de 1999 inspeccioné la fuente de emisión en el asunto, me acompañó al recorrido de inspeceión el Ing. Carlos Acevedo, "Safety & Enviromnental Consultant".

Este informó que eliminaron los solventes que contienen HAP's. El único contaminante de aire, peligroso que emiten es metanol y su cantidad es un valor despreciable. El mismo está presente en los tintes usados en el "coating" del producto Tagamed, según lo expresado por el ingeniero Acevedo. Basado en este dato, él entiende que no necesitan someter el plan de emergencia que se le requiere en las condiciones de permiso.

Indica además que, durante el mes de octubre estarán sometiendo su nueva solicitud de permiso por Ley de Certificación. Una vez eliminado los HAP's saldrían de su clasificación de Fuente Menor Sintótica a Ley de Certificación.

El oxidador termal fue eliminado. Descontinuaron la operación de dos incineradores de desperdicios bio-médicos debido a que éstos no aprobaron el muestreo de chimenea que se le requirió en el permiso. La opacidad de las emisiones de sus calderas (menor de **20%**) cumplia con la condición de permiso que las regula.

Tienen dos generadores de electricidad, marca Caterpillar, con capacidad de 1,750 HP y un compresor de aire (marca Atlas) que consume diesel, ninguno de estos equipos tiene permiso temporal de operación. Estos equipos fueron adquiridos mediante renta, para dar apoyo a los existentes durante emergencia, mientras dure la época de huracanes.

R2-0004253

Recomendaciones:

1. Notificar violación a:
   * Regla 203(F) Permiso para construir una Fuente de Emisión
   * Regla 204(c)(1)(D) Permiso para operar una Fuente de Emisión (Permiso Temporal)
   * Regla 107(c) Plan de Reacción a Emergencia.

AI/OR/biv

G:\USERDATA\AIRE\TOXICCAWP\M-1021.CDS

2/2

R2-0004254

REFERENCE 96

GOBIERNO DE PUERTO RICO / OFICINA DEL GOBERNADOR

JUNTA DE CALIDAD AMBIENTAL

1 de diciembre de 1999

SR CARLOS A ACEVEDO
CUMPLIMIENTO AMBENTAL
Y SEGURIDAD OCUPACIONAL
SMITHKLINE BEECHAM
PO BOX 11975
CIDRA P R 00739-1975

2000 APR -7 PM 3:20

Estimado señor Acevedo:

Re: NOTIFICACION DE VIOLACION
SMITHKLINE BEECHAM
CIDRA, P.R.
PFE-21-0996-1021-I-II-III-O

El 16 de septiembre de 1999, personal técnico del Programa Mejoramiento Calidad de Aire inspeccionó la fuente de emisión en referencia. Esta fue operada en violación al Reglamento para el Control de la Contaminación Atmosférica.

Las violaciones encontradas fueron las siguientes:

1- Operan dos generadores de emergencia Marca Caterpillar de 1,750 HP y un compresor de aire sin los debidos permisos en violación a la Regla 203 y 204.

2- No sometieron el Plan de Respuesta a Emergencia requerido por la Regla 107.

Le solicitamos que rinda no más tarde de 15 dias a partir del recibo de esta notificación lo siguiente:

1- Razón por la cual operó esta fuente en violación.

2- Un informe sobre las medidas realizadas para corregir las violaciones antes mencionadas.

NOTIFICACION DE VIOLACION
SMITHKLINE BEECHAM
CIDRA, P.R.
PFE-21-0996-1021-I-II-III-O

La Ley de Politica Pública Ambiental permite a la Junta imponer sanciones y multas administrativas. No cumplir con las restricciones, órdenes y reglamentos de la Junta puede penalizarse con hasta $25,000. En caso de insistir en el incumplimiento con hasta $50,000.

Esperamos su pronta atención a este asunto.

Cordialmente,

Elisabeth Muñoz Matos
Directora
Programa Mejoramiento Calidad de Aire

ai/fd/cr

2/2

REFERENCE 97

2 [illegible]

Vista: 12 VI 84

ESTADO LIBRE ASOCIADO DE PUERTO RICO
OFICINA DEL GOBERNADOR
JUNTA DE CALIDAD AMBIENTAL

IN RE:

BOURNS PUERTO RICO, INC.
(Cidra, Puerto Rico)
Querellado

CASO NUM: C-AG-7S-0016

SOBRE: ORDEN DE HACER Y DE MOSTRAR CAUSA

REF: DL-84-003-032

DILIGENCIAMIENTO

YO, Jose A Rodriguez declare: Que recibi copia de este documento el día 8 de mayo de 1984, y que lo nitlfiqué personalmente a S Jose Orlandi el día 10 de mayo de 1984, a las 11:00 en Cidra, Puerto Rico, haciendo conatar en la copia notificada bajo mi firma, la fecha y sitio de la notificación.

Recibido por;
Ramón A. Martínez

Jose A Rodriguez
DILIGENCIANTE

AFFIDAVIT NUM:

JURADA Y SUSCRITA ANTE MI por mayor de edad, casado, Auxiliar Administrativo de la Junta de Calidad Ambiental y vecino de Bayamón, Puerto Rico; a quien doy fe de conocer personalmente en San Juan, Puerto Rico, a

NOTARIO PUBLICO

* Revisar Exp.e

Lcdo. Arturo Negrón Navas → Ref. Legal

CK: Orden (18-V-84)

1/6

R2-0004259

ESTADO LIBRE ASOCIADO DE PUERTO RICO
OFICINA DEL GOBERNADOR
JUNTA DE CALIDAD AMBIENTAL

HOJA DE TRAMITE PARA LA EXPEDICION DE ORDENES

File

RE: BOURNS PUERTO RICO, INC. CASO NUM: C-AG-76-0016
(Cidra, Puerto Rico)

La Junta de Calidad Ambiental planea notificar próximamente una Orden contra la Parte Querellada del epigrafe.

Favor de revisar y firmar a continuación en el lugar correspondiente:

	Aprobado	No Aprobado	Fecha
PEDRO A. GELABERT Presidente	☒	☐	27/IV/84
CARL AXEL P. SODERBERG Vicepresidente	☒	☐	27/IV/84
LUIS E. DE LA CRUZ Miembro Asociado	☒	☐	4 Mayo-84
DIRECTOR DEL PROGRAMA CORRESPONDIENTE	☒	☐	27/IV/84
HECTOR RUSSE MARTINEZ Director Interino Oficina Servicios Legales	☒	☐	1-5-84
ABOGADO-INTERES PUBLICO	☐	☐	mayo 5

FAVOR DEVOLVER A LA OFICINA DE SERVICIOS LEGALES UNA VEZ CUMPLIMENTADO EL TRAMITE DE ENDOSOS

R2-0004260

V.A – 12 junio 84
Arzola

ESTADO LIBRE ASOCIADO DE PUERTO RICO
OFICINA DEL GOBERNADOR
JUNTA DE CALIDAD AMBIENTAL

IN RE:	*	
	*	CASO NUM: C-AG-76-0016
BOURNS PUERTO RICO, INC. (Cidra, Puerto Rico)	*	SOBRE: ORDEN DE HACER Y DE MOSTRAR CAUSA
Querellada	*	
	*	REF: DL-84-003-032

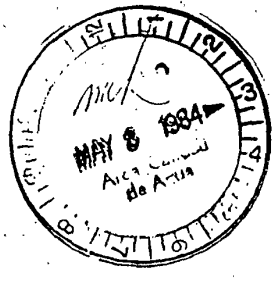
RELACION DE HECHOS

Bourns Puerto Rico, Inc. (en adelante se referirá como "Bourns") opera unas facilidades ubicadas en la Carretera PR-1, Km. 48.1 del Barrio Beatriz en Cidra, Puerto Rico. La misma se dedica a la manufactura de potenciómetros ("potentiometers parts").

La Junta de Calidad Ambiental (en adelante la Junta) expidió a nombre de Bourns una Orden autorizándole a operar un sistema de tratamiento de aguas usadas que consiste en una planta de tratamiento de aereación extendida y un sistema de irrigación para disponer finalmente del efluente tratado que genera la operación de la industria.

Pruebas hechas en el campo y resultados analiticos de las muestras tomadas sobre verificación del efluente de Bourns, en ocasión que personal técnico de la Junta se personaran a las facilidades de epigrafe, demuestran que Bourns ha incurrido en violación a los limites establecidos en la Orden de Hacer, referencia C-AG-76-0016, para los siguientes parámetros y limitaciones:

a. demanda bioquimica de oxígeno (BOL_5)
b. sólidos suspendidos (TSS)
c. eficiencia remoción de BCD_5 y sólidos suspendidos
d. coliformes fecales
e. pH



UNO: Luego de revisar los informes sobre los reportes de monitoria sometidos por Bourns a la Junta durante el periodo comprendido entre julio 1979 hasta el informe más reciente que

R2-0004261

obra en el expediente de este caso en la Junta, surge que el efluente ha violado y está violando los siguientes limites para los parámetros especificados en la Orden emitida a favor de la Bourns para la operación de un sistema de tratamiento de aguas usadas:

a. demanda bioquimica de oxigeno (BOD_5)

b. sólidos suspendidos (TSS)

c. aceites y grasas

d. coliformes fecales

e. pH

f. eficiencia de remoción para BOD_5 y TSS

DOS: En adición, los resultados quimicos y bactereológicos de la descarga industrial de Bourns reflejan la presencia de zinc y plomo en concentraciones que constituyen un riesgo potencial para los recursos naturales, seguridad y salud públicas.

TRES: La inspección realizada por la Junta demostró que la planta de tratamiento de aguas usadas y su componente, o sea, el sistema de irrigación final no están operando en condiciones óptimas. Se observó que la misma no tenia un medidor de flujo operando adecuadamente; el sistema de asperjadores deberá operarse de tal forma que evite la saturación del terreno y se contaminen escorrentías que pudieran afectar algún cuerpo de agua. Se observó el efluente con sólidos flotantes y espuma.

VIOLACIONES

De la anterior relación de hechos se desprende que las actuaciones u omisiones de la parte Querellada han infringido y/o continúan infringiendo las siguientes disposiciones:

1. Orden de Hacer, referencia C-AG-76-0016, emitida por la Junta de Calidad Ambiental.
2. Artículo 6.6.1(A) del Reglamento de Estándares de Calidad de Agua, vigente.

ORDEN

En vista de lo anteriormente expresado y en virtud de los poderes que confiere a esta Junta de Calidad Ambiental, la Ley

4

R2-0004262

Sobre Política Pública Ambiental, según enmendada (Ley Número 9 del 18 de junio de 1970, 12 LPRA 1121 et seq.), en su Artículo 11, Incisos 14, 19 y 22 y en sus Artículos 14, 15 y 16, esta Junta ORDENA:

1. Que la Querellada cumpla inmediatamente, sin excusa o pretexto alguno, con las condiciones y limitaciones de la Orden de Hacer, Referencia C-AG-76-0016 y no cause violaciones futures a la misma.
2. Que Bourns opere el equipo de control de contaminación objeto de la Qrden a que hemos hecho referencia en forma que permita cumplir con las reglas y reglamentos aplicables.
3. Que Bourns someta por escrito a la Junta dentro del término de 15 días a partir de la notificación de la presente, toda la información referente a la disposición de lodos o cienos que genera el sistema de tratamiento de aguas usadas.

Se cita al Querellado de epígrafe a una VISTA ADMINISTRATIVA en la cual deberá MOSTRAR CAUSA por la cual esta Junta no deba imponerle una multa administrativa a celebrarse en el Salón de Audiencias de esta Junta, sita en la Calle del Parque #204, Esquina Pumarada, Edificio Empire, Sagundo Piso, Santurce, Puerto Rico, el dia 12 de junio de 1984, a las 10:00 de la mañana. Se le apercibe al Querellado que deberá comparecer a la misma acompañado de abogado.

En adición, se le apercibe que esta Orden no podrá ser alterada, modificada o revocada a menos que un tribunal con jurisdicción o la propia Junta así lo ordene.

El Articulo 16 de la Ley Sobre Política Pública Ambiental (supra) faculta a la Junta de Calidad Ambiental a imponer sanciones y multas administrativas por infracciones a la ley, órdenes, reglas y reglamentos emitidos por esta Junta al amparo de la misma. Las multas administrativas no excederán de veinticinco mil ($25,000) dólares diarios por violación, entendiéndose que cada día que subsista la misma se considerará como una

5

R2-0004263

violación por separado. En los casos que incurra en contumacia en el incumplimiento de cualquier orden o resolución emitida por esta Junta, ésta podrá imponer una multa administrativa adicional hasta un máximo de cincuenta mil ($50,000) dólares.

NOTIFIQUESE con copia de la Orden que antecede personalmente al Sr. José Orlandi, Presidente, Bourns Puerto Rico, Inc., PR-1, Km. 48.7, Cidra, Puerto Rico; Box 5789, Caguas, Puerto Rico 00625; y a la mano a los siguientes funcionarios de la Junta de Calidad Ambiental: Ing. Carl-Axel P. Soderberg, Vice-Presidente; Ing. Luis E. de la Cruz, Miembro Asociado; licenciada Norma Morales de Sánchez, Directora, Oficina de Oficiales Examinadores; Lcdo. Héctor Russe Martínez, Director, Oficina Servicios Legales y a la Lcda. Wanda A. Linares Hernández, Representante del Interés Público.

En San Juan, Puerto Rico, a 4 de mayo de 1984.

PEDRO A. GELABERT
Presidente

6/6

R2-0004264

REFERENCE 98

COMMONWEALTH OF PUERTO RICO / OFFICE OF THE GOVERNOR

Environmental Quality Board

January 29, 1999

Mr. Israel Torres Rivera
Director
Land Pollution Regulation Program

Mr. Carmelo Vázquez, Chief
Hazardous Waste Compliance Division

Zulma M Toro

Mrs. Zulma M. Toro
Environmental Specialist

Inspection Report for
Bourns Puerto Rico, Inc.
(Tech Group P.R.)
Cidra, Puerto Rico
PRD 090057878

The above mentioned company was visited on December 1st, 1998. During the visit, a Full RCRA Generator Inspection was performed in order to determine their compliance with the Federal Resource Conservation and Recovery Act (RCRA) and the State Regulation for the Control of Hazardous Solid Wastes (RCHSW).

Attached please find the following documents with regard to this inspection:

- Inspection Report

/sec

R2-0004266

Inspection Report

On December 1st, 1998 Boums Puerto Rico, Inc., was visited by the subscriber to perform Hazardous Waste Generator Inspection. However, it was found that the facihty ceased operations.

Boums Puerto Rico was located at State Road 1, Km. 48.7, Beatriz Ward, Cidra, Puerto Rico. Now at this address Tech Group Puerto Rico is located. It is engaged in the manufacturing of custom injection molded plastic components for the medical and high technology industries. There, we contacted Mr. Epifanio Pérez, Maintenance Supervisor of the company. The company phone number is (787) 747-4900. It began operations in 1990. During the visit we inspected the production area, the tool room and the maintenance area.

The process of this company consists of the melting of resin pellets and the injection of it to molds. Depending on the product that is being manufactured the molded piece is packed as it was manufactured or is assembled with other parts to form the final product and then packed. According to Mr. Pérez, every day the equipment used in their manufacturing process is cleaned using a mixture that is 70 percent Isopropyl Alcohol and 30 percent water. Every two months they use mineral spirit to clean the surface of the equipment that became dirty with grease during the equipment use. The solvent (mineral spirits) is sprayed on the surface and then is cleaned using rags. About 20 to 25 pounds of rags are generated during these cleaning activities. The rags are disposed of with the domestic garbage. As indicated by Mr. Pérez, the facility also use small amounts of acetone to clean those surfaces that become spotted during the preparation of the ink use to print dates in one of the products that they manufacture (contraceptive pills cases). About one rag is used for these purposes every two to three days. The ink used is Tampastar TPR 073. No residues of ink are generated except for the residues in the rag.

At the tool room citric acid is used to clean the molds cavities by immersion. According to a manual of procedures found at this area, when the acid becomes saturated it is neutralized to a pH between 7 and 8 and then is discarded through the sewer.

Conclusion and Recommendation

As a result of the inspection performed, it was found that Boums Puerto Rico, Inc., ceased operations and other company, Tech Group Puerto Rico, is occupying the building that they used to occupy. Therefore the withdrawal of their EPA ID number from the RCRIS is recommended. Regarding Tech Group Puerto Rico, it will be required the submittal of information regarding to basis used to determine that the rags damped with mineral spirits and those with acetone are non hazardous solid wastes since the facility could be acting as a Conditionally Excempt Small Quantity Generator.

R2-0004267

REFERENCE 99

Detailed Facility Report

Report Error | Data Dictionary

For Public Release - Unrestricted Dissemination Report Generated on 12/12/2002
US Environmental Protection Agency - Office of Enforcement and Compliance Assurance

Data in this report are under a data quality review/comment period. Select the Report Error button to report an error.

Facility Permits and Identifiers

Data Dictionary

Statute	System	Source ID	Facility Name	Street Address	City	State	Zip
	FRS	110011546201	BOURNS PUERTO RICO, INC	RD 1 KM 48.7	CIDRA	PR	00639
RCRA	ROR	PRD090057878	BOURNS PUERTO RICO INC-CIDRA	KM 48.7 ST RD 1	CIDRA	PR	00639

Facility Characteristics

Data Dictionary

Statute	Source ID	Facility Status	Permit Expiration Date	Lat/Long	Indian Lands?	Primary SIC	Secondary SICs
RCRA	PRD090057878	LQG			No		

Inspection and Enforcement Summary Data

Data Dictionary

Statute	Source ID	RECAP Insp. Last 02Yrs	Date of Last Inspection	Formal Enf Act Last 02 Yrs	Penalties Last 02 Yrs
RCRA	PRD090057878	1	03/04/2002	0	$00

Inspection History (02 years)

Data Dictionary

Statute	Source ID	Inspection Type	Lead Agency	Date
RCRA	PRD090057878	COMPLIANCE EVALUATION INSPECTION ON-SITE	State	03/04/2002

Entries in *italics* are not considered inspections in Reporting for Enforcement and Compliance Assurance Priorities (RECAP) official counts.

Compliance Summary Data

Data Dictionary

Statute	Source ID	Current SNC/HPV?	Current Quarter	Description	Qtrs in NC (of 8)
RCRA	PRD090057878	NO	Oct-Dec02		0

Two Year Compliance Status by Quarter

Data Dictionary

Statute:Source ID	QTR1	QTR2	QTR3	QTR4	QTR5	QTR6	QTR7	QTR8
- No data records returned.								

Formal Enforcement Actions (02 year history)

Data Dictionary

Statute	Source ID	Type of Action	Lead Agency	Date	Penalty	Penalty Description
- No data records returned.						

In some cases, formal enforcement actions may be entered both at the Initiation and final stages of the action. These may appear more than once above. Entries in *italics* are not "formal" actions under the PCS definitions but are either the initiation of an action or penalties assessed as a result of a previous action. This section includes US EPA and State formal enforcement actions under CAA, CWA and RCRA.

EPA Formal Enforcement Cases (02 year history)

Data Dictionary

Primary Law/Section	Case Number	Case Type	Case Name	Issued/Filed Date	Settlement Date	Penalty	SEP Cost
- No data records returned.							

Federal enforcement actions and penalties listed in this section may duplicate records in the Formal Enforcement Actions section.

R2-0004269

Demographic Profile of Surrounding Area (3 Miles)

Data Dictionary

Radius of Area:	N/A	Land Area:	N/A	Households in area:	N/A
- No data records returned.					

Please Note: Entries in gray denote records that are not federally required to be reported to EPA. These data may not be reliable.

This report was generated by the Integrated Data for Enforcement Analysis (IDEA) system, which updates its information from program databases monthly. The data were last updated: RCRAInfo: 11/12/2002. NCDB: 11/08/2002. FRS: 11/07/2002.

EPA Home | Privacy and Security Notice | Contact Us

2/2

R2-0004270

REFERENCE 100

COMMONWEALTH OF PUERTO RICO / OFFICE OF THE GOVERNOR

GENERATOR ANNUAL HAZARDOUS WASTE REPORT

Environmental Quality Board

This report is for the calendar year ending December 31, 1982

AFFIX LABEL HERE

GENERAL INSTRUCTIONS: If you received a preprinted label attached to the mailing envelope in which this form was enclosed, affix it in the space provided. If any of the information on the label is incorrect, draw a line through it and provide the correct information in the appropriate section below. If the information is correct and complete, leave Sections I, II, and III below blank. If you did not receive a preprinted label, complete all sections. REFER TO THE SPECIFIC INSTRUCTIONS CONTAINED IN THIS BOOKLET BEFORE COMPLETING THIS FORM. The information requested in this report is required by law (Section 3002 of the Resource Conservation Recovery Act).

Please print/type with elite type (12 characters per inch)

I. GENERATOR'S EPA I.D. NUMBER

T/A C

F P R D 0 9 0 0 5 7 8 7 5 1

II. NAME OF INSTALLATION

B O U R N S P R I N C C I D R A

III. INSTALLATION MAILING ADDRESS

3 P O B O X 5 7 8 9

Street or P.O. Box

4 C A G U A S — P R 0 0 6 2 6

City or Town — State — Zip Code

IV. LOCATION OF INSTALLATION (if different than section III above)

5 R O A D # 1 K M 4 8 7 B O B E A T R I Z

Street or Route number

6 C I D R A — P R

City or Town — State — Zip Code

V. INSTALLATION CONTACT

2 O R L A N D I J O S E

Name (last and first)

8 0 9 — 7 4 3 — 1 7 4 1

Phone No. (area code & no.)

VI. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Jose Orlandi — Title — [signature] — 8/11/83

Print/Type Name — Title — Signature of Authorized Representative — Date Signed

1/4

R2-0004272

ENVIRONMENTAL QUALITY BOARD

Generator Annual Hazardous Waste Report (cont.)

This report is for the calendar year ending December 31, 1982

Date rec'd: _____ Rec'd by: _____

VII. GENERATOR'S EPA I.D. NO.

G P R D 0 9 0 0 5 7 8 7 8 T/A C 1

1 2 13 14 15

VIII. FACILITY NAME (specify facility to which all wastes this page were shipped)

SERVICIOS CARBAREON, INC.

IX. FACILITY'S EPA I.D. NO.

F P R D 0 9 1 0 1 8 6 3 2

th 28

X. FACILITY ADDRESS

Carr. 385 Km. 3.5, Tallaboa, Penuelas

XI. TRANSPORTATION SERVICES USED (List the name and EPA identification numbers of all transporters whose services were used during 1981. This section to be completed only once. Do not repeat on supplemental sheets.)

SERVICIOS CARBAREON, INC. - PRD0000831487

XII. WASTE IDENTIFICATION

Sequence	Line	A. Description of Waste	B. DOT Hazard Code	C. EPA Hazardous Waste No. (see instructions)	D. Amount of Waste
32	1	1,1,1, Trichloroethane	1 4 (33 34)	35 0 0 2 (38 39 42) (43 46 47 50)	3 9 9 4 K (51 59)
	2	Methyl Ethy Ketone	1 4	F 0 0 5 1	5 3 0 K
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				

XIII. COMMENTS (enter information by section number—see instructions)

Based on the above data, we would like to be excluded of your records as hazardous waste generators, and be considered small generators as it is explained on part 261.5 of Federal Register. (Not generate 1000KG or more of hazardous waste on a given month and not accumulate such quantity.)

2

R2-0004273

Do not make entries in shaded areas.

COMMONWEALTH OF PUERTO RICO / OFFICE OF THE GOVERNOR

GENERATOR ANNUAL HAZARDOUS WASTE REPORT

Environmental Quality Board

This report is for the calendar year ending December 31,1983

AFFIX LABEL HERE

Please print/type with elite type (12 characters per inch).

GENERAL INSTRUCTIONS: If you received a preprinted label attached to the mailing envelope in which this form was enclosed, affix it in the space provided. If any of the information on the label is incorrect, draw a line through it and provide the correct information in the appropriate section below. If the information is correct and complete, leave Sections I, II, and III below Blank. If you did not receive a preprinted label, complete all sections. REFER TO THE SPECIFIC INSTRUCTIONS CONTAINED IN THIS BOOKLET BEFORE COMPLETING THIS FORM. The information requested in this report is required by law (Section 3002 of the Resource Conservation Recovery Act).

I. GENERATOR'S EPA I.D. NUMBER

T/A C

F	P	R	D	0	9	0	0	5	7	8	7	8	1
1	2									13	14	15	

II. NAME OF INSTALLATION

B	O	U	R	N	S		P	R		I	N	C		C	1	D	R	A
10																		69

III. INSTALLATION MAILING ADDRESS

3	P	O		B	O	X		5	7	8	9
15	1h										45

Street or P.O. Box

4	C	A	G	U	A	S
15	16					

City or Town

P	R	0	0	6	2	5
41	42	47				51

State Zip Code

IV. LOCATION OF INSTALLATION (if different than section III above)

5	R	O	A	D		#	1		K	M		4	8	7		B	O		B	E	A	T	R	I	Z
15	1h																								45

Street or Route number

6	C	I	D	R	A
15	16				

City or Town

P	R
41	42

State

47	51

Zip Code

V. INSTALLATION CONTACT

2	O	R	L	A	N	D	I		J	O	S	E
15	16											45

Name (last and first)

8	0	9	—	7	4	7	—	4	9	0	0
4b											55

Phone No. (area code & no.)

VI. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

JOSE ORLANDI	PRESIDENT	Jose Orlandi	2/28/84
Print/Type Name	Title	Signature of Authorized Representative	Date Signed

3

R2-0004274

Do not make entries in shaded areas

ENVIRONMENTAL QUALITY BOARD

Generator Annual Hazardous Waste Report (cont.)

This report is for the calendar year ending December 31, 1983

Date rec'd: _____ Rec'd by: _____

VII. GENERATOR'S EPA I.D. NO.

C P R D 0 9 0 0 5 7 8 7 8 T/A C 1

VIII. FACILITY NAME (specify facility to which all wastes on this page were shipped)

SERVICIOS CARBAREON

IX. FACILITY'S EPA I.D. NO.

F P R D 0 9 1 0 1 8 6 3 2

X. FACILITY ADDRESS

Carr. 385 Km. 3.5 Tallaboa
Penuelas, P. R.

XI. TRANSPORTATION SERVICES USED (List the name and EPA identification numbers of all transporters whose services were used during 1981. This section to be completed only once. Do not repeat on supplemental sheets.)

SERVICIOS CARBAREON, INC. - PRD000831487

XII. WASTE IDENTIFICATION

Sequence #	Line #	A. Description of Waste	B. DOT Hazard Code	C. EPA Hazardous Waste No. (see instructions)	O. Amount of Waste	E. Unit of Measure
	1	1,1,1, Trichloroethane	14	0 0 38	3195	K
	2	Methyl Ethyl Ketone	14	F 0 0 5	265	K
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					

XIII. COMMENTS (enter information by section number—see instructions)

Based on above data, we would like to be excluded of your records as hazardous waste generators, and be considered small generators as it is explained on part 261.5 of Federal Register.

4/4

R2-0004275

REFERENCE 101

ESTADO LIBRE ASOCIADO DE PUERTO RICO
OFICINA DEL GOBERNADOR
JUNTA DE CALIDAD AMBIENTAL

IN RE:	*	R-84-35-7
BOURNS PUERTO RICO INC.	*	CASO NUM: C-AG-76-0016
Querellada	*	SOBRE: ORDEN PARA MOSTRAR CAUSA Y DE HACER
**********	*	REF: 0L-84-003-032

RESOLUCION Y NOTIFICACION

En reunión celebrada el 5 de diciembre de 1984 se sometió a la consideración de la Junta de Calidad Ambiental el Informe de la Oficial Examinadora, Lcda. Norma Morales de Sánchez, relacionado con una Orden para Mostrar Causa y de Hacer contra Bourns Puerto Rico, Inc., por violaciones al Reglamento de Estándares de Caiidad de Agua de Puerto Rico, segdn enmendado. Dicho informe vino acompañado de una estipulación suscrita entre las partes.

Luego de discutidos todos los méritos de este caso y al amparo de los poderes y facultades que le confiere a esta Junta de Calidad Ambienal la Ley Número 9 del 18 de junio de 1970, Ley Sobre Política Pública Ambiental, según enmendada, por la presente se acepta el Informe de la Oficial Examinadora y se aprueba la estipulacidn en todas sus partes, copia de la cual se acompaña para que forme parte de esta Resolución. Se ordena el pago de $3,500.00 por concepto de costas, según estipulado.

NOTIFIQUESE por correo certifIcado con acuse de recibo a: Sr. José Orlandi, Apartado 5789, Caguas, Puerto Rico 00625; Lcdo. Eduardo M. Negrón Navas, G.P.O. Box 3507, San Juan, Puerto Rico 00936; y personalmente a los siguientes funcionarios de la Junta de Calidad Ambiental: Ing. Carl A. Soderberg, Vicepresidente; Ing. Luis E. de la Cruz, Miembro Asociado; Lcdo. Héctor Russe, Director Oficina de Servicios Legales; Lcda. Wanda Linares, Abogada Oficina de Servicios Legales; y a la Lcda. Norma Morales de Sánchez, Directora Oficina Oficiales Examinadores.

DADA en San Juan, Puerto Rico, a de diciembre de 1984.

CERTIFICACION
CERTIFICO que la presente es copia fiel y exacta del original que obra en el Archivo de Seguridad de esta Junta.
En San Juan, Puerto Rico, hoy 17 dic 84

RECIBIDO
DIC 27
Negociado Calidad de Agua

PEDRO A. GELABERT
Presidente

1/5

R2-0004277

IN THE COMMONWEALTH OF PUERTO RICO
OFFICE OF THE GOVERNOR
ENVIRONHENTAL QUALITY BOARD

IN RE:	*	CASE NO: C-A6-76-0016
BOURNS PUERTO RICO, INC.	*	RE: ORDER TO SHOW CAUSE AND TO DO AND TO CEASE DOINIG
	*	REF: DL-84-003-032

S T I P U L A T I O N

WHEREAS, the Environmental Quality Board (the "Board") issued an Order To Show Cause, To Do, and To Cease Doing, dated May 4, 1984 (the "Order"), alleging certain violations of Order C-AG-76-0016 and to the Puerto Rico Water Quality Standards Regulation, as amended, (the "Regulation"), and summoning Bourns Puerto Rico, Inc. ("Bourns") to show cause why certain actions shpuld not be taken;

WHEREAS, Bourns and the Board wish to enter into an agreement to avoid the delay, costs, uncertainty and expenses of lengthy administrative procedures in connection with the Order,

NOW, THEREFORE, the parties hereto hereby agree as follows:

FIRST: The present stipulation contains the entire agreement between the parties, except where otherwise specifically set out herein.

SECOND: Bourns enters this stipulation and agrees to perform as hereinafter described, without accepting the violations alleged in the Order, nor any responsibility nor liability thereof, nor waiving any right or defense whatsoever, and with the single purpose of avoiding the delay, costs, uncertainty and expenses of lengthy administrative and/or court procedures.

THIRD: Bourns acknowledges and accepts the jurisdiction of the Board in this case.

FOURTH: Bourns has taken and is taking certain actions to upgrade its wastewater treatment system, which actions are described in attachment "A" of this Stipulation.

FIFTH: Bourns agrees to comply fully with the compliance schedule described in attachment "A" of this Stipulation.

SIXTH: If the biological mass fails to grow and/or stabilize the system within the stipulated date, despite proper operation and maintenance, Bourns agrees to present an alternative option and/or schedule and EQB agrees to reasonably consider such option and/or schedule.

R2-0004278

SEVENTH: Bourns shall at all times maintain in good working order and operate as efficiently as possible all facilities and systems and related appurtenances for collection and treatment which are installed or used by the permittee for water pollution control and abatement to achieve compliance with the terms and conditions of permit.

EIGHTH: The Board grants attachment "A" as a compliance schedule and will not take any further action against Bourns on the basis of the Order, the alleged violations and the Board inspections.

NINTH: Bourns agrees to pay the Board the sum of $3,500.00 to cover the costs incurred by the Board in connection with this case; payment of which shall be made within thirty (30) days following the receipt of the Board's resolution accepting the present stipulation.

TENTH: Bourns agrees to pay the abpve referred costs, without accepting the violations alleged in the Order, nor any responsibility nor liability thereof, nor waiving any rights or defehse whatsoever.

ELEVENTH: This Stipulation shall become effective and binding upon the parties on the date it is formally approved and adopted by resolution df the Board.

THE PARTIES HERETO respectfully request the Examining Panel and thereafter the Board to adopt this Stipulation as submitted.

In San Juan, Puerto Rico, this 30th day of November, 1984.

BOURNS PUERTO RICO, INC.

By: _____
José Orlandi
President

By: _____
Eduardo Negrón Navas
Legal Counsel

ENVIRONMENTAL QUALITY BOARD

By: _____
Carl Axel P. Soderberg
Vice-President

By: _____
Wanda A. Linares Hernández
Legal Counsel

3

R2-0004279

"ATTACHMENT A"

COMPLIANCE SCHEDULE

	ACTION	DATE
I.	**TANKS**	
	1. Empty all tanks	7-29-84
	2. Remove all solids and water	7-29-84
	3. Clean all tanks	7-29-84
	4. Inspect all tanks for cracks	7-29-84
	5. Fix cracks	7-29-84
	6. Start new wastewater treatment cycle	7-30-84
	7. Stabilize the new wastewater treatment cycle (grow the biological mass and stabilize the system)	11-30-84 (*)
II.	**INFLUENT PUMPING WELL.**	
	1. Provide spare electrodes and solenoid valve for instant replacement on failure.	8-3-84
	2. Provide a portable pump to solve immediate problems.	8-3-84
III.	**AERATION TANKS.**	
	1. Reduce air supply to the tanks to maintain no more than 3.0 mg/L	8-13-84
IV.	**SETTLING TANK.**	
	1. Level the weir	8-31-84
	2. Increase the size of the air supply line to 1 1/2 -2 inches	8-25-84
	3. Repair the torn end of the pipe.	8-10-84
	4. Provide new stilling baffle to improve recirculation	10-15-84
V.	**SLUDGE HOLDING TANK.**	
	1. Use the tank for storing waste sludge only.	7-29-84
	2. Provide a water discharge pipe from sludge holding tank to aeration tank number 1	8-24-84

(*) If the biological mass fails to grow and/or stabilize the system within the stipulated date, despite proper operation and maintenance, Bourns agrees to present an alternative option and/or schedule and EQB agrees to reasonably consider such option and /or schedule.

R2-0004280

VI. AIR SYSTEM

1. Maintain a spare solenoid valve for immediate replacement on failure. 8-10-84

VII. FLOW MEASUREMENT

1. Install a weir box 8-18-84

2. Install a flow meter 12-15-84

VIII. IRRIGATION PUMPS WET WELL.

1. Adjust the levels of the electrodes to maintain a low volume of water. 8-18-84

2. Provide continuous fow of air to prevent septicity. 8-11-84

IX. RETURN ACTIVATED SLUDGE SYSTEM

1. Provide a gate valve on the discharge line close to the air lift. 8-3-84

X. CHLORINATION SYSTEM

1. Shield both the feed pump and the solution tank from, sunlight, heat, and excessive humidity. 8-18-84

5/5

R2-0004281

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 102

BOURNS PUERTO RICO, INC.
STATE ROAD No. 3 Km. 82.6 HUMACAO, P.H.
P.O. BOX 727 HUMACAO, PUERTO RICO 00661
TELEPHONE (809) 852-2315 • FAX (809) 852-4982

16 de marzo de 1989

Sr. Tomós Rivera
Director
Area de Calidad de Agua
Junta de Calidad Ambiental
G.P.O. Box 11488
Santurce, Puerto Rico 00910

RE: Bourns Puerto Rico, Inc.
Carr. #1, Km 48.7
Barrio Beatríz
Cidra, Puerto Rico
C-AG, 76-0016

Estimado Señor Rivera:

Hago referencia a su carta fechada el 3 de febrero de 1989 en la cual se requiere el que sometamos una carta a la Junta de Calidad Ambiental en la que se notifique oficialmente el cierre de la Planta de Tratamiento de Bourns Puerto Rico en Cidra, asi como el Plan de Acción propuesto para remover y disponer de manera adecuada los lodos remanentes en los tanques de dicha Planta.

El propósito de la presente carta es el notificar oficialmente que dicha Planta de Tratamiento ya fue cerrada. Con relación al Plan de Acción para la disposición de lodos, dichò plan fue coordinado con el Ingeniero Wanda Garcia por via telefónica, el pasado julio de 1988.

Según el Ingeniero Garcia los únicos requisitos de la Junta de Calidad Ambiental era que se dispusiera de los sólidos según dispone la Ley y que se sometiera copia de los Documentos de Disposición a la JCA como evidencia de que se cumplió con dicho requisite.

Junto con esta carta estoy sometiendo copia de los Documentos de Disposición de los lodos de nuestra planta al efectuar el cierre de la misma. De este modo solicito la anulación del Permiso de Operación # C-AG-76-0016 que autoriza a Bourns a operar la planta de tratamiento localizada en el Bo. Beatríz de Cidra.

De tener alguna duda sobre el particular, favor de comunicarse conmigo al teléfono 852-2315.

BOURNS PUERTO RICO, INC.

Misael Pérez
Ingeniero de Facilidades

1/6

MP
Encls.

R2-0004284

ESTADO LIBRE ASOCIADO DE PUERTO RICO / OFICINA DEL GOBERNADOR

Junta de Calidad Ambiental

AG/WG/mc

FEB 3 - 1989

Sr. Misael Pérez
Bourns de Puerto Rico
Apartado 727
Humacao, Puerto Rico

Re: Bourns de Puerto Rico
Carr. #1, Km. 48.7
Bo. Beatriz
Cidra, Puerto Rico
C-AG-[redacted]

Estimado señor Pérez:

Hago referencia a la conversación telefónica que sostuviera usted con la Ingeniero Wanda García, Jefe, Sección de Permisos Industriales del Area de Calidad de Agua (ACA) en torno al cierre de las facilidades de epígrafe, asi como de la planta de tratamiento de aguas usadas existente en la misma.

Por este medio, deseo informarle que se deberá someter al ACA una carta en donde se notifique oficialmente el cierre de la planta de tratamiento de Bourns de P.R. asi como del Plan de Acción propuesto para remover y disponer de manera adecuada de los lodos remanentes en los tanques de dicha planta. De esta manera se solicitará la anulación del Permiso de Operación #C-AG-76-0016 que autoriza a Bourns a operar la planta y se procederá a cerrar el caso.

De tener alguna duda sobre este particular, favor de comunicarse con la Ingeniero Wanda Garcia al teléfono 725-4135 a su mejor conveniencia.

Cordialmente,

Tomás Rivera
Director
Area Caliad de Agua

2

R2-0004285

ACKNOWLEDGEMENT OF RECEIPT OF NON-HAZARDOUS WASTE MATERIAL

DATE: Septiembre 8, 1988 (2 SHIPMENT)

COMPANY AND LOCATION: BOURNS DE PUERTO RICO

CARRETERA #1 KM 48.7

BO BEATRIZ, CIDRA, PUERTO RICO

NAME OF WASTE MATERIAL: NON-HAZARDOUS SLUDGE

AMOUNT OF WASTE MATERIAL: 5,000 GALLONS PER SHIPMENT

WPS CODE NUMBER: P 1696

HANDLING METHOD: LANDFILLING (DS1)

FACILITY AREA: NON-HAZARDOUS WASTE LANDFILL (AC2)

THIS IS TO CERTIFY THAT THE ABOVE NAMED WASTE MATERIAL WAS HANDLED ACCORDING TO INTERNAL PRACTICES AND ENVIRONMENTAL REGULATIONS.

REPORTED BY: Marta Hernández

Marta Hernández

TITLE: TSDF CHEMIST

RELEASED BY: René R. Rodríguez

TITLE: CONPLIANCE MANAGER

3

PROYECO

R2-0004286

ACKNOWLEDGEMENT OF RECEIPT OF NON-HAZARDOUS WASTE MATERIAL

DATE: SeptIembre 16, 1988

COMPANY AND LOCATION: BOURNS DE PUERTO RICO

CARRETERA # 1 KM 48.7

BO. BEATRIZ, CIDRA, PUERTO RICO

NAME OF WASTE MATERIAL: NON-HAZARDOUS SLUDGE

AMOUNT OF WASTE MATERIAL: 5,000 GALLONS PER SHIPMENT

WPS CODE NUMBER: P 1696

HANDLING METHOD: ~~LANDFILLING (D80)~~

FACILITY AREA: NON-HAZARDOUS WASTE LANDFILL (AC2)

THIS IS TO CERTIFY THAT THE ABOVE NAMED WASTE MATERIAL WAS HANDLED ACCORDING TO INTERNAL PRACTICES AND ENVIRONMENTAL REGULATIONS.

REPORTED BY: Marta Hernández

TITLE: TSDF CHEMIST

RELEASED BY: René R. Rodríguez

TITLE: COMPLIANCE MANAGER

PROYECO

Protección Técnica Ecológica

R2-0004287

ACKNOWLEDGEMENT OF RECEIPT OF NON-HAZARDOUS WASTE MATERIAL

DATE: Septiembre 19, 1988

COMPANY AND LOCATION: BOURNS DE PUERTO RICO

CARRETERA # 1 KM 48.7

BO BEATRIZ, CIDRA, PUERTO RICO

NAME OF WASTE MATERIAL: NON-HAZARDOUS SLUDGE

AMOUNT OF WASTE MATERIAL: 5,000 GALLONS PER SHIPMENT

WPS CODE NUMBER: P 1696

HANDLING METHOD: LANDFILLING (D81)

FACILITY AREA: NON-HAZARDOUS WASTE LANDFILL (AC2)

THIS IS TO CERTIFY THAT THE ABOVE NAMED WASTE MATERIAL WAS HANDLED ACCORDING TO INTERNAL PRACTICES AND ENVIRONMENTAL REGULATIONS.

REPORTED BY: Marta Hernández

TITLE: TSDF CHEMIST

RELEASED BY: René R. Rodríguez

TITLE: COMPLIANCE MANAGER

PROTECO

Protección Técnica Ecológica

R2-0004288

ACKNOWLEDGEMENT OF RECEIPT OF NON-HAZARDOUS WASTE MATERIAL

DATE: Septiembre 23, 1988

COMPANY AND LOCATION: BOURNS DE PUERTO RICO
CARRETERA # 1 KM 48.7
BO. BEATRIZ, CIDRA, PUERTO RICO

NAME OF WASTE MATERIAL: NON-HAZARDOUS SLUDGE

AMOUNT OF WASTE MATERIAL: 5,000 GALLONS PER SHIPMENT

WPS CODE NUMBER: P 1696

HANDLING METHOD: LANDFILLING (D5)

FACILITY AREA: NON-HAZARDOUS WASTE LANDFILL (A02)

THIS IS TO CERTIFY THAT THE ABOVE NAMED WASTE MATERIAL WAS HANDLED ACCORDING TO INTERNAL PRACTICES AND ENVIRONMENTAL REGULATIONS.

REPORTED BY: Marta Hernandez

TITLE: TSDF CHEMIST

RELEASED BY: René R. Rodríguez

TITLE: COMPLIANCE MANAGER

PROYECO

6/6

REFERENCE 103

ESTADO LI[illegible]ASOCIADO/ OFICINA DEL GOL[illegible]NADOR
OFICINA REGIONAL DE GUAYAMA

JUNTA DE CALIDAD AMBIENTAL

27 de septiembre de 2000

SR BILL GERARD
DIRECTOR GERENCIAL
TECH GROUP PUERTO RICO INC
PO BOX 372587
CAYEY PR 00737-2587

RE: TECH GROUP PUERTO RICO
CIDRA, PUERTO RICO
PFE-LC-RG-21-0800-0033-I-II-O

Estimado señor Gerard:

Me refiero a la autorización de operación otorgada el 18 de agosto de 2000 y a su solicitud de modificación recibida el 22 de septiembre de 2000, para la fuente de emisión mencionada en el epigrafe.

Luego de someterse la documentación necesaria y de realizarse la evaluación correspondiente esta Junta autoriza la modificación de la autorización antes mencionada en cuanto a contaminación atmosférica respecta, según los términos y condiciones de la solicitud.

Las Secciones II y III Revisadas, que se incluyen y que forman parte de esta autorización, contienen todas las fuentes de emisión y condiciones autorizadas bajo esta autorización. Dichas Secciones II y III Revisadas sustituyen las anteriores Secciones II y III.

SECCION II REVISADA – FUENTES DE EMISON INCLUIDAS EN EL PERMISO

FUENTE	DESCRIPCION
Generador de electricidad	Posee una capacidad de 1,200 HP y consumirá "diesel" a razón de 73.2 gals/hr.
Dos (2) tanques de almacenaje de "diesel".	Capacidades de 2,000 galones y 6,000 galones.
Generador de electricidad	Posee una capacidad de 715 HP (325 KW) y consumirá "diesel" a razón de 25.0 gals/hr.
Generador de electricidad	Posee una capacidad de 109 HP (80 KW) y consumirá "diesel" a razón de 5.0 gals/hr.

SECCION III REVISADO - CONDICIONES DE PERMISO

1. Mantendrá copia de este permiso en la instalación en todo momento.

2. Los generadores de electricidad de 1,200 HP (880 KW), 715 HP (525 KW) y 109 HP (80 KW) operarán un máximo de 500 hrs/año (c/u). Mantendrá un registro diario con las horas de operación y consumo de combustible de los generadores disponibles para inspección del personal de la Junta.

3. Deberá enviar a la Junta un informe anual donde se indique el consumo mensual de combustible y horas de operación de los generadores. Este informe será enviado a la Junta no más tarde de los próximos quince (15) dias del siguiente año para el cual el informe es representativo. El mismo deberá ser enviado a la atención de la Sra. Evelyn Rodriguez, División de Validación y Manejo de Datos, Apartado 11488, Santurce, PR 00910.

4. Si el total de emisiones permitidas es distinto a lo otorgado en el penniso, deberá enviar los cómputos de emisiones certificadas por un ingeniero o quimico licenciado. Estos profesionales deben estar autorizados a ejercer la profesión en Puerto Rico. La certificación deberá incluir el pago por las emisiones adicionales a emitirse.

Deseo indicarle que las demás condiciones y términos bajo los cuales se otorgó la autorización del dia 18 de agosto de 2000 permanecen vigentes.

Cordialmente,

Ing. Angel Rivera Ramos
Director
Oficina Regional de Guayama

RG-JFV-jrf

2/2

REFERENCE 104

GOVERNMENT OF PUERTO RICO / OFFICE OF THE GOVERNOR
ENVIRONMENTAL QUALITY BOARD
EMERGENCY RESPONSE AND SUPERFUND AREA

September 14, 2000

Denise Zeno
Project Manager
Pre-Remedial Section, Special Projects Branch
U.S. Environmental Protection Agency
290 Broadway 18th Floor
New York N.Y. 10007-1866

RE: Pre-CERCLA Screening, Zenith Laboratories Caribe, Ine.
Cidra Industrial Park, Cidra, Puerto Rico

Dear Mrs. Zeno:

The following information summarizes all the findings during the Pre-Cercla Screening of Zenith Laboratories Caribe, Inc. (ZENITH). The scope of the investigation included the review of available information from the PREQB files, a target survey, several telephone interviews, and an Off/On Site Reconnaissance performed on May 17, 2000 (Ref 3).

General Description and Site History:

This site is located on Street A of the Cidra Industrial Park, which is located at Km 0.5 of State Road 171, in the Municipality of Cidra, PR (Fig. 1, Ref. 1). The Cidra Industrial Park is to the southeast of the downtown area of Cidra, to the east of State Road 171 and to the north of State Road 7733 (Peripheral Avenue) (Fig. 2, Ref 3). The geographic coordinates are 18° 10' 21" N latitude and 66° 09' 32" W longitude (Ref 2). Other industrial facilities surroimd Zenith, these are: PepsiCola Bottling Company (PepsiCo) is to the east, D. J. Manufacture and Shelfoam are to the west, and Enco Paints and Warnaco Men's Sportware are to the north (Fig. 2, Ref 3). To the north of the site there is a lot under construction that used to be a recreational park, which is next to a public residential complex (Residencial Práxedes Santiago) (Fig. 2, Ref 3). The Ana I. Candelas High School is to the west of the Industrial Park, across from Road 171, and within 0.1-mile distance (Ref. 3). Two different companies established their operations at the site, which is comprised of two buildings (C-1 and C-2). OMARK ANTILLES, INC. (OA) operated from 1978 until 1985 in building C-2 (BDG C-2). ZENITH LABORATORIES CARIBE, INC. (ZENITH) started operations in building C-1 (BDG C-1) from 1983 until present, therefore occupying both buildings since 1985 when OA ceased operations. (Refs. 3, 20 - 26)

OA was a subsidiary of OMARK Industries and manufactured electroplated chain saws. In their manufacture process the metal pieces passed through a washing step followed by a heat treatment to harden them, and an electroplating step. During the electroplating process, the metal pieces are

passed through different metal rinsates (zinc or chromium). The following hazardous chemicals were either used in the manufacture process or generated as hazardous wastes: 1,1,1-Trichloroethane (F001), Chromic Hidroxide (F006), Zinc Hydroxide(F006), Sulfuric Acid, Hydrochloric Acid, Caustic Soda, Glicerine, Chromic Sulfate (F00S), and Ferric Chloride (K062). OA was classified as a Large Quantity Generator umder the RCRA Subtltle C (PRD091007369). OA facilities consisted of one building where the administratives offices, the manufacture area, the shipping department, and the warehouse were located (Figure 4). Outside and to the west of this building there was a ditch that collected the wastewaters generated from the manufacture process and a water treatment plant for these waters. Approximately 1,400 pounds of metal sludge containing Chromium were generated yearly. Hazardous wastes were stored in drums indoors. A company known as Omark Caribbean, located in Bayamón, disposed of the sludge and the hazardous wastes generated at the site. (Refs. 20-26)

Currently, Zenith, a subsidiary of Zenith Goldline Pharmaceuticals, is engaged in the manufacture of several bioequivalent and generic drugs in the form of capsules and tablets (Ref. 3). At Zenith there are 306 employees working in two shifts (Ref. 3). The manufacture process involves several steps: a) weight out, b) granulation, c) compressing, d) encapsulating, and e) coating. Initially, the raw material to be used is weighted (step a) following a specific method. Then, during the granulation (step b) all the necessary raw materials (active and inactive ingredients) are mixed with each other in a reactor and then granulated. Finally, the mixture is homogenized and passed through a milling process. The homogenized mixture is then passed through a compressing process (step c) for the preparation of tablets or through the encapsulation process (step d) for the preparation of capsules. The tablets are manufactured in different shapes and sizes in a compressing machine. For capsules, a different machine is used to fill each one with the powdered homogenized mixture. The outside surface of some of the tablets is covered (step e) with a layer that makes them an easy to swallow pill. The different steel reactors, compressing, and encapsulating machines used in the manufacture process are cleaned with isopropanol (Ref. 3). During the mixing process methylene chloride, methanol and water are added as solvents (Refs. 6 and 7).

Zenith is located in a property almost triangular in shape with a total surface area of approximately 13.5 acres and surrounded by a cyclone fence (Ref. 3). On the westem side of the property there are areas of exposed soil and areas covered with grass. In addition, there are several above ground storage tanks containing fuel (used for boilers) and water (used for the fire emergency system) on this side (Ref. 3). Street C divides the property in two, except for a small portion on the west side (Figs. 2 and 3). BDG C-1 is located in the southem half and to the north of the State Road 7733 (Peripheral Avenue) and BDG C-2 in the northem half and to the south of Street A (Figs. 2 and 3, Ref. 3). Several parking zones covered with concrete are to north and east of both buildings (Fig. 3, Ref. 3). BDG C-1 is where the manufacture process is carried out and the final product is stored (Ref. 3). All the administration offices, the two Quality Control Laboratories, the warehouse for raw materials, and the areas for labeling and packaging of the final product are in BDG C-2 (Ref. 3). There are areas covered with grass and vegetatlon to the south and west of BDG C-2 (Ref. 3). There is also a small area covered with grass and vegetation between BDG C-1 and the parking lot (Fig. 2,3, Ref. 3).

R2-0004295

Next to BDG C-1 and the southem fence there is a small structure that is used for the storage of the flammable solvents (e. g. methanol, hexane) and other hazardous chemicals (e. g. acetonitrile, chloroform, and toluene) (Fig. 3, Ref. 4). For a complete list of all the chemicals stored at this stmcture see References 4 and 8. This structure has a concrete floor and roof, and is surrounded by a cyclone fence (Ref. 3). The soil to the east, south, and west of this storage stmcture is covered with grass and it gently slopes towards the front of the stmcture (Fig. 3, Ref. 3). To the west of BDG C-2 there are the two water wells used by Zenith for their manufacture process and the Hazardous Waste Container Storage Area (HWCSA) (Fig. 3, Ref. 3). Both wells are imbedded in a concrete platform that is beside and to the west of the HWCSA (Ref. 3). The HWCSA is a structure made of a metal roof and metal walls over a concrete floor (Ref. 3). It has a primary containment system which consist of a small concrete wall of approximately two (2) feet high that surrounds it and is part of the floor that made the stmcture (Ref. 3). There is a concrete platform in front of the entrance to the HWCSA (to the north of it). The soil to the south and the east of the HWCSA is covered with grass and it gently slopes towards the front of the stmcture (Ref. 3). The hazardous waste inside this stmcture consist of Lab Packs containing a variety of chemicals and 55-gallon dnims containing acetonitrile, chloroform or a mixture of solvents (e. g. methanol, hexane) generated at their Quality Control Laboratories (Refs. 3, 4, 6, and 7). Chemicals such as ammonium chloride, ammonium persulfate, arsenic trioxide, ciclohexane, dichloromethane, heptane, hexane, isopropanol, lead nitrate, mercury iodide, methylene chloride, Nessler's Reagent, potassium chloride, potassium permanganate, and xylene have been generated as hazardous waste at the site and stored at the HWCSA (Refs. 4, 6, and 7). During the Off/On Site Reconnaissance stressed vegetation was observed in a small area of the grass beside the HWCSA and along the concrete platform to the north of it (Fig. 3 and Ref. 3). It was also observed that the soil in this area of stressed vegetation is unstable and tends to sink forming an indentation where the stormwater accumulates.

Zenith has an Industrial Discharge Permit (GDA-90-505-013) for the residual water generated from their manufacture process and for the domestic wastewater generated from both buildings (Ref. 4). These wastewaters are discharged into the PRASA (Puerto Rico Aqueduct and Sewer Authority) sewer system (Ref. 4). Before the final disposition, the residual waters generated from their manufacture process pass through a pre-treatment process in a plant that is to the north and along the side of BDG C-1 (Fig. 3, Refs. 3 and 4). Ih the northeast comer of BDG C-1 there is a manhole where one of the connection to PRASA is located, while the other is in the southwest comer of BDG C-2 (Ref. 4). The manhole at BDG C-1 is where the water that enters the PRASA sewer system is sampled monthly (Ref. 3).

Zenith is classified as a Conditionally Exempt Small Quantity Generator (CESQG) under the RCRA Subtitle C (PRD987377702). As mentioned before, the hazardous substances and wastes in Zenith are stored outdoors in the Flammable Storage structure (next to BDG C-1) and at the HWCSA (west of BDG C-2), except for the hazardous chemicals stored and generated in the QA/QC laboratories which are kept inside of BDG C-2 (Refs. 3, 4, 6, 7, and 8). OCHOA disposes of the hazardous wastes generated in the laboratories and PROTECO disposes of the non-hazardous sludge generated from a water Pre-Treatment plant currently in operation at their facilities (Ref. 3 and 4).

R2-0004296

The site is located in a zone classif ed as one of minimal flooding by the National Flood Insurance Program of the Federal Emergency Management Agency (Ref 5). Downgradient and to the southeast, at approximately 394 feet from the site, there is an unnamed stream that flows northeast and connects with the Cidra Lake 0.5 mile downstream (Ref 1). In the Cidra Lake there is a PRASA water intake serving a population of 15,683 (Ref 17). This lake and its tributaries have been designated as a Critical Wildlife Habitat for the protection of the Plain Pigeon, an endemic and federal protected specie (Ref 18). To the southwest of both the Cidra's downtown area and the Industrial Park, there is the Arroyata River, which flows northwest and connects with La Plata River 9 miles downstream (Ref 1).

Within a 4-miles distance from the site there are seventeen (17) PRASA drinking water wells that are part of the Cidra urban system (Ref 17). Of these, six (6) are downgradient and to the northwest, serving a population of approximately 2,818 (Ref 17). Since 1996, the Puerto Rico Department of Health (PRDOH) closed four of these downgradient wells (wells III, IV, VI, and VIII) due to contamination with Chloroform, 1,1-dichloroethene, Cis, 1, 2-dichloroethene, Trichloroethene, and Tetrachloroethene (Refs. 9 through 15, 27, and 28). These wells are within 0.5 mile distance from the site and have been under the monitoring of the PRDOH, the PREQB and PRASA in order to eliminate the problem and reinstall these wells into the Cidra urban system (Refs. 9 through 15). On August 1996 Zenith detected these contaminants in one of the wells at their property (Refs. 4 and 11).

There is evidence of contamination of several PRASA drinldng water wells that are part of the Cidra urban system with hazardous substances used or generated as wastes in the two industries established at the site from 1978 to the present. Other wells of this system may be at risk of contamination and the downgradient intake (Cidra Lake) may be impacted by this problem. A threat to the ground water resources of the area may exist due to the above conditions, to the fact that there is no secondary containment surrounding the HWCSA at the site, and that stressed vegetation was besides this storage area. Due to this situation and the conditions found at the site during the Off/On Site Reconnaissance, we recommend this site for a high priority Site Inspection.

Sincerely,

Miguel A. Maldonado
Chief
Superfund PA/SI Division

R2-0004297

PRE-CERCLIS SCREENING CHECKLIST

5

PRE-CERCLIS SCREENING ASSESSMENT CHECKLIST/DECISION FORM

This checidist can assist the site investigator during the Pre-CERCLIS screening. It will be used to determine whether further steps in the rite investigation process arc required under CERCLA. Use additional sheets, if necessary.

Checklist Preparer: FRANCES M. SEGARRA ROMAN / Env. Science Specialist. 20/SEPT./2006
(Name/Title) (Date)
PREQB, 431 Ponce De León Ave., San Juan PR (787) 767-8181 Ext 2244
(Address) (Phone)

(E-Mail Address)

Site Name: ZENITH LABORATORIES CARIBE, INC (ZNT)

Previous Names (if any): OMARK ANTILLES, INC (OA)

Site Location: Cidra Industrial Park, Cidra (Street A)
(Street)
(City) (ST) (Zip)
PR

Latitude: 18° 10' 12" N Longitude: 66° 09' 32" W

Complete the following checidist. If "yes" is marked, please explain below.		YES	NO
1.	Does the site already appear in CERCLIS?	☐	☑
2.	Is the release from products that are pan of the structure of, and result in exposure within, residential buildings or businesses or community structures?	☑	☐
3.	Does the site consist of a release of a naturally occuring substance in its unaltered form, or altered solely through naturally occurring processes or phenomena, from a location where it is naturally found?	☐	☑
4.	Is the release imo a public or private drinking water supply due to deterioration of the system through ordinary use?	☐	☑
5.	Is some other program actively involved with the site (i.e., another Federal, State, or Tribal program)?	☐	☑
6.	Are the hazardous substances potentially released at the site regulated under a statutory exclusion (i.e., petroleum, namral gas, natural gas liquids, synthetic gas usable for fuel, normal application of fertilizer, release located in a workplace, naturally occuning, or regulated by the NRC, UMTRCA, or OSHA)?	☐	☑
7.	Are the hazardous substances potentially released at the site excluded by policy considerations (e.g., deferral to RCRA Corrective Action)?	☐	☑
8.	Is there sufficient documentation that clearly demonstrates that there is no potential for a release that could cause adverse environmental or human health impacts (e.g., comprehensive remedial investigation equivalent data showing no release above ARARs, completed removal action, previous HRS score determined, ASTM Phase I, II, etc. completed, EPA approved risk assessment completed)?	☐	☑

Please explain all "yes" answer(s), attach additional sheets if necessary:

Stressed vegetation was observed at the site, in a small area covered with grass that is next to the Hazardous Waste Container Storage Area.

6

R2-0004299

Site Determination: ☑ Enter the site into CERCLIS. Further assessment is recommended (explain below).

☐ The site is not recommended for placement into CERCLIS (explain below).

DECISION/DISCUSSION/RATIONALE:

FOUR PRASA DRINKING WATER WELLS CLOSED SINCE 1996 DUE TO CONTAMINATION WITH CHEMICALS USED BY THE TWO COMPANIES ESTABLISHED AT THE SITE SINCE 1978 (OA AND ENT) REFER TO THE PRE-CERCLA SCREENING LETTER FOR MORE DETAILS

RECOMMEND THIS FOR A HIGH PRIORITY SITE INSPECTION

Regional EPA Reviewer: _____ Print Name/Signature _____ Date

State Agency/Tribe: FRANCES M SEGARRA Print Name/Signature Sept. 29, 2000 Date

R2-0004300

APA CHECKLIST

R2-0004301

ABBREVIATED PRELIMINARY ASSESSMENT CHECKLIST

This checklist can be used to help the site investigator determine if an Abbreviated Preliminary Assessment (APA) is warranted. This checklist should document the rationale for the decision oh whether further steps in the site investigation process are required under CERCLA. Use additional sheets, if necessary.

Checklist Preparer: Francisco M. Segarra, Environ. Scientist Spec. Sept. 24, 2000
(Name/Title) (Date)
PRSQB, 431 Ponce DeLeón Ave, San Juan PR 787-767-8181 ext 2244
(Address) (Phone)
(E-Mail Address)

Site Name: Zenith Laboratories Caribe, Inc. (ZNT)

Previous Names (if any): Omark Antilles, Inc. (OA)

Site Location: (Street A) Cidra Industrial Park,
(Street) Cidra, PR
(City) (ST) (Zip)

Latitude: 18° 10' 13" N Longitude: 66° 09' 32" W

Describe the release (or potential release) and its probable nature: The PR Health Department closed four PRASA drinking water wells since 1996 that are within 1-mile distance and downgradient of the site due to contamination with chemicals used at the site. These contaminants were also detected at one of the wells at the site (production well). Stressed vegetation observed next to the hazardous wastes storage area.

Part 1 - Superfund Eligibility Evaluation

If all answers are "no" go on to Part 2, otherwise proceed to Part 3.	YES	NO
1. Is the site currently in CERCLIS or an "alias" of another site?	☐	☑
2. Is the site being addressed by some other remedial program (Federal, State, or Tribal)?	☐	☑
3. Are the hazardous substances potentially released at the site regulated under a statutory exclusion (e.g., petroleum, natural gas, natural gas liquids, synthetic gas usable for fuel, normal application of fertilizer, release located in a workplace, naturally occurring, or regulated by the NRC, UMTRCA, or OSHA)?	☐	☑
4. Are the hazardous substances potentially released at the site excluded by policy considerations (i.e., deferred to RCRA corrective action)?	☐	☑
5. Is there sufficient documentation to demonstrate that no potential for a release that could cause adverse environmental or human health impacts exists (e.g., comprehensive remedial investigation equivalent data showing no release above ARARs, completed removal action, previous HRS score determined, or an EPA approved risk assessment completed)?	☐	☑

Please explain all "yes" answer(s).

R2-0004302

Part 2 - Initial Site Evaluation

For Part 2, if information is not available to make a "yes" or "no" response, further investigation may be needed. In these cases, determine whether an APA is appropriate. Exhibit 1 parallels the questions in Part 2. Use Exhibit 1 to make decisions in Part 3.

If the answer is "no" to any of questions 1, 2, or 3, proceed directly to Part 3.	YES	NO
1. Does the site have a release or a potential to release?	☑	☐
2. Does the site have uncontained sources containing CERCLA eligible substances?	☑	☐
3. Does the site have documented on-site, adjacent, or nearby targets?	☑	☐

If the answers to questions 1, 2, and 3 above were all "yes" then answer the questions below before proceeding to Part 3.	YES	NO
4. Does documentation indicate that a target (e.g., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site?	☑	☐
5. Is there an apparent release at the site with no documentation of exposed targets, but there are targets on site or immediately adjacent to the site?	☑	☐
6. Is there an apparent release and no documented on-site targets or targets immediately adjacent to the site, but there are nearby targets (e.g., targets within 1 mile)?	☑	☐
7. Is there no indication of a hazardous substance release, and there are uncontained sources containing CERCLA hazardous substances, but there is a potential to release with targets present on site or in proximity to the site?	☐	☑

Notes: _____

10

R2-0004303

EXHIBIT 1
SITE ASSESSMENT DECISION GUIDELINES FOR A SITE

Exhibit 1 identifies different types of site information and provides some possible recommendations for further site assessment activities based on that information. You will use Exhibit 1 in determining the need for further action at the site, based on the answers to the questions in Part 2. Please use your professional judgement when evaluating a site. Your judgement may be different from the general recommendations for a site given below.

Suspected/Doeumented Site Conditions		APA	Full PA	PA/SI	SI
1. There are no releases or potential to release.		Yes	No	No	No
2. No uncontained sources with CERCLA-eligible substances are present on site.		Yes	No	No	No
3. There are no on-site, adjacent, or nearby targets.		Yes	No	No	No
4. There is documentation indicating that a target (e.g., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site.	Option 1: APA ⇨ Si	Yes	No	No	Yes
	Option 2: PA/SI	No	No	Yes	NA
5. There is an apparent release at the site widi no documentation of exposed targets, but there are targets on site or immediateiy adjacent to the site.	Option 1: APA ⇨ SI	Yes	No	No	Yes
	Option 2: PA/SI	No	No	Yes	NA
6. There is an apparent release and no documented on-site targets and no documented targets immediately adjacent to the site, but there are nearby targets. Nearby targets are those targets that are located within 1 mile of the site and have a relatively high likelihood of exposure to a hazardous substance migration from the site.		No	Yes	No	No
7. There is no indication of a hazardous substance release, and there are uncontained sources containing CERCLA hazardous substances, but there is a potenuai to release with targets present on site or in proximity to the site.		No	Yes	No	No

Part 3 - EPA Site Assessment Decision

When completing Part 3, use Part 2 and Exhibit 1 to select the appropriate decision. For example, if the answer to question 1 in Pan 2 was "no," then an APA may be performed and the "NFRAP" box below should be checked. Additionally, if the answer to question 4 in Part 2 is "yes," then you have two options (as indicated in Exhibit 1): Option 1 – conduct an APA and check the "Lower Priority SI" or "Higher Priority SI" box below; or Option 2 – proceed with a combined PA/SI assessment.

Check the box that applies based on the condusions of the APA:

- ☐ NFRAP
- ☑ Higher Priority SI
- ☐ Lower Priority SI
- ☐ Defer to RCRA Subtitle C
- ☐ Defer to NRC
- ☐ Refer to Removal Program - further site assessment needed
- ☐ Refer to Removal Program - NFRAP
- ☐ Site is being addressed as pan of another CERCLIS site
- ☐ Other: _____

Regional EPA Reviewer: _____ _____

Print Name/Signature Date

James A. Sigua, Environmental Science Specialist Sept 24, 2000
PRERB

R2-0004304

PLEASE EXPLAIN THE RATIONALE FOR YOUR DECISION:

Four RAST drinking water wells closed Sept 1996 due to contamination with chemicals used by the two companies established at the site Since 1978 (OA and ENT). Refer to the Pre-CERCLA Screening Letter for more details.

Recommend this site for a High Priority Site Inspection.

NOTES:

R2-0004305

PRE-CERCLA SCREENING REPORT
ZENITH LABORATORIES CARIBE INC.
FIGURES AND REFERENCES
CIDRA, PUERTO RICO

R2-0004306

FIGURES

1. Site Location Map. Zenith Laboratories Caribe, Inc. (ZENITH), Cidra, Puerto Rico.
2. Area Sketch. Zenith Laboratories Caribe, Inc. (ZENITH), Cidra Industrial Park, Cidra, Puerto Rico.
3. Site Sketch. Zenith Laboratories Caribe, Inc. (ZENITH), Cidra, Puerto Rico.
4. Site Sketch. Omark Antilles, Inc. (OA), Cidra, Puerto Rico.

R2-0004307

REFERENCES

1. U. S. Geological Survey, 7.5-minute topographic quadrangle map of Comerio, PR 1957, photorevised 1982.
2. Latitude and longitude calculation sheet.
3. Frances M. Segarra, Environmental Sciences Specialist. PREQB Superfund (PA/SI) Section. Zenith Off/On Site Reconnaissance Information Reporting form and photolog. May 31, 2000.
4. Axel M. Gómez, Environmental Specialist. Zenith Laboratories Caribe, Inc. Re: Reference documents from Zenith sent to the PREQB.
5. Federal Emergency Management Agency, Flood Insurance Rate Map. Commonwealth of PR, Community – Panel Number 720000 0174B. Panel 174 of 325. Map revised: July 19, 1982.
6. PREQB, Land Pollution Control Area, Hazardous Waste Compliance Division. November 13, 1995. Re: Letter sent to Zenith with findings during an inspection performed on October 18, 1995.
7. PREQB, Land Pollution Control Area, Hazardous Waste Compliance Division. October 17, 1997. Re: Letter sent to Zenith with findings during and inspection performed on October 15, 1997.
8. Zenith Laboratories Caribe, Inc. (Zenith). Re: Tier I and II forms corresponding to 1998, 1999 and 2000.
9. Carmen Feliciano, Secretary, Health Department. March 14, 1996. Re: Violation Notification to PRASA -Tetrachloroethane, pozo calle Padilla Final.
10. Cannen Feliciano, Secretary, Health Department. October 31, 1996. Re: Violation Notification to PRASA -Tetrachloroethane, pozo VIII (Cementerio).
11. Ismael Castro, Environmental Technician. PREQB Water Quality Area. November 7, 1996. Re: Inspection to PRASA's drinking water wells VIII (Cementerio).
12. Carmen Feliciano, Secretary, Health Department. December 16, 1998. Re: Information reganiing drinking water well #3.
13. Carmen Feliciano, Secretary, Health Department. February 19, 1999. Re: Violation Notification to PRASA, drinking water well #3.
14. Cannen Feliciano, Secretary, Health Department. February 11, 1999. Re: Violation

R2-0004308

Notification to PRASA, drinking water well #3.

15. Carmen Feliciano, Secretary, Health Department. October 15, 1999. Re: Investigation on the drinldng water well of the Cidra urban system.
16. PR Water Company. March 30, 1999. Re: Resuh of VOC analysis of samples from two (2) private wells.
17. PREQB Superfund PA/SI Division files. Re: Information regarding the PRASA wells of the Cidra Urban System.
18. PR Natural Resources Department. Critical Wildlife Areas of Puerto Rico.
19. OMARK ANTILLES, INC. March 4, 1981. EPA Fonn 8700-12. Notification of hazardous waste activity.
20. PREQB, Land Pollution Control Area, Hazardous Waste Compliance Division. April 9, 1981. Re: Memo regarding inspection at OMAR ANTILLES, INC., and the recommendations.
21. OMARK ANTILLES, INC. August 14, 2000. Re: Letter sent to the PREQB regarding the hazardous wastes generated at the site.
22. PREQB, Land Pollution Control Area, Hazardous Waste Compliance Division. June 13, 1984. Re: Memo regarding a Full RCRA inspection at OMARK ANTILLES, INC witii fmdings and recommendations.
23. PREQB, Land Pollution Control Area, Hazardous Waste Compliance Division. August 3,1984. Re: Memo with documents sent by OMARK ANTILLES, INC.
24. PREQB, Land Pollution Control Area, Hazardous Waste Compliance Division. June 13, 1985. Re: Memo regarding inspection at OMARK ANTILLES, INC and the recommendations .
25. Frances M. Segarra, Environmental Sciences Specialist. PREQB Superfund (PA/SI) Section. August 25, 2000. TELECON NOTE. Re: Interview with Mr. Rafael Caraballo, fomier employee of OMARK ANTILLES, INC.
26. Frances M. Segarra, Environmental Sciences Specialist. PREQB Superfund (PA/SI) Section. August 25, 2000. TELECON NOTE. Re: Fax sent by Mr. Rafael Caraballo witii site sketch of OMARK ANTILLES, INC.

R2-0004309

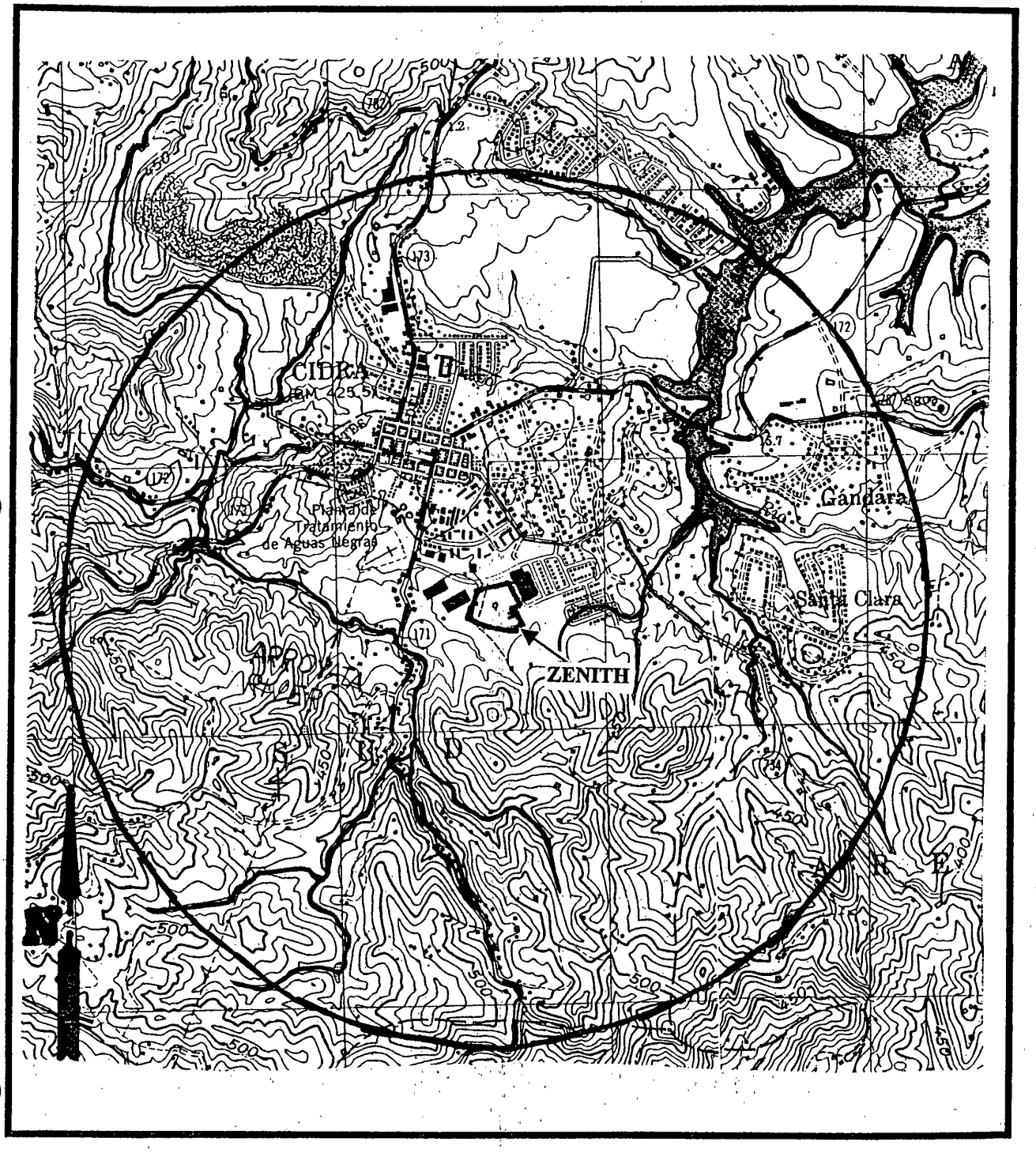
27. Carmen Feliciano, Secretary, Health Department. August 2, 2000. Re: Violation Notification to PRASA, drinking water well #6 (Calle Baldorioty).
28. Carmen Feliciano, Secretary, Health Department. August 22, 2000. Re: Violation Notification to PRASA, drinking water well #6 (Calle Baldorioty).

R2-0004310

FIGURE 1

R2-0004311

Figure 1
SITE LOCATION MAP
Zenith Laboratories Caribe, Inc. (ZENITH)
Cidra Industrial Park, Cidra, PR



SCALE 1 : 20,000

R2-0004312

FIGURE 2

R2-0004313

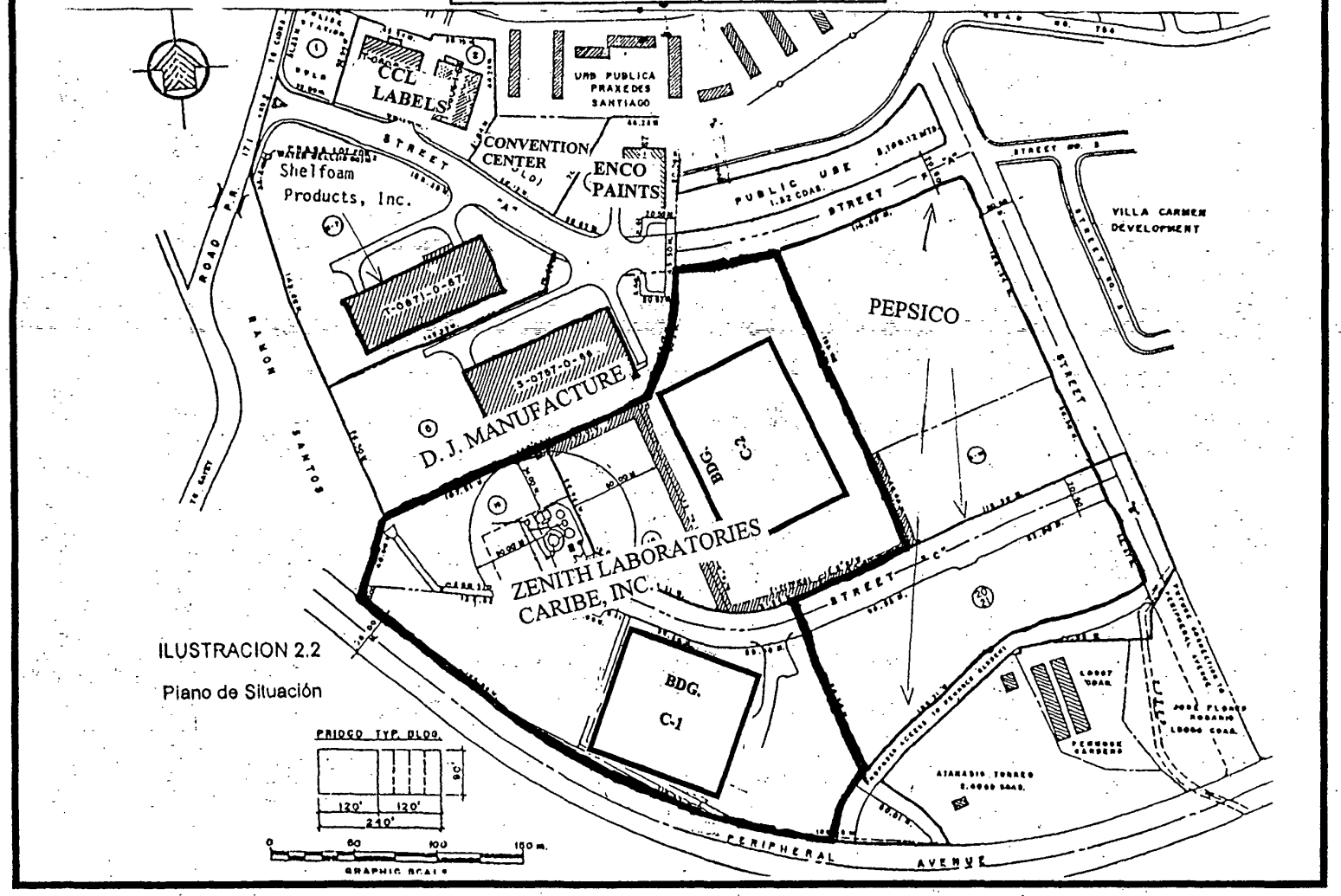
Figure 2

AREA SKETCH

Zenith Laboratories Caribe, Inc.

Cidra Industrial Park, Cidra, PR

NOT TO SCALE



ILUSTRACION 2.2

Plano de Situación

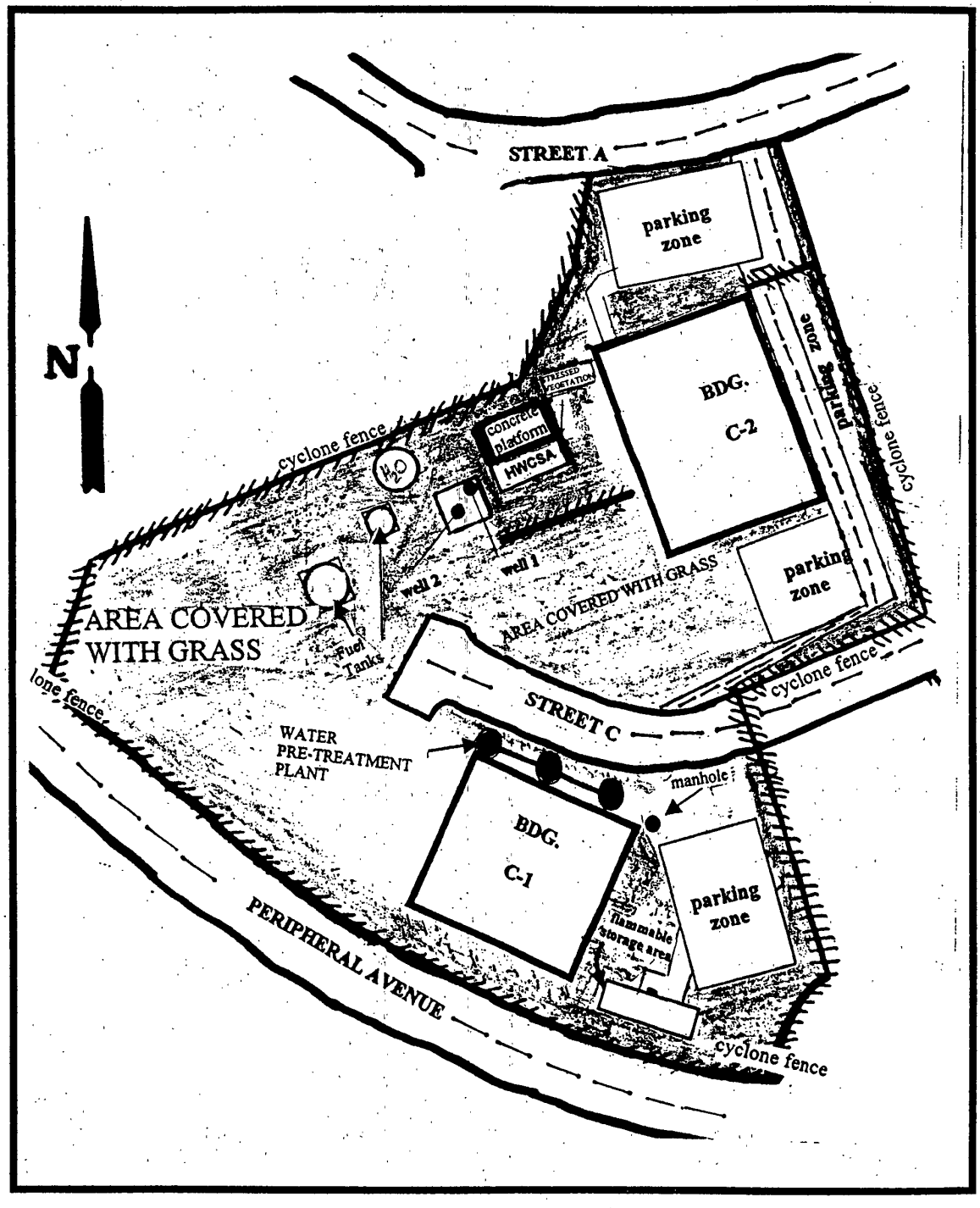
FIGURE 3

R2-0004315

Figure 3

SITE SKETCH
Zenith Laboratories Caribe, Inc. (ZENITH)
Cidra Industrial Park, Cidra, PR

NOT TO SCALE



23

FIGURE 4

R2-0004317

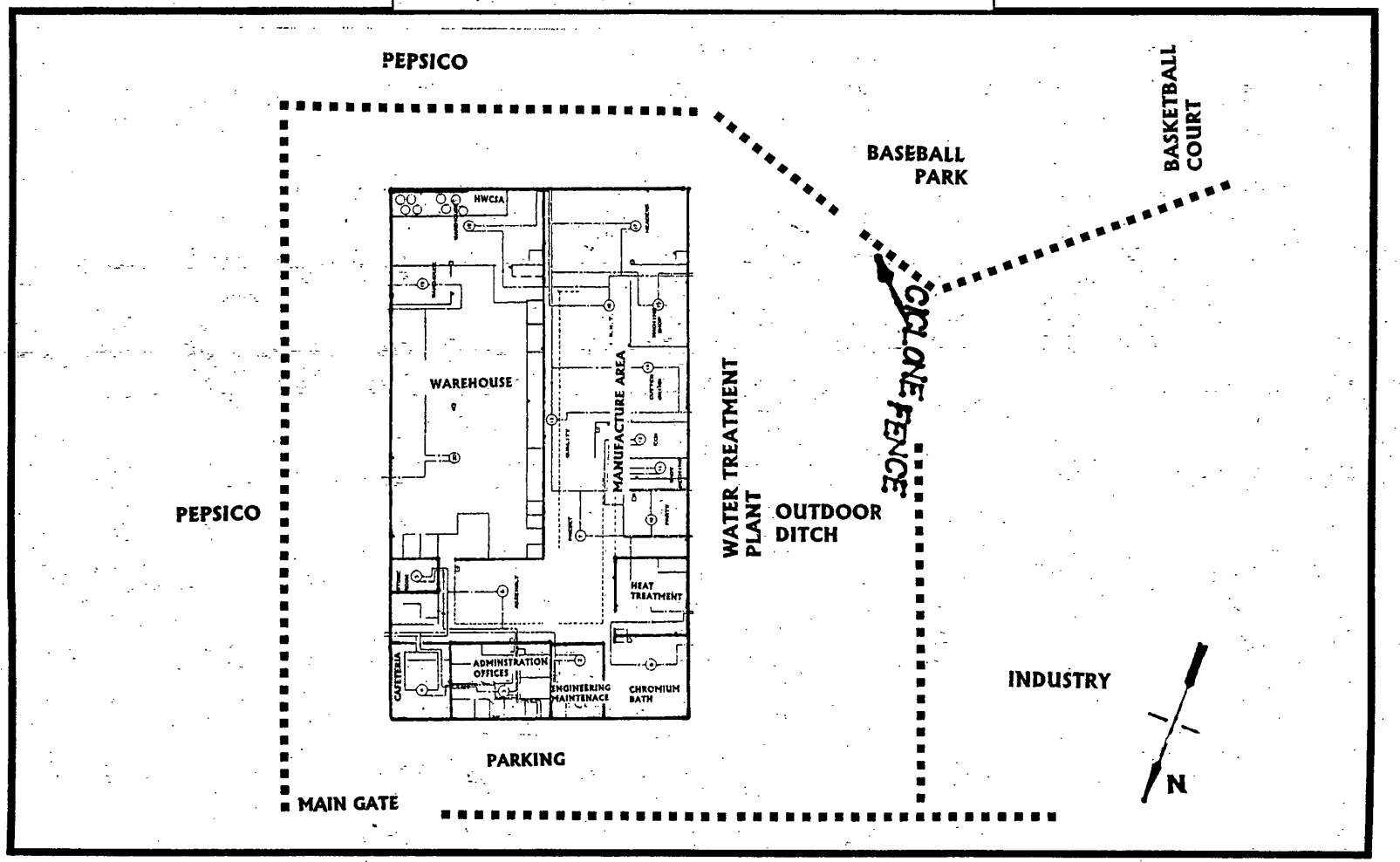
Figure 4

SITE SKETCH

OMARK ANTILLES, INC.

Cidra Industrial Park, Cidra, PR

NOT TO SCALE



R2-0004318

REFERENCE 1

R2-0004319

REFERENCE # 1

ZENITH LABORATORIES CARIBE, INC (ZENITH)
CIDRA, PR
7.5 MINUTE SERIES (TOPOGRAPHIC)

ROAD CLASSIFICATION

Heavy-duty ——— Light-duty - - - -

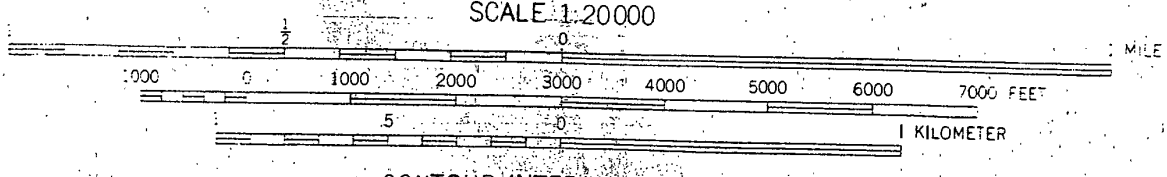
Medium-duty — — — Unimproved dirt - - - -

Insular Route

00265

COMERÍO, P. R.
N1807.5—W6607.5/7.5

1957
PHOTOREVISED 1982
DMA 1322 I SW-SERIES V855



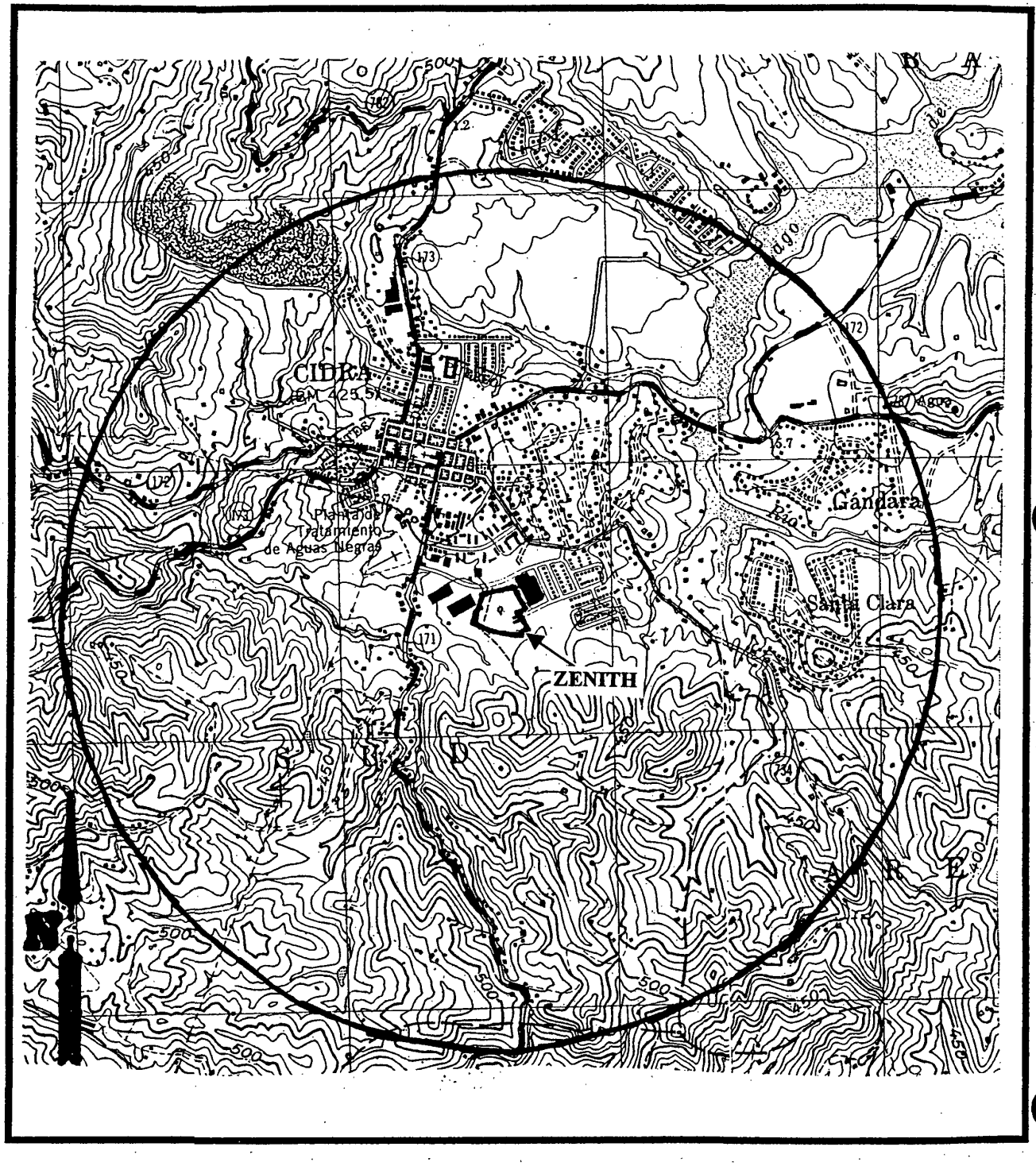
CONTOUR INTERVAL 10 METERS
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
AND DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS, SAN JUAN, P. R. 00910
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

27

R2-0004320

SITE LOCATION MAP
Zenith Laboratories Caribe, Inc. (ZENITH)
Cidra Industrial Park, Cidra, PR



SCALE 1 : 20,000

24

R2-0004321

REFERENCE 2

R2-0004322

LATITUDE AND LONGITUDE CALCULATION WORKSHEET
WHEN USING THE COORDINATE GRID CELL

SITE NAME: Zenith Laboratories Caribe, Inc. CERCLIS #: _____

AKA: _____ SSID: _____

ADDRESS: Street A, Lots 18 and 19, Cidra Industrial Park

CITY: Cidra STATE: PR ZIP CODE: 00739

USGS QUAD MAP NAME: Comerio TOWNSHIP: _____ N/S RANGE: _____ E/W

SCALE: 1:20,000 MAP DATE: 1957 SECTION: _____ ¼ _____ ¼ _____ ¼

MAP DATUM: 1940 PHOTOREVISED: 1982 MERIDIAN: _____

LONGITUDE: 66 ° 07 ' 30 " W LATITUDE: 18 ° 07 ' 30 " N

COORDINATED FROM LOWER RIGHT (SOUTHEAST) CORNER OF 2.5' GRID CELL:

LONGITUDE: 65 ° 09 ' 30 " W LATITUDE: 18 ° 10 ' 00 " N

CALCULATIONS: LATITUDE (7.5' QUADRANGLE MAP)

A) ALIGN THE GRID CELL (7.5' WIDE X 2.5' HIGH) WITH THE NEAREST LATITUDE REFERENCE POINT TO THE SITE.
B) ADD TO THE REFERENCE LATITUDE POINT THE CORRESPONDING INCREMENTS OF 1 SECOND UNTIL THE SITE LOCATION.
C) WRITE DOWN THE CORRESPONDING LATITUDE COORDINATE OF THE SITE IN DEGREES, MINUTES AND SECONDS.

SITE LATITUDE: 18 ° 10 ' 21 " N

CALCULATIONS: LONGITUDE (7.5' QUADRANGLE MAP)

A) WITHOUT DISPLACING THE GRID CELL, LOOK FOR THE LONGITUDE THAT APPEARS ON THE NORTHEAST CORNER OF THE QUADRANGLE.
B) ADD TO THIS LONGITUDE THE CORRESPONDING INCREMENTS OF ONE SECOND UNTIL THE SITE LOCATION
C) WRITE DOWN THE CORRESPONDING LONGITUDE COORDINATE OF THE SITE IN DEGREES, MINUTES AND SECONDS.

SITE LONGITUDE: 66 ° 09 ' 32 " W

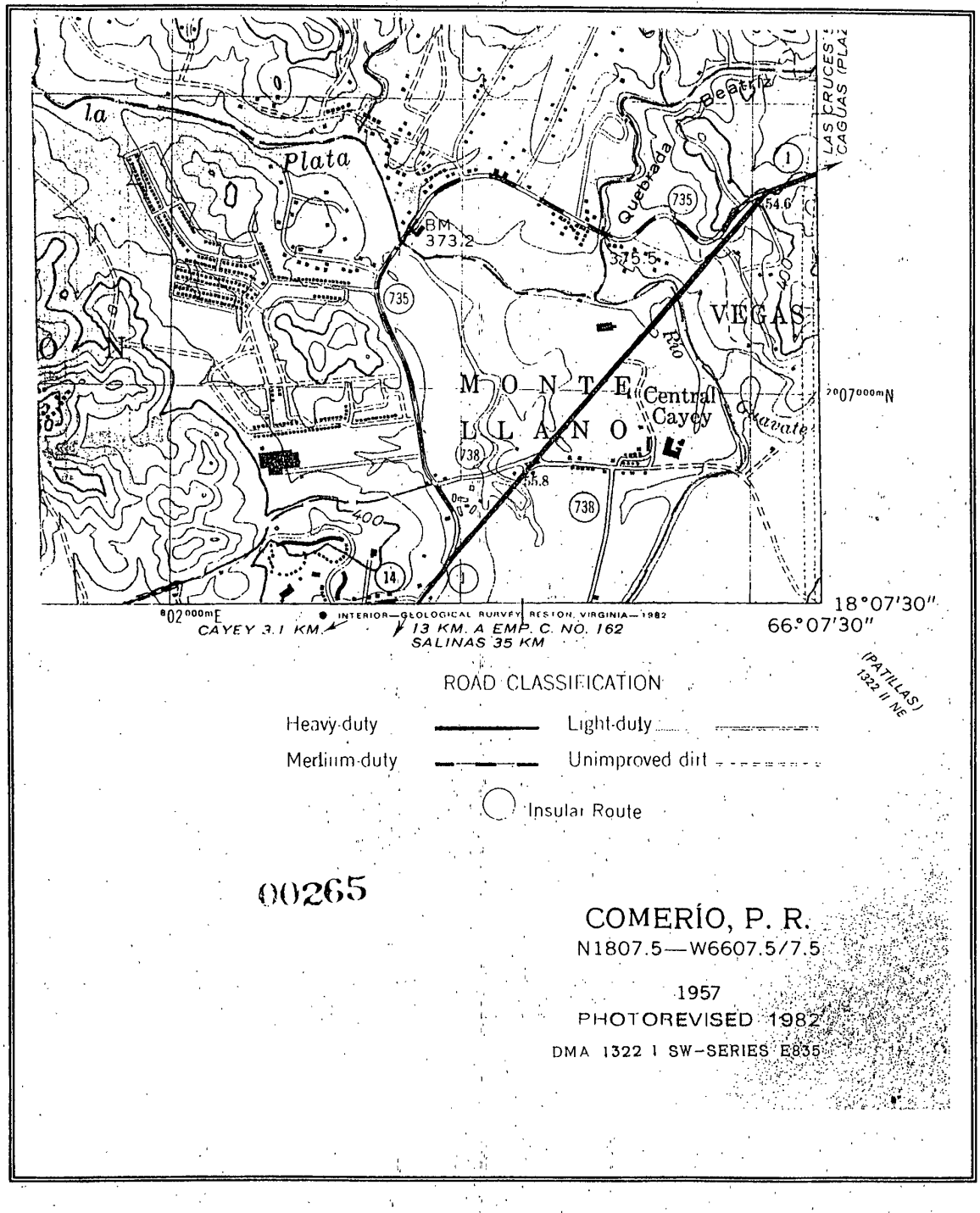
PREQB INVESTIGATOR: Frances M. Segarra DATE: June 7, 2000

REFERENCE # 2

30

R2-0004323

SITE NAME: Zenith Laboratories Caribe, Inc. CERCLIS # PRD _____



00265

COMERÍO, P. R.
N1807.5—W6607.5/7.5

1957
PHOTOREVISED 1982
DMA 1322 I SW-SERIES E835

TOPOGRAPHIC MAP QUADRANGLE NAME: Comerio, PR SCALE: 1:20,000
COORDINATES OF LOWER RIGHT-HAND CORNER OF 7.5-MINUTE GRID:
LATITUDE: 18° 07' 30" N LONGITUDE: 66° 07' 30" W

R2-0004324

REFERENCE 3

R2-0004325

OFF SITE/ON SITE RECONNAISSANCE
INFORMATION REPORTING FORM

Date: May 17, 2000 REFERENCE # 3

Site Name: Zenith Laboratories Caribe, Inc.

Site Address: State Road 171, Km 0.5, Cidra Industrial Park, Cidra, Puerto Rico.

EQB Personnel:	Name	Discipline
	Nereida Hernandez	Environmental Science Specialist
	Frances M. Segarra	Enyironmental Science Specialist

Weather Conditions (clear, cloudy, rain, snow, etc.):

Rainy.

Estimated temperature at arrival:

80°F

Signature: Frances M. Segarra **Date: May 31, 2000**

R2-0004326

OFF SITE/ON SITE RECONNAISSANCE INFORMATION REPORTING FORM

Date: May 17, 2000

Site Name: Zenith Laboratories Caribe, Inc.

* * *

0745 - Departure from the PREQB. Drove south on Highway 52 (Luis A. Ferré). After the first toll, took exit into State Road 172. Continue traveling on Road 172 in direction to Cidra and turned left at the intersection with State Road 171. The Cidra Industrial Park is at Km 0.5 on Road 171, to the left-hand side or east, immediately after the Mumicipal Cemetery.

0845 - Arrived to the Cidra Industrial Park. Reached Zenith Laboratories Caribe, Inc. (Zenith) through Street A (municipal road that gives access to the industrial park) after passing by Shelfoam and D. J. Manufacturing. Zenith is in a property almost triangular in shape and surrounded by a cyclone fence that is to the south of Street A. Other industrial facilities surrounding Zenith are: PepsiCola Bottling Company (PepsiCo) is to the east, D. J. Manufacturing and Shelfoam are to the west, Enco Paints and Warnaco Men's Sportware are to the north. Also, to the north of Zenith there is a small lot that is under construction that used to be a recreational park and a public residential complex (Residencial Praxedes Santiago). The Cidra Industrial Park is to the southeast of the town of Cidra. State Road 7733 (Peripheral Avenue) is to the south and State Road 171 is to the west of the site. Ana I. Candelas High School is to the west of the Industrial Park, across from Road 171, and within a 0.1-mile distance.

There is a municipal road (Street C) that divides the property in two. Currently there are two buildings at the site, one is on the northern half and to the south of Street A, and the other is on the southern half and to the north of State Road 7733 (see site sketch). There are several above ground storage tanks on the western corner of the property. Observed areas covered with grass surrounding each building and at the west side of the property. There were areas of exposed soil in the west side. Also, there were parking zones covered with

R2-0004327

concrete next to both buildings.

0910 - Entered Zenith and met with Mrs. Diduvina Westerband, Safety Officer. Mrs. Westerband indicated that at their facilities several pharmaceutical, bioequivalent, and generic drugs, in the form of tablets or capsules, are manufactured. According to her the manufacture process involves several steps: a) weight out, b) granulation, c) compressing, d) encapsulating, and e) coating. Initially, the raw material to be used is weighted (step a) following a specific method. During the granulation (step b) once the amount of all necessary raw materials is weighted, they are mixed with each other (active and inactive ingredients) in a reactor and then granulated in a machine. Finally, the mixture is homogenized and passed through a milling process. Once the mixture is homogenized it either pass through a compressing process (step c) for the preparation of tablets or through the encapsulation process (step d) for the preparation of capsules. The tablets are manufactured in different shapes and sizes in a compressing machine. For capsules, a different machine is used to fill each one with the powdered homogenized mixture. The outside surface of some of the tablets are covered (coating, step e) with a layer that makes them easier to swallow.

Mrs. Westerband infonned that all the different reactors and machines used in the manufacture process are cleaned with Isopropanol. She also indicated that the manufacture process has not changed since 1983, when Zenith began its operations. Currently there are 306 employees at Zenith working in two shifts. This company is a subsidiary of Zenith Goldline Pharmaceutical.

0930 – Mr. Gilberto Cruz, Engineering Manager; Mrs. Virginia Garcia, Quality Assurance Manager, and Mr. Alex Gómez, Environmental Specialist, arrived at the meeting. Mr. Cruz indicated that OCHOA disposes of the hazardous wastes generated at their facilities which consist of Lab packs, acetonitrile, chloroform, and mixtures of solvents (e. g. methanol, hexane). He also mentioned that PROTECO disposes of the non-hazardous sludge generated from the Pre-Treatment plant currentiy in operation at Zenith. According to Mr. Cruz, the company has a discharge permit from PRASA that authorizes them to discharge the water from the

R2-0004328

manufacture process, after pre-treatment, into the PRASA sewer systems. Mrs. Westerband informed that these hazardous wastes are generated from the Quality Control Laboratories at the site.

1000 – Proceeded to inspect the facilities with Mr. Gilberto Cruz. He informed that there are two buildings in the property, building C-1 and C-2. All the offices, the two Quality Control Laboratories, a warehouse for raw materials, and the areas for labeling and packaging the final product are in building C-2 (BDG C-2). This building is on the north side and next to the main gate and the visitor's parking zone (see site sketch). Building C-1 (BDG C-1) is where the manufacture process is carried out and where the final product is stored. This building is on the south side of the property. According to Mr. Cruz, building C-1 was expanded on November 1999.

1005– Visited different areas inside building C-2.

1008 –Left BDG C-2. Observed the following in the surroundings of BDG C-2:

- There are areas covered with concrete to the north, east and south designated as parking zones. In the parking zone to the south of this building most of the superficial area was covered with concrete, but there was a small portion covered with gravel.
- There are areas covered with grass and some vegetation to the south and to the west of BDG C-2.
- Three above-ground storage tanks, the Hazardous Waste Storage Area, and the two water wells are to the west of BDG C-2.

1015 – Arrived to BDG C-1. There is a small stmcture next to the southem fence and to the east of BDG C-1, where the flammable solvents and chloroform are stored (see site sketch). It consists of a concrete roof and floor, and surrounded by a cyclone fence. The access to this structure is through a concrete stair and is restricted. The soil to the south, east, and west of the storage structure for flammable solvents and chloroform, is covered with grass. To the north of the storage structure the soil is covered with concrete. Over this area covered with concrete there is a parking zone that is southeast of BDG C-1. The Water Pre-Treatment

R2-0004329

Plant is to the north and alongside of BDG C-1 (see site sketch). On the northeast corner, there is a manhole where the connection to PRASA is located. At this point the water that enters the PRASA sewer system is sampled monthly. There is a small area covered with grass and vegetation between BDG C-1 and the parking lot to the east of it. To the west of both buildings and the end of street C, there is a larger area covered with grass except for some small portions where the soil is exposed.

1020 – Entered BDG C-1 and visited the different manufacture areas.

1030 – Left BDG C-1. Proceed to inspect the Hazardous Waste Storage area located to the west of BDG C-2. Observed an old structure to the west of Zenith that, according to Mr. Cruz, used to be a Treatment Plant that have been closed for over 30 years. In addition, various above ground storage tanks used to store either fuel or water were observed. The Hazardous Waste Storage area is to the west, between BDG C-2 and Street C (see site sketch). The two water wells used for the manufacture process at Zenith are to the west of and next to the Hazardous Waste Storage (HWS) area (see site sketch). Both wells are in an area covered with concrete. The HWS area is a structure made of a metal roof and metal walls over a concrete floor. It has a primary containment system (a small concrete wall of approximately 2 feet that surround and is part of the floor that made the HWS structure) and the access is restricted. There is a concrete platform in front of the entrance to the HWS structure (to the north of it). According to Mr. Cruz the hazardous waste stored inside this structure consist of Lab Packs and 55-gallon drums containing acetonitrile, chloroform or a mixture of solvents. The soil to the south and the east of the HWS structure is covered with grass and it gently slopes towards the front of the structure. Observe stressed vegetation in a small area of the grass that is beside to the HWS structure and along the concrete platform to the north of it (see photo 1 & 2). Also, the soil in this area of stressed vegetation seems to be sinking in. Since it was raining, it was evident that the water draining from the metal roof of the HWS structure, flew over the whole area of stressed vegetation.

1130 – Departure from Zenith.

R2-0004330

1145 – Observed fishermen at the Cidra Lake (see photo 3).

1200 – Completed the Off/On Site Reconnaissance.

***

R2-0004331

OFF SITE/ON SITE RECONNAISSANCE

INFORMATION REPORTING FORM

Date: May 17, 2000

Site Name: Zenith Laboratories Caribe Inc.

Camera: Canon Sure Shot

Film: Kodak color (35 mm)

Photographer: Frances M. Segarra Román

PHOTO LOG

ROLL #	PHOTO #	TIME	DESCRIPTION
1	1,2	1020	View of stressed vegetation in the grass area besides the Hazardous Waste Storage structure. Photo was taken looking south towards the structure.
1	3	1145	View of fishermen at the Cidra Lake.

R2-0004332

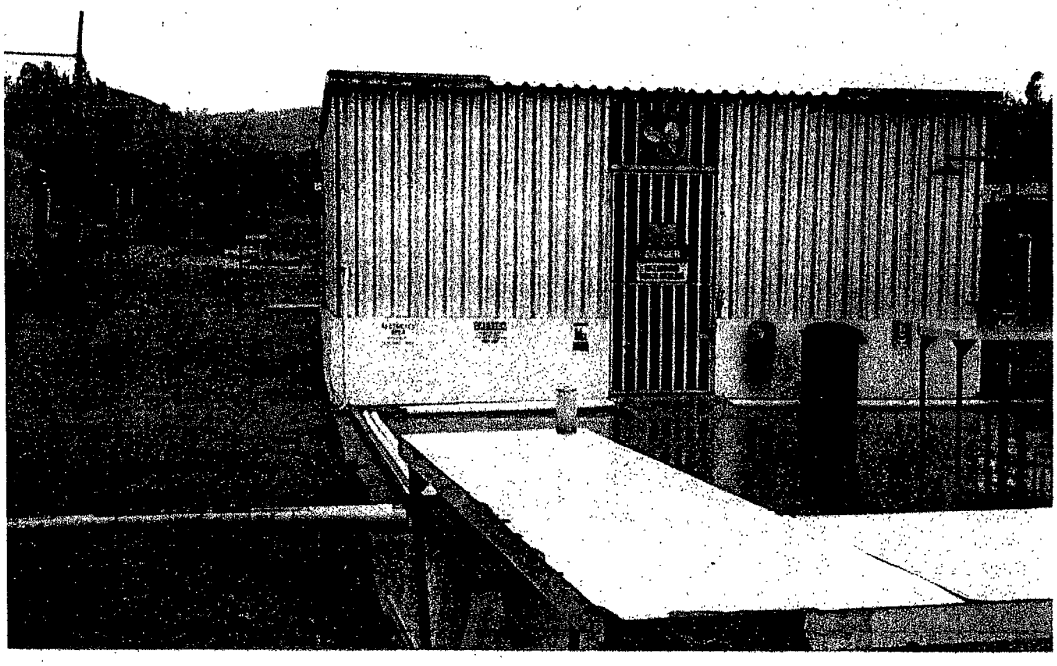


PHOTO 1

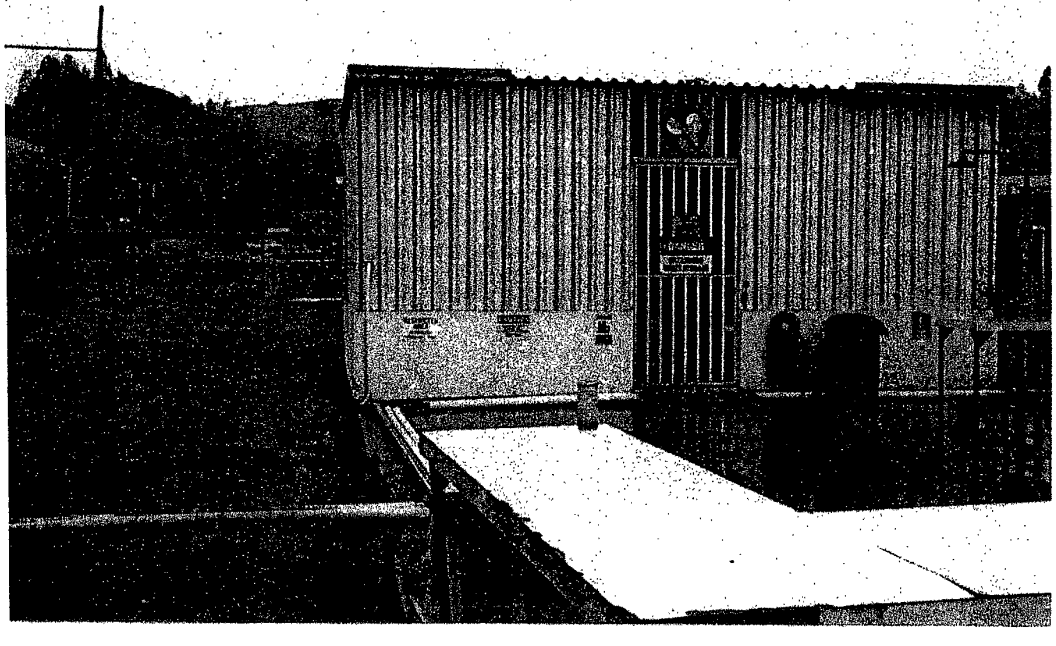


PHOTO 2

R2-0004333

PHOTO 3

R2-0004334

REFERENCE 4

R2-0004335

REFERENCE # 4

REFERENCE DOCUMENTS FROM

ZENITH LABORATORIES CARIBE, INC.

SENT BY:

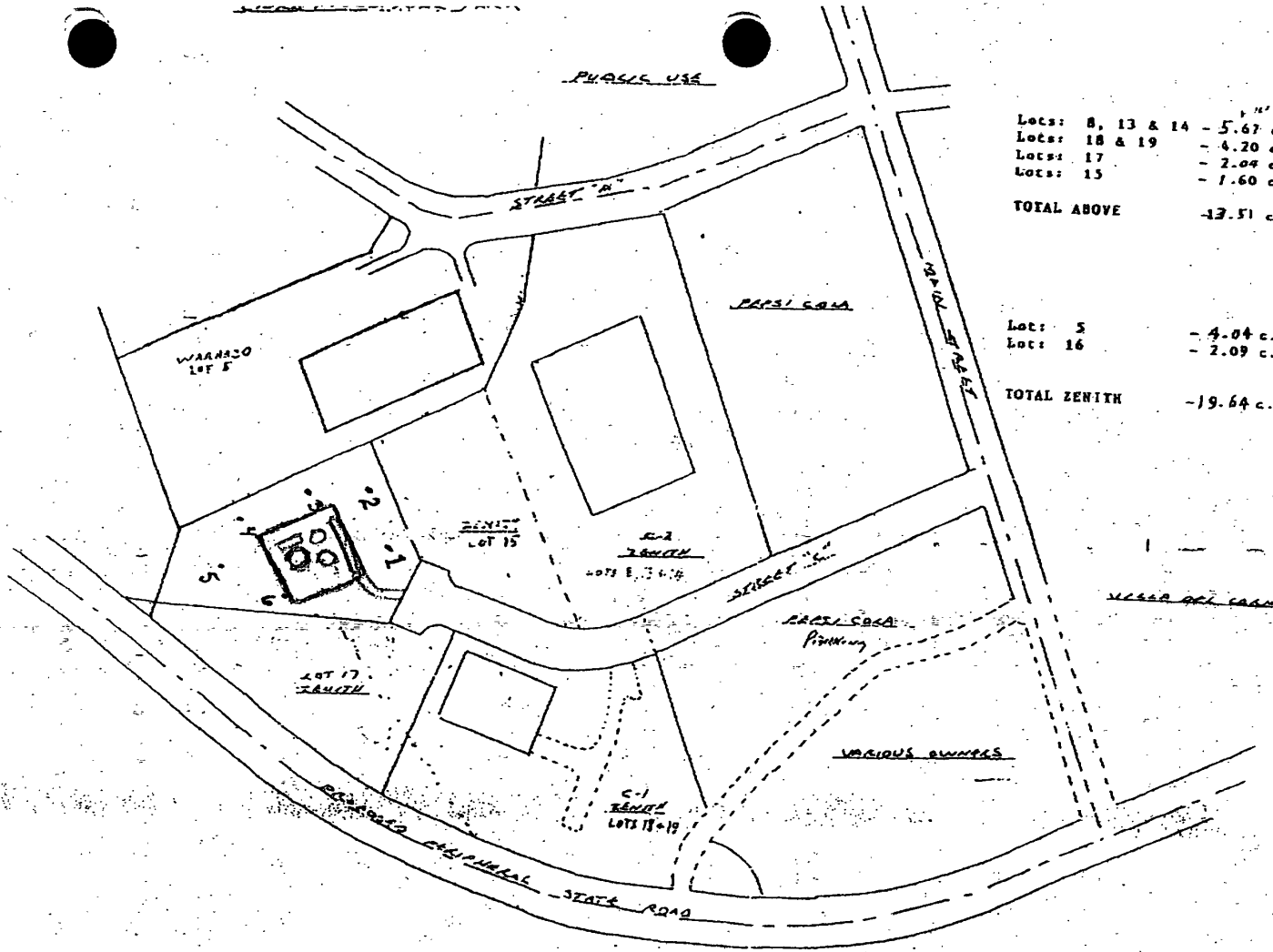
Mr. Axel M. Gómez, Environmental Specialist

R2-0004336

ZENITH LABORATORIES CARIBE, INC.

Site Plan

R2-0004337



Lots:	8, 13 & 14	- 5.67 c.
Lots:	18 & 19	- 4.20 c.
Lots:	17	- 2.04 c.
Lots:	15	- 1.60 c.
TOTAL ABOVE		-13.51 c.

Lot: 5	- 4.04 c.
Lot: 16	- 2.09 c.
TOTAL ZENITH	-19.64 c.

1 CUERDA = 3931 M² = .97

ZENITH LABORATORIES CARIBE, INC.

Chemicals stored at the flammable storage area.
(next to building C-1)

R2-0004339

9 de mayo de 2000.

Inventario cuarto de Inflamables – C-1.

Descripción	*Cantidad (cs)*	*Exp.*
Acetone	*12*	*1/03*
Acetonitrile	*22*	*3/03*
Acetic Acid	*7*	*2/03*
Buffer pH 1.68	*1*	*7/00*
Buffer pH 2	*1*	*11/01*
Buffer pH 4	*1*	*9/01*
Buffer pH 7	*1*	*1/2002*
Buffer pH 10	*1*	*8/00*
Buffer pH 12.45	*2*	*8/00*
1-Butanol	*1*	*2/03*
Butyl Alcohol	*2*	*2/03*
Chlordform w/o etanol	*8*	*1/03*
Cyclohexane	*9*	*1/03*
Cyclohexanone	*1*	*7/01*
Dimethyl Acetamide	*1*	*1/03*
Dimethyl Sulfoxide	*2*	*4/03*
Ethyl Acetate	*2*	*2/03*
Ethyl Alcohol 95% desnatured	*1*	*7/01*
Ethyl Alcohol 200 proof	*21*	*12/02*
Heikol-E detergent	*5*	*3/03*
Hexane	*8*	*1/03*
Hydrochloric Acid	*3*	*1/03*
Hydranal Buffer	*1*	*10/02*
Hydranal Composite 5	**(71307)*	
Isobutanol	*5 ea.*	*2/03*
Isopropano Alcohol 99%	*1*	*9/02*
Isopar	*1 (55gl.)*	*2/03*
Methanol	*12*	*3/03*
Methanol anhydrous	*6*	*12/02*
Methyl Isobutyl Ketone	*6 ea.*	*2/03*
N,N-Dimethylformamide	*16*	*4/02*
2-Propanol	*2*	*1/03*
Petroleum Ether	*4*	*2/03*
Phosphoric Acid	*7*	*2/03*
Tetrahydrofuran	*5*	*1/03*
Toluene	*10*	*1/03*
Triethylamine	*10*	*2/03*

47

ZENITH LABORATORIES CARIBE, INC.

Reactives in the Quality Control Lab.
(building C-2)

R2-0004341

SOLVENTS AND ACIDS IN QUALITY CONTROL LAB.

1,2-Dichlorohethane	Mallincrodt	5	Sep-02	1	Sep-02	MK4966-03 (500ML)
1,4-Dioxane	Fisher	1	Jun-00	1	Jun-00	D111-500
1-Butanol	JT Baker	2	Agost-02	1	Aug-02	9454-01
1-Chloronaphthalene	Aldrich	1	Nov-01	1	Nov-01	
1-Propanol	JT Baker	4	Jul-00	1	Jul-00	9086-01
2-Iodopropane, 97%	ICN	1	Marz-02	1	Mar-02	2518-59
2-Methoxybenzaldehyde 98%	Alfa	1	Febre-02	1	Feb-02	10770
2-Methoxyethanol	JT Baker	1	May-00	1	May-00	JT784-7 (500ML)
Acethaldehyde	JT Baker	1	Oct-01	1	Oct-01	A025-05
Acetic acid, 80%	Fisher	1	May-00	1	May-00	A37-1 (1L)
Acetic Anhydride	JT Baker	11	Oct-02	1	Oct-02	0018-01
Acetic Glacial acid	Mallincrodt	3	Jun-01	1	Jun-01	2504
Acetophenone	EM	1	Aug-01	1	Aug-01	AX0165-15
Antifoam B Silicone Emulsion	JT Baker	3	Oct-01	1	Oct-01	B531-05
Ammonium Hydroxide	EM	1	Oct-01	1	Oct-01	AX1303-14
Benzene	JT Bakef	1	Jun-01	1	Jun-01	9154-01
Bromine	Fisher	1	Nov-01	1	Nov-01	6365-50 (50ML)
Buffer pH 1.68	Ricca	6	Septi-00	1	Sep-00	
Buffer pH 10	Baxter	5	Aug-00	1	Aug-00	
Buffer pH 2	Baxter	6	Abril-01	1	Apr-01	
Buffer pH 12.45	VWR	6	Jul-00	1	Jul-00	
Buffer pH 4	Baxter	6	Sep-01	1	Sep-01	
Buffer pH 7	Baxter	6	Sep-01	1	Sep-01	
n-Butyl acetate	Mallinckrodt	1	Jun-02	1	Jun-02	
Butyl Ether	Aldrich	1	Apr-02	1	Apr-02	
Butyl Alcohol	EM	11	Feb-03	1	Feb-03	
n-Butyrophenone	Sigma	1	Mar-02	1	Jan-01	
Castor Oil	JT Baker			1	Aug-00	
Conductivity cal. 10std. (100ml)	VWR	*//	//o/	/	//o/	23226-650
1-Chloronapthalene 90%	Aldrich	1	Nov-01	1	Nov-01	18,575-2
Carbon Disulfide	Fisher	1	Oct-02	1	May-00	C164-500 (500ML)
Conductivity call. 100 std	VWR	2	Jul-00			23226-589
Conductivity call. 10 std	VWR	2	Jun-02			23226-567
Cupric Nitrate	Fisher	1	Jan-03	1	Jan-03	
Cupriethylehediamine sol.	GFS	4	Apr-03	1	Jul-00	
Cyclohexane	Sigma	6	Feb-01	1	Feb-01	C-8458

*REACTIVOS YA ORDENADOS

5/9/0012:48 PM

R2-0004342

SOLVENTS AND ACIDS IN QUALITY CONTROL LAB.

1,2 Dichloroethane	Mallincrodt	*		1	Marzo-01	
Dioxane	Mallincrodt	1	Jan-01			4937
Diethylamine	JT Baker	12	Mar-03	1	Deo-02	
NN Dimeyhylacetamide	Fisher	9	4/03	1	Jul-00	
Dimethyl Sulfoxide	Fisher	10	Novl-02	1	Nov-02	081-1
Ethyl Alcohol 200 proof	Pharmco	4	Deo-02	1	Dec-02	1110000200 CSGL
Ethyl Acetate	EM	6	Jan-03	1	Dec-02	E145-1
Ethyl Alcohol-d	Sigma	1	Oct-00	1	Jun-00	E98-78
EDTA, 0.1M (0.2N)	Lab. Chem. Inc.	1	Apr-02	1	Apr-02	LC13900-1
Fehling's sol. B (Alkaline Tartrate	Mallinckrodt	4	Jan-02			
Fehling's sol. A (Cupric SDulfate)	Mallinckrodt	1	Jan-02			
Formamide	Kodak	4	Novle-02	1	Nov-02	1B72028
Formic Acid, 88%	JT Baker	1	May-02	1	May-02	0128-01
Formi Acid, 90%	Fisher	4	Jun-00	1	Jun-00	0129-01
Furfural	JT Baker	2	Apr-03	1	Mar-03	
Formic Acid 96+%	Alfa	3	Dec-00	1	Dec-00	
Glycerin (Glycerol Anhydrous)	EM	1	Jan-02	1	Jan-02	GX0185-6
Heptane	B&J	2	Oct-00	1	Oct-00	210-1
Hydranal Buffer	Fls, Inc.	3	Mayo-02	1	May-02	34804
Hydranal Comp. 5	Fisher	4	Dec-00	1	Deo-00	34805
Hydrochloric Acid	Mallinckrodt	5	Jun-02	1	Jun-02	2612
Iron atomic absortion std. sol.	Aldrich	1	Oct-00			30595-2
Iodomethane Stabilized, 99%	Acros	25	Sep-02			P086-07
Lead std. 0.1MPb2+	Orion	1	Feb-02	1	Feb-02	
Iodine Sol. 0.1N	Mallinckrodt	7	Jan-03	1	Nov-02	
Iodine sol, Hanus	Fisher	2*3	10/01	1	10/01	S198-500
Isobutanol	Acros	12	Feb-03			
Iso-Butyl Alcohol	EM	2	Deo-02			
Isopentyl Alcohol (3 methyl-1-butanol)	Mallinckrodt	*		1	Sep-00	2992
3M KCL	Coming	6	Jul-01			
Lithium Methoxide, 1.0M sol.	Aldrich	4	Mar-02	1	Deo-01	30411-1000
Light Mineral Oil	Mallinckrodt	1	Feb-02	1	Feb-02	6358
Methanesulfonic acid	Sigma	11	Feb-03	1	Feb-03	E207-57
Methyl Iodide	Alfa	1	Apr-02			
Methyl etthyl ketone (2-butanone)	JT Baker	1	Jun-01	1	Jun-01	6240
Methylene Chloride	VWR	3	Jul-01	1	Jul-01	VW4525-3

*REACTIVOS YA ORDENADOS

5/9/0011:27 AM

R2-0004343

SOLVENTS AND ACIDS IN QUALITY CONTROL LAB.

Monohethanolamine (ethanolamine)	Mallinckrodt			1	Jan-01	6339
Morpholine	JT Baker			1	Sep-00	R367-07
N,N-Dimethylacetamide	Fisher	1	Jan-01	1	Jan-01	D135-500
N,N-Dimethyloctylamine,97%	Acros	1	Apr-01	1	Apr-01	22529-5000
n-Tetradecane	Sigma	1	Sep-02	1	Sep-02	T-4833
Nessler's Reagent	Ricca	2	Nov-00			5250-16
Nickel atomic absortion std. sol.	Aldrich	1	Oct-00			20,732-2
Nitric Acid	Fisher	1	Feb-02	1	Feb-02	A200-500
O-Xylene	B&J	4	Jun-01			370-1
Petroleum Ether	Fisher	2	Sep-01			E139-4
o-Phosphoric Acid 85%	JT Baker	3	Febre-02	1	Feb-02	0260-02
Perchloric Acid 70% (explosivo)	EM	2	Jan-01	1	Aug-00	PX0396A-13
Picric Acid	Fisher	1	Jul-00	1	Aug-00	A-253-100
~~Polyxyethylene Sorbitan Monolaurate~~	~~Sigma~~			~~1~~	~~Jun-00~~	
Potasium Permanganate o.1N (explosivo)	VWR	2	Jan-01			VW3213-1
Potasium Permanganate (explosivo)	Mallinckrodt			1	Apr-02	7068-01
1 Propanolol	JT Baker	4	Jul-00	1	Jul-00	9086-01
Propylene Glycol	JT Baker			1	Aug-01	
Pyridine	B&J	1	May-02	1	Mayo-02	332-1
Salicylaldehyde	JT Baker	2	Mar-03	1	Jun-00	
Sulfurous Acid	EM	1	Dec-00	1	Dec-00	
Silver Nitrate 0.1N (VS) (explosivo)	Mallinckrodt	2	Jan-01	1	Jan-01	
Sodium Thiosulfate 0.1N (N/10)	VWR	1	Jan-01	1	Aug-00	VW3228-1
Starch indicatro 0.5 (w/v)	Ricca	3	Apr-01	1	Apr-01	
Sodium Hypochlorite sol. 5%	JT Baker	1	Jan-01	1	Jan-01	
Sulfasil Siliconizing Fluid	Pierce			1	May-02	
Stannous Chloride, 40%	VWR	2	Feb-01			VW3980-0
Sulfuric acid (explosivo)	Fisher	2	Jul-01	1	Jul-01	9681-33
Tertiary-Butanol	Fisher	1	Apr-01	1	Apr-01	A401-1
Tert-Butyl Alcohol	JT Baker	10	May-02	1	May-02	
Tetrabutylamonium Hydroxide	EM			1	Jan-01	
Titanous Chloride sol. 20%	Fisher	1	Dec-01	1	Deo-01	
Tolueno	JT Baker	2	Sep-01	1	Sep-01	9351-02
Trichlorohethylene	JT Baker	6	Feb-03	1	Oct-00	8600
Trietaholamine	JT Baker			1	Feb-03	9468-01
Triton X-100 (Oxtocynol-9)	ICN	1	Mayo-01	1	May-01	807426

*REACTIVOS YA ORDENADOS

5/9/0011:27 AM

R2-0004344

SOLVENTS AND ACIDS IN QUALITY CONTROL LAB.

Trietilamine	JT Baker	10	Agost-02	1	Aug-02	W635-07
Tween 20	JT Baker	* 1	~~May-02~~	1	May-02	X251-07
Vinegar	Heins	1		1	Dec-01	
Xylene	JT Baker	3	Apr-03	1	Apr-03	

*REACTIVOS YA ORDENADOS

5/9/0011:27 AM

R2-0004345

SOLVENT AND ACIDS IN QUALITY CONTROL LAB. (NEVERA)

Ethyl Ether	VWR	6	Sep-01	1	Jan-01	VW2142-6	
Ethyl Chioroformate, 99%				1	Sep-02		
1-aminohomopiperidine, 95%	Aldrich	5	Feb-03	1	Dec-01		
Acetaldehyde-D4	ICN	3	May-02			521259	
Hydrogen Perocide 30%	Fisher	1	Oct-01	1	Oct-01	H325-500	
Formic Acid 98%	EM	5	Dec-01	1	Oct-01	FX0440-7	
Formic Acid 99%	Acros	1	Dec-01	1	Dec-01		
Pimvic Acid, 98%	Aldrich	2	Oct-01			10,736-0	
N-Nitrosohexamethyleneimine	Cosma	2	Nov-03				
Hydriodic Actd, 55%	Sigma	4	Jan-02	1	Jan-02		
Boron Trifluride 10-15% in Methanol	Mallinckrodt	3	Mar-03	1	Mar-03		

*REACTIVOS YA ORDENADOS

5/9/0011:27 AM

53

R2-0004346

REACTIVES IN QUALITY CONTROL LAB.

(+)-a-Methoxyphdnylacetic acid 99%	Sigma	1	Oct-02	1	Oct-02	M-2876	
1-Hexanesulfonic acid sodium salt	Acros	2	Julio-02	1	Jul-01	4160-1000	71.1
1-Octanesulfonic acid sodium salt HPLC	Sigma	7	May-02	1	May-02	41636-0250	
4-aminophenol 98+%=	Acros	1	Jun-02	1	Jun-02		
1-Pentanesulfonic acid	ICN	4	Febre-02	1	Feb-01	2841-06	
2,4,6-Triamino-5-nitroso-pyrimidine, 97%	Aldrich	1	Jun-00	1	Deo-00	N4877 (5G.)	6.95
2,4-Dinitrophenyl Hydrazine	ICN	1	Dec-01	1	Dec-01		
4(Dimethylamino)benzaldehyde, 99%	Aldrich	2	Jan-03				
2,3-Diaminonapthalene	Sigma	1	Nov-01	1	Nov-01		
2,6-Dichlorobenzaldehyde, 99%	Aldrich	1	Jun-00			D5,650-0 (25G.)	18.8
2-7-Dihydroxynaphtalene (2,7-Naphtalenediol)	Acros			1	Jan-02	11504-1000	
2-Aminopyridine, 99%	Acros	1	Oct-01	1	Oct-01	10454-1000	
2-Methyl-5-nitroimidazole, 99%	Aldrich	2	Mar-03				
2-Methyl-5-nitroimidazole, 99%	Avocado	1	Mar-02			13,625-5	
2-Naphthol	JT Baker			1	Jul-00	2742-01	
3-Hydroxyacetophenone, 98%	Avocado	1	Mar-02	1	May-00		
4-(p-Nitrophenylazo)-resorsinol	Acros	1	Jun-00			15151-0250	
4'-Chloroacetanilide,98%	Avocado	1	Nov-01	1	Nov-01	16995-0500	
4-Chlorobenzadeyde,97%	Aldrich	1	Febre-01			11,221-6	
4-Chlorobenzoic Acid	Sigma	2	Dec-01	1	Deo-01	15925*2500	
4-Nitroimidazole	ICN	1	Marzo-03	1	Jul-01	151753	
5-Nitroso-2,4,6-Triaminopiridine	Sigma	*		1	Sep-00	N-4877	
9 Flurenone, 99+%(GC)	Acros	1	Jun-02	1	Jun-02	11920-1000	
a Lactose	Sigma	*		1	Sep-00	L3625 (100G.)	4.3
Acetanilide	JT Baker	1	Junio-02	1	Jun-02		
Acid Potasium Phthalate, 84J	NIST	2	Octub-04	1	Febre-04		
Agarose,std.,low electroendosmosis(EEO)	JT Baker	1	Ene-02				
Aluminum Chloride Anhydrous	EM	1	Febre-03	1	Febre-03		
Adipic acid	Mallinckrodt	1	Enero-01	1	May-00	A44-500 (500G.)	40.1
Aluminum Chloride hexahydrate	Mallinckrodt	4	Febre-03	1	Aug-01		
Aluminum Oxide	JT Baker	2	Mar-02				
Aminoguanidine	Sigma			1	Oct-00		
Aminoguanidine Bicarbonate	ICN	*		1	Jul-00		
Ammonium Acetate	Fisher	2	Febre-03	1	Octub-02		
Ammonium Carbonate	Mallinckrodt	1	May-00	1	May-00		
Ammonium Chloride (explosivo)	Fisher	1	Oct-00	1	Oct-00		

* REACTIVOS YA ORDENADOS

5/9/00
11:26 AM

R2-0004347

REACTIVES IN QUALITY CONTROL LAB.

Ammonium Molybdate	Fisher			1	Jun-00		
Ammonium phosphate dibasic	Acros	2	Sep-02	1	Sep-02		
Ammonium Oxalate	JT Baker	2	Octub-02	1	Octub-02		
Ammonium Phosphate Monobasic	Fisher	1	Novi-01	1	Nov-01	A684-500	
Ammonium Persulfate (peroxydisulfate)	Fisher	1	Octu-01	1	Octu-01		
Ammonium Sulfamate	JT Baker	1	Juil-01	1	Jul-01		
Ammonium Sulfate	JT Baker	1	Mar-02	1	Aug-02		
Ammonium Thiocyanate	JT Baker	2	Feb-03	1	Deo-00	A709-500	
Arsenic Trioxide	JT Baker	*		1	Aug-00		
b Lactose	Sigma	*		1	Sep-00	L3750 (100O.)	8.76
Barium Chloride	Fisher	2	Jan-03	1	Jan-03	B34-100	
Barium Sulfate	Sigma	1	Oct-02	1	Oct-02	8821	
Benzoic Actd, 350a	NIST	1	Enero-02				
Benzoin acid, 99%	Avocado	2	Feb-03	1	Mar-02		
Benzoic Actd USP	Mallinckrodt	2	Jan-03				
Benzoic Acid	EM	2	Nov-02	1	Nov-02	A83-500	
Benzophenone	EM	1	Apr-03	1	Nov-02		
Bizmuth Oxinitrate	Sigma			1	Sep-00	B-9009	
Boric Acid	Fisher	2	May-02	1	Sep-00		
Brillant Yellow	ICN	2	Oct-00	1	Oct-00		
Bromocresol Purple Indicator	Mallinckrodt	1	Jul-02	1	Jui-02		
Bromocresol Green	Mallinckrodt			1	Aug-01		
Bromophenol Blue	JT Baker	1	Oct-01				
Butyiboronie Acid, 97%	Aldrich			1	Mar-02		
Bromothymol Blue	JT Baker	1	Mar-03	1	Feb-03		
Cadmium Acetate dihydrate	JT Baker	1	Feb-02	1	Feb-02		
Calcium Sulfate Dihydrate	JT Baker	1	Jan-03	1	Jan-03		
Calctum Carbonate	Mallinckrodt			1	Dec-02	4072	
Calctum Carbonate, 915a	NIST	2	Agost-03	1	Nov-00		
Calctum Chloride dehydrate	Fisher			1	Feb-01	C79-500	
Calcium Hydroxide	Fisher	1	May-00			C 97-500 (500G.)	31
Celite 545	Aldrich	1	Oct-01	1	Oct-01		
Cerric Ammonim Nitrate	Mallinckrodt	2	Mar-03	1	Jun-00	2508-01	
Charcol Activated	EM	1	Jan-03	1	Feb-02	C-5260	
Chloramine-T	Mallinckrodt	1	Oct-02	1	Oct-02	0614-58	
Chromium Trioxkle AR	Mallinckrodt	1	Oct-02	1	Oct-02		

* REACTIVOS YA ORDENADOS

5/8/00
11:26 AM

55

R2-0004348

REACTIVES IN QUALITY CONTROL LAB.

Cinchonidine	ICN	4	Jan-02	1	Jan-02		
Citric Acid Anhydrous	Fisher	4	Novl-02	1	Nov-02	CX1723-1	
Citric Acid Monohydrate	EM	15	Jan-03	1	Jan-03	CX-17251	
Cobalt Chloride	Mallinckrodt	1	Agost-01	1	Aug-01	4532-02	
Cobalt(II)acetate tetrahydrate, 98+%	Aldrich	1	Febre-01	1	Feb-01	40,302-4	
Cobalt Nitrate, 6 hydrate	JT Baker	4	Mar-03				
Cristal Violet	Acros	1	May-02	1	May-02	40583-0250	
Chromotropic Acid, disodium salt, dihydrate	JT Baker	2	Apr-03	1	Apr-03		
Cupric Nitrate	Fisher	1	Jan-03	1	Jan-03		
Cupric Sulfate	Mallinckrodt	1	Mar-02	1	Mar-02	4844	
d-10-Camphorsulfonic Acid 09%	Mallinckrodt	*		1	Oct-00		
D-Glucose (dextrose), 917a	NIST	2	Nov-00				
Diphenhydramine	Sigma	1	Oct-01	1	Oct-01		
Diphenylglioxime	Aldrich			1	Jun-00	28,897-3	
Diethyldythiocarbamic Acid Trihydrate	ICN	1	Oct-01	1	Oct-01		
Dithizone (Diphenylthiocarbazone)	Acros	*		1	Junio-01	18697-0500	
Dupon Fiber Ident. Stain #4	Pylam			1	Aug-01		
Eosin Y (Cert)	JT Baker	1	Nov-02	1	Nov-02	L088-03	
Eriochrome Black T	Mallinckrodt	1	Nov-01	1	Nov-01	2418-57	
EDTA, Tetrasodium Salt, Dihydrate	JT Baker	3	Jun-02	1	Oct-01		
EDTA, Disodium Salt, dihydrate	JT Baker	1	Apr-01	1	Abril-01	8893-01	
Ethyl 4-Hydroxybenzoate 99%	Aldrich	2	Feb-03	1	Oct-00	11,188-8	
Ethylenediarrinetetracetic acid	Malinckrodt			1	Jul-00	2453	
Fast blue B salt	Aldrich	*		1	Aug-00		
Ferric Chloride Anhydrous	EM	3	Jan-03	1	Jan-03		
Ferric Ammonium Sulfate	Mallinckrodt	1	Mar-02	1	Mar-02	5044	
Fenic Chloride Anhydrous	EM	4	Jan-03	1	Jan-03		
Ferric Nitrate	EM	4	Jan-03	1	Nov-00	5032-02	
Ferric Nitrate 9 hydrate	JT Baker	1	Apr-02	1	Apr-02	2018-01	
Ferrous Sulfate	JT Baker	1	Dec-02	1	Oct-01	5056	
Ferrous Sulfate 7-hydrate	JT Baker	1	Dec-02				
Ferrous Ammonium Sulfate	Mallinckrodt	2	Mar-02	1	Mar-02		
Fluorescamine	Aldrich	1	Apr-02	1	Apr-02		
Fluorene, 98%	Acros	2	Jan-03	1	Jun-00	15613-1000	
Furosemide	ICN	1	Julio-01	1	Jul-01	158210	
Guanine	Sigma	1	Deo-01	1	Dicie-01		

* REACTIVOS YA ORDENADOS

5/8/00
11:28 AM

R2-0004349

REACTIVES IN QUALITY CONTROL LAB.

Glass wool	O Valley	4	Sep-02	1	Septi-02		
Gum locust Bean	Sigma	1	Oct-01	1	Octu-01	6-0753	
Silctne	JT Baker			1	Nov-00		
Silcolic Acid	JT Baker	1	Nov-02	1	Aug-00	2473	
Hexamethylenetetramine	JT Baker	1	Jan-01	1	Oct-02	N145-07	
Hydroquinine	Aldrich	1	Jan-03	1	Jan-03	33,771-4	
Hydroquinone	Alfa	1	Apr-02	1	Apr-02		
Hexadecyltrimethylamonium Bromide	JT Baker	1	Jan-03	1	Jan-03	N130-07	
Hydroxy Naphtol Blue	Fisher			1	Dec-01		
Hydroxylamine Hydrochloride	JT Baker	1	Nov-01	1	Nov-01		
Iodine	EM	2	Mar-03	1	Mar-03		
Lauryl Sulfate	Sigma	4	May-02	1	May-02	L-5750	
Lead Acetate	EM	1	Nov-01	1	Nby-01	L33-500	
Lead Nitrate	Mallinckrodt	1	Octub-01	1	Oct-01	5744-02	
Lead Subacetate	Fisher	1	Jul-01	1	Aug-00	L36-250	
Lead Perchlorate	EM	1	Nov-02	1	Nov-02		
Lithium Chloride	ICN	1	Mar-02	1	Mar-00	L121-100 (100G.)	34.3
m-Cresol purple	JT Baker			1	Jun-00	F860-00	
Magnesium Oxide	EM	2	Feb-03	1	Sep-02	M-1531	
Maleic Acid	Sigma	2	Dec-02	1	Dec-02		
Malachite Green	EM	1	Nov-01	1	Nov-01	A779-500	
Manganese Dioxide	JT Baker	1	Nov-01	1	Nov-01		
Mercuric Acetate	EM	1	Nov-02	1	Nov-02	H513-01	
Mercuric Chloride	EM			1	Aug-00	MX0360-2	
Methyl Orange	JT Baker	1	Octub-02	1	Oct-02	2694-00	
Methyl p-hydroxybenzoate	Mallinckrodt	2	Feb-02	1	Peb-02	5892	
Methyl Red	Fisher	1	Dec-01	1	Jul-02		
Methylene Blue Indicator	Mallinckrodt			1	Ded-00	5891-57	
Molecular Sive 0.3nm with humidity Indicator	Metrohn	3	Aug-02	1	Aug-02		
Molybdic acid, 85%	JT Baker	1	Mar-02	1	Aug-00		
Naphthalend	ICN			1	Aug-00	151726	
Nitriotriacetic acid	ICN	1	Mar-02	1	Mar-02	152551	
Nortriptyline hydrochloride	Sigma	1	Jun-00	1	Juh-00	N7377 (10G.)	22
N-Tricosane	ICN			1	Jun-02		
N-1(1-Naphthyl)ethylenediamine Hydrochloride	ICN			1	Jul-01	152549	
N-Propyl-P-Hydroxybenzoate	ICN	*					

* REACTIVOS YA ORDENADOS

5/9/00
11:26 AM

R2-0004350

REACTIVES IN QUALITY CONTROL LAB.

Nyhydrin monohydrate	EM	1	Mar-02	1	Oct-00	N862-03	
0-Anisaldehyde, 98%	Acros	*		1	Oct-00		
o-Cresolthalein Complexion	ICN	1	Jan-02	1	Jan-02		
O-Tolidine, 98%	Avocado	1	Feb-02			T8533 (25G.)	22
Oxalic Actd	Aldrich	1	Jan-03	1	Jan-p3	A218-250	36.4
p-Naphtholbenzein	Fisher	5	Jul-02	1	Jul-02		
p-Toluenesulfonamide	Sigma			1	Nov-00		
p-Nitroaniline	ICN	1	May-02	1	May-02	R871-05	
Pancreatin	Fisher	2	Apr-01	1	Apr-01	P13-500	
Paraffin	JT Baker	1	Dec-01	1	Deo-01		
Papaverine	Sigma	2	Jun-02	1	Jun-02		
Pararosaniline Chloride	Acros	2	Jan-03	1	Jan-03		
Pararosaniline	Sigma	1	Apr-00			P7632 (6G.)	14.25
Piperazine anhydrous	Mallinckrodt	1	Apr-02	1	Apr-02		
Pepsin	JT Baker			1	Jul-00	2844-01	
Phenantroline	Fisher	1	Julio-01	1	Jul-01	P-70	
Phenilhydrazine hydrochloric	JT Baker	1	Apr-02	1	Apr-02	P288-500	
Phenol Red	JT Baker	3	May-02	1	May-02		
Phenolphthalein	JT Baker	1	Oct-02	1	Oct-02	2870-04	
Polyoxyethylene 23 lauryl ether	Sigma	2	May-02	1	May-02		
Phosphorus Pentoxide	Fisher	2	Feb-03	1	Feb-03	6612	
Potasium Acid Phthalate	Mallinckrodt			1	Oct-00		
Potasium Acetate	EM	2	Nov-01	1	Nov-01		
Potasium Chloride	JT Baker	1	Feb-02	1	Feb-02		
Potasium Bromide	Mallinckrodt	5	Jan-03	1	Jan-02		
Potasium Bphthalate, cristal	JT Baker			1	Jun-00		
Potasium Carbonate anhydrous	Mallinckrodt	1	Jan-03	1	Jan-03		
Potasium Chlorpplatinate	ICN	1	May-01			156337	
Potasium Cyanide	JT Baker			1	Oec-00		
Potasium Cromate	Fisher			1	Nov-00	P220-100	
Potasium Cyanate	JT Baker	1	May-00			3076-01	
Potasium Dicromafe, 635a	NIST	2	Apr-03	1	Oct-01		
Potasium Ferricyankle	Fisher	1	Agos-02	1	Aug-02	P238-500	
Potasium Ferrocyanide	Fisher			1	Jul-01		
Potasium Hexahudroxyantimonat (V)	Sigma	1	Feb-03	1	Feb-03	24,726-6 (100G.)	31.2
Potasium Hydrogen Phthalate	EM	1	Oct-00	1	Oct-00	PX1476-3	

* REACTIVOS YA ORDENADOS

5/8/00
11:26 AM

R2-0004351

REACTIVES IN QUALITY CONTROL LAB.

otasium Hydroxide	JT Baker	9	Feb-03	1	Feb-03	3140-01	
otasium Iodate	Acros			1	Sep-00	41924-1000	
otasium Iodide	Fisher	2	Feb-03	1	Jul-02	VW5225-1	109.76
otasium Nitrate (explosivo)	Mallincrodt	XZ	Apr-03			7029	
otasium Permanganate (explosivo)	Fisher			1	Apr-02		
otasium Phosphate Monobasic	JT Baker	2	Octub-02	1	Octub-02	JT3246-S (2.5KG.)	154.9
otasium phosphate dibasic	Fisher	2	Abril-03	1	Abril-03		
otasium Pyrophosphate	Aldrich	*		1	Mdr-02		
otaium Sodim Tartrate	Mallincrodt	4	May-02	1	May-02	2367	
otasium Sulfate	EM	3	Jan-02	1	Jan-02	P-4042	
ropylparaben NF	ICN	1	Mar-02	1	Mar-02	151959	
ropylamine Hydrochloride	Acros	1	May-00	1	May-00	22198-02S0	
henol	EM	1	Oct-01	1	Oct-01	PX0510-1	
henol Red	JT Baker	1	Nov-02	1	Nov-02		
hthalic Anhydride	JT Baker	1	Oct-01	1	Oct-01	0272-01	
uinine Sulfate dihydrate	NIST	1	Nov-00				
osaniline chloride	Acros	1	Jan-03	1	Jan-03		
alicylaldazine	ICN			1	Apr-02		
elenium	JT Baker	3	Dec-01	1	Dec-01	3395-04	
ilica gel blue indicating	VWR	11	Jan-03	1	Jan-03		
ilver diethyldithiocarbamate	JT Baker	1	Dec-02	1	Dec-02		
ilver Oxide	EM	1	Jan-01	1	Jan-01	SX0207-1	
ilver Chloride	ICN	1	Dec-01	1	Dec-01	190987	
ilver Nitrate (explosivo)	JT Baker	1	Apr-03	1	Aug-01	S0138 (25G.)	41.15
odium Acetate Trihydrate	EM	3	Feb-03	1	Dec-02	S209-3	
odium Acetate Anhydrous	JT Baker	1	Jul-02	1	Jul-02		
odium Acetate	Fisher	4	Feb-01	1	Feb-01	S209-S00 (500ML)	31.5
odium Azide	EM			1	Aug-00	SX0298-1	
odium Bicarbonate	EM	1	Oct-01	1	Oct-01		
odium Bitartrate	Fisher	1	Dec-01	1	Dec-01		
odium Bisulfate	JT Baker	2	Jun-02	1	Jun-02	89631	
odium Borate 10 Hydrate	JT Baker	1	Feb-02	1	Feb-02		
odium Carbonate Anhydrous	EM	2	Julio-01	1	Jun-00	SX0400-1	
odium Carbonate 192b	NIST	2	Abri-03	1	Apr-03		
edium Chloride 919a	NIST	2	Jun-03				
odium Chloride	Fisher	2	Dec-01	1	Dec-01	S174-100	

* REACTIVOS YA ORDENADOS

5/9/00
11:26 AM

59

R2-0004352

REACTIVES IN QUALITY CONTROL LAB.

Sodium Citrate 2-Hydrate (Dihydrate)	Mallincrodt	1	Mar-02	1	Mar-02	754	
Sodium Olefhyldifhiocarbamafe	Mallincrodt			1	Dec-00	7617	
Sodium Fluoride	JT Baker	2	Feb-01	1	Febre-01	3688-04	
Sodium meta-periodate	EM	12	Mar-03	1	Febre-03		
Sodium Metabisuifite	Mallinckrodt	2	Mar-02	1	Marso-02		
Sodium Hydroxide pellet	EM	4	Feb-03	1	Feb-03	SX0583-3	
Sodium Nitrofericyanide	EM	2	Aug-02	1	Aug-02	22,871-0	
Sodium Nitrite	JT Baker	2	Agosto-01			3780-01	
Sodium Nitropmsside	Sigma	2	Oct-02			S-0501	
Sodium Phosphate dibasic anhydrous	Mallincrodt			1	Mar-02		
Sodium Phosphate dibasic heptahydrate	Mallincrodt	5	Deo-01	1	Oct-00	7414	
Sodium Phosphate monobasic monohydrate	JT Baker	8	Mar-03	1	Jul-01		
Sodium Phosphate monobasic	Mallincrodt	1	Oct-02	1	Oct-02	3818-01	
Sodium Phosphate Tribasic	EM	1	Jun-02	1	Jun-02	42440-5000	
Sodium Sulfate anhydrous granular	Fisher	1	May-02	1	May-02	181444	
Sodium Taltrate dehydrate	Sigma			1	Oct-02	42444-5000	
Spironolactone	ICN	1	Feb-02	1	Feb-02		
Starch, potato	Acros	1	Jun-02	1	Jun-02		
Starch soluble	Fisher	4	Mar-01	1	Marso-01	5513-100	
Stannous Chloride	EM	1	May-02			8176-01	
Sodium Sulfite	Fisher	3	Jan-03	1	Jan-03		
Sucrose Optical Rotation, 17e	NIST	2	Aug-08	1	Nov-00		
Sulfamic Acid	Fisher	1	Apr-02	1	Oct-01	A285-500	
Sulfanllic acid	JT Baker	3	Oct-01	1	Oct-01		
Taltaric acid	Mallincrodt			1	May-02	2312	
Teyrabutylammonium Hydrogen Sulfate	JT Baker			1	Mar-02		
Tetramethylammonium Chloride	ICN	2	Mar-03				
Tetramethylammonium hydroxide	JT Baker	1	Aug-02	1	Aug-02	T-7505	
Tetrabufylamrrionium 1odide	JT Baker			1	Feb-01	V386-05	
Theobromine	Sigma	*		1	Sep-00	T4500 (25G.)	8
Tin (II) Chloride, 88%	Aldrich			1	Feb-01	20,825-6	
Thophyiine	Kodak			1	Jan-02	1368562	
Thioacetamide	JT Baker			1	Nov-01		
Trichloroacetic acid	VWR			1	Aug-00		
Thymol	EM			1	Deo-01	103062	
Thymol Blue	JT Baker			1	Jan-02	V856-01	

* REACTIVOS YA ORDENADOS

5/8/00
11:26 AM

R2-0004353

REACTIVES IN QUALITY CONTROL LAB.

Tolbutamide	ICN	3	Feb-03	1	Feb-03	190274	
Trypam Blue	Aldrich			1	Aug-01	30,264-3	
TRIS (Base) (Tromethamine, USP)	JT Baker	2	Nov-01	1	Agosto-01	JT4099-02 (1KG.)	47
Uracil	ICN	1	Oct-00	1	Opt-00	103204	
Urea	EM			1	Jan-03		
Uric Acid	Aldrich	2	Oct-00	1	Jun-00	16,119-7	14.25
Zinc Chloride	JT Baker	1	Dec-01	1	Deo-01		
Zinc Metal	JT Baker	*		1	Feb-02		
Zinc Sulfate	JT Baker	1	Feb-02	1	Feb-02		

* REACTIVOS YA ORDENADOS

5/9/00
11:26 AM

R2-0004354

REACTIVES IN QUALITY CONTROL LAB. (NEVERA)

5-methoxy-2-methyl-3-Indolacetic acid, 99%	Aldrich	1	Oct-00	1	Oct-00	10,517-1 (5G)
Acetophenetidin	Sigma	1	Mar-02	1	Mar-02	
a-nicotinamide adenine dinucteotide	Sigma	1	Dec-01	1	Dec-01	N-6754
L-a-Phosphatidylcholine	Sigma	5	Jun-02			
Aldehyde Dehydrogenase	ICN	6	Jul-02	1	Nov-01	190679
Collagenase	Sigma	1	Nov-01			C-9991
Diethydithiocarbamic actd	ICN	1	Octubre-01	1	Oct-01	
Indole	Ultra Scten	1	Jan-03	1	Jan-03	
Osmic Actd	JT Baker	15	Oct-01	1	Oct-01	
Lecithin	ICN	3	Oct-01	1	Oct-01	
Fast Blue B Salt	ICN	1	Oct-01	1	Oct-01	
Naphtol AS-B1 phosphate	ICN	1	Oct-01	1	Oct-01	102415
B-Nicotinamide Adenine Dinucteotide	ICN	1	Octu-01	1	Oct-01	100499
Chloroplatinic Acid	Fisher,ICN	7	Oct-01	1	Oct-01	P-154
Lead (II) perchlorate, 97%	Alfa	1	Feb-02	1	Feb-02	
Silver Diethyidithiocarbomate	JT Baker	1	Dictem-02	1	Dec-02	H739-02

* REACTIVOS YA ORDENADOS

5/9/00
11:26 AM

R2-0004355

ZENITH LABORATORIES CARIBE, INC.

Data & Well Lithology.
(wells next to the hazardous waste storage area)

R2-0004356

CAMPOS DRILLING INC.
PERFORACION DE POZOS PROFUNDOS
INSTALACION DE BOMBAS
MITA RURAL 142 BUZON 181-P/CAGUAS, PUERTO RICO 00625/TELS 720-8670-/-747-9533

A

DATA & HELL LITHOLOGY

Name & Address:
OMARK ANTILLES (ZENITH LAB.)

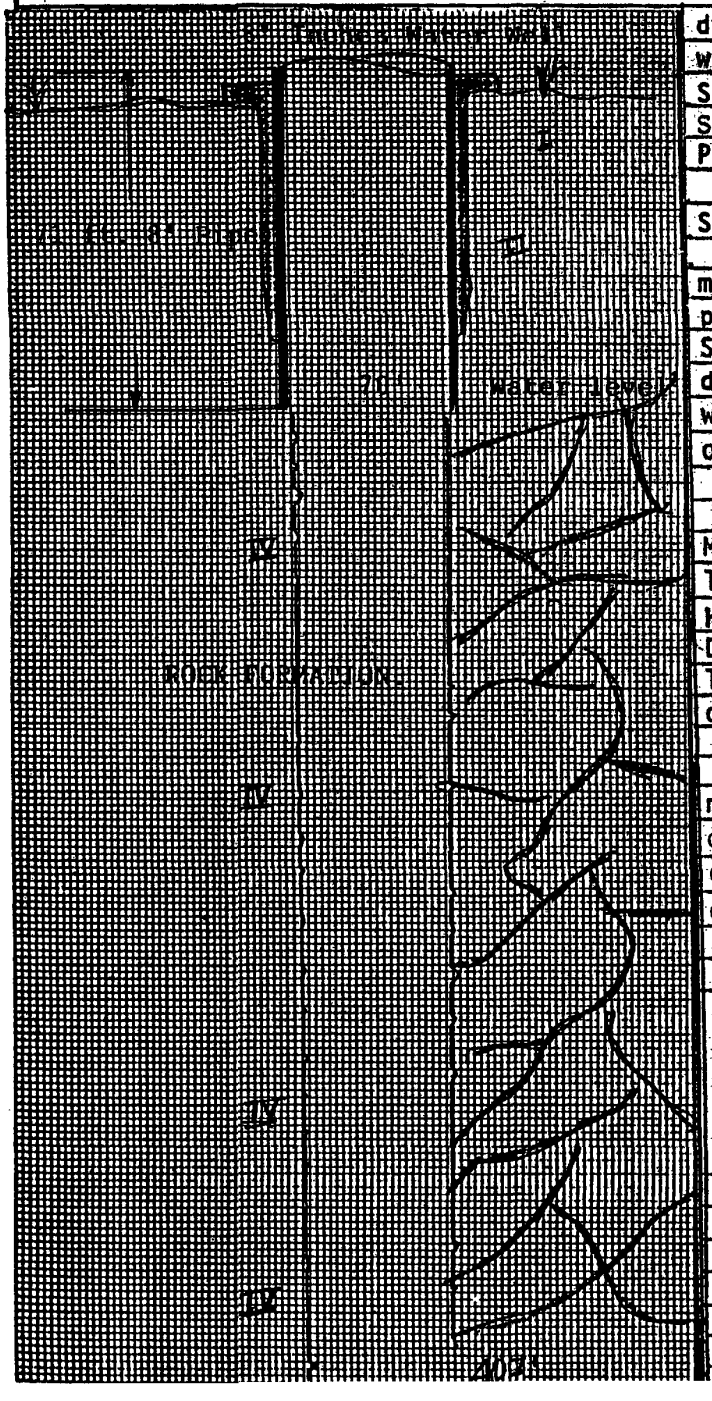
Date:
June 1st 1978

Cidra, Puerto Rico

operator Fermin Sanchez

Well location:
Cidra

Well No.
No. 78-044



driller: * Fermin Sanchez
well diameter: 8" well depth: 407'
S.W.L.: 70' P.W.L.: 150'
Specific capacity: 1.25 .a.p.m= 100
Pipe: from: 0' to= 71' dia. 8"
from: to= dia.
Screen: from: to= dia.
CLEANING & DEVELOPMENT ** DATE never
method used: / / /
pumping test duration=
S.W.L= P.W.L=
drawdawn= S.C. =
well yield=
other information:

FINAL PUMP INSTALLATION ***
Manufacturer: Geuld Pump
Type of pump: Submersible
H.P= 20 Phases= 3 R.P.M.=3600 Cycles 6
Depth Installed= 280' Column dia.= 3"
Total Column head= 350' d.p.m.= 90
other:

WELL REHABILITATION **** every 4 years
method used:
compressor: hrs:
clean after hrs. capacity=
other comments: No other maintenance work has been done since June 78

SYMBOLS OF STRATUM FOUND WHILE DRILLING

Cement grout: "0" to
gravel filter:
other comments:
Prepared by:
Alex Campos.

64

R2-0004357

CAMPOS DRILLING INC.

PERFORACION DE POZOS PROFUNDOS
INSTALACION DE BOMBAS

RUTA RURAL 142 BUZON 181-P / CAGUAS, PUERTO RICO 00625 / TELS 720-8670 - / - 747-9533

B

DATA & WELL LITHOLOGY

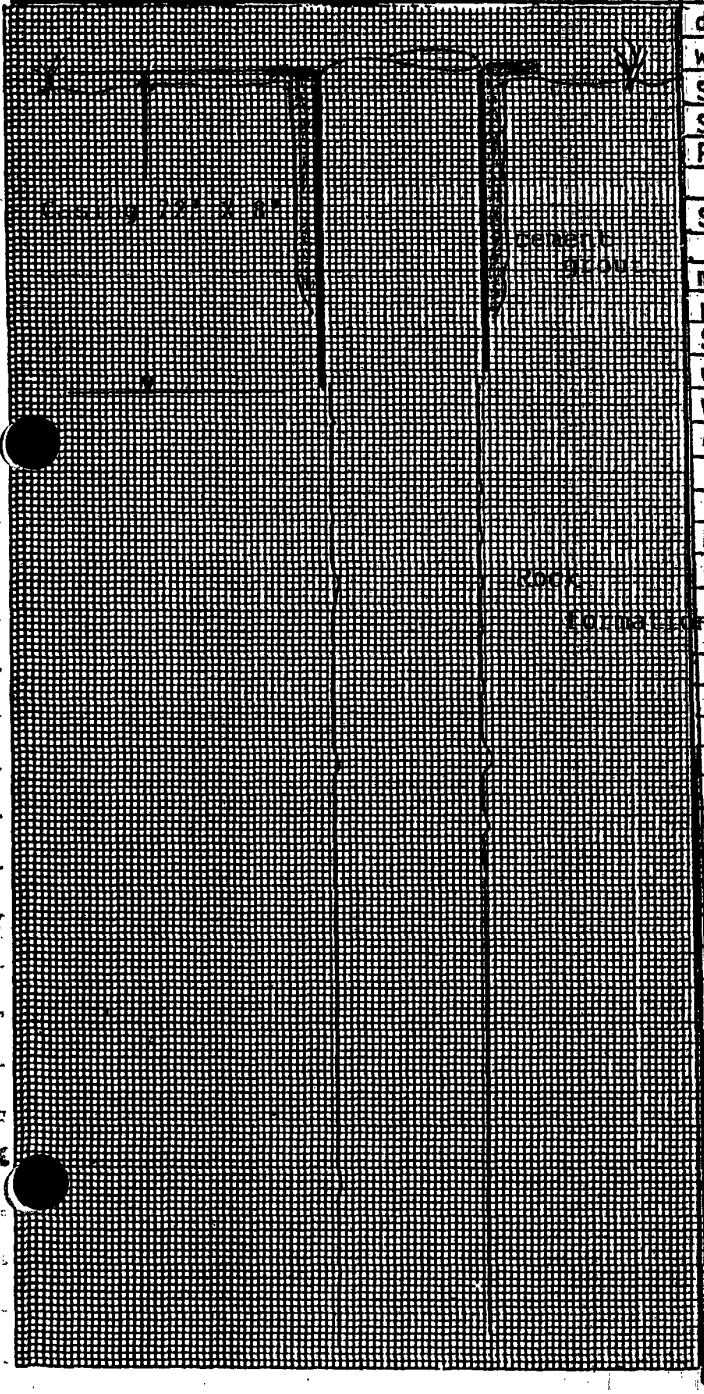
Name & Address: OMARK ANTILLES (Zenith Lab. Inc.)

Date: March 8, 1985

Zona Industrial , Cidra, P.R.

Well location: Pozo Produccion # II (reemplazo)

Well No. 84-211



driller: * Fermin Sanchez

well diameter: 8" well depth: 367'

S.W.L.: P.W.L.:

Specific capacity: g.p.m=

Pipe: from: 0 to= 72' dia. 8"

from: to= dia.

Screen: from: to= dia.

CLEANING & DEVELOPMENT ** DATE

method used: / / /

pumping test duration=

S.W.L= P.W.L=

drawdawn= S.C. =

well yield=

other information:

FINAL PUMP INSTALLATION ***

Manufacturer:

Type of pump:

H.P= Phases= R.P.M.= Cycles

Depth installed= Column dia.=

Total Column head= g.p.m.=

other:

WELL REHABILITATION **** every 4 years

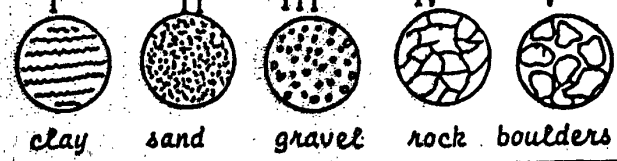
method used:

compressor: hrs:

clean after hrs. capacity=

other comments:

SYMBOLS OF STRATUM FOUND WHILE DRILLING



Cement grout: "0" to

gravel filter:

other comments:

Prepared by Alex Campos.

65

R2-0004358

ZENITH LABORATOIES CARIBE, INC. (ZENITH)

Results of the analysis of groundwater samples

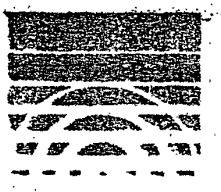
1996 - 1999

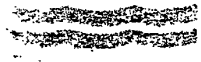
R2-0004359

TEST RESULTS BY SAMPLE

Sample: 01A Well — Collected: 09/20/96
Job: 01-Q4 Groundwater - Grab

Test Description	Result	Limit	Units	Analyzed	By
1,1-Dichoroethane	<5.0	5.0	µg/L	05/30/96	EAD
1,1-Dichoroethylene	[illegible]	5.0	µg/L	09/30/96	EAO
Chloroforn	<5.0	5.0	µg/L	09/30/96	EAO
Tetrachloroethane	<5.0	5.0	µg/L	09/30/96	EAO





R2-0004360

ZENITH LABORATORIES CARIBE, INC.

Uniform hazardous waste manifests
(1998 - 2000)

68

1998

R2-0004362

Environmental Quality Board

COMMONWEALTH OF PUERTO RICO
ENVIRONMENTAL QUALITY BOARD

P.O. Box 11488, Santurce, Puerto Rico 00910

OCHOA ENVIRONMENTAL SERVICES

Please print or type. (Fonw desigoed tor use on elite (12-pitch) typewritet.)

Fnm Aamovad OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. PRD987377702 Manifest Document No. 001

2. Page 1 of 2

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
BOX 1979
CIDRA, PR 00739-

4. Generator's Phone (787) 739-SA21

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name
OCHOA INDUSTRIAL SALES CORP.

6. US EPA ID Number PRD090128SS2

C. State Transporter's ID HW-21

D. Transporter's Phone 809/788-8000

7. Transporter 2 Company Name
CROWLEY AMERICAN TRANSPORT

8. US EPA ID Number PRD090559360

E. State Transporter's ID

F. Transporter's Phone 809/781-1313

9. Designated Facility Name and Site Address
LAIDLAW ENV.SERV. (TS), INC.
5383 12STH AVENUE NORTH
CLEARWATER, FL 34620-

10. US EPA ID Number FLD961474802

G. State Facility's ID

H. Facility's Phone (813) 573-1405

	HM	11. US DOT Description (Including Pnymr SAipping Name, Hazard Class and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	X	WASTE TOXIC SOLID INORGANIC, N.O.S., Contains (SODIUM PHOSPHATE, AMMONIUM CHLORIDE), 6.1, UN3588, PG II, (D005)	001	DF	00030	P	D005
b.	X	WASTE CHLOROFORM, 6.1, UN1888, PG III, (D022)	001	DF	00016	G	D022
c.							
d.							

J. Additional Descriptions for Materials Listed Above
(a) LAB-PACK
(b) LAB-PACK

K. Handling Codes for Wastes Listed Above
(a) S01,M141
(b) S01,M141

15. Special Handling Instructions and Additional Information
11A.1X55 SAL. DRUM#2
118.1X55 GAL.DRUM#8
EMERGENCY PHONE : (787) 739-8421 EMERGENCY CONTACT:EDDIE CLASE

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of INs consignment are fully and accurately described above by proper shipping nama and are classified, packed, markecl, and labeled, and are in all respects in proper oanditian tor transport by highway and water accordbig to applicable international and national government regulations.

If I am a large quantity generator, I eertily that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have detemained to be aoonomically practicaiile and that i have selected the practicable method ol treatment, storage, or disposal currently available to me which minimizes the present and hiture threat to human health and the envinnment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and selecl thw best waste management method that is available to me and that I can altord.

Printed/Typed Name: PEDRO GARCED
Signature: Pedro Garced
Month Day Year: 01 08 98

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: José Del Valle
Signature: [signature]
Month Day Year: 01 08 98

18. Transporter 2 Acloiowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Month Day Year

GENERATOR / TRANSPORTER / FACILITY

Copy 5 Generator - Retained by Generator

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete

70

R2-0004363

22

Environmental Quality Board

COMMONWEALTH OF PUERTO RICO
ENVIRONMENTAL QUALITY BOARD

P.O. Box 11408, Santurce, Puerto Rico 00910

OCHOA ENVIRONMENTAL SERVICES

Form Approved OMB No. 2050-0039

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. PRD987377702 — Manifest Document No. 98004

2. Page 1 of 2 — information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ZENITH LABORATORIES CARIBE INC
BOX 1979
CIDRA, PR 00739-

4. Generator's Phone (787) 739-6421

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: OCHOA INDUSTRIAL SALES CORP.

6. US EPA ID Number: PRD090128562

C. State Transporter's ID: HW-21

D. Transporter's Phone: 809/788-8000

7. Transporter 2 Company Name: CROWLEY AMERICAN TRANSPORT

8. US EPA ID Number: PRD090559360

E. State Transporter's ID

F. Transporter's Phone: 809/721-1313

9. Designated Facility Name and Site Address
LAIDLAW ENV. SERV. (TS), INC.
5303 126TH AVENUE NORTH
CLEARWATER, FL 34620-

10. US EPA ID Number: FLD981474802

G. State Facility's ID

H. Facility's Phone: (813) 573-1405

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.		ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S., (MATERIAL CONTAMINATED WITH CYCLOHEXANE, AND ACETONE), 9, UN3077, PGIII	001	DF	00093	P	NONE
b.	X	WASTE FLAMMABLE LIQUID, N.O.S., Contains (XYLENE, BUTANOL), 3, UN1993, PG II, (D001, F003)	001	DF	00018	G	D001, F003
c.	X	WASTE DIOXANE, 3, UN1165, PG II, (D001, D003)	001	DF	00001	G	D001, D003
d.	X	WASTE FLAMMABLE LIQUID, N.O.S., Contains (HEPTANE, ISOPENTYL ALCOHOL), 3, UN1993, PG II, (D001)	001	DM	00004	G	D001

J. Additional Descriptions for Materials Listed Above
(a) LAB-PACK
(b) LAB-PACK
(c) LAB-PACK
(d) LAB-PACK

K. Handling Codes for Wastes Listed Above
(a)
(b) S01, M141
(c) S01, M141
(d) S01, M141

15. Special Handling Instructions and Additional Information
11A. 1X5 GAL. DRUM#5 11C. 1X5 GAL. DRUM#6
11B. 1X55 GAL. DRUM#6 11D. 1X15 GAL. DRUM#10
EMERGENCY PHONE : (707) 739-0421 EMERGENCY CONTACT: EDDIE CLASE

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and water according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: PEDRO GARCED — Signature: Pedro Garced — Month Day Year: 01 08 98

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: José Del Valle — Signature: [signature] — Month Day Year: 01 08 98

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF EMERGENCY OF SPILL IMMEDIATELY CALL THE ENVIRONMENTAL QUALITY BOARD (809) 722-0439

Copy 5 Generator - Retained by Generator

EPA Form 8700-22 (Rev. 8-88) Previous editions are obsolete

R2-0004364

Environmental Quality Board

COMMONWEALTH OF PUERTO RICO
ENVIRONMENTAL QUALITY BOARD

P.O. Box 11488, Santurce, Puerto Rico 00910

OCHOA ENVIRONMENTAL SERVICES

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-003A

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. PRD987377702 Manifest Document No. 005

2. Page 1 of 2

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ZENITH LABORATORIES CARIBE INC
BOX 1979
CIDRA, PR 00739-

4. Generator's Phone (787) 739-8421

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name
OCHOA INDUSTRIAL SALES CORP.

6. US EPA ID Number PRD090128552

C. State Transporter's ID HW-21

D. Transporter's Phone 809/788-8000

7. Transporter 2 Company Name
CROWLEY AMERICAN TRANSPORT

8. US EPA ID Number PRD090559350

E. State Transporter's ID

F. Transporter's Phone 809/721-1313

9. Designated Facility Name and Site Address
LAIDLAW ENV. SERV. OF BARTOW
178 BARTOW MUNICIPAL AIRPORT
BARTOW, FL 33830-

10. US EPA ID Number FLD988729610

G. State Facility's ID

H. Facility's Phone (813) 533-6111

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	X	WASTE HYDROGEN PEROXIDE, AQUEOUS SOLUTION, 5.1, UN2014, PG II, (D001, D002)	001	DF	00055	G	D001, D002
b.	X	WASTE ISOPROPYL ALCOHOL, 3, UN1219, PG II, (D001)	002	DF	00110	G	D001
c.	X	WASTE FLAMMABLE LIQUIDS, N.O.S., Contains(METHANOL, HEXANE), 3, UN1993, PG II, (D001, D022, F002)	008	DF	00440	G	D001, D022 F002
d.	X	WASTE DICHLOROMETHANE, Contains(METHYLENE CHLORIDE), 6.1, UN1593, PG III, (U080)	001	DM	00055	G	U080

J. Additional Descriptions for Materials Listed Above
(a) CWZEN-008:HYDROGEN PEROXIDE 50%
(b) TRSI-13273:IPA
(c) TRSI-13277:LAB-COMPOSITE
(d) TRSI-13278:METHYLENE CHLORIDE

K. Handling Codes for Wastes Listed Above
(a) M141
(b) M061
(c) M061
(d) M141

15. Special Handling Instructions and Additional Information
job#4733
SH: CONTAINER:
EMERGENCY PHONE : (787) 739-8421 EMERGENCY CONTACT : EDDIE CLASE

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and water according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: [signature] Signature: [signature] Month Day Year: 01 14 98

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DAVID SANCHEZ Signature: [signature] Month Day Year: 01 14 98

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name Signature Month Day Year

IN CASE OF EMERGENCY OF SPILL IMMEDIATELY CALL THE ENVIRONMENTAL QUALITY BOARD (809) 722-0439

GENERATOR / TRANSPORTER / FACILITY

Copy 5 Generator - Retained by Generator

EPA Form 8700-22 (Rev 9-88) Previous editions are absolute

72

R2-0004365

Environmental Quality Board

COMMONWEALTH OF PUERTO RICO
ENVIRONMENTAL QUALITY BOARD
P.O. Box 11488, Santurce, Puerto Rico 00910

OCHOA ENVIRONMENTAL SERVICES

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No: PRD039737772 — Manifest Document No: 00871

Page 1 of 2

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: BOX 1575 CIDRA, PR 00739- ATT: EDDIE CLASSE

A. State Manifest Document Number:

B. State Generator's ID:

4. Generator's Phone (787) 739-8421

5. Transporter 1 Company Name: OCHOA INDUSTRIAL SALES CORP.

6. US EPA ID Number: PRD091012855 2

C. State Transporter's ID: HW-21

D. Transporter's Phone: 809/788-8000

7. Transporter 2 Company Name: PUERTO RICO MARINE MANAGMENT

8. US EPA ID Number: PRD000726818 0

E. State Transporter's ID:

F. Transporter's Phone: 787/793-3000

9. Designated Facility Name and Site Address: LAIDLAW ENV. SERV. OF BARTOW, 170 BARTOW MUNICIPAL AIRPORT, BARTOW, FL 33830-

10. US EPA ID Number: FLD982072936 10

G. State Facility's ID:

H. Facility's Phone: (813) 533-6111

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	TSI	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE TOXIC LIQUID INORGANIC, N.O.S., Contains (TITANIUM CHLORIDE), 8, 1, UN3287, PG II, (D003)	X	001	DF	000001	G	D003
b. WASTE CHLOROFORM, 6.1, UN1888, PG III, (D022)	X	001	DM	000012	G	D022
c. TOXIC SOLID, INORGANIC, N.O.S., (Contains SODIUM FLUORIDE, COBALT ACETATE), 6.1, UN3288, PG II, (NONE)	X	001	DM	000017	P	NONE
d. TOXIC LIQUID, INORGANIC, N.O.S., Contains (STANNOUS CHLORIDE, ETHYLENE DIAMINE TETRA ACETIC ACID), 6.1, UN3287, PG II, (NONE)	X	001	DM	000013	G	NONE

J. Additional Descriptions for Materials Listed Above
(a) LAB-PACK
(b) LAB-PACK
(c) LAB-PACK
(d) LAB-PACK

K. Handling Codes for Wastes Listed Above
(a) S01, M141
(b) S01, M141
(c) S01, M141
(d) S01, M141

15. Special Handling Instructions and Additional Information
11A. 1X5 GAL. DRUM#1 11C. 1X15 GAL. DRUM#6
11B. 1X55 GAL. DRUM#3 11D. 1X15 GAL. DRUM#8
EMERGENCY PHONE : (787) 739-8421 EMERGENCY CONTACT : JOSE SOLA SH: TCR

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and water according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
EDDIE CLASSE	Eddie Classe	10	17	18

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
DAVID SANCHEZ	D. Sanchez	10	17	18

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
JESUS PANCORBO	Jesus Pancorbo	10	23	18

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Month	Day	Year
MARTHA HAMILTON	Martha Hamilton	10	23	18

GENERATOR — IN CASE OF EMERGENCY OR SPILL IMMEDIATELY CALL THE ENVIRONMENTAL QUALITY BOARD (809) 722-0439

TRANSPORTER

FACILITY

Copy 1 Generator - Mailed by TSDF

EPA Form 8700-22 (Rev 9-88) Previous editions are ob

73

R2-0004366

Environmental Quality Board

COMMONWEALTH OF PUERTO RICO
ENVIRONMENTAL QUALITY BOARD

P.O. Box 11488, Santurce, Puerto Rico 00910

OCHOA ENVIRONMENTAL SERVICES

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. PRD937377702 Manifest Document No. 98 [illegible]

2. Page 1 of 2

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
ZENITH LABORATORIES CARISE INC
BOX 1979
CIDRA, PR 00739-

4. Generator's Phone (787) 739-8421

A. State Manifest Document Number

B. Ststs Genenitor's ID

5. Transporter 1 Company Name
OCHOA INDUSTRIAL SALES CORP.

6. US EPA ID Number PRD090128562

C. State Transporter's ID HW-21

D. Transporter's Phone 809/788-8000

7. Transporter 2 Conmany Name
PUERTO RICO MARINE MANAGMENT

8. US EPA ID Number PRD800726810

E. State Transporter's ID

F. Transporter's Phone 767/793-3000

9. Designated Facility Name and Site Address
LAIDLAW ENV. SERV. OF BARTOW
170 BARTOW MUNICIPAL AIRPORT
BARTOW, FL 33630-

10. US EPA ID Number FLD980729618

G. State Facility's ID

H. Facility's Phone (813) 533-6111

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. X	WASTE OXIDIZING LIQUID, N.O.S., Contains (LEAD NITRATE, SILVER NITRATE), 5.1, UN3139, PG II, (D001, D008, D011)	001	DM	00001	G	D001, D008 D011
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
(a) LAB-PACK

K. Handling Codes for Wastes Listed Above
(a) S01, M141

15. Special Handling Instructions and Additional Information
11A.1X16 SAL. DRUM#7

EMERGENCY PHONE : (787) 739-8421 EMERGENCY CONTACT : EDDIE CLASBE

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and water according to applicable international and national government regulations.

If I am a large quantity generator I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determin economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the pr future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation the best waste managsment method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month
EDDIE CLASBE	[signature]	93

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month
DAVID SANCHEZ	[signature]	01

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Mo

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19

Printed/Typed Name	Signature

74

Copy 3 Generator - Retained by Generator

EPA Form 8700-22 (Rev 9-88) obsolete

R2-0004367

Environmental Quality Board

COMMONWEALTH OF PUERTO RICO
ENVIRONMENTAL QUALITY BOARD

P.O. Box 11488, Santurpe, Puerto Rico 00910

OCHOA ENVIRONMENTAL SERVICES

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: PRD987377788 — Manifest Document No.: 299014

2. Page 1 of 2 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: DENTAL LABORATORIES CARIBE INC
BOX 1979
CIDRA, PR 00739-
ATT: JOSE SOLA

4. Generator's Phone (787) 739-8421

5. Transporter 1 Company Name: OCHOA INDUSTRIAL SALES CORP.
6. US EPA ID Number: PRD090128562

7. Transporter 2 Company Name: PUERTO RICO MARINE MANAGMENT
8. US EPA ID Number: PRD000726810

9. Designated Facility Name and Site Address: LAIDLAW ENV. SERV. OF BARTOW
170 BARTOW MUNICIPAL AIRPOST
BARTOW, FL 33838-
10. US EPA ID Number: FLD980729610

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
a.	X	WASTE TOXIC LIQUID, ORGANIC, N.O.S., Contains (CHLOROFORM, PROPYLENE GLYCOL), 6.1, UN2810, PG II, (D022)	001	DF	00004	G	D022
b.	X	WASTE ENVIRONMENTALY HAZARDOUS SUBSTANCES, SOLID, N.O.S., (ABSORBENT MATERIAL WITH METHANOL), 9, UN3077, PGIII (D001, F003)	001	DF	00002	P	D001, F003
c.		TOXIC SOLID, INORGANIC, N.O.S., Contains (SODIUM TARTRATE, HYDROQUINONE), 6.1, UN3288, PG II, (NONE)	001	DF	00003	P	NONE
d.							

J. Additional Descriptions for Materials Listed Above
(a) LAB-PACK
(b) LAB-PACK
(c) LAB-PACK

K. Handling Codes for Wastes Listed Above
(a) [illegible]
(b) [illegible]
(c) [illegible]

15. Special Handling Instructions and Additional Information
11A. 1X16GAL. DRUM#4 11C. 1X5GAL. DRUM#3 JOB#5222
11B. 1X5GAL. DRUM#1
EMERGENCY PHONE : (787) 739-8421 EMERGENCY CONTACT : JOSE SOLA

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and water according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the tishmp and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which mi/Anizes the present and future threat to human health and the environment; OR, if I am a small quantity generator I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Gilberto Cruz Delgado — Signature: [signature] — Month Day Year: 99 4 98

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DAVID SANCHEZ — Signature: [signature] — Month Day Year: 99 4 98

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF EMERGENCY OF SPILL IMMEDIATELY CALL THE ENVIRONMENTAL QUALITY BOARD (809) 722-0439

EPA Form 8700-22 (Rev 9-88) Previous editions are obsolete

75

R2-0004368

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator's US EPA ID No.: PRD987377702 | Manifest Document No.: 98017

22. Page: 2 of 2

Information in the shaded areas is not required by Federal law.

23. Generator's Name

ZENITH LABORATORIES CARIBE INC
BOX 1979
CIDRA, PR 00739-

L. State Manifest Document Number

M. State Generator's ID

24. Transporter ___ Company Name: CROWLEY AMERICAN TRANSPORT

25. US EPA ID Number: PRD098888376

N. State Transporter's ID

O. Transporter's Phone: 787/721-1313

26. Transporter ___ Company Name

27. US EPA ID Number

P. State Transporter's ID

Q. Transporter's Phone

	28. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No.	29. Containers Type	30. Total Quantity	31. Unit Wt/Vol	32. Waste No.
a.	WASTE ISOPROPYL ALCOHOL,, 3, UN1S19, PG II, (D001)	X	001	DM	00016	G	D001
b.	ENVIRONMENTALLY HAZARDOUS SUBSTANCES,SOLID,N.O.S., (MATERIAL WITH HEXANE),9,UN3077,PGIII	X	001	DM	00010	P	NONE
c.	WASTE FLAMMABLE LIQUID,TOXIC,N.O.S.,, Contains(METHANOL, XYLENE), 3, UN1993, PG II, (D001, D018, F003)	X	001	DM1	000 10	G	D001, D018 F003
d.							
e.							
f.							
g.							
h.							
i.							

S. Additional Descriptions for Materials Listed Above

(a) LAB-PACK
(b) LAB-PACK
(c) LAB-APCK

T. Handling Codes for Wastes Listed Above

(a) S01, M141
(b) 001, M141
(c) SB1, M141

32. Special Handling Instructions and Additional Information

28a. 1x55gal.drum#5 28c. 1x30gal.drum#11
28b. 1x16gal.drum#7

EMERGENCY PHONE : (787) 739-8421 EMERGENCY CONTACT : JOSE SOLA

TRANSPORTER

33. Transporter ___ Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

34. Transporter ___ Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

35. Discrepancy Indication Space

EPA Form 8700-22A (Rev 9-88) Previous editions are obsolete

Copy 4 Generator State - Mailed by Generator

76

R2-0004369

Environmental Quality Board

COMMONWEALTH OF PUERTO RICO
ENVIRONMENTAL QUALITY BOARD
P.O. Box 11488, Santurce, Puerto Rico 00910

OCHOA ENVIRONMENTAL SERVICES

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. P R 0 9 8 7 3 7 7 7 0 2 | Manifest Document No. 9 8 3 1 6 | 2. Page 1 of 2 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: ZENITH LABORATORIES CARIBE INC.
BOX 1979
CIDRA, PR 00739-
4. Generator's Phone (787) 739-8421

5. Transporter 1 Company Name: CCHOA INDUSTRIAL SALES CORP. | 6. US EPA ID Number: P R D 0 9 0 1 2 0 5 6 2

7. Transporter 2 Company Name: CCHOA INDUSTRIAL SALES CORP. | 8. US EPA ID Number: P R D 0 9 0 1 2 0 5 6 2

9. Designated Facility Name and Site Address: SAFETY KLEEN (BARTOW), INC.
170 BARTOW MUNICIPAL AIRPORT
BARTOW, FL 33830- | 10. US EPA ID Number: F L D 9 8 0 7 2 9 6 1 9

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a.	WASTE CHLOROFORM, , 6.1, UN1888, PG II, (D022)	X	001	DM	116	G	D022
b.	WASTE TOXIC SOLID, INORGANIC, N.O.S., , Contains (BARIUM CHLORIDE, ARSENIC TRIOXIDE), 6.1 UN3288, PG II, (D004, D005, D008)	X	001	DM	00040	P	D004, D005, D008
c.	WASTE TOXIC LIQUID, ORGANIC, N.O.S., , Contains (CHLOROFORM, POLYETHYLENE GLYCOL), 6.1, UN2810, PG II, (D022)	X	001	DM	00007	G	D022
d.	WASTE METHYL IODIDE, 6.1, UN2644, PG I, (U138)	X	001	DF	00001	G	U138

J. Additional Descriptions for Materials Listed Above
(a) LAB-PACK
(b) LAB-PACK
(c) LAB-PACK
(d) LAB-PACK

K. Handling Codes for Wastes Listed Above
(a) S01, M141
(b) S01, M141
(c) S01, M141
(d) S01, M141

15. Special Handling Instructions and Additional Information
11A. 1X55GAL. DRUM#5 11C. 1X30GAL. DRUM#12
11B. 1X55GAL. DRUM#6 11D. 1X5GAL. DRUM#16
EMERGENCY PHONE : (787). 739-8421 EMERGENCY CONTACT : JOSE SOLA

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and water according to applicable international and national government regulations.
If I am a large quantity generator I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Jose L. Cruz | Signature: Jose L. Cruz | Month Day Year: 1/10/23

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DAVID SANCHEZ | Signature | Month Day Year: 1/10/23

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

IN CASE OF EMERGENCY OR SPILL IMMEDIATELY NOTIFY THE ENVIRONMENTAL QUALITY BOARD (809) 722-0438

GENERATOR

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete.

Copy 4 Generator State - Mailed by Generator

77

R2-0004370

1999

R2-0004371

Environmental Quality Board

COMMONWEALTH OF PUERTO RICO
ENVIRONMENTAL QUALITY BOARD

P.O. Box 11488, Santurce, Puerto Rico 00910

OCHOA ENVIRONMENTAL SERVICES

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No. 2000

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No: P R D 9 8 7 3 7 7 7 0 2 — Manifest Document No. 98003

2. Page 1 of 2

Information in the shaded a is not required by Federal la

3. Generator's Name and Mailing Address: ZENITH LABORATORIES CARIBE INC. 4/3/99 98003
BOX 1979
CIDRA, OR 00739-

4. Generator's Phone (797) 739-8421

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: CCHCR INDUSTRIAL SALES CORP.

6. US EPA ID Number: P R 0 0 9 0 1 2 8 5 6 2

C. State Transporter's ID: HM-21

D. Transporter's Phone: 7877768-[illegible]

7. Transporter 2 Company Name: CROWLEY AMERICAN TRANSPORT

8. US EPA ID Number: P R D 0 9 0 8 5 9 3 5 0

E. State Transporter's ID

F. Transporter's Phone: 7877721-131[illegible]

9. Designated Facility Name and Site Address: SAFETY KLEEN(BARTOW), INC.
170 BARTOW MUNICIPAL AIRPORT
BARTOW, FL 33630-

10. US EPA ID Number: F L D 9 0 9 7 2 9 6 1 8

G. State Facility's ID

H. Facility's Phone: (941) 533-6111

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No
a.	WASTE FLAMMABLE LIQUID, N.O.S., Contains (METHANOL, ACETONE), 3, UN1993, PG II, (D001, D022, F002, F083)	X	013	DF	00715	G	D001, D022, F002, F003
b.	WASTE ISOPROPANOL,, 3, UN1219, PG II, (D001)	X	004	DF	00730	G	D001
c.							
d.							

J. Additional Descriptions for Materials Listed Above
(a) BTZEN-012:LAB-MIXTURE
(b) BTIEN-016:ISOPROPYL ALCOHOL

K. Handling Codes for Wastes Listed Above
(a) M141
(b) M061

15. Special Handling Instructions and Additional Information
[illegible]
SH: CONTAINER:
EMERGENCY PHONE : (737) 739-8421 EMERGENCY CONTACT : EDDIE CLASE

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and water according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present a future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and sel the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Axel M. Gomez Bermudez — Signature: [signature] — Month Day Ye: 12 29 9[illegible]

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Ye: [illegible]

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: ~~Axel M. Gomez~~ [illegible] 12/6/98 — Signature: [signature] [illegible] 12/26/98 — Month Day Ye

19. Discrepancy Indication Space

79

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name — Signature — Month Day Ye

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF EMERGENCY OF SPILL IMMEDIATELY CALL THE ENVIRONMENTAL QUALITY BOARD (809) 722-0439

Copy 4 Generator State - Mailed by Generator

EPA Form 8700-22 (Rev. 9-88) Previous editions are o

R2-0004372

IN CASE OF EMERGENCY OF SPILL IMMEDIATELY CALL THE ENVIRONMENTAL QUALITY BOARD (809) 722-0439

GENERATOR

3. Generator's Name and Mailing Address: TENITH LABORATORIED CARIBE INC
BOX 1979
CIDRA, PR 00739-
4. Generator's Phone (787) 739-8421

A. State Manifest Document Number:
B. State Generator's ID:

5. Transporter 1 Company Name: DCHOA INDUSTRIAL SALES CORP.
6. US EPA ID Number: PRD090012836 2
C. State Transporter's ID: DHW-51
D. Transporter's Phone: 787/788-8888

7. Transporter 2 Company Name: CROWLEY AMERICAN TRANSPORT
8. US EPA ID Number: PRD090055530
E. State Transporter's ID:
F. Transporter's Phone: 787/721-131

9. Designated Facility Name and Site Address
SAFETY KLEEN (BARTOW), INC.
179 BARTOW MUNICIPAL AIRPORT
BARTOW, FL 33830-
10. US EPA ID Number: FLD980729610
G. State Facility's ID:
H. Facility's Phone: (941) 533-6111

11. US DOT Description (including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. TOXIC LIQUID INORGANIC, N.O.S.,, Contains (AMINOHOMO PIPERIDINE, N-NITROSOHEXANE ETHYLENEAMINE), 6.1, UN3287, PG II, (NONE)	X	001	DF	0001	G	NONE
b. SODIUM FLUORIDE,, 6.1, UN1690, PG III, (NONE)	X	001	DF	0001	G	NONE
c. WASTE TOXIC SOLIDS INORGANIC, N.O.S.,, Contains (POTASSIUM CYANATE), 6.1, UN3288, PG I, (NONE)	X	001	DF	0001	P	NONE
d. WASTE TOXIC SOLID, INORGANIC, N.O.S.,, Contains (SILVER DIETHIOCARBAMATE, M-CRESOL), 6.1, UN3288, PG II, (D011, 0024)	X	001	DM	0001	P	D011, D024

J. Additional Descriptions for Materials Listed Above
(a) LAB-PACK
(b) LAB-PACK
(c) LAB-PACK
(d) LAB-PACK

K. Handling Codes for Wastes Listed Above
(a) 801, M141
(b) S01, N141
(c) S01, M141
(d) S01, M141

15. Special Handling Instructions and Additional Information
IIA. 1X5GAL. DRUM#5 IIC. 1X56AL. DRUM#12
IIB. 1X5GAL. DRUM46 IID. 1X556AL. DRUM#16
EMERGENCY PHONE : (787) 739-8421 EMERGENCY CONTACT : JOSE SOLA

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and water according to applicable international and national government regulations.
If I am a large quantity generator I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[signature]	01	05	99

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Jose Del Valle	[signature]	01	05	99

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

Copy 4 Generator State - Mailed by Generator

EPA Form 8700-22 (Rev 9-88) Previous editions are obsolete

80

R2-0004373

Environmental Quality Board

COMMONWEALTH OF PUERTO RICO
ENVIRONMENTAL QUALITY BOARD

P.O. Box 11488, Santurce, Puerto Rico 00910

OCHOA ENVIRONMENTAL SERVICES

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. P 9 9 9 9 9 9 7 7 7 9 9 9 9 9 9 9 — Manifest Document No.

2. Page 1 of 2

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address ZENITH LABORATORIES CARISE INC
BOX 1979
CIDRA, PR 00739-

4. Generator's Phone (797) 739-8421

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name OCHOA INDUSTBIAL SALES CORP.

6. US EPA ID Number P 9 9 9 9 9 1 9 9 9 9 9

C. State Transporter's ID HW-21

D. Transporter's Phone 787/788-8000

7. Transporter 2 Company Name CBOWLEY AMERICAN TBANSPORT

8. US EPA ID Number 9 9 9 9 9 9 9 9 9 9 9

E. State Transporter's ID

F. Transporter's Phone 787/721-1313

9. Designated Facility Name and Site Address
SAFETY KLEEH(BARTOW), INC.
170 BARTOW MUNICIPAL AIRPORT
BARTOW, FL 33830-

10. US EPA ID Number F L 0 9 8 0 7 2 9 5 1 0

G. State Facility's ID

H. Facility's Phone (941) 533-6111

11. US DOT Description (including Proper Shipping Name, Hazard Class and ID Number)	ISI		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a.	X	HASTE MERCURIC CHLORIDE., 8.1, UN1824, PO II, (D009)	001	DF	00001	P	D009
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
(a) LAB-PACK

K. Handling Codes for Wastes Listed Above
(a) S01, M141

15. Special Handling Instructions and Additional Information
11A. 1X5GAL, DRUM#4

EMERGENCY PHOHE : (787) 739-8421 EMERGENCY CONTACT : JOSE SOLA

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and water according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name [illegible] | Signature [illegible] | Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name Jose [illegible] | Signature [illegible] | Month Day Year 01 23 [illegible]

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day tbsr

19. Discrepancy Indication Space

81

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

GENERATOR

TRANSPORTER

FACILITY

IN CASE OF EMERGENCY OF SPILL IMMEDIATELY CALL THE ENVIRONMENTAL QUALITY BOARD (809) 722-0439

Copy 5 Generator - Retained by Generator

EPA Form 8700-22 (Rev 9-88) Previous editions are obsolete

R2-0004374

Please print or type (Form designed for use on elite (12-pitch) typewriter)

Form Approved OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator's US EPA ID No.: P R D 9 8 7 3 7 7 7 0 1

Manifest Document No.: 9 9 0 0 5

22. Page 2 of 2

Information in the shaded areas is not required by Federal law.

23. Generator's Name

ZENITH LABORATORIES CARIBE INC
BOX 1979
CIDRA PR 00739-

L. State Manifest Document Number

M. State Generator's ID

24. Transporter Company Name: SAFETY KLEEN(TG)INC

25. US EPA ID Number

N. State Transporter's ID

O. Transporter's Phone 803/962-8060

26. Transporter Company Name

27. US EPA ID Number

P. State Transporter's ID

Q. Transporter's Phone

	28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.	Waste Toxic Solid, Inorganic N.O.S. (Contains: Selenium Granules, Lead Acetate) 6.1 UN 3288 PG III	X	001	DF	00040	P	D007, D010 D008
b.							
c.							
d.							
e.							
f.							
g.							
h.							
i.							

S. Additional Descriptions for Materials Listed Above
(a) Lab Pack

T. Handling Codes for Wastes Listed Above
(a) S01, M141

32. Special Handling Instructions and Additional Information
1 x 30 yard drum # 1

EMERGENCY PHONE : (787) 739-8421 EMERGENCY CONTACT : JOSE SOLA

TRANSPORTER

33. Transporter ____ Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

34. Transporter ____ Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

35. Discrepancy Indication Space

82

EPA Form 8700-22A (Rev. 9-88) Previous editions are obsolete.

R2-0004375

Environmental Quality Board

COMMONWEALTH OF PUERTO RICO
ENVIRONMENTAL QUALITY BOARD

P.O. Box 11488, Santurce, Puerto Rico 00910

OCHOA ENVIRONMENTAL SERVICES

Please print or type. (Fonn designed for use on elite (12-pitch) typewriter.)

Fivm Approved OMll No. 2050-0039

IN CASE OF EMERGENCY OF SPILL IMMEDIATELY CALL THE ENVIRONMENTAL QUALITY BOARD (809) 722-0439

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: ATT: ALEX GOMEZ

4. Generator's Phone ( )

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name | 6. US EPA ID Number | C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address | 10. US EPA ID Number | G. State Facility's ID

H. Facility's Phone

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a.		001	DM	00055	G	NONE
b. ENVIRONMENTALLY HAZARDOUS SUBSTANCES SOLID, N.O.S., ABSORBENT MATERIAL WITH ACETONITRILE), 9, UN3077, PGIII (NONE)		001	DF	00004	P	NONE
c. ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S., MATERIAL WITH CLOZAPINE), 9, UN3077, PGIII (NONE)		001	DM	00020	P	NONE
d.						

J. Additional Descriptions for Materials Listed Above

a. LAB-PACK

b. LAB-PACK

c. LAB-PACK

K. Handling Codes for Wastes Listed Above

a. S01, M141

b. S01, M141

c. S01, M141

15. Special Handling Instructions and Additional Information

11a. 1X30GAL. DRUM#2 11b. 1x5gal. DRUM#3

11c. 1x30gal. drum#1

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and water according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name	Signature	Month	Day	Year
		11	24	11

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

83

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

COPY 8 GENERATOR - RETAINED BY GENERATOR

EPA Fnrm 8700-22 (Rev 9-88) Previnn editnns are obsolete

R2-0004376

Environmental Quality Board

COMMONWEALTH OF PUERTO RICO
ENVIRONMENTAL QUALITY BOARD

P.O. Box 11488, Santurce, Puerto Rico 00910

OCHOA ENVIRONMENTAL SERVICES

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. P R D 8 8 7 2 7 0 7 2 8 2 8 1 6 — Manifest Document No.

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address ZENITH LABORATORIES CARIBE INC
P.O. BOX 11879
CIDRA, PR 00739-
4. Generator's Phone (787) 739-6421

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name — 6. US EPA ID Number
OCHOA INDUSTRIAL SALES CORP. P R D 0 8 8 1 2 0 2 6 5 6

C. State Transporter's ID HW-21

D. Transporter's Phone 787778-0000

7. Transporter 2 Company Name — 8. US EPA ID Number
CROWLEY AMERICAN TRANSPORT P R D 0 8 8 2 5 0 5 6 5 6

E. State Transporter's ID

F. Transporter's Phone 787/721-1313

9. Designated Facility Name and Site Address — 10. US EPA ID Number
SAFETY KLEEN(BARTOW), INC.
170 BARTOW MUNICIPAL AIRPORT
BARTOW, FL 33830- F L D 0 5 2 0 7 2 6 5 1 6

G. State Facility's ID

H. Facility's Phone (941) 533-6111

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE FLAMMABLE LIQUID, N.O.S., , Contains(METHANOL, ACETONE), 3, UN1993, PG II, (D001, D022, F002, F003)	X	014	DF	00770	G	D001, D022 F002, F003
b. WASTE ISOPROPANOL, , 3, UN1219, PG II, (D001)	X	004	DF	00440	G	D001
c.						
d.						

J. Additional Descriptions for Materials Listed Above
(a) BTZEN-012:SOLVENT MIXTURE
(b) BT2EN-016:IFA

K. Handling Codes for Wastes Listed Above
(a) M141
(b) M061

15. Special Handling Instructions and Additional Information
JOB#5242
EH: CONTAINER#
EMERGENCY PHONE : (787) 739-6421 EMERGENCY CONTACT : ALEX GOMEZ

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and water according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment: OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
DAVID SANCHEZ	David Sanchez	04	15	97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

84

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR

TRANSPORTER

FACILITY

IN CASE OF EMERGENCY OF SPILL IMMEDIATELY CALL THE ENVIRONMENTAL QUALITY BOARD (809) 722-0439

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete

R2-0004377

Environmental Quality Board

ENVIRONMENTAL QUALITY BOARD

P.O. Box 11488, Santurce, Puerto Rico 00910

Ocho ENVIRONMENTAL SERVICES

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: PRD987377702 — Manifest Document No.: 99020
2. Page 1 of 2

Information in the shaded area is not required by Federal law.

3. Generator's Name and Mailing Address: ZENITH LABORATORIES CARIBE, INC. ACT: EDDIE CLASSE
P.O. BOX 1979
CIDRA, P.R. 00739

4. Generator's Phone (787) 739-8421

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: OCHOA INDUSTRIAL SALES CORP.
6. US EPA ID Number: PRD090128562

C. State Transporter's ID: BW-21

D. Transporter's Phone: (787)788-8000

7. Transporter 2 Company Name: CROWLEY AMERICAN TRANSPORT
8. US EPA ID Number: PRD090128562

E. State Transporter's ID

F. Transporter's Phone: (787)729-1000

9. Designated Facility Name and Site Address: SAFETY KLEEN (BARTOW), INC.
170 BARTOW MUNICIPAL AIRPORT
BARTOW, FL. 33830
10. US EPA ID Number: FLD980729610

G. State Facility's ID

H. Facility's Phone: (941) 519-6368

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	MM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	X	RQ, WASTE CORROSIVE LIQUID, TOXIC, N.O.S., (SULFURIC ACID, MERCURIC SULFATE), 8, UN 2922, PG II, MARINE POLLUTANT	001	DF	00001	G	D002 D007 D009
b.	X	WASTE FORMIC ACID, 8, UN 1779, PG II	001	DF	D0001	G	D002
c.	X	WASTE OXIDIZING, LIQUID, N.O.S., (POTASSIUM DISHROMATE), 5.1, UN 3139, PG II	001	DF	00001	G	D001 D007
d.	X	TOXIC, SOLID, INORGANIC, N.O.S., (CUPRIC SULFATE, SODIUM SULFATE), 6.1, UN 3288, PG II	001	DM	00030	P	NONE

J. Additional Descriptions for Materials Listed Above
11a. LABPACK
11b. LABPACK
11c. LABPACK
11d. LABPACK

K. Handling Codes for Wastes Listed Above
11a. S01, M141
11b. S01, M141
11c. S01, M141
11d. S01, M141

15. Special Handling Instructions and Additional Information
11a. 1 x 5 gls DRUM #2 11d. 1 x 30 gls DRUM #1 11a. - 11d. DOT E-10933
11b. 1 x 5 gls DRUM #3
11c. 1 x 5 gls DRUM #5 EMERGENCY PHONE: (787) 739-8421 EMERGENCY CONTACT: EDDIE CLASSE

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and water according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: EDDIE CLASSE — Signature: Eddie Classe — Month Day Year: 12 28 99

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: José Del Valle — Signature: [signature] — Month Day Year: 12 28 99

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

85

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF EMERGENCY OF SPILL IMMEDIATELY CALL THE ENVIRONMENTAL QUALITY BOARD (809) 722-0439

2000

R2-0004379

Environmental Quality Board

COMMONWEALTH OF PUERTO RICO
ENVIRONMENTAL QUALITY BOARD

P.O. Box 11488, Santurce, Puerto Rico 00910

OCHOA ENVIRONMENTAL SERVICES

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039.

IN CASE OF EMERGENCY OF SPILL IMMEDIATELY CALL ENVIRONMENTAL QUALITY BOARD (809) 722-0439

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No.

2. Page 1 of

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name

6. US EPA ID Number

C. State Transporter's ID

D. Transporter's Phone [illegible]

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone [illegible]

9. Designated Facility Name and Site Address

10. US EPA ID Number

G. State Facility's ID

H. Facility's Phone [illegible]

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	X	[illegible]	[illegible]	[illegible]	-	[illegible]
b.		[illegible]	[illegible]	[illegible]	-	[illegible]
c.	X	WASTE [illegible] (METHANOL [illegible]) (EX=[illegible])	[illegible]	[illegible]	-	[illegible]
d.						

J. Additional Descriptions for Materials Listed Above

[illegible] SOLVENT MIXTURE [illegible]

K. Handling Codes for Wastes Listed Above

[illegible]

15. Special Handling Instructions and Additional Information

[illegible]

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway and water according to applicable international and national government regulations.

It I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment: OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name | Signature | Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed Typed Name | Signature | Month Day Year

87

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete.

R2-0004380

ZENITH LABORATORIES CARIBE, INC.

Pretreatment Area/Industrial Pennit
PRASA
(GDA-90-505-013)

88

Government of Puerto Rico
AQUEDUCT & SEWER AUTHORITY
Pretreatment Area/Industrial Permit Management

June 16, 1999

(Modificado: 5 de octubre de 1999)

Certified Mail

Eng. Nelson Rodríguez
General Manager and President
ZENITH LABORATORIES CARIBE, INC.
P. O. Box 11979
Cidra, Puerto Rico 00731

Dear Mr. Rodríguez:

Re: CDA-90-505-013

Enclosed is your Renewal Industrial Discharge Permit (the Permit) modified. The Permit establishes effluent limitations and sampling requirements as well as general and specific conditions, with which facility must comply.

The Permit incorporates the Environmental Protection Agency (EPA) approved local limits for the Cayey Regional Wastewater Plant (the Plant). Before June 30, 1999, these limits shall be adopted and incorporated within the discharge permit of all categorical and significant Industries discharging its process water to the plant.

Changes were necessary to assure the compliance of the Plant with the new discharge limits and requirements established in its NPDES permit, specifically for Arsenic and Surfactants. Lower limits are proposed for Cadmium, Copper, Cyanide, Lead, Manganese, Mercury, Selenium, Zinc and Phenols. All parameters must be monitored and reported after effective date of the modification of your permit. If the industry understands that it cannot comply with the new limits, interim limits and a compliance plan may be approved upon request and evaluation.

On the other hand, some parameters were eliminated from the industrial discharge permit because they are not presently necessary to maintain compliance of the Plant with NPDES permit limits. PRASA will validate the local limits for a period of one year and will inform EPA every three months on PRASA's compliance with the implementation of the new limits.

It's very important that you notify these permit modifications to the laboratory performing the sampling and analyses of your discharge.

89

ZENITH LABORATORIES CARIBE, INC.
GDA-90-505-013

Further, the industry must provide a control plan for organic toxic compounds. The control plan must include a copy of the industry Spill Prevention Control and Countermeasure (SPCC) Plan and the measures you have implemented to prevent the discharge of toxic substances to the PRASA sewer system.

You have fifteen (15) calendar days from receipt of this letter to submit comments. If we do not receive any comments within the required time, this permit will become effective and final. Nevertheless, any sections of the permit that were not commented upon within the stipulated timeframe will be effective as of the effective date establish in the Permit.

Please acknowledge receipt by signing in the space provided below and return it to us. Include your account number as it appears in your water and sewer bill.

If you have any questions, or need clarifications on any permit conditions, you can call Mrs. Lenna Encarnación, industrial Permit Manager at (787) 756-2242.

Cordially,

Raymond C. Sandza
Director of Pretreatment

MS/LE/RCS/crc

Received by:

_____ _____
Signature Name

_____ _____
Position Date

_____
Account Number

90

ZENITH LABORATORIES CARIBE, INC.
GDA-90-505-013

I. *CONDICIONES GENERALES (Se acompahan)*

II. *CONDICIONES ESPECIALES*

Gerencia de Permisos Industriales - AAA

A. *DESCRIPCION DE LAS DESCARGAS*

Caudal 001

Aguas residuales de proceso generadas en el Edificio C-1 y pretratadas antes de combinarse con las aguas residuales domésticas. Las aguas de proceso provienen de la purga de calderas, rechazo del sistema de osmósis en reverso, regeneración del sistema suavizador de agua, limpieza de equipo del drea de manufactura, limpieza de áreas de manufactura y sanitizaclón del sistema de osmósis en reverso. Estas aguas son descargadas a la PRTAR de Cayey a través del punto descrito como descarga 001. El punto de muestreo estd localizado en lq salida del clarificador de la planta compacta de pretratamiento de Zenith Laboratories. (Véase diagrama 1)

Descarga 002

Aguas residuales procedentes de los baños, cafetería y del laboratorio de control de calidad y aguas resultantes de la sanitización del sistema deionizador ubicado en el Edificio C-2. Véase Diagrama Núm. 1. El punto de muestreo estd localizado ai norte de la instalación.

Descarga 003

Aguas residuales domésticas generadas en el Edificio C-1, se descargan a través de la Descarga 001. El punto de muestreo estd localizado al suroeste del Edificio C-1. (Véase Diagrama núm. 1)

B. *REQUISITOS GENERALES APLICABLES A TODAS LAS DESCARGAS*

El usuario del permiso debe cumplir con las prohlbiciones generales y disposiciones generales que se establecen en la Sección I de este permiso.

Se prohibe realizar Interconexiones, relocalización o mezcla de los flujos entre las descargas sih el consentimiento previo por escrito de la Autoridad. También se prohibe cualquier desvío (bypass) de las instalaciones de pretratamiento.

R2-0004384

Información General Sobre el Usuario del Permiso

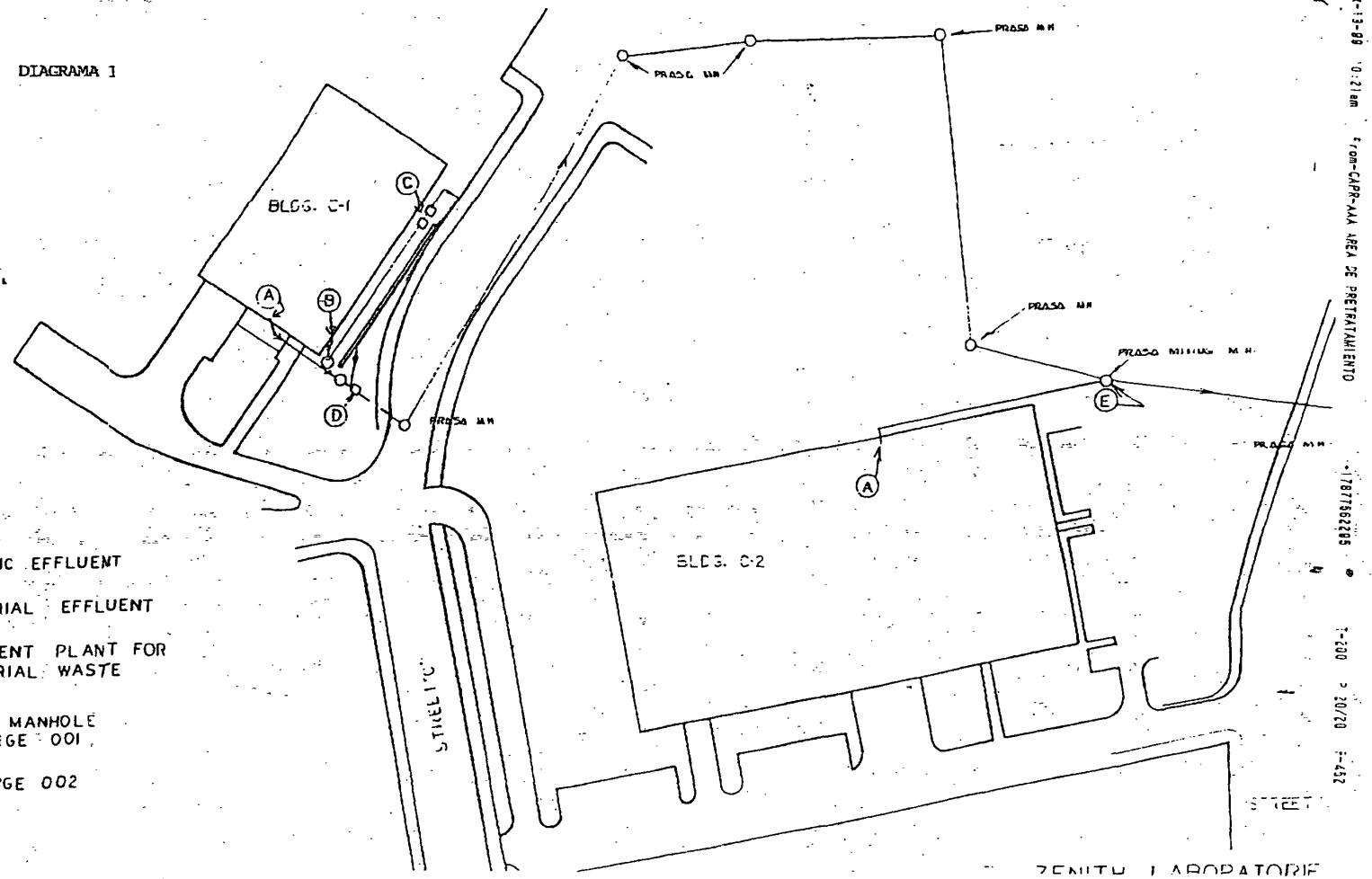
Permiso Núm.	:	*GDA-90-505-013*
Nombre de la Compañía	:	*Zenith Laboratories Caribe, Inc.*
Dirección Física	:	*Parque Ind. Cidra, Lote 13814* *Cidra, Puerto Rico 00739-1979*
Dirección Postal	:	*Call Box 4979* *Cayey, Puerto Rico 00731*
Número telefónico	:	*(787) 739-8467*
Número telefónico en caso de emergencia	:	*(787) 739-8467*
Clasificación Industrial (SIC)	:	*2834 Preparativos Farmacéuticos*
Categoría	:	*Parte 439, Subparte D, Farmaceutica*
Tipo de Fuente	:	*Usuario Industrial Existente*

Gerencia de Permisos Industriales - AAA

92

R2-0004385

DIAGRAMA 1



LEGEND

A DOMESTIC EFFLUENT

B INDUSTRIAL EFFLUENT

C TREATMENT PLANT FOR INDUSTRIAL WASTE

D MIXING MANHOLE DISCHARGE 001

E DISCHARGE 002

93

R2-0004386

REFERENCE 5

R2-0004387

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

COMMONWEALTH OF PUERTO RICO

COMMUNITY-PANEL NUMBER
720000 0174 B

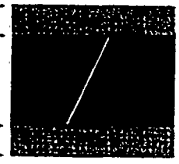
PANEL 174 OF 325
(SEE MAP INDEX FOR PANELS NOT PRINTED)

MAP REVISED:
[redacted]

Federal Emergency Management Agency

KEY TO MAP

500-Year Flood Boundary
100-Year Flood Boundary
Zone Designations* With Date of Identification e.g., 12/2/74
100-Year Flood Boundary
500-Year Flood Boundary



Base Flood Elevation Line With Elevation In Meters** — 153
Base Flood Elevation Line Where Uniform Within Zone** — (EL 387)
Elevation Reference Mark — RM7x

**Referenced to Mean Sea Level

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flopd hazard factors not determined.
AO	Areas of 100-year shallow flooding where depths are between 0.3 and 1.0 meter; average depths of inundation are showti, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between 0.3 ahd 1.0 meter; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors dttermined.
A99	Areas of 100-year flood to be protecled by flood projection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-ytar flooding with average depths less than 0.3 meter or wtiere the contributing drainage area is less than 2.6 square kilometers, or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undertermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

REFERENCE # 5

INITIAL IDENTIFICATION:
AUGUST 1, 1978

FLOOD INSURANCE RATE MAP EFFECTIVE:
AUGUST 1, 1973

FLOOD INSURANCE RATE MAP REVISIONS:
Map revised July 19, 1982 to add detailed flood hazard areas and elevations, and to change scale.

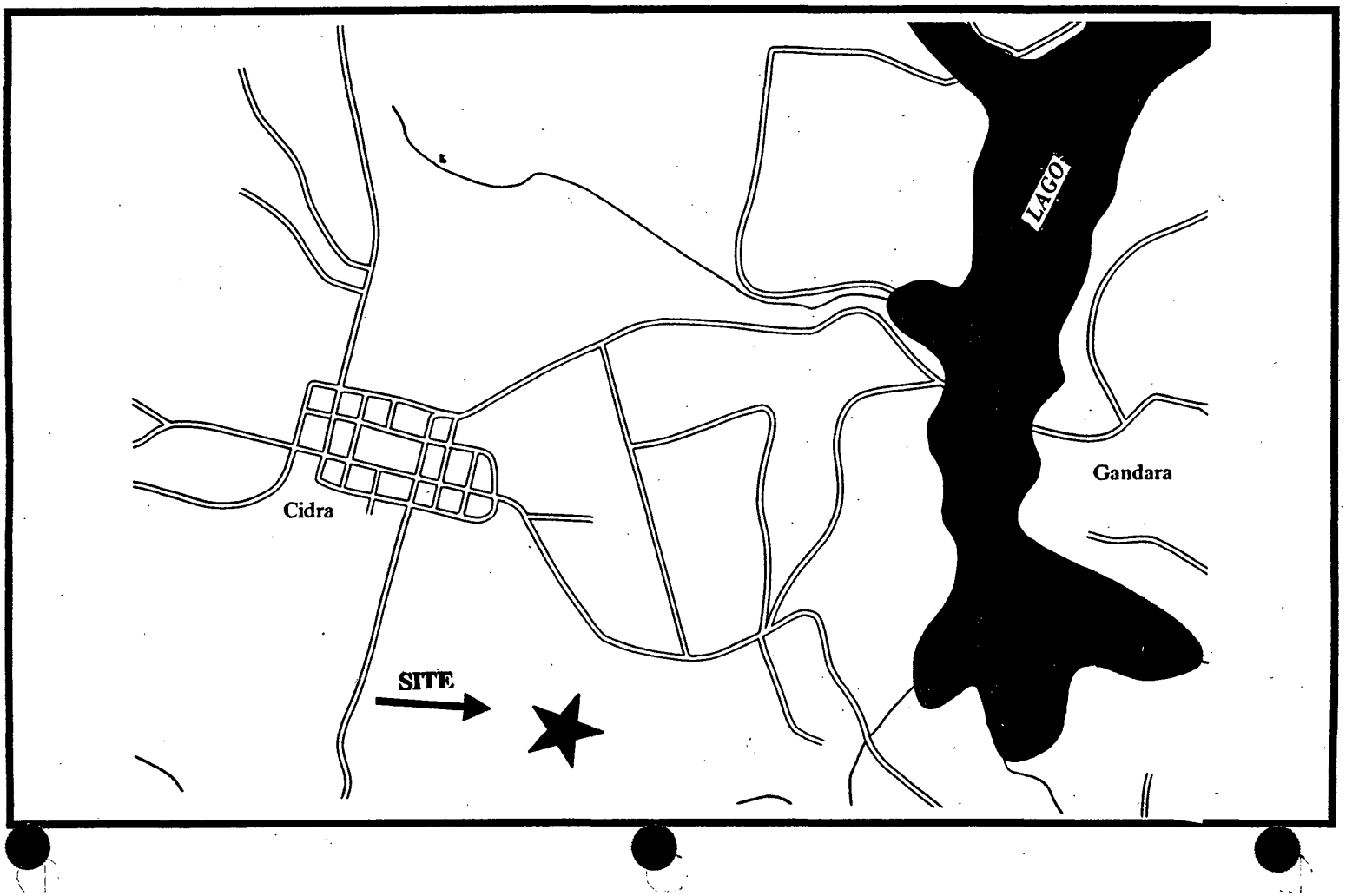
APPROXIMATE SCALE
1 : 10000

1/2 1/4 0 1/2 Mile
500 0 500 1000 1500 2000 2500 3000 3500 Feet
.5 .25 0 .5 Kilometer

95

R2-0004388

FLOOD INSURANCE RATE MAP
PANEL 174 OF 325
scale 1 : 10,000
Zenith Laboratories Caribe, Inc. (ZENITH)
Cidra Industrial Fadc, Cidra, PR



R2-0004389

REFERENCE 6

R2-0004390

GOBIERNO DE PUERTO RICO
OFICINA DEL GOBERNADOR
JUNTA DE CALIDAD AMBIENTAL

November 13, 1995

REFERENCE # 6

Mr. Israel Torres Rivera
Acting Director
Land Pollution Control Area

Mr. Carmelo Vázquez, Chief
Inspection, Monitoring and
Surveillance Section

Mrs. Mayra Fortes Dávila
Environmental Specialist

Zenith Laboratories
Cidra, Puerto Rico
PRD 987377702

The above mentioned company was visited on October 18, 1995. During the visit, a Full RCRA Generator Inspection was performed, in order to determine their compliance with the Federal Resource Conservation and Recovery Act (RCRA) and the State Regulation for the Control of Hazardous and Non - Hazardous Solid Wastes (RCHNHSW).

Attached, please find the following documents with regard to this inspection:

- Inspection Report
- Notification to the company

/sec

98

R2-0004391

SUMMARY OF FINDINGS

Zenith Laboratories is located at Cidra Industrial Park, Street A, Lots 18 and 19, Cidra, Puerto Rico. The telephone number is (809) 739-8421.

During the inspection Ms. Francisca Román, Senior Compliance Auditor, Mr. Hernán Acevedo, Maintenance Supervisor and Ms. Liduvina Westerband, Training and Safety Coordinator were present.

Zenith Laboratories was established since 1983. It is engaged in the manufacture of generics pharmaceuticals products in tablets and capsules form.

The process steps consists on mixing raw materials in several reactors, encapsulation or compression (tablets), coating and finally packing for the distribution of the product. During the mixing process, methylene chloride, water or methanol are added as solvent. Wastes methanol or methylene chloride mixed with water is generated from this process. Also, the mixing tanks are cleaned with Isopropyl Alcohol which is generated as hazardous waste.

The main hazardous wastes stream is generated at the company's QA/QC laboratory. Most of the hazardous wastes are generated as a mixture of solvent or traces of other constituents.

The generated wastes are mostly classified as D001/F002/F003. About six to eight fifty five gallons drums are generated monthly; lab packs are generated too. Ochoa Industrial is designated to pick up the hazardous wastes stored at this facility.

At the time of the inspection, the following hazardous wastes containers were found stored at the Hazardous Wastes Container Storage Area:

Amount (55 aals.)	Acc. Date	Waste Code
3	9/95	D001/F002/F003
4	10/95	D001/F002/F003
1	8/95	" "
1	10/95	Isopropyl Alcohol
1	9/95	Chloroform Methylene Chloride

R2-0004392

Amount (55 gals.)	Acc. Date	Waste Code
1	10/95	Methyl Alcohol

The generation log reflect the same amount of containers found in the storage area.

All documents required to a generator of hazardous wastes were found already available for their evaluation.

The company has an NPDS and air emission permit. Storm water documents are under evaluation.

The waste minimization program is under evaluation.

CONCLUSIONS AND RECOMMENDATIONS

As result of the inspection performed to Zenith Laboratories, it was found in compliance with the minimum hazardous wastes generator requirements set forth in the local and federal regulations.

The Land Ban requirements were evaluated and found in compliance, please see inspection checklist attached.

A compliance letter will be sent to the company. Attached please find a letter to the company for your approval and signature.

MF/sec

R2-0004393

November 13, 1995

Mr. Hernán Acevedo Parrilla
Maintenance Supervisor
Zenith Laboratories
PO Box 11979
Cidra, Puerto Ricb 00639-1979

Dear Mr. Acevedo Parilla:

Reference is made to the inspection performed to Zenith Laboratories on October 17, 1995, by Mrs. Mayra Fortes, from the Land Pollution Control Area.

At the time of the inspection, the company was found in compliance with the Regulation for the Control of Hazardous and Non - Hazardous Solid Wastes (RCHNHSW) and 40 CFR 262 and 265.

This compliance letter is related only and exclusively with the above mentioned inspection and does not preclude from further enforcement action.

We appreciate your cooperation.

Cordially,

Israel Torres Rivera
Acting Director
Land Pollution Control Area

MF/sec

101

R2-0004394

REFERENCE 7

R2-0004395

COMMONWEALTH OF PUERTO RICO / OFFICE OF THE GOVERNOR

Environmental Quality Board

REFERENCE # 7

October 17, 1997

Mr. Israel Torres Rivera
Director
Land Pollution Regulation Program

Mr. Carmelo Vázquez, Chief
Hazardous Waste Compliance Division

Mrs. Sandra I. Roca La Santa
Environmental Specialist

Inspection Report for
Zenith Laboratories
Cidra, Puerto Rico
PRD 987377702

The above mentioned company was visited on October 15, 1997. During the visit, a Full RCRA Generator Inspection was performed in order to determine their compliance with the Federal Resource Conservation and Recovery Act (RCRA) and the State Regulation for the Control of Hazardous Solid Wastes (RCHSW).

Attached please find the following documents with regard to this inspection:

- Inspection Report
- Notification to the company

/sec

R2-0004396

Inspection Report

Zenith Laboratories is located at Cidra Industrial Park, Street A, Lots 18 and 19, Cidra, Puerto Rico. The telephone number is (787) 739-8421.

During the inspection, Mr. Gilberto Cruz, Engineering Manager and Mr. José Solá, Environmental Specialist were present.

Zenith Laboratories was established since 1983. It is engaged in the manufacture of generics pharmaceuticals products in tablets and capsules form.

The process steps consists of mixing raw materiais in several reactors, encapsulation or compression (tablets), coating and finally packing for the distribution of the product. During the mixing process, methylene chloride, water or methanol are added as solvent. Wastes Methanol or Methylene Chloride mixed with water is generated from this process. Also, the mixing tanks are cleaned with Isopropyl Alcohol which is generated as hazardous waste.

The main hazardous wastes stream is generated at the company's QA/QC laboratory. Most of the hazardous wastes are generated as a mixture of solvents or traces of other constituents.

The generated wastes are mostly classified as D001/F002/F003. About six (6) to eight (8) fifty five gallons drums are generated monthly. Lab packs are generated too. Ochoa Industrial is designated to pick up the hazardous wastes stored at this facility.

During the inspection of the Hazardous Wastes Container Storage Area (HWCSA), one (1) fifty five gallons drum identified as Methylene Chloride was found stored there, eventhough it was not marked as hazardous waste. Also, the date when the period of accumulation began for four (4) full fifty five gallons drums, containing laboratory solvents (D001, F002, F003, D022) were fade out from the labels.

Mr. José Solá brought the operation log with the dates when the containers began to be stored.

The following is an inventory of the hazardous wastes containers that were found stored at the HWCSA:

Solvent Area:

Date	Quantity	Gallons	Waste Code
9-12-97	1	55	D001, F002, F003, D022

R2-0004397

Date	Quantity	Gallons	Waste Code
9-5-97	1	55	D001, F002, F003, D022
8-27-97	1	55	" " " "
9-16-97	1	55	" " " "
9-26-97	1	55	" " " "
9-29-97	1	55	" " " "
10-6-97	1	55	" " " "
9-30-97	1	5	Isopropyl Alcohol
7-22-97	1	55	" "
9-24-97	1	55	Methylene Chloride

Lab Packs Area:

	Quantity
Nessler's Reagent	box - August 97
Toluene	box - 10/4/97
Reactive and solvent expired	box - 9/5/97
Heptane	box - 10/4/97
Acetonitrile	box - 10/97
Ciclohexano/acetone	box - 9/25/97

The following expired reagents were being gathered to conform a lab pack according to their compatibilities:

D10-Camphor sulphuric acid	500 gr.
4-Chlorobenzon acid	50 gr.
Ethyl 4-hydrobenzoate	200 gr.

105

Forosemide	5 gr.
Bromine	50 mg
3 Hydroxyacetonphenone	25 gr.
Oxypropenol hydrochloride	120 miligrams
Mannitol	600 miligrams
Stearic acid	1,00 mlg.
2-4 tramino-5 nitroso pirimidine	300 mg.
A C-7 Uranil acetate	(radioactive)

Also, during the inspection water was observed within the secondary containment system (dike) of HWCSA.

During the inspection, a records review was performed and the documents pertaining to a generator were found in compliance.

Conclusion and Recommendation

As a result of the inspection performed to Zenith Laboratories Caribe, Inc. it was found that the company was in compliance with the Generator minimum requirements set forth in the state Regulation for the Control of Hazardous Solid Wastes and the federal regulation 40 CFR.

Enclosed is compliance letter in relation to this case.

Sandra Roca

Sandra I. Roca La Santa
Environmental Specialist

SRLS/sec

106

COMMONWEALTH OF PUERTO RICO / OFFICE OF THE GOVERNOR

Environmental Quality Board

October 17, 1997

Mr. Gilberto Cruz
Zenith Laboratories Caribe, Inc.
PO Box 11979
Cidra, Puerto Rico 00739-1979

Dear Mr. Cruz:

Reference is made to the inspection performed to Zenith Laboratories Caribe Inc., on October 15, 1997 by Mrs. Sandra Roca La Santa, from the Land Pollution Regulation Program.

At the time of the inspection, the company was found in compliance with the Regulation for the Control of the Hazardous Solid Wastes (RCHSW) and 40 CFR 262 and 265.

This compliance letter is related only and exclusively with the above mentioned inspection and does not preclude from further enforcement action.

We appreciate your cooperation.

Cordially,

Israel Torres Rivera
Director
Land Pollution Regulation Program

SRLS/sec

NATIONAL PLAZA BUILDING, 431 PONCE DE LEON AVENUE, HATO REY, PUERTO RICO 00917
P.O. BOX 11488 SANTURCE, PUERTO RICO 00910 PHONE NUMBER: 767-8181

107

R2-0004400

REFERENCE 8

R2-0004401

Zenith Laboratories Caribe, Inc.

2 de marzo de 1998

Sra. ~~Mayra Fortés~~ Enid Drevón

REFERENCE # 8

Area de Emergencias Ambientales
P.O. Box 11488
Santurce, P.R. 00910

Estimada Sra. Fortés:

Adjunto le incluyo los reportes Tier I & II correspondientes al año 1998. De tener alguna pregunta no dude, por favor, en comunicarse conmigo al 739-8421, ext. 202.

RECIBIDO
AREA EMER.
AMBIENTALES Y

1998 MAR -6 AM 9:33

Cordialmente,

José A. Solá
Especialista Ambiental

1998 MAR -3 PM 12:45

Revised June 1990

Page 1 of 2 pages
Form Approved OMB No. 2050-0072

TIER ONE EMERGENCY AND HAZARDOUS CHEMICAL INVENTORY

Aggregate Information by Hazard Type

FOR OFFICIAL USE ONLY — ID # _____ Date Received _____

Important: Read instructions before completing form

Reporting Period From January 1 to December 31, 19____

Facility Identification

Name ZENITH LABORATORIES CARIBE, INC
Street CIDRA INDUSTRIAL PK. LOTS 17, 18 and 19
City CIDRA Zone ____ State PR Zip 00739
SIC Code 2834 Dun & Brad Number 10-409-6623

Owner/Operator

Name Nelson Rodriguez
Mail Address P.O. Box 11979 Cidra, PR 00739-1979
Phone (787) 739-8421

Emergency Contacts

Name Eng. Gilberto Cruz
Title Engineering Manager
Phone (787) 739-8421
24 Hour Phone (787) 744-4303

Name Eng. Jose' A. Sola'
Title Environmental Technician
Phone (787) 739-8421
24 Hour Phone (787) 743-2767

____ Check if information below is identical to the information submitted last year.

HAZARDS

____ Check if site plan is attached

	Hazard Type	Max Amount	Average Daily Amount*	Number of days On-Site	General Location
Physical	Fire	03	03	365	Outside the main building, located in the flamable and combustible solvent storage area near building C-1. At the boiler fuel area.
Physical	Sudden Release of Pressure	__	__	___	
Physical	Reactivity	__	__	___	
Health	Inmediate (acute)	01	01	365	Outside the main building, located in the flamable and combustible solvent storage area near building C-1
Health	Delayed (Chronic)	02	02	365	Outside the main building, located in the flamable and combustible solvent storage area near building C-1.

Certification (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate and complete.

Eng. Gilberto Cruz / Eng Manager
Name and official title of owner/operator
OR owner/operator's authorized representative

G. Cruz 02-28-98
Signature Date signed

*Reporting Ranges

Range Code	Weigth Range in Pounds From...	To...
01	0	99
02	100	999
03	1000	9999
04	10000	99999
05	100000	999999
06	1000000	9999999
07	10000000	49999999
08	50000000	99999999
09	100000000	499999999
10	500000000	999999999
11	1 billion	higher than 1 billion

110

R2-0004403

Form Approved OMB No. 2050-0072

TIER TWO — EMERGENCY AND HAZARDOUS CHEMICAL INVENTORY — Specific Information by Chemical

Important: Read all instructions before completing forni

Reporting period From January 1 to December 31, 19__

X Check if information below is identical to the information submitted last year

Chemical 1

CAS 67630 - __ - __ Trade Secret ___

Chem. Name Isopropyl Alcohol

Check all that apply: X Pure ___ Mix ___ Solid X Liquid ___ Gas ___ EHS

Physical and Health Hazards: X Fire; ___ Sudden Release of Pressure; ___ Reactivity; X Immediate (acute); ___ Delayed (chronic)

Inventory: 02 Max Daily Amount (code); 02 Avg. Daily Amount (code); 365 No. of Days On-site (days)

Storage Code: M41

Storage Codes and Locations (Non-confidential) Storage Locations: Outside the building in a flamable and combustible liquid storage area near building C-1

Chemical 2

CAS 8008 - 20 6 Trade Secret ___

Chem. Name Kerosene

Check all that apply: X Pure ___ Mix ___ Solid X Liquid ___ Gas ___ EHS

Physical and Health Hazards: X Fire; ___ Sudden Release of Pressure; ___ Reactivity; ___ Immediate (acute); ___ Delayed (chronic)

Inventory: 03 Max Daily Amount (code); 03 Avg. Daily Amount (code); 365 No. of Days On-site (days)

Storage Code: M41

Storage Codes and Locations (Non-confidential) Storage Locations: At the boiler fuel tank area

Chemical 3

CAS 75092 - __ - __ Trade Secret ___

Chem. Name Methylene Chloride

Check all that apply: X Pure ___ Mix ___ Solid X Liquid ___ Gas ___ EHS

Physical and Health Hazards: ___ Fire; ___ Sudden Release of Pressure; ___ Reactivity; ___ Immediate (acute); X Delayed (chronic)

Inventory: 01 Max Daily Amount (code); 01 Avg. Daily Amount (code); 365 No. of Days On-site (days)

Storage Code: M41

Storage Codes and Locations (Non-confidential) Storage Locations: Outside the building in a flamable and combustible liquid storage area near building C-1

Certification (Read and sign after completing all sections)
I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate and complete.

Eng. Gilberto Cruz / Eng. Manager — Name and official title of owner/operator OR owner/operator's authorized representative

Signature

02-28-98 — Date signed

Optional Attachments
___ I have attached a site plan
___ I have attached a list of site coordinate abbreviations
___ I have attached a description of dikes and other safeguard measures

R2-0004404

February 26, 1999

Mr. Hector Russe Martinez
President of Congress
Environmental Quality Board
P.O. Box 11488
Santurce, P.R. 00910-1488

1999 MAR -4 PM 4:27

Dea Mr. Russe

This is regarding section 311 of the Emergency Planing and community Right-To-Know Act and section 312 of the Superfund Amendment a Reauthorization Act(SARA) Title III.

Attached, please find MSDS's copies of the following chemicals: Isopropyl Alcohol, Kerosene and Methylene Chloride used at the facility and a copy of an Emergency and Hazardous Chemical Inventory (Tier I and Tier II Forms).

If you should have any questions or concerns, please do not hesitate to contact me.

Cordially ,

Gilberto Cruz
Eng. Manager

CC. President of SARA Committee – Mr. Luis G. Torres
Sgt. Abraham Sierra of Cidra Fire Station

112

R2-0004405

Form Approved OMB No. 2050-0072

TIER ONE EMERGENCY AND HAZARDOUS CHEMICAL INVENTORY

Aggregate Information by Hazard Type

FOR OFFICIAL USE ONLY — ID # _____ Date Received _____

Important: Read instructions before completing form

Reporting Period From January 1 to December 31, 19____

Facility Identification

Name ZENITH LABORATORIES CARIBE, INC.
Street CIDRA IND. PARK, LOTS 17, 18 & 19
City CIDRA Zone ____ State P.R. Zip 00739
SIC Code ____ Dun & Brad Number ____-____-____

Owner/Operator

Name NELSON RODRIGUEZ
Mail Address P.O. BOX 11979, CIDRA, P.R. 00739
Phone (787) 739-8421

Emergency Contacts

Name Axel Gomez
Title Env. Specialist
Phone (787) 739-8421
24 Hour Phone (787) 739-8809

Name Gilberto Cruz
Title Eng. Manager
Phone (787) 739-8421
24 Hour Phone (787) 744-4303

____ Check if information below is identical to the information submitted last year.

HAZARDS

	Hazard Type	Max Amount	Average Daily Amount*	Number of days On-Site	___ Check if site plan is attached — General Location
Physical	Fire	03	03	365	Outside the main building, located in the Flamable and combustible solvent storage area near building C-1. At the boiler fuel tank area.
	Sudden Release of Pressure				
	Reactivity				
Health	Inmediate (acute)	01	01	365	Outside the main building, located in the flamable and combustible solvent storage area near building C-1.
	Delayed (Chronic)	02	02	365	Outside the main building, located in the flamable and combustible solvent storage area near building C-1.

Certification (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate and complete.

Gilberto Cruz / Eng. Manager
Name and official title of owner/operator OR owner/operator's authorized representative

Signature _____ Date signed 3/1/99

*Reporting Ranges

Range Code	Weigth Range in Pounds From...	To...
01	0	99
02	100	999
03	1000	9999
04	10000	99999
05	100000	999999
06	1000000	9999999
07	10000000	49999999
08	50000000	99999999
09	100000000	499999999
10	500000000	999999999
11	1 billion	higher than 1 billion

113

Form Approved OMB No. 2050-0072

FEB 24'99 11:22 No.002 P.03 ID:809-766-0150 PREQB-EMERG.RESP.OFF.

TIER TWO — EMERGENCY AND HAZARDOUS CHEMICAL INVENTORY

Specific Information by Chemical

Important: Read all instructions before completing form

Reporting period: From January 1 to December 31, 19__

___ Check if information below is identical to the information submitted last year

Chemical Description	Physical and Health Hazards	Inventory	Storage Code	Storage Codes and Locations (Non-confidential) Storage Locations
CAS 66-63-D Trade Secret ___ Chem. Name [redacted] Check all that apply: X Pure ___ Mix ___ Solid X Liquid ___ Gas ___ EHS	X Fire ___ Sudden Release of Pressure ___ Reactivity X Immediate (acute) X Delayed (chronic)	02 Max Daily Amount (code) 02 Avg. Daily Amount (code) 365 No. of Days On-site (days)	M 4 1	OUTSIDE THE BUILDING IN A FLAMABLE AND COMBUSTIBLE LIQUID STORAGE AREA NEAR BUILDING C-1.
CAS 8008-20-6 Trade Secret ___ Chem. Name [redacted] Check all that apply: X Pure ___ Mix ___ Solid X Liquid ___ Gas ___ EHS	X Fire ___ Sudden Release of Pressure ___ Reactivity X Immediate (acute) X Delayed (chronic)	03 Max Daily Amount (code) 03 Avg. Daily Amount (code) 365 No. of Days On-site (days)	M 4 1	AT THE BOILERS FUEL TANK AREA
CAS 75-09-2 Trade Secret ___ Chem. Name [redacted] Check all that apply: X Pure ___ Mix ___ Solid X Liquid ___ Gas ___ EHS	___ Fire ___ Sudden Release of Pressure ___ Reactivity X Immediate (acute) X Delayed (chronic)	01 Max Daily Amount (code) 01 Avg. Daily Amount (code) 365 No. of Days On-site (days)	M 4 1	OUTSIDE THE BUILDING IN A FLAMABLE AND COMBUSTIBLE LIQUID STORAGE AREA NEAR BUILDING C-1.

Certification (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through ___, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate and complete.

GILBERTO CRUZ / ENG. MANAGER
Name and official title of owner/operator OR owner/operator's authorized representative

Signature

3/1/99
Date signed

Optional Attachments
___ I have attached a site plan
___ I have attached a list of site coordinate abbreviations
___ I have attached a description of dikes and other safety

R2-0004407

Zenith Laboratories Caribe, Inc.

February 28, 2000

RECIBIDO
JUNTA DE CALIDAD AMBIENTAL
FEB 29 2000
Prog. Reglamentación Sobre Contaminación de Terrenos

Mr. Hector Russe Martinez
President of Congress
Environmental Quality Board
PO BOX 11488
Santurce, PR 00910-1488

Dear Mr. Russe:

This regarding section section 311 of the Emergency Planning and community Right-to know Act and section 312 of the Superfund Amendment a Reauthorization Act(SARA) Title III.

Attached, please find MSDS's copies of the following chemicals: Kerosene, Diesel, Dimethylformamide, and Chloroform used at the facility and a copy of an Emergency and Hazardous Chemical Inventory report (on floppy).

If you should have any questions or concerns , please do not hesitate to contact me.

Cordially,

2/25/00

Axel M Gómez Bermúdez
Especialista Ambiental

RECIBIDO
AREA DE
AMBIENTAL
2000 MAR -3 PM 2:56

Cidra Industrial Park • P.O. Box 11979 • Cidra, Puerto Rico 00739-1979 • (787) 739-8467

115

R2-0004408

Due to Electronic Processing Your form will be returned unless each item is completed!

Form Approved OMB No.2050-0072

Facility Identification (PLACE LABEL HERE CAUTION DO NOT OBSCURE YOUR PHONE NUMBER)

Name ZENITH LABS CARIBE INC 000327

Street CIDRA INDUSTRIAL PARK LOT 13, 17-19

City CIDRA County CIDRA State PR Zip 00739

Phone # (787)739-8421 Latitude/Longitude

Owner/Operator Name

Name NELSON RODIGUEZ Phone(787)739-8421x8402

Mail Address CIDRA INDUSTRIAL PARK LOT 13, 17-19

City (787)739-8421 State PR Zip 00739

MUST HAVE *YOUR MAILING ADDRESS IF DIFFERENT FROM FACILITY ID ADDRESS*

Name PO BOX 11979

Street

PO BOX 11979 City CIDRA State PR Zip 007391979

ATTN: NELSON RODRIGUEZ

SIC Code 2834 Dun & Bradstreet Number 10409 6623

Emergency Contact

Name GILBERTO CRUZ Title ENG. MANAGER

Phone (787)739-8421x8404 24 Hr. Phone (787)744-4303

Name AXEL M GOMEZ Title ENV. SPECIALIST

Phone (787)739-8421x8289 24 Hr. Phone (787)739-8809

Chemical Description

THE CHEMICAL NAME MUST BE IN ALPHABETICAL ORDER PLEASE

Physical and Health Hazards SEE INSTRUCTION PAGE 3

Inventory SEE INSTRUCTION PAGE 3 & 4

Storage Codes SEE INSTRUCTION PAGE 4

STORAGE LOCATIONS SEE INSTRUCTION PAGE 5

Only 105 characters available including word spaces (Please Print)

Chemical 1

☐ CHECK IF CHEMICAL INFORMATION IN THIS AREA IS IDENTICAL TO THE INFORMATION LISTED LAST YEAR.

CAS 67663 Trade Secret ☐

Chem. Name CHLOROFORM

ENS Name CHLOROFORM

Check all that apply: ☐ Pure ☐ Mix ☐ Solid ☒ Liquid ☐ Gas ☒ EHS

Physical and Health Hazards:
- ☐ Fire
- ☐ Sudden Release of Pressure
- ☐ Reactivity
- ☒ Immediate (acute)
- ☒ Delayed (chronic)

Inventory:
- Max. Daily Amount (code): 01
- Avg. Daily Amount (code): 01
- No. of Days On-site (days): 365

Storage Codes:

Container Type	Pressure	Temperature
M	1	4
M	1	4

STORAGE LOCATIONS:
AT THE LABORATORY
AT THE STORAGE BUILDING OUTSIDE OF THE LABORATORY BUILDING

Chemical 2

☐ CHECK IF CHEMICAL INFORMATION IN THIS AREA IS IDENTICAL TO THE INFORMATION LISTED LAST YEAR.

CAS 68476346 Trade Secret ☐

Chem. Name DIESEL

EHS Name

Check all that apply: ☐ Pure ☐ Mix ☐ Solid ☒ Liquid ☐ Gas ☐ EHS

Physical and Health Hazards:
- ☒ Fire
- ☐ Sudden Release of Pressure
- ☐ Reactivity
- ☒ Immediate (acute)
- ☒ Delayed (chronic)

Inventory:
- Max. Daily Amount (code): 04
- Avg. Daily Amount (code): 03
- No. of Days On-site (days): 365

Storage Codes:

Container Type	Pressure	Temperature
M	1	4

STORAGE LOCATIONS:
OUTSIDE OF THE BUILDING AT THE STORAGE TA ANK

Certification: (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

NELSON RODRIGUEZ
Name and official title of owner/operator's authorized representative

Signature

2/28/2000
Date signed

Optional Attachments

- ☒ I have attached a site plan
- ☒ I have attached a list of site coordinate abbreviations
- ☒ I have attached a description of duties and other safeguard measures

Facility Name [illegible]ITN LABS CARIBE INC

Tier Two Contin[illegible]on Form

Page 2 [illegible] 2

Chemical Description THE CHEMICAL NAME MUST BE IN ALPHABETICAL ORDER PLEASE	Physical and Health Hazards SEE INSTRUCTION PAGE 3	Inventory SEE INSTRUCTION PAGE 3 & 4	Storage Codes SEE INSTRUCTION PAGE 4	STORAGE LOCATIONS SEE INSTRUCTION PAGE 5 Only 105 characters available including word spaces (Please Print)
☐ CHECK IF CHEMICAL INFORMATION IN THIS AREA IS IDENTICAL TO THE INFORMATION LISTED LAST YEAR. CAS 68 122 Trade Secret ☐ Chem. Name DIMETHYLFORMAMIDE EHS Name Check all that apply: ☐ Pure ☐ Mix ☐ Solid ☒ Liquid ☐ Gas ☐ EHS	☒ Fire ☐ Sudden Release of Pressure ☐ Reactivity ☐ Immediate (acute) ☒ Delayed (chronic)	02 Max. Daily Amount (code) 01 Avg. Daily Amount (code) 365 No. of Days On-site (days)	Container Type / Pressure / Temperature M 1 4 M 1 4	AT THE LABORATORY OUTSIDE OF THE BUILDING IN THE STORAGE SITE
☐ CHECK IF CHEMICAL INFORMATION IN THIS AREA IS IDENTICAL TO THE INFORMATION LISTED LAST YEAR. CAS 8008 206 Trade Secret ☐ Chem. Name KEROSE EHS Name Check all that apply: ☐ Pure ☐ Mix ☐ Solid ☐ Liquid ☐ Gas ☐ EHS	☒ Fire ☐ Sudden Release of Pressure ☐ Reactivity ☒ Immediate (acute) ☐ Delayed (chronic)	04 Max. Daily Amount (code) 03 Avg. Daily Amount (code) 365 No. of Days On-site (days)	Container Type / Pressure / Temperature M 1 4	OUTSIDE OF THE PLANT IN THE STORAGE TANK

REFERENCE 9

R2-0004411

PO BOX 70184 • SAN JUAN • PUERTO RICO 00936

DEPARTAMENTO DE SALUD
GOBIERNO DE PUERTO RICO
Dando SALUD a tu Vida

14 de marzo de 1996

REFERENCE # 9

Ing. Benjamin Pomales
Director Ejecutivo
Autoridad de Acueductos y Alcantarillados
Apartado 7066, Bo. Obrero Station
Santurce, Puerto Rico 00916

Re: Violación NMC Tetracloroeteno
Sistema: Cidra Urbano
Pozo:#4 Calle Padilla Final
PWS I.D.: 0004695

Estinado ingeniero Pomalns:

El Pozo #4 (Calle Padilla Final) perteneciente al sistema Cidra Urbano, excedió el Nivol Máximo de Contaminante (NMC) para tetracloroeteno establecido an 0.005 mg/L. los valores obtenidos se reflejan en la siguiente tabla.

Fecha	Valor Obtenido en mg/L
3/30/96	0.0109
3/ 1/96	0.0078
3/ 7/96	0.0177

Este Pozo debió haber sido muestrrado trimestralmente durante el año 1995. Según información suministrada a este Departamento, el mismo se encontraba fuera de operación. De acuerdo a información posterior, el mismo está en servicio.

De acuerdo a los resultados obtenidos, y en virtud de la Ley #5 y del Reglamento #50, se requiere que el Pozo #4 sea retirado de operación inmediatamente.

4695 - 210Z
* SE CERRO DESDE MARZO 1996
11/10/96

119

Ing. Benjamin Pomales
Director Ejecutivo-A.A A.

Violación NMC Tetracloroeteno
Sistema: Cidra Urbano
Pozo: #4 Calle Padilla Final
PWS I.D.: 0004695

Página #2

14 de marzo de 1996

Dicho Pozo no sólo excede el NMC para tetracloroeteno, sino que demuestra detección para otros químicos orgánicoa volátiles tales como: Cis-1,2 dicloroetano, tetracloruro de carbono, y 1, 1-dicloroeteno.

Debido al riesgo a la salud que representan estos contaminantes en agua potable se requiere una investigación para determinar la procedencia de esta contaminación, esto como parte del Programa de Protección de la Fuente.

El Pozo #4, no podrá ser incorporado como componente del sistema Cidra Urbano hasta tanto no se demuestre que cumple con la Reglamentación para agua potable.

Cualquier duda o pregunta sobre este asunto, favor de comunicarse con el Programa de Agua Potable a los teléfonos 754-6010 ó 6370.

Cordialmente,

Carmen Feliciano de Melecio, M.D.
Secretaria de Salud

Anexo

cc: Sr. Hernán Horta Cruz, MSS
Secretario Auxiliar para
Salud Ambiental

Sra. Olga I. Rivera, MSA
Dir. Int. Prog. de Agua Potable

Ing. Victor Trinidad- CFO, EPA
Sr. Jean Marc Philippot- PSG
Sr. Orlando Colón- A.A.A.
Sra. Clara O'Neill-A.A.A.

TOTAL P.03 120

R2-0004413

REFERENCE 10

R2-0004414

Departamento de Salud
Secretaria Auxiliar para Salud Ambiental
Programa de Agua Potable

31 de octubre de 1996

REFERENCE # 10

Ing. Benjamín Pomales
Director Ejecutivo
Autoridad de Acueductos y Alcantarillados
Apartado 7066, Bo. Obrero Station
Santurce, Puerto Rico 00916

RECIBIDO AREA SERVICIOS AMBIENTALES '96 NOV 25 P12:24

Re : Violación al NMC -Tetracloroeteno
Pozo VIII (Cementerio)
Sistema : Cidra Urbano
PWS I.D.# : 4695-2113

Estimado ingeniero Pomales :

El pozo VIII (Cementerio) perteneciente al Sistema Cidra Urbano, excedió el Nivel Máximo de Contaminante (NMC) para tetracloroeteno establecido en 0.005 mg/L. Los valores obtenidos se reflejan en la siguiente tabla.

POZO VIII	TRIMESTRE				PROMEDIO mg/L
	4to.95	1ro.96	2do.96	3er.96	
Tetracloroeteno	0.0038	0.0075	0.0160	0.0034	0.0077

En comunicación con fecha del 17 de octubre indican que el pozo fué sacado de operación y que la deficencia de agua ocasionada por el cierre del mismo se compensó con el sistema de Cayey.

Por este medio requerimos que dicho pozo se mantenga fuera de uso para distribución de agua potable hasta tanto la situación que ocasiona dicha contaminación sea eliminada o se instale la Major Tecnologia Disponible (BAT, por sus siglas en inglés).

122

R2-0004415

REFERENCE 11

R2-0004416

GOBIERNO DE PUERTO RICO
OFICINA DEL GOBERNADOR
JUNTA DE CALIDAD AMBIENTAL

25 JCA Aniversario

NOV - 7 1996

Sr. Eric H. Morales Cruz
Jefe
División de Planes y Programas

REFERENCE # 11

Sr. Rafael Martinez
Técnico Ambiental

Ismael Castro
Técnico Ambiental

INSPECCION AL POZO VIII DEL MUNICIPIO DE CIDRA

El dia 24 de julio de 1996 personal técnico de la Sección de Proceao Continuo de Planificaclón efectuó una visita a los predios del Pozo VIII ubicado en la Carr. 171, Km. 0.1 (frente al cementerio) en Cidra, en compañia del Ing. Luis González Martinez, representante de la Autoridad de Acueductos y Alcantarillados (AAA). El propósito de la misma fue inspeccionar y evaluar las posibles fuentes de contaminación por [redacted], [redacted], y [redacted] que se detectaron en dicho pozo perteneciente a la AAA. Esta contaminación fue detectada como resultado de los muestreos rutinarios de la AAA. En el recorrido por el sector se encontraron la siguientes instalaciones, las cuales se ubican dentro de los [redacted] pies de protección de areas inmediatas a pozos:

A. Pepsi Corp

Esta ubicado en Cidra Industrial Park, Cidra. Nos atendió la Sra. Zaida Colón, Supervisora de Control de Calidad. La compañía se dedica a preparar el concentrado de la glucosa. [redacted] El permiso de franquicia que se requiere para el funcionamiento del pozo de agua potable esta vigente en el DRNA, según la Sra. Zaida Colón, empleada de la Pepsi Corp. En comunicación telefónica el 24 de septiembre de 1996, al Departamento de Recursos Naturales y Ambientales, nos comunicamos con la Sra. Sara Cortés y corroboramos que la franquicia esta vigente. [redacted] en las [redacted] y [redacted]. Luego de la inspección se realizd una evaluación a los expedientes que tiene dicha compañia en los diferentes Programas de esta Junta, encontrándose lo siguiente:

1. Según el Sr. Ramón Palau, Ingeniero adscrito al Programa de Control de Tanques de Almacenamiento Soterrado, dicha

instalación posee el expediente número # [redacted] y la misma cumplió con un Plan de Cierre. Actualmente los tanques están cerrados al rellenarse con arena, realizarón un barreno para probar si habian derrames, no detectándose alguno.

B. Escuels Superior Ana J. Candelas

Esta ubicada en la Carr. 171, Km. 0.4 salida de Cidra para Cayey (cerca del cuartel de la polioia). Nos comunicamos via telefónica con la Autoridad de Edificios Públicos el 20 de septiembre de 1996 para verificar donde se descargaban las aguas sanitarias de esta escuela. El Sr. Nelson Torres, Ingeniero de dicha agencia nos informó que descargaban al sistema de alcantarillados sanitarios de dicho sector.

C. Parque Industrial Cidra

En el parque Industrial se encuentran las siguientes industrias:

1. Shelfoam Products Co.

Nos atendió el Sr. Jorge Ramirez, Gerente de la compañia. El proceso de la compañia es expandir el "FOAM" con vapor, agua y aire. Luego de la inspección se realizó una evaluación a los expedientes que tienen diferentes programas de esta Junta sobre dicha compañia, encontrándose lo siguiente:

a. Tienen un tanque de 8,000 galones de petróleo según el sr. Ramón Palau, Ingeniero del Programa de Control de Tanques de Almacenamiento Soterrados. Se encontró en el expediente una carta del 8 de febrero de 1996, firmada por la Directora del Area de Calidad de Agua, señalando unas deficiencias con respecto a un "Informe con los Resultados de un Programa de Investigación de Lugar", que hasta el presente no se ha recibido respuestas. Adjunto copia de la carta.

2. Zenith Labcratorles Caribe

Nos atendió la Sra. Virgen Garcia, Directora de Cumplimiento de la compañia. Esta compañia se dedica a confeccionar tabletas bioequivalentes en cápsulas. [redacted] Adjunto copia

R2-0004418

de los resultados del agua cruda del pozo de agua potable que realizó la Zenith Laboratories Caribe.

Se identificarón en nuestro inventario de Fuentes de Contaminación y Tomas de Aguas tres (3) pozos de agua potable.

Pozo 3 al lado STP

No hay nada reportado sobre alguna inspección realizada.

Pozo Calle Baldorioty

Se procedid a buscar información sobre estándares de calidad de agua e información del Programa de Computadoras "STORET", de donde se obtuvo datos de los años 1990 y 1994. [redacted]

Pozo Calle Padilla

De este pozo se obtuvo información de "STORET" que comprende desde el año 1990 hasta 1994. [redacted]

Recomendaciones:

1. Referir el caso al Programa de Control de Tanques de Almacenamiento Soterrados del Area de Calidad de Agua, para que se le de seguimiento a la compañia Shelfoam Products Inc. por las deficiencias señaiadas en su comunicación escrita del 8 de febrero de 1996 y dirigida al Sr. Edwin Santiago, Contralor de Shelfoam Products Inc.

2. Escribir carta a la AAA informando sobre los hallazgos de esta inspección.

3. Añadir al inventario de fuentes de contaminación y tomas de agua los pozos que existen en la Pepsi Corp. & Zenith Co.

IC/inr
Nom.Mun.Cidra
96-01A-028

R2-0004419

ZENITH LABORATORIES CARIBE, INC.

PHARMACEUTICALS

CIDRA INDUSTRIAL PARK
P.O. BOX 1979
CIDRA, PUERTO RICO 00739-1979
TEL. (787) 739-8467
FAX TELEPHONE NO. (717) 739-4721

Tel 787-1962

FAX TRANSMISSION COVERLETTER

PRZ NO:

DATE	9/27/96	NO. OF PAGES(INCLUDING COVERLETTER)
TO	Ismael Castro	
FROM	~~José A. Solá~~	
SUBJECT	Well Water Analysis	

RECIBIDO
1996 SEP 29 PM 1:30
NEG. PLANIFICACION
AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS DE PUERTO RICO

MESSAGE:

Att Ismael Castro

As we spoke, there is attached the well water analysis of our plant performed on August

Thanks

A Solá

COPIES: _____ _____ _____

_____ _____ _____

CONFIDENTIALLY NOTE: The documents accompanying this telefax transmission contain information belonging to ZENITH LABORATORIES CARIBE, INC. which is confidential and/or legally privilege. The information is intended only for the use of the individual or entity named above. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or the taking of any action in reliance on the contents of this telecopied information is strictly prohibited. If you have received this telefax in error, please immediately notify us by telephone to arrange for return of the original documents to us.

Transmitted by: _____

R2-0004420

Order # 96-08-929
08/22/96 15:23

TEST RESULTS BY SAMPLE

Sample: 01A Well
Job: 01-04 Groundwater - Grab

Collected: 08/09/96

Test Description	Result	Limit	Units	Analyzed	By
[redacted]	[redacted]	0.5	µg/L	09/21/96	SCB
[redacted]	[redacted]	0.5	µg/L	08/21/96	SCB
Tetrachloroethane	<0.5	0.5	µg/L	08/21/96	SCB

R2-0004421

ZENITH LABS. CARIBE, INC.
P.O. BOX 11579
CIDRA, P.R. 00739

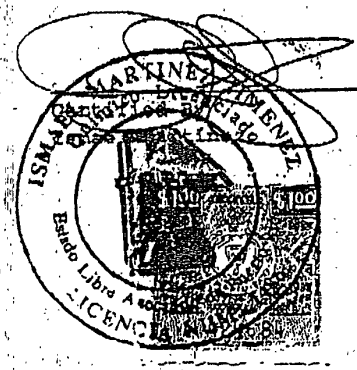
ATTN: MR. HERNAN ACEVEDO
Invoice Number:

Order #: 96-08-629
Date: 08/22/96 15:22
Work ID: Groundwater - Grab
Date Received: 08/09/96
Date Completed: 08/22/96
Client Code: 378_01

OS # 96-8767
Samples collected by EQ Lab Technician
Limit = Detection Limit

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	Well		



GOBIERNO DE PUERTO RICO
OFICINA DEL GOBERNADOR
JUNTA DE CALIDAD AMBIENTAL

NOV 7 1996

Katherine Batista
Jefe
Programa Control de Tanques de
Almacenamiento Soterrados

Lucinia Ghiglietty
Directora
Area de Calidad de Agua

Roberto Ayala 11/12/96
Roberto Ayala
Director
Negociado Planificación Calidad de Agua

INSPECCION AL POZO VIII DEL MUNICIPIO DE CIDRA

El 24 de julio de 1996, personal técnico adscrito a la Sección de Proceso Continuo de Planificación de Calidad de Agua realizó una inspeccidn al Pozo VIII en el municipio de Cidra. La misma tuvo como propósito el localizar posible fuentes de contaminación por las sustanciae cloroformo, tetracloroeteno, y 1,1 dicloroetenó que se detectaron en el pozo VIII perteneciente a la Autoridad de Acueductos y Alcahtarillados (AAA).

La compañia Shelfoam Products Inc. esta ubicado en el Cidra Industrial Park. La misma tiene un tanque de 8,000 galones de petróleo, el cuál aparece registrado con el Número UST-02-94-0159. Se nos notifieó que en el expediente de didho programa existe una carta fechada el 8 de febrero de 1996 en la que se señalan unas deficiencias que al presente no han sido notificadas como corregidas. La información y seguimiento de este caso podrá ayudarnos a determinat las fuentes de contaminación al Pozo VIll de Cidra. Le ineluimos copia del memorando de inspeceidn generado en la Divisidn de Planes y Programas.

Cualquier acción que el Programa de Control de Tanques de Almacenamiento soterrados considere necesarios para requerirle que corrijan, favor de notificarlo, o cualquier duóa al respecto podrá comunicarse con el Sr. Eric H. Morales, Jefe, Divisidn de Planes y Programa a la extensiones 2530 0 3530.

IC/inr
Nom.Mun.Cidra
96-01A-032

R2-0004423

REFERENCE 12

R2-0004424

PO BOX 70184 • SAN JUAN • PUERTO RICO, 00936 • TEL. (787) 766-1616

DEPARTAMENTO DE SALUD
GOBIERNO DE PUERTO RICO

Dando SALUD a tu Vida

RECIBI... ICIOS

'99 JAN -4 P 52

16 de diciembre de 1998

REFERENCE # 12

ing. Perfecto Ocasio
Director Ejecutivo
Autoridad de Acueductos y Alcantarillados
Apartado 7066, Bo. Obrero Station
Santurce, Puerto Rico 00916

AAA SERV. AMBIENTALES
ESTADISTICA E INFORME
1999 JAN -7 AM 9:11

Re: Pozo # 3 Cidra
Sistema: Cidra Urbano
PWSID: 0004695

Estimado ingeniero Ocasio:

La reglamentacidn de agua potable establece que para aquellos sistemas que están llevando a cabo muestreo a una frecuencia mayor que la anual para químicos orgánicos voiátiles (QOV), el cumplimiento es determinado por el promedio anual rotativo de las muestras tomadas en cada punto. Si el promedio anual de cualquier punto es mayor que ei nivel máximo de contaminante, entonces el sistema está fuera de cumplimiento (Articulo VI A 10) (f) 15.).

A tal efecto, en comunicados emitidos el 14 de marzo y 31 de octubre de 1996, se ordenó mantener fuera de operacidn el pozo #4 (Calle Padilla Final) y el pozo #8 (Cementerio), por exceder el promedio anual para tetracloroeteno. En dicha ocasión se apercibió a la Autoridad de Acueductos y Alcantarillados (AAA) que continuara con la investigacidn para determinar la procedencia de esta contaminacidn y tomara las medidas correctivas pertinentes para evitar que otros pozos pudieran contaminarse.

NUESTROS NIÑOS
Primero

132

R2-0004425

Pozo # 3
Cidra Urbano (4695)

El 8 de junio del corriente se emite la Notificacidn de Violacidn #066-98, al sistema Cidra Urbano por exceder, el pozo #3 (Alcantarillado), el nivel máximo permitido para tetracloroeteno en agua potable para los trimestres de enero a marzo y de abril a junio de 1998. Los resultados obtenidos fuerdn los siguientes:

CONTAMINANTE	NMC (mg/L)	FECHA - RESULTADO (mg/L)	
		Ene-Mar	Abr-Jun
Tetracloroeteno	0.006	0.0073	0.010 0.011

Dicha notificacidn requirid que se realizara una investigacidn en conjunto con la Junta de Calidad Ambiental en búsqueda de posibles fuentes de contaminacidn, evaluar las posibilidad de fuentes altemas, evaluar la instalacidn de la mejor tecnología de tratamiento disponible, reaiizar un muestreo de QOV en el primer consumidor servido por este componente por cinco dias consecutivos y continuar con el muestreo establecido por reglamentacidn.

Con fecha del 16 de septiembre recibimos contestacidn a dicho comunicado. Con relacidn a los resultados del muestreo realizado en el primer consumidor (residencia: Sr. Pedro Navarro), se refleja lo siguiente:

CONTAMINANTE	NMC (mg/L)	FECHA - RESULTADOS (mg/L)				
		7/20	7/21	7/22	7/23	7/24
Tetracloroeteno	0.005	0.0216	<0.0005	<0.0005	0.0208	0.0209
Tricloroeteno	0.005	<0.0005	0.0007	<0.0005	<0.0005	<0.0005
cis,1,2-dicloroeteno	0.070	0.0038	0.0036	<0.0005	0.0033	0.0035
1,1-dicloroeteno	0.007	<0.0005	0.0010	<0.0005	<0.0005	0.0011

Puede observarse que para los dias 20, 23 y 24 de julio los niveies de tetraclorbeteno obtenidos exceden el nivel máximo permitido en agua potable. Sin embargo, para los dias 21 y 22 los niveies estuvieron por debajo del limite de deteccidn.

R2-0004426

Pozo # 3
Cidra Urbano (4695)

Recientemente la AAA sometid el informe de QOV correspondiente al trimestre de julio a septiembre de 1998. En dicho infonne el pozo # 3 no reflejd deteccidn alguna de contaminantes. Ante la irregularidad de detecciones en los puntos de muestreo antes señalados y en virtud de la Ley #5 y del Reglamento #50 y en beneficio de la salud de los usuarios del sistema Cidra Urbano, este Departamento requiere lo siguiente:

1. Realizar un muestred semanal en los siguientes puntos:
   a. en el pozo # 3,
   b. en el primer consumidor y
   c. en un ptinto medio del sistema servido exclusivamente por este pozo.

   Este muestreo deberá realizarse por cuatro (4) semanas consecutivas. Los resultados deberán someterse semanalmente a este Departamento.

Luego de evaluar los resultados obtenidos en esta segunda ronda de muestreo en distribucidn, concurrentemente con los resultados del pozo, y de exceder el NMC permitido, la AAA deberá:

2. Instalar la mejor tecnologia disponible para la remocidn de tetracloroeteno o mantener el pozo fuera de operacidn, como fuente de abasto de agua potable.

3. Emitir notificacidn pública a la poblacidn servida indicando lo siguiente:
   a. tipo de violacidn
   b. potencial adverse a la salud
   c. poblacidn afectada
   d. hervir el agua para consumo humano en una olla de porcelana o acero inoxidabie de boca ancha por un periodo de cinco (5) minutos, en un lugar bien ventilado.
   e. acciones remediativas y a largo plazo que la AAA está llevando a cabo para solucionar el problema

R2-0004427

Pozo # 3
Cidra Urbano (4695)

La AAA deberá proveer contestacidn a este comunicado en o antes de 10 días a partir del recibo del mismo.

De tener alguna duda o pregunta favor de comunicarse al Programa de Agua Potable, adscrito a la Secretaría Auxiliar para Salud Ambiental, a los teléfonos 754-6010, 6370.

Cordialmente,

Carmen Feliciano de Melecio, MD
Secretaria de Salud

cf:
Ing. Carl-Axel P. Soderberg - EPA CEPD; Sr. Hemán Hdrta - Sec. Aux. para Salud Ambiental
Sra. Olga I. Rivera - Dir. Prog. Agua Potable; Ing. Emma Blanco - Coord. Regidn Caguas
Sra. Clara O'Neill – AAA; Sr. Jean Marc Philipot - PSG/AAA; Lcdo. Ismael Martinez –Lab. AAA

135

REFERENCE 13

R2-0004429

Departamento de Salud
Secretaría Auxiliar para Salud Ambiental
Programa de Agua Potable

19 de febrero de 1999

REFERENCE # 13

Sr. Orlando Colón
Subdirector Ejecutivo Apoyo Gerencial y Ambiental
Autoridad de Acueductos y Alcantarillados
Apartado 7066, Bo. Obrero Station
Santurce, Puerto Rico 00916

Re: Notificación de Violacidn 053-99
Pozo #3 Cidra (Planta Alcantarillado)
PWS I.D. #0004695
Violación MCL - VOC Regulados

Estimado señor Colón:

El Pozo #3 pertenenciente al sistema Cidra Urbano se encuentra en frecuencia de muestreo trimestral para quimicos orgánicos volátiles, al presentar detección sobre 0.0005 mg/L en tetracloroeteno. Al calcular el promedio anual de los últimos cuatro (4) trimestres se encuentra que el mismo excede el nivel máximo de contaminante (NMC) permitido (0.005 mg/L. Los valores obtenidos se reflejan en la siguiente tabla.

Pozo #3	Mar-Jun/98	Jul-Sept/98	Oct-Dic/98	Ene-Mar/99
Tetracloroeteno	0.0100 0.0110	<0.0005	0.0178	0.0085 0.0052 0.0074
Promedio	0.0105	0.0005	0.0178	0.0070
Promedio anual : 0.009 mg/L		MCL=0.005 mg/L		

En comunicado con fecha del 8 de junio de 1998 (NOV #66-98) se notified a la Autoridad de Acueductos y Alcantarillados (AAA) que el Pozo #3 había excedido el NMC en el trimestre de enero-marzo y abril-junio de 1998. Se requirid se investigara las posibles causas o eventos que estuvieran ocasionando dicha contaminacidn, búsqueda de fuentes alternas y muestreo en primer consumidor, entre otros.

La AAA sometió contestación a este comunicado (16 septiembre 1998) con las acciones realizadas hasta el momento.

1. Investigaclón en conjunto con JCA - La JCA indica que no tiene información que pueda relacionar las instalaciones aledañas al pozo con el problema de contaminación.

R2-0004430

2. Evaluación de fuentes alternas - La AAA identifica varias alternativas potenciales para el desarrollo de nuevos pozos.

3. Muestreo en primer consumidor por cinco (5) días - Se obtienen valores sobre el NMC para tetracloroeteno y menores del limite de detección. Se detectan otros VOC's regulados (<NMC).

Dado a la irregularidad en los resultados sometidos se establecen nuevos requisitos de muestreo y otros requerimientos (carta del 16 die. 1998).

Con fecha del 11 óe febrero recibimos los resultados del muestreo requerido, reflejando valores sobre el NMC para tetracloroeteno. En dicho comunicado la AAA informd que el pozo #3 fué sacado de operación el 2 de febrero de 1999.

Este es el tercer pozo perteneciente al sistema Cidra Urbano que es sacado fuera de operación por violación a tetracloroeteno. El pozo Cementerio (VIII) y el pozo Calle Padilla Final (IV) fueron sacados de operacidn en 1996.

Es de suma importancia que se realice una investigación, más amplia, en conjunto con la Junta de Calidad Ambiental referente a la identificación y eliminación de las fuentes de contaminación a dichos abastos de agua potable.

Debido a la presencia y violación de tetracloroeteno en estos componentes subterráneos del sistema Cidra Urbano, este Departamento requiere que se muestreen trimestralmente todos los componentes subterráneos del sistema en operación, asi como también, la planta de filtración de Cidra para quimicos orgánicos volátiles. Este muestreo de vigilancia óebe establecerse como meóida preventiva de contaminación con quimicos orgánicos volátiles.

Esperando su acosmmbrada cooperación quedo,

Atentamente,

Hernán Horta Cruz, MSS
Secretario Auxiliar para
Salud Ambiental

Anejo: Comunicaciones citadas

CF: Carl-Axel P. Soderberg - EPA CEPD, Olga I. Rivera - Dir. Agua Potable, Jerry Santiago Coord. Región Caguas, Clara O'Neill - AAA, Jean Marc Philipot - PSG, Ismael Martínez - Dir. Lab. AAA/PSG, Robeno Ayala - JCA

138

REFERENCE 14

R2-0004432

REFERENCE # 14

11 de febrero de 1999

Dra. Carmen Feliciano de Melecio, Secretaria
Departamento de Salud
PO Box 70184
San Juan, Puerto Rico 00936

Estimada doctora Feliciano:

① Pozo #3 Cidra
(Carr. 171 KM C.0
al lado de Planta Alc
② Pozo #4 Calle Padilla
final Cidra
③ Pozo #8 - Pozo Comunitario

Pozo #3 - Cidra
Sistema Cidra Urbano PWS I.D. 004695

El 4 de enero de 1999 recibimos su carta del 16 de diciembre de 1998. En la misma nos señala que el Pozo #3 Cidra del Sistema Cidra Urbano PWS I.D. 004695, excedió el nivel máximo permitido para tetracloroeteno, para los trimestres de enero a marzo y de abril a junio de 1998. A continuación le indicamos lo siguiente:

- El Pozo #3 de Cidra se comenzó a muestrear para tetracloroeteno el 13 de enero de 1999, con un muestreo semanal al primer consumidor y en un pumto medio del sistema como lo solicitó el Departamento de Salud. Se obtuvieron resultados positivos, nuevamente poniendo en violación al parámetro de tetracloroeteno. Adjunto copia de los resultados (Ver Anejo I).

- Reconociendo el riesgo que presenta a la salud exceder el NMC para tetracloroeteno, el Pozo #3-Cidra, fue sacado de operación el 2 de febrero de 1999. No obstante, el personal de la Región Este realiza los ajustes pertinentes para que el Sistema de Cayey pueda servir al área afectada por el cierre del Pozo #3.

- La Notificación Pública les será enviada tan pronto esté disponible.

Para información adicional se puede comunicar con el Ing. Carlos Torres, Coordinador Area de Cayey al 738-3832.

Cordialmente,

Clara M. O'Neill

Clara M. O'Neill, Directora
Area Servicios Ambientales

CO/SM/MS/mc

Anejos:

Fax 787-0150
ATT: Mercedes Padilla
Se informo por FAX
Sobre Superfund
Joint Ex
Cidra

c: Olga Rivera, Jean M. Philipot, Roberto Maldonado, Lucindo Ortiz, Jorge Casado, José R. Guzmán Garcia, José O. Colón, Carlos Torres, Ismael Martinez, Eugenia Agosto, Sylvia Martínez, Exp. Cidra Urbano (4695), Priscila Garcia, Francisco Mojica, Exp. Reader File A: SPOZO3CI.WPD

140

R2-0004433

REFERENCE 15

compañía de aguas de Puerto Rico

REGION ESTE

REFERENCE # 15

HOJA DE FAX

To:	Sra. Mercedes Padilla	**Fax:**	766-0150
From:	Lcdo. Jorge L. Casado	**Date:**	3/30/99
Re:		**Pages:**	(13)
CC:			

x Urgent X For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

ADJUNTO RESULTADO DE "VOC" POZO CIDRA

PO Box 235, Caguas, PR 00726
Tel. (787) 745-1226 / Fax (787) 745-8270

una empresa de VIVENDI

142

LABORATORIO CENTRAL - A.A.A.

1/28/99 ISPOSM2 08 VOC y TPH Page 1

Region: GUAYAMA
Sistema: CTCSA Cayey
Pwsid: 4695

No. Muestra: 99-0-0023 Unidad Medida: ppm
Fecha Muestra: 1/13/99 Fecha Informada: 1/29/99

v = Violacion
* = Concradada

Nombre Punto Muestra: POZO III (PTA. ALC.)
CARR. 171 KM 8.0
CIDRA

	Resultado mg/L	MCL mg/L		Resultado mg/L	MCL mg/L	
Benceno:	< .0005	0.005	Bromobenceno:	< .0005		
Bromodiclorometano:	< .0005		Bromoclorometano:	< .0005		
Bromoformo:	< .0005		Bromometano:	< .0005		
N-Butilbenceno:	< .0005		Sec-Butilbenceno:	< .0005		
Tert-Butilbenceno:	< .0005		Tetracloruro de carbono:	< .0005	0.005	
Clorobenceno:	< .0005	0.1	Cloroetano:	< .0005		
Cloroformo:	.0018		Dibromoclorometano:	< .0005		
Clorometano:	< .0005		2-Clorotolueno:	< .0005		
4-Clorotolueno:	< .0005		Tetracloroetano:	.0085	0.005	V
Tolueno:	< .0005	1.0	1,2,3-Triclorobenceno:	< .0005		
1,2,4-Triclorobenceno:	< .0005	0.07	1,1,1-Tricloroetano:	< .0005	0.2	
1,1,2-Tricloroetano:	< .0005	0.005	Tricloroeteno:	< .0005	0.005	
Triclorofluorometano:	< .0005		1,2,3-Tricloropropano:	< .0005		
1,2,4-Trimetilbenceno:	< .0005		1,3,5-Trimetilbenceno:	< .0005		
Cloruro de vinilo:	< .0005	0.002	Xileno Total:	< .0015	10	
1,2-Dibromo-3-Cloropro:	< .0005		1,2-Dibromometano:	< .0005		
Diclorometano:	< .0004		1,2-Diclorobenceno:	< .0005	0.6	
1,3-Diclorobenceno:	< .0005		1,4-Diclorobenceno:	< .0005	0.075	
Diclorodifluorometano:	< .0005		1,1-Dicloroetano:	< .0005		
1,2-Dicloroetano:	< .0005	0.005	1,1-Dicloroeteno:	< .0005	0.007	
Cis-1,2-Dicloroeteno:	.0020	0.07	Trans-1,2-Dicloroeteno:	< .0005	0.1	
1,2-Dicloropropano:	< .0005	0.005	1,1-Dicloropropano:	< .0005		
2,2-Dicloropropano:	< .0005		1,1-Dicloropropeno:	< .0005		
Etilbenceno:	< .0005	0.7	Hexaclorobutadieno:	< .0005		
Isopropilbenceno:	< .0005		p-Isopropiltolueno:	< .0005		
Naftaleno:	< .0005		N-propilbenceno:	< .0005		
Estireno:	< .0005	0.1	Diclorometano:	< .0005	0.005	
1,1,1,2-Tetracloroetano:	< .0005		1,1,2,2-Tetracloroetano:	< .0005		
Cis-1,3-Dicloropropeno:	< .0005		Trans-1,3-Dicloropropeno:	< .0005		
			Total_THM:	.0027		

ASOCIADO DE PUERTO RICO ESTADO LIBRE ASOCIADO DE PUERTO RICO QUIMICO LICENCIADO
Lic. Luis E. Aguilo Lic. 2402
Lic. 1287
Quimico
Jefe Laboratorio

143

R2-0004436

LABORATORIO CENTRAL - A.A.A.

1/29/98 INFORME DE VOC Y TDH Page 2

Region: GUAYAMA
Sistema: CIDRA URBANO
Pozo: 4685

No. Muestra: 98-0-0024 Unidad Medida: ppm
Fecha Muestra: 1/13/98 Fecha Informado: 1/28/98

V - Violaciones
- - Cumplimiento

Nombre Punto Muestra: CUARTEL POLICIA
CARR. 729 KM 1.2
CIDRA

	Resultado ug/L	MCL ug/L		Resultado ug/L	MCL ug/L	
	Benceno: < .0005	0.005		Hexaclorobenceno: < .0005		
	Bromoclorometano: .0006			Bromoclorometano: < .0005		
	Bromoformo: < .0001			Bromometano: < 5005		
	n-Butilbenceno: < .0005			Sec-Butilbenceno: < .0005		
	Terc-Butilbenceno: < .0005			Tetracloruro de carbono: < .0005	0.001	
	Clorobenceno: < .0005	0.1		Cloroetano: < .0005		
	Cloroformo: .0019			Dibromoclorometano: < .0005		
	Clurometano: < .0005			2-Clorotolueno: < .0005		
	4-Clorotolueno: < .0005			Tetracloroeteno: .0089	0.005	V
	Feluono: < .0005	1 0		1,2,3-Triclorobenceno: < .0005		
	1,2,4-Triclorobenceno: < .0005	0.07		1,1,1-Tricloroetano: < .0005	0.2	
	1,1,2-Tricloroetano: < .0005	0 005		Tricloroeteno: < .0005	0.005	
	Triclorofluorometano: < .0005			1,2,3-Tricloropropano: < .0005		
	1,2,4-Trimetilbenceno: < .0005			1,3,5-Trimetilbenceno: < .0005		
	Cloruro de vinilo: < .0005	0.002		Xileno Total: < .0015	10	
	1,2Dibromo3Cloropro: < .0005			1,2-Dibromoetano: < .0005		
	Dibromometano: < .0005			1,2-Diclorobenceno: < .0005	0.6	
	1,3-Diclorobenceno: < .0005			1,4-Diclorobenceno: < .0005	0.075	
	Diclorodifluorometano: < .0005			1,1-Dicloroetano: < .0005		
	1,2-Dicloroetano: < .0005	0.005		1,1-Dicloroeteno: < .0005	0.007	
	Cis-1,2-Dicloroeteno .0056	0.07		Trans-1,2-Dicloroeteno: < .0005	0.1	
	1,2-Dicloropropano: < .0005	0.005		1,1-Dicloropropano: < .0005		
	2,2-Dicloropropano: < .0005			1,1-Dicloropropeno: < .0005		
	Etilbenceno: < .0005	0.7		Hexaclorobutadieno: < .0005		
	Isopropilbenceno: < .0005			p-Isopropiltolueno: < .0005		
	Naftaleno: < .0005			N-propilbenceno: < .0005		
	Estireno: < .0005	0.1		Diclorometano: < .0005	0.005	
	1,1,1,2-Tetracloroetano < .0005			1,1,2,2-Tetracloroetano: < .0005		
	cis-1,3-Dicloropropeno < 0055			Trans-1,3-Dicloropropeno: < .0005		
				Total_TDH: .0024		

Lic. [illegible] Berr. [illegible] L. [illegible]

ESTADO ASOCIADO DE PUERTO RICO * QUIMICO LICENCIADO *

Rafael Hortas
Lic. William López Cancel
Lic. 1287

ESTADO ASOCIADO DE PUERTO RICO * QUIMICO LICENCIADO *

Químico

Jefe Laboratorio

144

LABORATORIO CENTRAL - A.A.A.

1/29/99 INFORME DE VOC Y THM Page 3

Region: GUAYAMA
Sistema: CIDRA URBANO
Pwsid: 4603

No. Muestra: 90-5-0023 Unidad Medida: ppm
Fecha Muestra: 1/13/99 Fecha Informado: 1/20/99

V = Violacion
* = Contraseña

Nombre Punto Muestra: KINGOS'S RESTAURANT
CARR. 720 KM 2.2
CIDRA

	Resultado mg/L	MCL mg/L		Resultado mg/L	MCL mg/L
Benceno:	< .0005	0.005	Bromobenceno:	< .0005	
Bromodiclorometano:	.0172		Bromoclorometano:	< .0005	
Bromoformo:	< .0005		Bromometano:	< .0005	
N-Butilbenceno:	< .0005		Sec-Butilbenceno:	< .0005	
Tert-Butilbenceno:	< .0005		Tetracloruro de carbono:	< .0005	0.005
Clorobenceno:	< .0005	0.1	Cloroetano:	< .0005	
Cloroformo:	.0127		Dibromoclorometano:	.0044	
Clorometano:	< .0005		2-Clorotolueno:	< .0005	
4-Clorotolueno:	< .0005		Tetracloroeteno:	< .0005	0.005
Tolueno:	< .0005	1.0	1,2,3-Triclorobenceno:	< .0005	
1,2,4-Triclorobenceno:	< .0005	0.07	1,1,1-Tricloroetano:	< .0005	0.2
1,1,2-Tricloroetano:	< .0005	0.005	Tricloroeteno:	< .0005	0.005
Triclorofluorometano:	< .0005		1,2,3-Tricloropropano:	< .0005	
1,2,4-Trimetilbenceno:	< .0005		1,3,5-Trimetilbenceno:	< .0005	
Cloruro de vinilo:	< .0005	0.002	Silano Total:	< .0015	10
1,2Dibromo3Cloroprop:	< .0005		1,2-Diclorometano:	< .0005	
Dibromometano:	< .0005		1,2-Diclorobenceno:	< .0005	0.6
1,3-Diclorobenceno:	< .0005		1,4-Diclorobenceno:	< .0005	0.075
Diclorodifluorometano:	< .0005		1,1-Dicloroetano:	< .0005	
1,2-Dicloroetano:	< .0005	0.005	1,1-Dicloroetano:	< .0005	0.007
Cis-1,3-Dicloroetano:	< .0005	0.07	Trans-1,2-Dicloroetano:	< .0005	0.1
1,2-Dicloropropano:	< .0005	0.005	1,1-Dicloropropano:	< .0005	
2,2-Dicloropropano:	< .0005		1,1-Dicloropropeno:	< .0005	
Metilbenceno:	< .0005	0.7	Tetraclorobutadileno:	< .0005	
Isopropilbenceno:	< .0005		p-Isopropilbenceno:	< .0005	
Naftaleno:	< .0005		N-propilbenceno:	< .0005	
Estireno:	< .0005	0.1	Diclorometano:	< .0005	0.005
1,1,1,3-Tetracloroetano:	< .0005		1,1,2,2-Tetracloroetano:	< .0005	
Cis-1,1-Dicloropropeno:	< .0005		Trans-1,3-Dicloropropeno:	< .0005	
			Total THM:	.0349	

Lic. Luis E. Berrios Aguiló Lic. 2402 — Quimico Licenciado

Lic. William Lopez Cancel Lic. 1287 — Quimico Licenciado

Quimico

Jefe Laboratorio

145

AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS
Area de Laboratorio
P.O. Box 7065
Barrio Obrero Station
San Juan, Puerto Rico 00516

Attn: Lcda. Miriam Estrada

Colector: Luis R. Vazquez

Numero de cliente: 233-06-01
Region: Guayama
Municipio: Cidra
Sistema:
PWSID: 4655
Dia Colectada: 1/20/99
Hora: 1:20PM
Numero Muestra: 99-6-045
Analista: Ruth Gonzalez
Fecha de corrida: 1/26/99
EQ Lab Sample: 99-01555-42
Unidad Medida: mg/L
Requerido Por:

Punto de Muestreo: Pozo #3

Direccion:

Benceno < .0005
Bromodiclorometano < .0005
Bromoforno < .0005
N-butilbenceno < .0005
fert-butilbenceno < .0005
clorobenceno < .0005
Cloroforno .0018
Clorometano < .0005
4-Clorotolueno < .0005
Toluene < .0005
1,2,4-Triclorobenceno < .0005
1,1,2-Tricloroetano < .0005
Triclorofluorometano .0006
1,2,4-Trimetilbenceno < .0005
cloruro de vinilo < .0005
1,2-Dibromo-3-Cloroprop < .0005
Dibromometano < .0005
1,3-Diclorobenceno < .0005
Diclorodiflourometano < .0005
1,2-Dicloroetano < .0005
Cis-1,2-Dicloroeteno .0007
1,2-Dicloropropano < .0005
2,2-Dicloropropano < .0005
Etilbenceno < .0005
Isopropilbenceno < .0005
Naftaleno < .0005
Xstireno < .0005
1,1,1,2-Tetracloroetano < .0005
Cis-1,3-Dicloropropeno < .0005

Bromobenceno < .0005
Bromoclorometano < .0005
Bromometano < .0005
Sec-Butilbenceno < .0005
Tetracloruro de carbono < .0005
Cloroetano < .0005
Dibromoclorometano < .0005
2-Clorotolueno < .0005
Tetracloroeteno .0052
1,2,3-Triclorobenceno < .0005
1,1,1-Tricloroetano < .0005
Tricloroeteno < .0005
1,2,3-Tricloropropano < .0005
1,3,5-Trimetilbenceno < .0005
Xileno Total < .0005
1,2-Dibrometano < .0005
1,3-Diclorobenceno < .0005
1,4-Diclorobenceno < .0005
1,1-Dicloroetano < .0005
1,1-Diclorbeteno .0006
Trans-1,2-Dicloroetano < .0005
1,3-Dicloropropano < .0005
1,1-Dicloropropeno < .0005
Hexaclorobutadieno < .0005
p-Isopropilcolueno < .0005
N-propilbenceno < .0005
Diclorometano < .0005
1,1,2,2-Tetracloroetano < .0005
Trans-1,3-Dicloropropeno < .0005

MAGGIE I. DAVILA LOPEZ
Químico Licenciado
Estado Libre Asociado de Puerto Rico
LICENCIA NUM. 2948

Revisado por: Maggie Davila

146

AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS
Area de Laboratorio
P.O. Box 7066
Barrio Obrero Station
San Juan, Puerto Rico 00516

Attn: Lcda. Miriam Batrada

Colector: Luis R. Vazquez

Punto de Muestreo: Cuartel Policia Cidra

Direccion:

Numero de cliente: 281-06-01
Region: Guayaca
Municipio: Cidra
Sistema:
PWSID: 4695
Dia Colectada: I/20/99
Hora: 1:35PM
Numero Muestra: 99-G-046
Analista: Such Gonzalez
Fecha de Corrida: 1/26/99
BQ Lab Sample: 99-01565-43
Unidad Medida: mg/L
Requerido Por:

Benceno < .0005
Bromodiclorometano .0136
Bromoformo < .0005
N-butilbenceno < .0005
Tert-butilbenceno < .0005
Clorobenceno < .0005
Cloroformo .0226
Clorometano < .0005
4-Clorotolueno < .0005
Tolueno < .0005
1,2,4-Triclorobenceno < .0005
1,1,2-Tricloroetano < .0005
Triclorofluorometano < .0005
1,2,4-Trimetilbenceno < .0005
Cloruro de vinilo < .0005
1,2-Dibromo-3-Cloroprop < .0005
Dibromometano < .0005
1,3-Diclorobenceno < .0005
Diclorodiflouromatano < .0005
1,2-Dicloroetano < .0005
Cis-1,2-Diclaroeteno < .0005
1,2-Dicloropropano < .0005
a,2-Dicloropropeno < .0005
Etilbenceno < .0005
Isopropilbenceno < .0005
Nafealena < .0005
Estireno < .0005
1,1,1,2-Tetracloroetano < .0005
Cis-1,3-Dicloropropeno < .0005

Bromobenceno < .0005
Bromocloromatano < .0005
Bromometano < .0005
Sec-Butilbenceno < .0006
Tetracloruro de carbono < .0005
Cloroetano < .0005
Dibromoclorometano .0041
2-Clorotolueno < .0005
Tetraelbroateno < .0005
1,2,3-Triclorobenceno < .0005
1,1,1-Tricloroetano < .0005
Tricloroeteno < .0005
1,2,3-Tricloropropano < .0005
1,3,5-Trimetilbenceno < .0005
Xileno Total < .0005
1,2-Dibromoetano < .0005
1,2-Diclorobenceno < .0005
1,4-Diclorobenceno < .0005
1,1-Dicloroetano < .0005
1,1-Dicloroeteno < .0005
Trana-1,2-Diclaroeteno < .0005
1,3-Dicloropropano < .0005
1,1-Dicloropropeno < .0005
Hexaclorobutadieno < .0003
p-Isopropiltolueno < .0005
N-propilbencene < .0005
Diclorometano < .0005
1,1,a,2-Tetracloroetano < .0006
Trana-1,3-Dicloropropano < .0005

MAGGIE I. DAVILA LOPEZ
Químico Licenciado
Estado Libre Asociado de Puerto Rico
LICENCIA NUM. 2948

Revisado por: Maggie Davila

147

AOTORIDAP DE ACUEDCCTOS Y ALCANTAHILLADAS
Area de Laboracorio
9.0. Bom 7066
Barrio Obrero Scacion
San Juan, Puerco Sieo 00916

Acen: Lcda. Miriam Eatrada

Colactor: Luia R. Vazquez

Numero de clieate: 223-06-01
Region: Suayama
Municipio: Cidra
Sistema:
PWSID: 4595
Dia Celeocada: 1/20/99
Hora: 1:50PM
Numero Mueatra: 99-G-047
Analista: Rucb Gonsalez
Peeha de Corrida: 1/26/99
EQ Lab Sample: 99-01565-44
Unidad Medida: mg/L
Requerido Por:

Punto de Mueacreo: Miago Rest. Cidra

Direccion:

Benceno < .0005
Brooodieleromacano .0135
Bromoformo < .0005
N-butilbencena < .0005
Terr-bucilbenceno < .0005
Clorobenceno < .0005
Cloroforma .0224
Clcroaetano < .0005
4-clorotolneno < .0005
Tolueno < .0005
1,2,4-Trticlorobeaeeno < .0005
1,1,2-Tricloroecano < .0005
Triclorofluoromecano < .0005
1,2,4-Trimetilbeneeno < .0005
Cloruro de vinilo < .0005
1,2-Dibromo-3-Cloroprop < .0005
Bibronoaetano < .0005
1,3-Diclorobenceno < .0005
Siclorodiflouromecano < .0005
1,2-Dieloroetaao < .0005
Cls-1,2-Dieleroetsao < .0005
1,3-Dicloropropano < .0005
2,2-Dicloropropano < .0005
Etilbenceno < .0005
Isopropilbeaeenc < .0005
Naftaleno < .0005
Eatireno < .0005
1,1,1,2-Tetracloroetano < .0005
Cla-1,3-Dleleroprapena < .0005

Bromobenceno < .0005
Bioneelarometano < .0005
Bromamecaao < .0005
See-Bucilbenceno < .0005
Tetracloruro de earbono < .0005
Cloroeceno < .0005
Bibromeelerometano .0042
2-Clorotolueno < .0005
Tetracloroeteno < .0005
1,2,3-Triclorobeneeno < .0005
1,1,1-Trlelorostano < .0005
Tricloroeteno < .0005
1,2,3-Trielpropropeao < .0005
1,3,5-Trinacilbeneeno < .0005
Xileno Total < .0005
1,2-Dibromoetano < .0005
1,3-Dlclorobenceno < .0005
1,4-Diclerobenceno < .0005
1,1-Dicloroetano < .0005
1,1-bieloroeteno < .0005
Trans-1,2-Diclqroeteno < .0005
1,3-Dleleropropano < .0005
1,1-Cicloropropano < .0005
Eexaclorobutadieno < .0005
p-Ieopropiltolaeno < .0005
N-propilbonceno < .0005
Diclorometano < .0005
1,1,2,2-Teesacloroetano < .0005
Trans-1,3-Dieloropropeno < .0005

MAGGIE I. DAVILA LOPEZ
Químico Licenciado
Estado Libre Asociado de Puerto Rico
LICENCIA NUM. 2948

Maggie

Revisado por: Maggie Davila

148

REFERENCE 16

R2-0004442

Departamento de Salud
Secretaria Auxiliar para Salud Ambiental
Programa de Agua Potable

15 de octubre de 1999 REFERENCE # 16

Area de Emergencias Ambientales y Superfund
OCT 27 1999
Oficina del Direc

Sr. Genaro Torres León, Director
Programa de Emergencias Ambientales y Superfund
Junta de Calidad Ambiental
Apartado 11488
San Juan, Puerto Rico 00710

DEC 16 1999
Area Calidad de Aire
Superfund PA/SI

Re: **Investigación Pozos**
Sistema : Cidra Urbano
PWS I.D. #0004695

Estimado señor Torres :

Acuso recibo de su comunicado donde solicita información sobre los componentes subterráneos del sistema de agua potable Cidra Urbano (4695), propiedad de la Autoridad de Acueductos y Alcantarillados (AAA).

Los pozos del sistema Cidra Urbano presentan detección y/o exceden los niveles máximos de contaminantes (NMC) para los compuestos orgánicos volátiles (VOC's, por sus siglas en inglés). A continuación le brindo la información más relevante de los pozos #3, #4 y #8 según solicitado y demás componentes subterráneos del sistema con relación a los VOC's.

A. Pozo #3 (Planta de Alcantarillado)

Estaba en frecuencia de muestreo trimestral por detectar tetracloroeteno, cis 1,2-dicloroeteno y 1,1-dicloroeteno.

Excede el NMC en el trimestre de enero a marzo de 1998 (0.0073 mg/L) y en abril a junio de 1998 (0.010 y 0.011 mg/L). Se requirid muestreo en el primer consumidor (residencia Pedro Navarro) por cinco dias consecutivos. Los resultados fueron los siguientes:

CONTAMINANTE	NMC (mg/L)	FECHA - RESULTADOS (mg/L) 7/20	7/21	7/22	7/23	7/24
Tetracloroeteno	0.005	0.0216	<0.0005	<0.0005	0.0208	0.0209
Tricloroeteno	0.005	<0.0005	0.0007	<0.0005	<0.0005	<0.0005
Cis,1,2-dicloroeteno	0.070	0.0038	0.0036	<0.0005	0.0033	0.0035
1,1-dicloroeteno	0.007	<0.0005	0.0010	<0.0005	<0.0005	0.0011

DEC 16 1999
Area Calidad de Aire
Superfund PA/SI

150

R2-0004443

Se aumenta la frecuencia de muestreo a semanal (en el pozo, primer consumidor y punto medio). Se obtienen los siguientes resultados:

Pozo #3 = 0.0085 mg/L

Cuartel de Policia
Carr. 729 Km 1.3 = 0.0089 mg/L

Mingo's Restaurant
Carr 729 Km 2.3 = <0.0005 mg/L

En el trimestre de enero a marzo de 1999, el pozo excedió el NMC de tetracloroeteno al obtener resultados de 0.0085 mg/L, 0.0052 mg/L y 0.0074 mg/L. Tambien detectó cis 1,2 - dicloroeteno = 0.0020 mg/L.

El pozo fué sacado de operación el 2 de febrero de 1999. La Autoridad de Acueductos y Alcantarillados (AAA) informó que el sistema Cayey serviria al área afectada.

B. Pozo #4 – (Calle Padilla Final)

El pozo está fuera de operación por Orden del Departamento de Salud (14 de marzo de 1996) por exceder el NMC para tetracloroetetio.

C. Pozo #8 (Cementerio)

Estaba en frecuencia de muestreo trimestral por detectar tetracloroeteno, 1,1-dicloroeteno, cis 1,2-dicloroeteno y xilenos. Excedió el NMC para tetracloroeteno en 1996. Tiene Orden de Cierre del Departamento de Salud (31 de octubre de 1996).

D. Pozo #6 (Calle Baldorioty)

Está en frecuencia de muestreo trimestral por detección de tetracloruro de earbono, tetracloroeteno y cis 1,2-dicloroeteno. Los resultados más recientes son:

Trimestre enero-marzo 1999 : No detección
Trimestre abril-junio 1999 : Tetracloroeteno = 0.0043 mg/L
Cis 1,2-dicloroeteno = 0.00071 mg/L

E. Pozo #7

Está en frecuencia de muestreo trimestral por detección de 1,4-diclorobenceno en 1996. Los resultados más recientes son:

Trimestre enero-marzo 1999 : No detección
Trimestre abril-junio 1999 : No detección

R2-0004444

F. Pozo Zapera 2

Está en frecuencia de muestreo trimestral para VOC. No ha evidenciado detección en los últimos años.

G. Otros Componentes Subterráneos del sistema Cidra son :

1. Pozo Zapera I – fuera de operación
2. Pozo Zapera III
3. Pozo Villa del Carmen
4. Pozo Ceiba
5. Pozo Bayamón – fuera de operación
6. Pozo Rabanal

Estos componentes fueron muestreados para VOC durante el trimestre de abril a junio de 1999. No mostraron evidencia de presencia de VOC's.

El Programa de Agua Potable posee un inventario de fuentes de contaminación potencial del pozo Cidra #3. Este documento fué sometido por la Autoridad de Acueductos y Alcantarillados y está disponible para su evaluacidn en nuestras oficinas.

De tener cualquier duda favor de comunicarse al Programa de Agua Potable a los teléfonos 754-6010, 754-6350.

Cordialmente,

Olga I. Rivera, MSA
Directora
Programa de Agua Potable

152

REFERENCE 17

R2-0004446

WELL	ADDRESS	DISTANCE FROM MDV	STATUS	LATITUDE / LONGITUDE	POPULATION SERVED	PWSID	WELL PRODUCTION (GPM)
BARRIO PIÑAS ABAJO	State Road 775, Comerfo	3 – 4 miles	In operation	18° 12' 47'' N 66° 13' 36'' O	Not available	4705	30
BEATRIZ III	State Road 1, Km 51.5, Cayey	3 – 4 miles	In operation	18° 08' 53'' N 66° 06' 39'' O	Not available	4675	100
FINCA BOSH (GIL)	State Road 14, Cayey (next to dhe Hospital de Tuberculosis)	3 – 4 miles	In operation	18° 07' 00'' N 66° 10' 22'' O	Not available	4675	180
LA CENTRAL	State Road 738, Cayey	3 – 4 miles	In operation	18° 07' 43'' N 66° 08' 03'' O	Not available	4675	Not available
LAS CORUJAS	Not available	3 – 4 miles	In operation	18° 13' 10'' N 66° 08' 22'' O	Not available		Not available
MOGOTE	Del Plata Ave., Mogote Ward, Cayey	3 – 4 miles	In operation	18° 07' 14'' N 66° 10' 20'' O	Not available	4675	80
MONTELLANOS	State Road 1, Km 56.3, Cayey	3 – 4 miles	In operation	18°07' 07'' N 66° 08' 43'' O	Not available	4635	Not available
PLANICIE II	Between State Road 1 and Highway 52	3 – 4 miles	In operation	18°07' 22'' N 66° 07' 57'' O	Not ayailable		Not available

* **Contamination was detected in this wells with chloroform, cis, 1,2-dichloroethene, Trichloroethene and tetrachloroethene between 1996 and 1999.** Health Department ordered closure pending the elimination of tbe problem.

REFERENCE #17

154

R2-0004447

WELL	ADDRESS	DISTANCE FROM MDV	STATUS	LATITUDE / LONGITUDE	POPULATION SERVED*	PWSID	WELL PRODUCTION (GPM)
VILLA DEL CARMEN	Street D, #5, Urb. Vilia del Carmen, Cidra	0 – ¼ mile	In operation	18°10'18" N 66°09'22" O	423	4695	80
POZO #6 (CALLE BALDIOROTY)	Next to AEE substation, Cidra	⅛ - ½ mile	In operation	18°10'37" N 66°09'45" O	284	4695	110
POZO VIII (CEMENTERIO)	State Road 171, Km 0.1, Cidra	¼ - ½ mile	Out of operation *	18°26'48" N 66°20'40" O	-----	4695	80
POZO IV (CALLE PADILLA FINAL)	Next to Club Profesidn.	⅛ - ½ mile	Out of operation *	18°10'35" N 66°09'42" O	-----	4695	80
POZO III (PLANTA ALCANTARILLADO)	Near PRASA treatment plant	⅛ - ½ mile	Out of operation *	18°10'32" N 66°09'48" O	702	4695	100
POZO VII	State Road 172, Km 13.2, Cidra	½ - 1 mile	In operation	18°10'48" N 66°09'13" O	Not available	4695	Not available
RABANAL 1	State Road 178, Cidra	½ - 1 mile	In operation	18°10'31" N 66°09'12" O	Not available	4695	Not available
CEIBA	State Road 782, Km 2.2, Ceiba Ward	1 - 2 miles	In operation	18°i1'47" N 66°10'24" O	702	4695	100
ZAPERA 1	Carr. 740, Km 1.0, Cidra	2 - 3 miles	In operation	18°10'00" N 66°06'58" O	423	4695	20
ZAPERA 2	Carr. 740, Km 2.0, Cidra	2 - 3 miles	In operation	18°09'44" N 66°07'07" O	284	4695	20

* Cootamiostion wss detected In this wells with cbloroforrn, cis, 1,2-dichloroethene, Trichloroethene and tetrachbroetbene betweea 1996 and 1999. Health Department ordered ciosore pending the elimination of the problem.

551

AUTORIDAD DE ACUEDOCSOS Y ALCANTARILLADOS

SISTEMAS DE ACUEDUCTOS

POZOS	GPM	DIRECCION
REGION GUAYAMA (ZONA CAYEY)		
1. Mogote	80	Aveidda del Plata, Barrio Mogote, Cayey
2. Montellanos	160	PR-1, Km. 56.3, Cayey
3. Pinca Bosch (Gil)	180	Detrás Hospital Tuinerpulasos, Cayey
4. Matón 1	30	PR-730, Km. 0.9, Cayey
5. Piñas Abajo	30	PR-Piñas, Km. 0.9, Comerío
6. Naranjo	100	PR-791, Km. 0.3, Comerío
7. Pozo Pasto	90	Rrente Guardia Nacional, Aibonito
8. Asomante Nuevo	70	PR-14, Km. 48.7, Aibonito
9. Matadero	140	PR-718, Km. 0.3, Aibonito
10. Playita	120	PR-715, Km. 0.5, Aibonito
11. Caonillm 1	10	PR-726, Km. 0.7, Aibonito
12. Caonillas 2	70	PR-726, Km. 1.4, Aibonito
13. Bauza I	100	PR-1, Km. 68.9, Aibonito
14. Bauza II	100	PR-1, Km. 69.0, Aibonito
19. Cuca Planta Alc. (Pozo VII)	100	Planta Alcantarillados, Cidra
16. Calle Padilla (Pozo III)	80	Al lado Club Profesiaa, Cidra
17. Calle Baldorioty (Pozo VI)	110	Al lado Subestaeidn A.E.E., Cidra
18. Entre 1 y 2	100	PR-173, Km. 13.3, Cidra
19. Zapera 1	20	PR-740, Km. 1.0, Cidra
20. Zapera 2	20	PR-740, Km. 2.0, Cidra
21. Ceiba	100	Salida Aguas Boenas
23. Bayamoncito (Bayamon)	70	PR-787 Int., Sec. Los Roloocs, Cidra

156

R2-0004449

AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS

SISTEMAS DE ACUEDUCTOS

P O Z O S	G P M	DIRECCION
REGION GUAYAMA (ZONA CAYEY) (CONT.)		
13. V0la del Carmen	80	Calle D #5, Urb. Villa del Carmen, Cidra
14. Heleehal	80	PR-162, Km. 7.5, Intersec. PR-558 Int.
15. Palo Hincado 2	100	PR-156, Km. 10.5, Barranquitas
REGION GUAYAMA (ZONA GUAYAMA)		
1. Villodas	400	PR-713, Km. 0.3, Gnayama
2. Puente Jobos	120	PR-3, Km. 144.4, Goayama
3. Villa Cora	100	PR-3, Km. 144.2, Gnayama
4. Pozo 1	20	PR-3, Km. 129.5, Arroyo
5. Pozo 2	40	PR-3, Km. 129.5, Arroyo
6. Pozo 5	50	PR-3, Km. 128.8, Arroyo
7. Ga0arte 1	180	PR-3, Km. 128.2 Interior, Arroyo
8. Guilarte 2	150	PR-3, Km. 128.2 Interior, Arroyo
9. Quinientas 1	110	PR-753, Km. 2.8, Arroyo
10. Quinientas 2	110	PR-753, Km. 2.8, Arroyo
11. Belinda	60	PR-753, Km. 13, Arroyo
12. Pitahaya 1	110	PR-753, Km. 13, Airoyo
13. Palo Hincado 3	70	PR-156, Km. 10.7, Barranquitas
14. Patillas 1	20	PR-3, Km. 124.3, Patillas
15. Jacaboa 1	140	PR-758, Km. 0.4, Patillas
16. Jacaboa 2	40	PR-758, Km. 0.8, Patillas
17. Jacaboa 3	100	PR-758, Km. 1.7, Patillas
18. Jacaboa 4	30	PR-758, Km. 1.7, Patillas
9. Maunabo 2 (Bordaleza)	40	PR-760, Km. 0.7, Maunabo

157

R2-0004450

AUTORIDAD DE ACUEDUCTOS Y ALCANTARILLADOS

SISTEMAS DE ACUEDUCTOS

POZOS	GPM	DIRECCION
REGION GUAYAMA (ZONA GUAYAMA) (CONT.)		
1. Maunabo 3	280	PR-759, Km. 0.6, Maunabo
1. Maunabo 4 (San Pedro)	130	PR-760 Intersec. PR-939, Maunabo
2. Calzadn	350	PR-7761 Lterior, Bo. Calzada, Maunabo
3. Salinas 1	600	Calle Palés Matos, Salinas
4. Salinas 2	600	Calle Palés Matos, Salinas
5. La Margarita	150	PR-701, Km. 0.2 Interior, Salinas
5. Coqui 1, 2	80	PR-3, Km. 157.0, Salinas
7. San Pelipe	100	PR-3, Km. 150.6, Salinas
8. Texidor	230	PR-3, Km. 152.6, Salinas
9. Mar Negro 2	30	PR-703, Km. 1.4, Salinas
1. Coco 1	45	PR-1, Km. 87.1 Interior, Salinas
1. Coco Nuevo 2	130	PR-1, Km. 88.7, Sidinas
1. Coco Nuevo 3	160	PR-1, Km. 89.7, Salinas
3. Coco 4 (Campamento)	130	PR-1, Km. 88.4, Salinas
4. Parcelas Vázquez	30	PR-1, Km. 79.4, Salinas
5. Godreau II	230	PR-1, Km. 88.5 Interior
1. Beatriz III	100	PR-1, Km. 51.5, Cayey

158

R2-0004451

DRINKING WATER POPULATIONS

SOURCE	AVG ANNUAL PUMPAGE (MG)	% TOTAL PUMPAGE	%TOTAL PUMPAGE	TOTAL SERVED POPULATION
GROUND WATER				
Cuartel #8 (cementerio)	31.5	0.82	0.82	423
Colecturia #5	21.0	0.55	0.55	284
Baldorioty #6	21.0	0.55	0.55	284
Salida Caguas	42.0	1.09	1.09	563
Alcantarillado #3	52.5	1.36	1.36	702
Villa del Carmen	31.5	0.82	0.82	423
Ceiba	52.5	1.36	1.36	702
La Zapera I	31.5	0.82	0.82	423
La Zapera II	21.0	0.55	0.55	284
SURFACE WATER				
Lago de Cidra	1,168.0	30.38	30.38	15,683
Guavate	1,460.0	37.90	37.90	19,563
Cayey	912.0	23.70	23.70	12,235
TOTAL SERVED POPULATION				51,572

R2-0004452

DEPARTAMENTO DE SALUD
PROGRAMA DE AGUA POTABLE
SISTEMAS PRASA

NOMBRE DE SISTEMAS	PWS-ID	FUENTE	ESTRUCTURA	POBLACION
Arroyo PR 00714				
BARRABQOITAS URBANO CARR. 152 KM.0.3	4605	SOPERFICIAL	PLT. FILTROS	21827
BARRAMQUITAS PR 00794				
BARRANCAS NUEVO CARR.771 KM.5.3	4625	SUPERFICIAL	PLT. FILTROS	5664
BARRARQUITAS PR 00794				
CATEY URBANO CARR. 1 KM.59.9	4635	SUPERFICIAL	PLT. FILTROS	51403
CAYEY PR 00660				
GUAVATE CARR.184 KM. 27.5	4645	SOPERFICIAL	PLT. FILTROS	7690
CAYEY PR 00660				
CEBRO CARR. 738 KM. 6.5	4655	SUPERFICIAL	ACU. RURAL	856
CAYEY PR 00660				
CULEBRAS CARR. 738 KMU	4665	SOPERFICIAL	PLT. FILTROS	1219
CAYEY PR 00660				
JAJOME BAJO CARR. 708 KM 3.3	4675	SUPERFICIAL	ACU. RURAL	497
CAYEY PR 00660				
CIDRA URBANO CARR. 173 KM. 3.3	4695	SOPERFICIAL	PLT. FILTROS	28010
CIDRA PR 00638				
COMERIO URBANO CARR. 775 KM. 1.1	4705	SOPERFICIAL	PLT. PILTROS	12766
COMERIO PR 00782				

160

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM		PROJECT NOTE
TO: Cidra Cable File	DATE: 08/06/97	Page 1 of 2
FROM: Alizabeth Olhasso		
SUBJECT: Municipal/Private Groundwater Populations (Use within 4 Miles)		
REFERENCE: The USGS Well Inventory and Summary Population and Housing Characteristics, Puerto Rico.		

According to the January 1997 USGS Well Inventory, there are eleven wells within 4-miles of the Cidra Cable site. There are eight public supply wells and three private wells (two of which are used for stock). All wells draw from the Formation J aquifer.

Pozo Cidra #04, a private well, is assumed to serve four people (the county average number of people per household).

Information in the PREQB PA states that the Treasure Island Well serves 50 people.

This well is considered to be a private wells by USGS.

To be conservative, it was assumed that the public wells within 4-miles of the site serve the total number of people residing in that community. Specific well population data was not available. Therefore it was assumed that the four public supply wells in Cidra, and Pozo Tugwell #02, serve the people residing in Sud barrio, Ceiba barrio, Arenas barrio, Cidra barrio-pueblo, Bayamon barrio, and Monte Liano barrio (minus the populaton who are served by the Lago de Cidra intake - 15,683). Pozo Perez is assumed to serve Sumidero barrio and 2DA Unidad Bayamoncito is assumed to serve Bayamoncito barrio.

Municipio Subdivision/Population	Municipio Subdivision/Population
Aguas Buenas, Sumidero - 6,819	Cidra, Bayamon - 7,247
Cidra, Ceiba - 3,434	Cidra, Monte Liano - 731
Cidra, Sud - 3,663	Cidra, Cidra - 1,428
Cidra, Arenas - 5,572	Aguas Buenas, Bayamoncito - 1,946

161

R2-0004454

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM — PROJECT NOTE

TO: Cidra Cable File

DATE: 08/06/97

FROM: Alizabeth Olhasso

SUBJECT: Municipal/Private Groundwater Populations (Use within 4 Miles)

REFERENCE: The USGS Well Inventory and Summary Population and Housing Characteristics, Puerto Rico.

Well	Population	Distance Ring
Pozo Cidra #01	1,278	2 - 3
Pozo Cidra #02	1,278	2 - 3
Pozo Cidra #03	1,278	3 - 4
Pozo Cidra #04	4	3 - 4
Pozo Cidra #05	1,278	3 - 4
Pozo Tugwell #02	1,278	2 - 3
Treasure Island Well	50	2 - 3
2DA Unidad Bayamoncito	1,946	3 - 4
Pozo Perez *(Nearest Well)*	6,819	1 - 2

Total Groundwater Populntions within Distance Ring Categories	
0 - ¼	0
¼ - ½	0
½ - 1	0
1 - 2	6,819
2 - 3	3,884
3 - 4	4,506

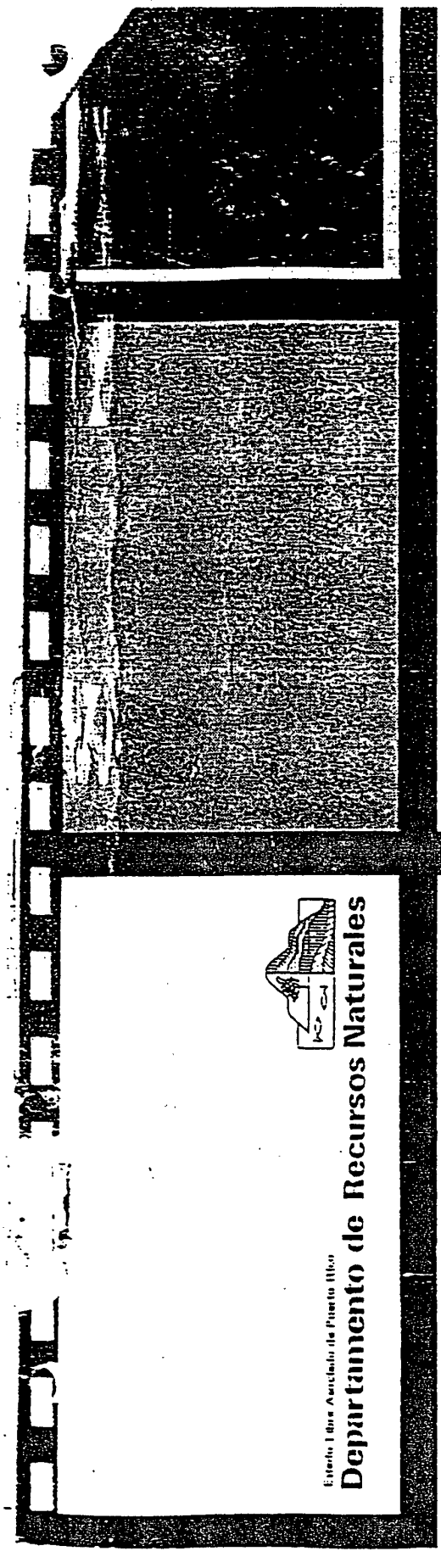
Total Groundwater Population within a 4-mile Radius = 15,209 people

R2-0004455

REFERENCE 18

R2-0004456

REFERENCE # 18



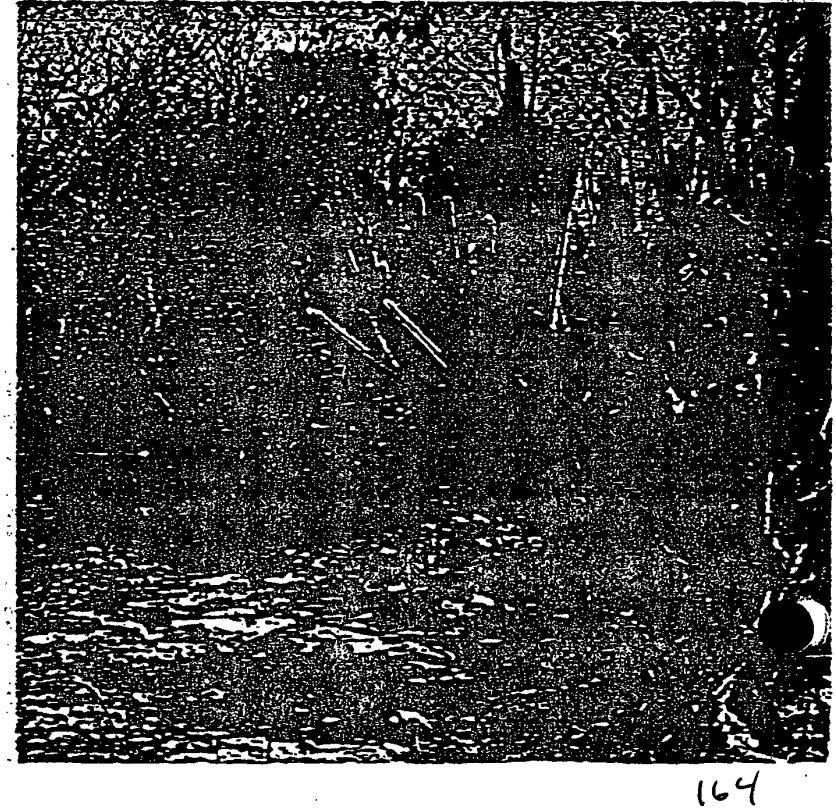
Critical Wildlife Are of Puerto Rico

Resource Planning Area

Coastal Zone And Wildlife Planning Division

Estado Libre Asociado de Puerto Rico

Departamento de Recursos Naturales



164

R2-0004457

Owl is known from this locale. The Salinas Training Area needs more study. Certainly its forested valleys should be maintained in their present state. Tentatively this area should be considered of secondary importance to wildlife.

48. Cidra Lake - (Cidra)

The Puerto Rican Plain Pigeon (protected-federal ESA) is an endemic subspecies to Puerto Rico that was believed to be extinct for a number of years. In the early 1960's a small population of Plain Pigeons was found around Cidra Lake and recent intensive studies show that the population consists of approximately 100 birds. These pigeons frequent stands of secondary forest and bamboo clumps that grow in pockets near the margin of the lake. These critical treed areas are demarcated on the accompanying map. The Department of Natural Resources in unison with the Planning Board are working to protectively zone these critical areas which will be a major step towards the protection of the bird. The Cidra Municipality has already been closed to pigeon hunting for a number of years. The principal remaining tasks that need to be undertaken in this area are to substantially increase vigilance, as numbers of nests are destroyed

R2-0004458

intentionally and illegal hunting persists, and to implement a program of public education to make the local citizenry aware of this important wildlife resource. Further information on the status of the Puerto Rican Plain Pigeon is presented by Wiley (1974, 1975). A team of scientists named by the Secretary of the U. S. Fish and Wildlife Service are preparing a recovery plan that deals specifically with the restoration of this species in Puerto Rico. Ths plan should be completed within the next year.

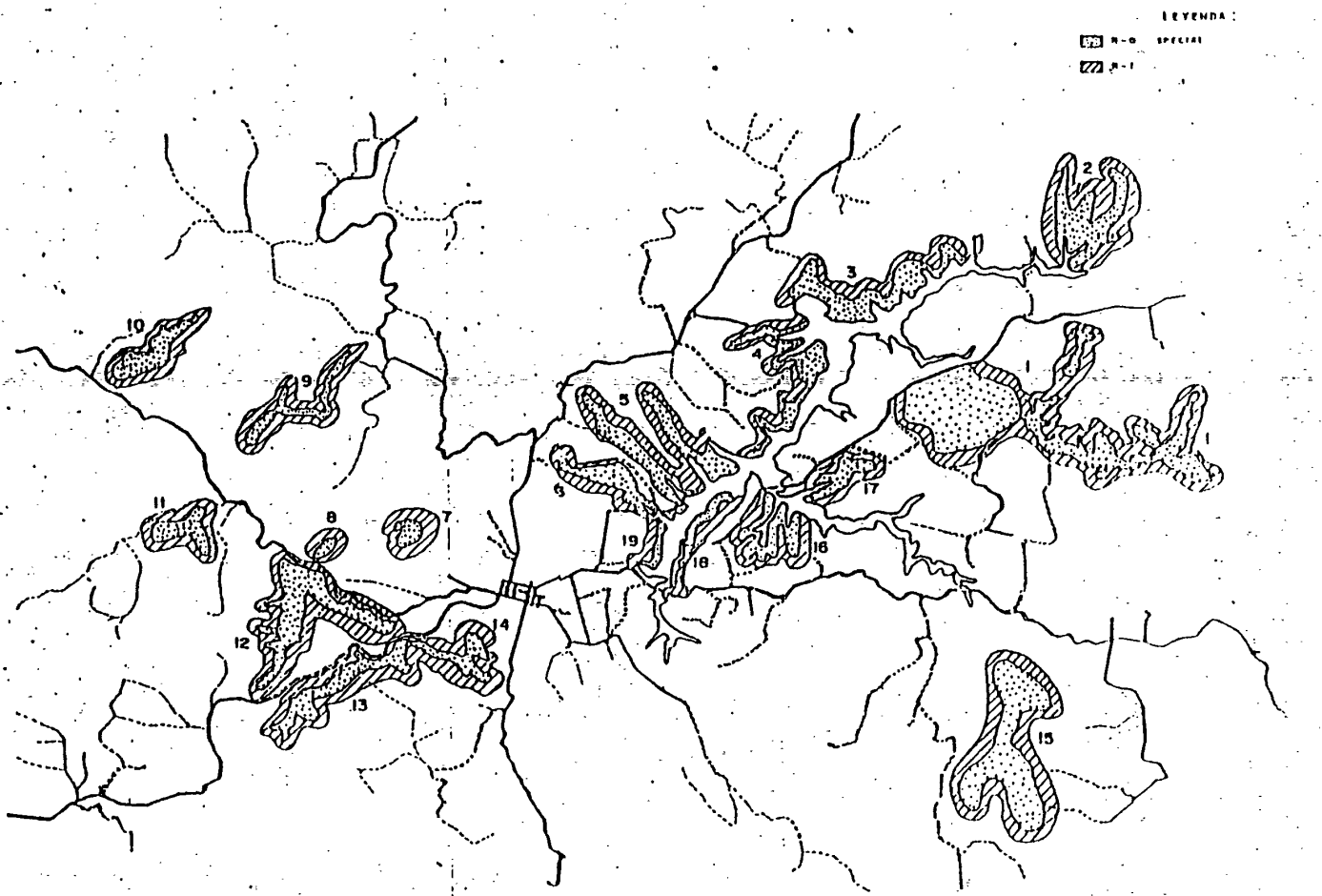
The Puerto Rican Plain Pigeon is presently only known to survive in the vicinity of Lake Cidra. The remaining forested areas of this municipality are certainly one of the island's critical wildlife habitats.

49. Pandura Mountain Range - (Yabucoa - Maunabo)

The endemic treefrog Eleutherodactylus cooki is confined to boulder piles within the Pandura Mountain Range. Portions of this range, where the frog is common and where development is impractical, should be set aside for the protection of this treefrog. As there appears to be no immediate threat to the survival of this frog's habitat it is being classified as a secondary wildlife area, but this is not to suggest that the above mentioned protective

R2-0004459

CIORA LAKE
CRITICAL AREAS FOR THE PROTECTION OF THE PLAIN PIGEON



R2-0004460

REFERENCE 19

R2-0004461

Please print or type with ELITE type (12 characters/inch) in the unshaded areas only.

Form Approved OMB No. 158-879016
GSA No. 0246-EPA-OT

U.S. ENVIRONMENTAL PROTECTION AGENCY

EPA NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

INSTRUCTIONS: If you received a preprinted label, affix it in the space at left. If any of the

INSTALLATION'S EPA I.D. NO.

I. NAME OF INSTALLATION

II. INSTALLATION MAILING ADDRESS

III. LOCATION OF INSTALLATION

REFERENCE # 19

PLEASE PLACE LABEL IN THIS SPACE

porter's principal place of business. Please refer to the INSTRUCTIONS FOR FILING NOTIFICATION before completing this form. The information requested herein is required by law (Section 3010 of the Resource Conservation and Recovery Act).

DETACH

FOR OFFICIAL USE ONLY

COMMENTS

C

INSTALLATION'S EPA I.D. NUMBER | APPROVED | DATE RECEIVED (yr., mo., & day)

F | T/A | C | 1

I. NAME OF INSTALLATION

OMARK ANTILLES INC.

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX

3 PO BOX 0C

CITY OR TOWN | ST. | ZIP CODE

4 CIDRA | PR | 00639

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER

5 A ST. CIDRA INDUSTRIAL PARK

CITY OR TOWN | ST. | ZIP CODE

6 CIDRA | PR | 00639

IV. INSTALLATION CONTACT

NAME AND TITLE (last, first, & job title) | PHONE NO. (area code & no.)

2 JOSE A CARRASQUILLO MAN. ENG | 809-739-8421

V. OWNERSHIP

A. NAME OF INSTALLATION'S LEGAL OWNER

8 OMARK INDUSTRIES

DETACH

B. TYPE OF OWNERSHIP (enter the appropriate letter into box)

F = FEDERAL
M = NON-FEDERAL

M

VI. TYPE OF HAZARDOUS WASTE ACTIVITY (enter "X" in the appropriate box(es))

- [X] A. GENERATION
- [ ] B. TRANSPORTATION (complete Item VII)
- [ ] C. TREAT/STORE/DISPOSE
- [ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION (transporters only — enter "X" in the appropriate box(es))

- [ ] A. AIR
- [ ] B. RAIL
- [X] C. HIGHWAY
- [ ] D. WATER
- [ ] E. OTHER (specify):

VIII. FIRST OR SUBSEQUENT NOTIFICATION

RECEIVED MAR 6 1981

Mark "X" in the appropriate box. If this installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification of this installation, enter the EPA I.D. Number in the space provided below.

- [X] A. FIRST NOTIFICATION
- [ ] B. SUBSEQUENT NOTIFICATION (complete item C)

C. INSTALLATION'S EPA I.D. NO.

PRT000019513

IX. DESCRIPTION OF HAZARDOUS WASTE ACTIVITY

CARIBBEAN OFFICE
U.S. ENVIRONMENTAL PROTECTION AGENCY

Please go to the reverse of this form and provide the requested information.

169

EPA Form 8700-12 (5-80)

CONTINUE ON REVERSE

R2-0004462

I.D. – FOR OFFICIAL USE ONLY

W

IX. DESCRIPTION OF HAZARDOUS WASTES *(continued from front)*

A. HAZARDOUS WASTES FROM NON–SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.31 for each listed hazardous waste from non–specific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
F006	F008				
7	8	9	10	11	12

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
K062					
19	20	21	22	23	24
25	26	27	28	29	30

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four–digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
U228					
37	38	39	40	41	42
43	44	45	46	47	48

D. LISTED INFECTIOUS WASTES. Enter the four–digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

E. CHARACTERISTICS OF NON–LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non–listed hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 – 261.24.)*

☐ 1. IGNITABLE (D001) ☐ 2. CORROSIVE (D002) ☐ 3. REACTIVE (D003) ☐ 4. TOXIC (D000)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE *(type or print)*	DATE SIGNED
	JOSE A CARRASQUILLO MANUFACTURING ENGINEER	2/4/81

EPA Form 8700-12 (6-80) REVERSE

170

R2-0004463

REFERENCE 20

R2-0004464

COMMONWEALTH OF PUERTO RICO / OFFICE OF THE GOVERNOR

Environmental Quality Board

REFERENCE # 20

9 de abril de 1981

MEMORANDO

A : Ing. Luis E. De la Cruz, Director
Programa Contaminación Terrenos

P/C : Ing. Carlos Ramfrez, Director
Negdo. Desperdicios Peligrosos

: Rita Juliá, Jefe Sección
Inspeceión y Vigiiancia

: Olga Avllés, Jefe
Sección Generadores

DE : Anltza Burgos
Técnico en Recursos Naturales

ASUNTO : Visita a industria Omark Antilles en Cidra

Hago referencia a la visita efectuada a la industria Omark Antilles, el dfa 19 de marzo de 1981. El Sr. Josó Carrasquillo, ingeniero, solicitó mediante llamada telefónica una consulta sobre el manifiesto y otros aspectos del Programa.

Me entrevisté con el señor Carrasquillo, quien me tnformó que la industria fabrica sierras para cottar árboles. Del proceso de electroenchape que se le da a ciertas piezas de estas sierras, se genera un cieno que contiene cromio (100 gal/mes). Este cieno está siendo almacenado en un tanque y transportado a la industria Omark Caribbean en Bayamón.

El Sr. Carrasquillo desconoce el destine final de este cieno, en adlción, no tenia conocimientos solre las regulaciones concernientes con desperdicios peligrosos. A tales efectos, se le asesoró sobre el particular.

Recomendaciones:

1) Se efectuará una visita a la industria Omark Caribbean en Bayamón, con el propósito de corroborar lo antes mencionado e Investigar la dlsposlción final de este desperdicio.

172

R2-0004465

2) Referir el caso a la Sección de Facilidades, ya que se están almacenando desperdicios peligrosos.

/sec

R2-0004466

REFERENCE 21

R2-0004467

OMARK ANTILLES, INC.

OREGON SAW CHAIN DIVISION

P O. BOX "OC." CIDRA, PUERTO RICO 00639

REFERENCE # 21

14 de agosto de 1984

Junta de Calidad Ambiental
Apartado 11488
Santurce, Puerto Rico 00910

Atención: Maria V. Rodriguez, Jefe Int.
Secc. Insp., Vig. y Monitoria

Estimada Srta. Rodriguez:

En contestación a su carta de el día 3 de agosto, 1984 donde se solicita informacidn adicional, adjunto le enviamos:

1 - Plan de Evacuacidn

2 - Programa de Adiestramiento para Emergencia

3 - El desperdicio peligroso F001, "1,1,1, cloruro thrichloroethano" no fue indicado en la Notificación de Actividaã de Desperdicios Sólidos Peligrosos debido a que todavia no hemos generado para dicho año. En nuestro plan de operacidn lo habíamos indicado dicho desperdicio ya que en un futuro cercano vamos a generarlo. El día que se genere dicho desperdicio vamos a notificarlo inmediatamente en la hoja de Actividad de Desperdicios Sólidos Peligrosos.

Esperamos que con esra informacidn se cumpla con los requisitos de la Junta de Calidad Ambiental.

Atentamente,

Jerry Torres
Gerente de Planta

JT:hd

175

R2-0004468

PROGRAMA DE ADIESTRAMIENTO
PARA EMERGENCIAS REALACIONADAS CON
LOS DESPERDICIOS DE SOLIDOS PELIGROSOS

I. INTRODOCCION:

Nuestra planta genera desperdicios sólidos peligrosos los cuales conllevan un manejo especial. El objetivo de este adiestramiento es garantizar que nuestros empleados estén capacitados para manejar los desperdicios sólidos peligrosos sin riesgo de accidentes. De esta forma estaremos cumpliendo con los requisitos establecidos por la Junta de Calidad Ambiental.

II. TIPOS DE DESPERDICIOS SOLIDOS PELIGROSOS:

Nuestros desperdicios sólidos peligrosos serán almacenados por un término de noventa (90) dias, o menos, después serán transportados por un transportador designado a Omark Caribbean, Inc., que tiene un permiso de almacenar por más de noventa (90) dias.

Nuestra planta genera los siguientes desperdicios sólidos peligrosos:

TABLA I

Desperdicios Sólidos Peligrosos	E.P.A. Waste Type
1 - Chromic Hidroxide	F006
2 - Chromic Sulfate	F00S
3 - Zinc Hidroxide	F006
4 - Cloruro Ferrico	K062
5 - Cloruro Trichloroethane	F001

51

RECIBIDO
JUNTA DE CALIDAD AMBIENTAL
AUG
Area Control
Contaminación de
176
R2-0004469

III. AREAS DONDE SE GENERAN DESPERDICIOS SOLIDOS PELIGROSOS:

Desperdicio Solido Peligroso	Departamento	Tipo
1 - Chromic Sulfate	Chrome Plate (tanques de producción)	Precipitado
2 - Chromic Hidroxide	Chrome Plate (tanques de tratamiento)	Reducción de ácido cromico en el proceso de destrucción de cromico.
3 - Zinc Hidroxide	Zinc Plating (tanques de producción)	Precipitado
4 - Cloruro Ferrico	ECM Dept. (tanques de producción)	Precipitado
5 - 1,1,1, Trichloro-thane	Parts (tanques de producción)	Residue

IV. ALMACENAMIENTO:

Los desperdicios sólidos peligrosos generados serán almacenados eh receptáculos autorizados y provistos para ello. Deberán ser cerraóos totalmente. Luego se rotularán con la siguiente información:

A) Proper D.O.T. Shipping Name - Nombre generico del desperdicio sólido peligroso (Ver Tabla I)

B) EPA Identification Number - Número de identificación otorgado por la Junta de Calidad Ambiental y (EPA)

C) EPA Waste Number - Número de identificación del óesperóicio sólido peligroso (Ver Tabla I)

177

R2-0004470

IV. ALMACENAMIENTO - continuado

D) Accumulation Start Date - Fecha en que se comenzó a almacenar los desperdicios sólidos peligrosos en el área provista para este fin.

E) Manifest Document Number - Número de manifesto que se generó

F) Address of Generator - Dirección del generador

G) Lables
I - Corrosive - Identificación del desperdicio sólido peligroso.

Los desperdicios sólidos peligrosos ya almacenados en los receptáculos seran transferidos al almacen de nuestra planta al área provista para este fin. Todas las transferencias de materiales de las diferentes áreas donde se generan los desperdicios sólidos peligrosos deberán ser anotados en el registro de almacenamiento. La siguiente información deberá ser anotada en el registro:

A) Date In - Fecha en que se comenzó a almacenar los desperdicios sólidos peligrosos en el área provista para este fin.

B) Sample - Nombre del desperdicio sólido peligroso (Ver Tabla I)

C) EPA Waste Type - Número de identificación del desperdicio sólido peligroso (Ver Tabla I)

D) Net Quantity - Cantidad del desperdicio sólido peligroso

E) Date Out - Fecha en que se sacó el desperdicio sólido peligroso fuera del almacenamiento para enviarlo a Bayamón.

178

R2-0004471

V. TRANFERENCIA DE LOS DESPERDICIOS SOLIDOS PELIGROSOS HACIA OMARK CARIBBEAN:

A) El permiso otorgado a nuestra planta solo permite almacenar los desperdicios sólidos peligrosos hasta un máximo de noventa (90) dias. Luego de noventa (90) días los desperdicios sólidos peligrosos deberán ser enviados a la planta de Omark Caribbean, Inc. Esta transferencia también envuelve un procedimiento especial. Estos materiales solo podrán ser acarreados por un transportador autorizado por la Junta de Calidad Ambiental y (E.P.A.) en el manejo de los desperdicios sólidos peligrosos.

B) Todos los desperdicios sólidos peligrosos que se van a transferir a Omark Caribbean, Inc., se procederá a llenar un manifiesto que es el documento provisto por la Junta de Calidad Ambiental para la identificación de la cantidad y composicidn, el origen, seguimiento y destine de los desperdicios sólidos peligrosos que están siendo transportados para el tratamiento, almacenamiento o disposición.

En este manifiesto de deberá incluir le siguiente:

1 - Número de Manifiesto

2 - Número de identificación, nombre, teléfono y dirección del generador.

3 - Número de identificación, nombre, teléfono y dirección de la facilidad donde se va a almacenar los desperdicios sdlidos peligrosos por más de noventa (90) dias.

4 - Número de indentificacidn, nombre, teléfono, tablilla de vehículo y dirección del transportador designado a llevar les desperdicios sólidos peligrosos.

5 - Indentificación y cantidad del desperdicio sólido peligroso.

6 - El generador se debe quedar con una copia del manifiesto firmada por el transportador designado y por el dueño de la facilidad de almacenamiento por más de noventa (90) dias.

C) Una vez que se haya cumpiimentado debidamente el documento de manifiesto se deberá anotar en el registro de transferencias lo siguiente:

1 - Date Out - Fecha en que se transfiere los desperdicios sólidos peligrosos a Omark Caribbean, Inc.

179

R2-0004472

2) Sample - Nombre del desperdicio sólido peligroso (Ver Tabla I)

3) EPA Waste Type - Número de identificación de los desperdicios sólidos peligrosos (Ver Tabla I)

4) Wet Quantity - Cantidad de desperdicios sólidos peligrosos.

5) Number Manifest Document - Número de Manifiesto que se originó.

6) Transport - Nombre del transportador que transfierre los desperdicios sólidos peligrosos a Omark Caribbean, Inc.

VI. RECORD DE ANALISIS:

Todas las pruebas para analizar o cuantificar los desperdicios sólidos peligrosos, Omark Caribbean, Inc. se encargará de hacerlos y enviar copia a nuestra planta (Omark Antilles, Inc.) para archivarlos en nuestro record. Dicho record se llevará de la siguiente manera:

1 - Sample

2 - Date Collection

3 - Time Collection

4 - PH

5 - Temperature

6 - Laboratories

7 - Location

8 - Description

VII. INSPECCION:

Con el propósito de evitar accidentes y garantizar que nuestras facilidades estén en óptimo estado los siguientes planes de inspeceión deberán ser llevados. 180

R2-0004473

El área donde se almacena los receptáculos de los desperdicios sólidos peligrosos se inspeccionarán semanalmente y se llevará record y se inspecionará lo siguiente:

1 - Ropturas en los receptáculos
    a - Filtraciones

2 - Rotulación y marcado
    a - Visible para la inspección
    b - Claro para leerlo

3 - Que esté completamente cerrado.

A) Nuestra planta de tratamiento de les desperdicios sólidos peligrosos se inspeccionarán semanalmente y se llevará record y se inspeccionará de la siguiente forma:

1 - Rupturas del tanque
    a - Filtracienes

2 - Chequeo de Bombas
    a - Funcionamiento

3 - Chequeo de Llaves
    a - Funcionamiento

4 - Chequeo de "Flange Couplings"
    a - Filtraciones

5 - Chequeo del Agitador
    a - Funcionamiento

6 - Chequeo de los Sensores de Nivel
    a - Funcionamiento
    b - Limpieza

B) Tanque de almacenamiento para la destrucción de cromo. Se inspeccionará de la siguiente forma:

1 - Rupturas del Tanque
    a - Filtraciones

2 - Chequeo de Bombas
    a - Funcionamiento

3 - Chequeo de Llaves
    a - Funcionamiento

4 - Chequeo de "Flange Couplings"
    a - Filtraciones

181

R2-0004474

VIII. Coordinadores de Emergencias

Estas son las personas asignadas por la compañia para actuar como coordinadores de emergencias en caso de derrames y fuego en las Areas de Almacenamiento de los Desperdicios Solidos Peligrosos.

1- José A. Meléndez López
Urbanización Planicie C-4
Cayey, P.R. 00633
Tel. 738-6918

2- Rafael Caraballo
Calle Gautier Benítez #40
Cidra, P.R. 00639
Tel. 739-3531

3- José Baez
Bo. Arenas
Parcelas Blancas
Cidra, P.R. 00639

R2-0004475

VIII. PLAN DE CONTINGENCIA:

El siguiente plan está diseñado para minimizar los riesgos en caso de que ocurra accidentes donde están envuetos los desperdicios sólidos peligrosos.

A) Derrames

B) Fueges

A) Derrames:

1 - El área de almacenamiento y tratamiento está especialmente diseñado para recojer automaticamehte los derrames que occuran.

En case de ocurrir un derrame deberá notificarse inmediatamente a las personas encargadas de este sistema automático.

	NOMBRE	DIRECCION	TELEFONO
1 -	José Baez	Bo. Arenas Pare. Blanco Cidra, PR	--
2 -	José Meléndez	Urb. Plenicie C-4 Cayey, PR	738-6918
3 -	Rafael Caraballo	Calle Gautier Benítez #40 Cidra, PR.	739-3531

2 - En las áreas de almacenamiento de los desperdicios sólidos peligrosos en el "Warehouse" en case de que haya un derrame ya sea por ruptura del receptáculo y cae al piso se procederá de la siguiente manera:

a - Se recojerá tomando todas las medidas de seguridad come:
1 - Guantes de seguridad
2 - Caretas de seguridad
3 - Uniforme de seguridad
4 - Zapatos de seguridad

b - Se procederá a recojer totalmente el desperdicio sólido peligroso con palas y echarlo a un receptáculo nuevo identificado y rotulado para el almacenamiento de los desperdicios sdlidos peligrosos.

183

R2-0004476

c - Luego se procede a limpiar los materiales usados y el piso donde hubo el derrame. Todo el "Rinse" que se sacó al limpiar se llevará a la planta de tratamiento.

Personas designadas para actuar en caso de derrames:

	NOMBRE	DIRECCION	TELEFONO
1 -	José Baez	Bo. Arenas Pare. Blanca Cidra, PR	--
2 -	José Meléndez	Urb. Plenicie C-4 Cayey, PR	738-6918
3 -	Rafael Caraballo	Calle Gautier Benítez #40 Cidra, PR	739-3531

B) Fuego:

Nuestros desperdicios sólidos peligrosos no son flamables, pero en caso de que ocurra un fuego en el área de almacenamiento o el área de tratamiento para la destrucción de cromo se le notificará al departamento de bomberos.

Si el fuego no ha llegado al área de almacenamiento se debe coger les recipientes y transferirles a una área segura.

1 - En el área de almacenamiento de les desperdicios sólidos peligrosos, en caso de fuego tenemos los siguientes equipos para combatir incendios.

a) El sistema de "Fire Sprinkler"
b) Un extinguidor a 10 pies del área.
c) Una manga contra indendios a 50 pies del área.

2 - En el área de almacenamiento y tratamiento para la óestrucción de cromo en caso de fuego tenemos lo siguiente:

a) Un extinguidor a 6 pies del área.
b) Una manguera contra incendios a 50 pies del área.

Personas designadas para actuar en case de fuego:

	NOMBRE	DIRECCION	TELEFONO
1 -	José Baez	Bo. Arenas Pare. Blanca Cidra, PR	--
2 -	José Meléndez	Urb. Planicie C-4 Cayey, PR	738-6918
3 -	Rafael Caraballo	Calle Gautier Benitez #40 Cidra, P.R.	739-3531

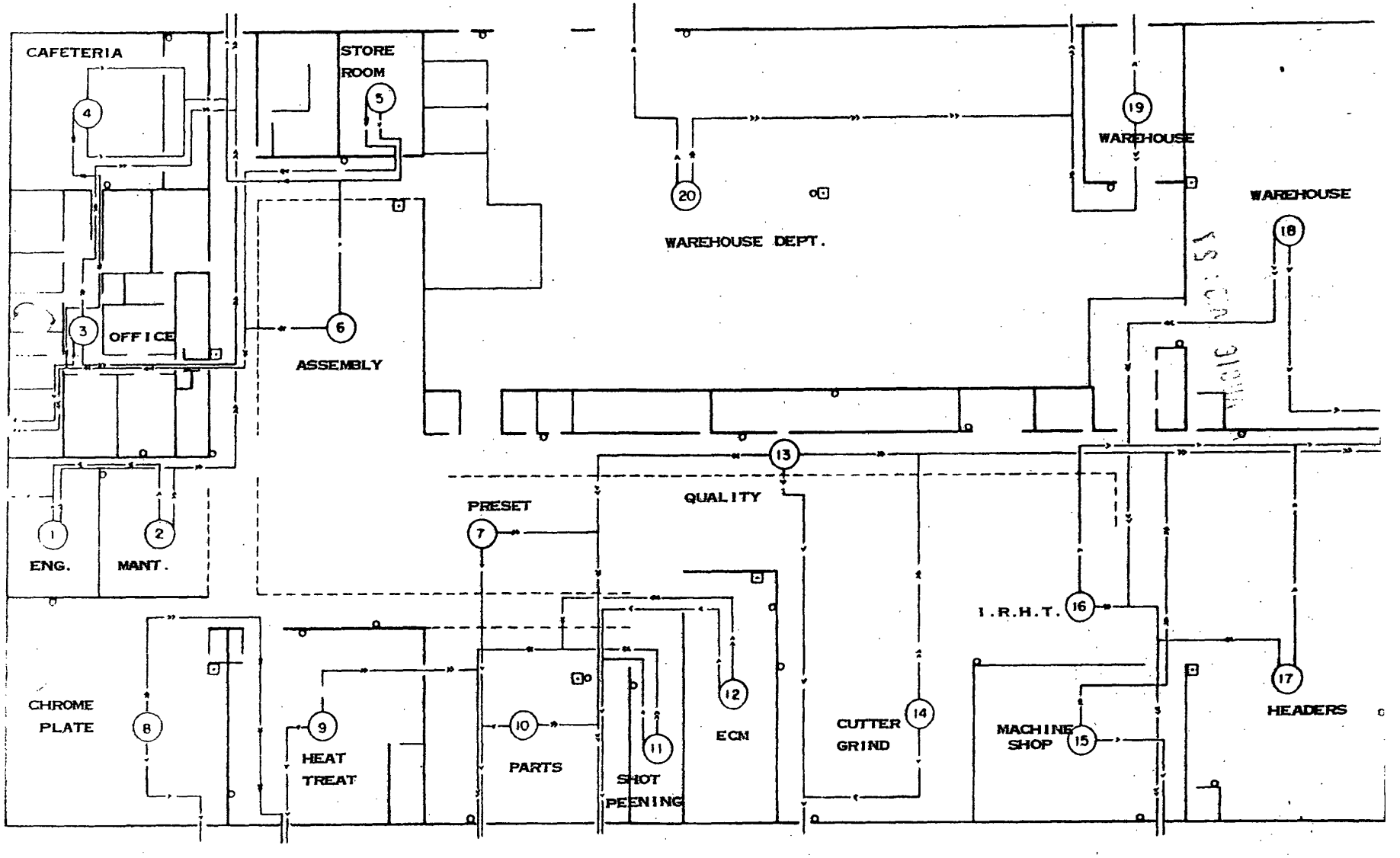
184

X. Plan de Evacuación;

Nuestro plan de evacuación está diseñado en un plane donde indica las salidas de emergencias en caso de derrame y fuego en las areas de los desperdicios solidos peligrosos. Cualquier persona que se encuentre en las areas de los desperdicios solidos peligrosos de surgir un derrame o un fuego en dicha area se ha localizado un plane para evacuación inmediata.

R2-0004478

PLAN DC EVACUACION



LEYENDA: SALIDAS DE EMERGENCIAS

1. SALIDA PRIMARIA ——>——
2. SALIDA SECUNDARIA ——»——

3. EXTINGUIDORES ○
4. MANGUERAS DC INCENDIO ⊡

5. AREA DONDE SE ENCUENTRA (1)

R2-0004479

PERSONAL ASIGNADO A LA BRIGADA DE INCENDIOS:

	PRIMER TURNO	SEGUNDO TURNO
Assembly, Packaging and Tool Crib	Josá A. Flores Colón Bo. Sud. Km 0.8 Cidra, Puerto Rico	Carlos Tirado Rivera Calle Argentina H-10 Cidra, Puerto Rico telefono: 739-8627
Cutter Grind	Pedro J. Rolón Perez Bo. Arenas Km. 1.5 Cidra, Puerto Rico telefono: 739-6401	Bonifacio Santos Rodriguez Bo. Rio Abajo Cidra, Puerto Rico
Parts	Esteban González Parcelas La Mllagrosa Bo. Rabanal Cidra, Puerto Rico	Juan Zayas Bo. Rabanal Cidra, Puerto Rico
Heat Treat	Rafael Caraballo Calle Gautier Benitez #40 Cidra, Puerto Rico telefoho: 739-3531	Angel Fenández Castellano Barrio Montellano Cidra, Puerto Rico
`hrome Plate	Rafael Caraballo Calle Gautier Benitez #40 Cidra, Puerto Rico telefono: 739-3531	Rafael Sanchez Bo. Bayamón Km. 1.0 Cidra, Puerto Rico
Maintenance	Angel Cardona Ramos Calle 2 C-25 Urb. Vista Monte Cidra, Puerto Rico telefono: 739-8053	Carlos Rivera Cartagena Bo. Rabanal Cidra, Puerto Rico
Shipping, Receiving and Warehouse	Juan Coilazo Bo. Sud Cidra, Puerto Rico	Juan Zayas Bo. Rabanal Cidra, Puerto Rico

L81

R2-0004480

CONT.

Personal asignado a la brigada de incendios;

ECM, Line Plating Dept.	Oscar Luna Nuñez Bo. Rabanal Km. 7.5 Cidra, Puerto Rico	Juan Zayas Bo. Rabanal Cidra, Puerto Rico
Headers, I.R.H.T. Dept.	Angel de Jesus Aponte Urb. Treasure Valley Bloque N #1 Cidra, Puerto Rico	Angel L. Ortiz Rodriguez Bo. Rabanal Cidra, Puerto Rico

"DIAS FESTIVOS Y NO LABORABLES, VER MANUAL DE GUARDIA DE SEGURIDAD"

REFERENCE 22

R2-0004482

ESTADO LIBRE ASOCIADO DE PUERTO RICO / OFICINA DEL GOBERNADOR

Junta de Calidad Ambiental

June 13, 1984

REFERENCE # 22

MEMORANDUM

To : Maria V. Rodriguez
Acting Chief
Inspection, Surveillance and
Monitoring Section

From : Damaris Maldonado
Environmental Inspector

: Jesús Medero
Engineer

Subject : Omark Antilles

Omark Antilles, located in Cidra, Puerto Rico, was visited on May 23, 1984, with the purpose of performing a Full RCRA Generator Inspection.

The following documents related to this inspection are enclosed:

. Inspection Report

. Notification to the industry

. RGRA Geheratcr Inspection Form

/ae

R2-0004483

SUMMARY OF FINDINGS

The company Omark Antilles (I.D. #PRD091007369), located in Industrial Park, Cidra, Puerto Rico, was visted by E.Q.B. personnel In May 22, 1984 with the purpose of performing a Full RCRA Generator Inspection in accordance to the State regulations (Regulations for the Control of Hazardous and Non-Hazardous Solid Wastes, amended version) The company telephone number is (809) 739-8421.

During the inspection, Mr. Alwin R. González, Production Superintendent and Mr. José Meléndez, Engineering Clerk of the Company, met with persbnnel of this Agency.

The company started its operations in July 1978 and it is dedicated to the electroplating of saw chains with zinc and chromium.

The primary material used in the manufacturing process is steel. The secondary materials used are:

1. Chromium 110
2. Chromium 204 - chromium sulfate
3. Sulfuric Acid
4. Hydrochloric Acid
5. Caustic Soda
6. Trichloroethane
7. Glicerine
8. Industrial Detergents

According to Mr. González, the waste quantities generated by the Company are:

1). Chromium metal sludges resulting from the processing of:

a. Ghromium (GR 110) - 10.3 pounds waste/month

h. Chromium (CR 204) - 1,408 pounds waste/year

2) E.P. Toxoid Metal, Oil and Grass - 55 gallons/year

At the time of inspection, the Company had on-site:

1. Six (6) steel drums (55 gal capacity) containing chromic sulfate sludge. According to Mr. Meléndez the storage of this sludge in drums started on May 16, 1984, however, one of the drums was storing sludge since June 27, 1983.

2. Sixty two (62) pounds of chromic hydroxide sludge stored in small steel drums (stored since January 11, 1984).

191

R2-0004484

The steel drums were found over palets. Some of the drums were improperly covered with a plastic material. The drums were all labeled but the date at which waste accumulation started was not provided in any one of the labels.

A grant of three (3) days was provided to the Company by the E.Q.B. inspector to dispose properly the hazardous waste stored since June 1983. Mr. Alwin González made the provisions to comply with this request of the E.Q.B. inspector and the related hazardous waste manifest arrived to our office few days after the inspection. The wastes were taken out of Company facilities on May 24, 1984.

All of the above mentioned observations were taken previously by:

Damaris Maldonado
Environmental Inspector

R2-0004485

SUMMARY AND CONCLUSIONS

At the time of the inspection, Omark Antilles was not in compliance with the standards applicable to Hazardous Waste Generators. The following violations were observed:

R.207 Lack of Operation Plan

R502 Absence of Records of Facility or Activity Operations

R.704(B)(D) Pre-transport requirements for Hazardous Solid Waste Generators (i.e. proper labeling and working of containers) were not achieved.

RECOMMENDATIONS AND ACTION

A letter will be sent to Mr. Alwin González, Production Superintendent of the Company, with the purpose of explaining to him the results of the inspection. A period of thirty (30) days will be granted to the Company for making arrangements to correct the above mentioned violations.

R2-0004486

SHIPPING REQUEST FORM

OMARK ANTILLES, INC.

SHIPPING ACKNOWLEDGEMENT NBR: ____

DATE 5-24-84

SHIP TO OMARK CARIBBEAN, INC.

ATTN TO JOSE GARRIGA

ADDRESS 88-90 'D' STREET
MINILLAS INDUSTRIAL PARK
BAYAMON, P.R. 00639

CUSTOMER P.O. No. ____

OUR P.O. No. ____

CLAIM NO. ____

SHIP VIA EMILIO BARBOSA VELEZ (CERTIFIED CARRIER)

INSURANCE $ ____

PREPAID ____ COLLECT ____ DEPARTMENT 33

QUANTITY	ITEM DESCRIPTION & PART NUMBER	PRICE
1	CHROMIC SULFATE -- DKUM # 5 383LBS	
1	CHROMIC SULFATE -- DRUM # 6 683LBS	
4	CHROMIC SULFATE -- DRUM # 8 431LBS	
	1,497LBS = .75 Toneladas	
1	CHROMIC HYDROXIDE -- DHUM # 4 62LBS = .03 Toneladas	

REASON FOR SHIPMENT HAZARDOUS WASTE TO BE STOCKED IN OMARK CARIBBEAN PLANT

PURCHASED FROM: OMARK CARIBBEAN INC.

CHARGE ____ NO CHARGE ____

BILL FREIGHT CHARGES ____ IF NOT, PLEASE EXPLAIN ____

BILL TO (WHEN DIFFERENT TO SHIP TO) ____

FREIGHT RECEIVED BY [signature] DATE 5/24/84 = 11:05 AM

REQUISITIONER SIGNATURE [signature]

SHIPPING SUPERVISOR SIGNATURE ____

APPROVED BY MANAGER ____

APPROVED BY PURCHASING (FOR RETURN TO VENDOR OR REPAIRS) ____

(SEE INSTRUCTIONS ON REVERSE SIDE)

194

R2-0004487

See cover sheet for instructions
PLEASE TYPE

COMMONWEALTH OF PUERTO RICO
ENVIRONMENTAL QUALITY BOARD
HAZARDOUS WASTE MANIFEST

PART A: DOCUMENT NO. P. R.

GENERATOR NAME: OMARK ANTILLES, INC.	PHONE: 739-8421	EPA ID NO.: P R D 0 9 1 0 0 7 3 6 9
SITE ADDRESS: P.O. BOX "OC" CIDRA, P.R. 00639		
TRANSPORTER NO.1: EMILIO BARBOSA VELEZ	PHONE: 781-8758	P B T 0 0 0 0 1 0 3 0 6
SITE ADDRESS: EDIFICIO C - 4 MERCADO CENTRAL PUERTO NUEVO P.R.		
TRANSPORTER NO.2	PHONE	
SITE ADDRESS		
TREATMENT STORAGE OR DISPOSAL (TSB) FACILITY: OMARK CARIBBEAN INC.	PHONE: 798-9641	P R D 0 9 0 0 3 8 0 9 2
SITE ADDRESS: 88-90 CALLE D MINILLAS INDUSTRIAL PARK 00619		

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPIATE

THIS FORM IS NO. ——— OF A TOTAL OF ——— THE FIRST MANIFEST DOCUMENT NO. IS. P. R.

	PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS NO.	CONTAINERS TYPE	EOB EPA HAZ CODE	EOB/EPA WASTE TYPE
1	CHROMIC HYDROXIDE	02	N/A	4	1.03	4	1	01	T	F006
2	CHROMIC SULFATE	02	N/A	4	.75	4	6	01	T	F006
3										
4										
5										
6										

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (i.e IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED)

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labelled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation U S EPA and the Commonwealth of P.R. The waste described above were consigned to the Transporter named. The Treatment, Storage or Disposal Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

195

R2-0004488

SHIPPING REQUEST FORM

OMARK CARIBBEAN, INC.
OMARK ANTILLES, INC.

DATE FEBRUARY 3, 1983

SHIP TO OMARK CARIBBEAN, INC.
ATTN TO JOSE GARRIGA
ADDRESS 88-90 'D' STREET,
MINILLAS INDUSTRIAL PARK
BAYAMON, P.R. 00619
SHIP VIA Our Truck

CUSTOMER P.O. No. N/A.
OUR P.O. No.
INSURANCE $
PREPAID COLLECT
DEPARTMENT 33

QUANTITY		ITEM DESCRIPTION & PART NUMBER	PRICE
1 DRUM	NO. 1	PROCESS OIL AND GREASE SLUDGE	
1 DRUM	NO. 2	PROCESS OIL AND GREASE SLUDGE	
1 DRUM	NO. 3	CHROMIC SULFATE SLUDGE	534 LBS

(DRUMS Hazard Waste)

REASON FOR SHIPMENT TO BE STOCKED
PURCHASED FROM:
CHARGE NO CHARGE
BILL FREIGHT CHARGES DO NOT BILL FREIGHT CHARGES
BILL TO (WHEN DIFFERENT TO SHIP TO)
BILL RECEIVER DO NOT BILL RECEIVER
REQUISITIONER SIGNATURE Jesi By Melecio Lopez
SHIPPING SUPERVISOR SIGNATURE Jaime Pinero
APPROVED BY MANAGER
APPROVED BY PURCHASING (FOR RETURN TO VENDOR OR REPAIRS)

(SEE INSTRUCTIONS ON REVERSE SIDE)

196

R2-0004489

LABOR..C..Y TEST REPORT

012

Omark Antilles
Gidra Industrial Park
Cidra, P.R. 00639
Attn: Mrs. Carmen Martínez

eqlab
ENVIRONMENTAL QUALITY LABORATORIES, INC.

Date: April 24,1984
Page 1 of 1

EQ LAB	CLIENT
W.O.#: 144-02-01 D.S.#: 2378 Date Sample Collected/Received: April 5/84	Facility: Cidra, P.R. P.O.#: 6788 Date Sample Collected: April 5/84
Sample #: 4800	Source: Effluent
	Description: Grab

SAMPLE #	PARAMETERS	RESULTS	UNIT	REMARKS
4800	Fecal Coliform	≥ 24,000	MPN/100ml	
	Total Coliform	≥ 24,000	MPN/100ml	
	Biochemical Oxygen Demand	82	mg/L	
	Chemical Oxygen Demand	177	mg/L	
	Color	15	PtCoCU	
	Oil & Grease	23	mg/L	
	Surfactants	3.91	mg/L	
	Turbidity	136	NTU	
	Total Suspended Solids	205	mg/L	
	Total Dissolved Solids	800	mg/L	
	Nitrate + Nitrlte-N	48.6	mg/L	
	Chloride	172	mg/L	
	Total Cyanide	1.79	mg/L	
	Total Phosphorus	9.80	mg/L	
	Total Arsenic	2.2	µg/L	
	Total Cadmium	0.008	mg/L	
	Total Chromium	0.40	mg/L	
	Total Chromium Hexavalent	0.02	mg/L	
	Total Copper	0.06	mg/L	
	Total Lead	1.02	mg/L	
	Total Mercury	1.20	µg/L	
	Total Selenium	< 2.0	µg/L	
	Total Zinc	1.93	mg/L	

RECEIVED
MAY 2 1984
ACCOUNTING

Reported by: Elba L. Martinez
Title: Microbiologist

Released by: José G. Vila
Title: General Manager

Reported by: Ismael Martínez
Title: Laboratory Manager

ISMAEL MARTINEZ JIMENEZ
Químico Licenciado
Estado Libre Asociado de Puerto Rico
LICENCIA NUM. 1486

R2-0004490

ENVIRONMENTAL QUALIT . ORATORIES, INC.
1397 FERIA STREET
SANTURCE, PUERTO RICO 00909

INVOICE 0001098

Invoice Date	Your Order No.	Our Order No.
4/24/84	6788	144-02-01

02

SOLD TO:

Omark Antilles
Cldra Industrial Park
Cldra, P.R. 00639
Attn: Mrs. Carmen Martínez

SHIPPED TO: (If other than SOLD TO)

RECEIVED
MAY - 1984
ACCOUNTING

Date Shipped	Salesman	Terms	Shipped Via	F.O.B.
		Net 30 Days		

Quantity	Description	Unit Price	Amount
	Cost of analysis on sample submitted April 5/84 Effluent EQL#4800		
1 ea.	Fecal/Total Coliform		$ 30.00
1 ea.	BOD		20.00
1 ea.	COD		20.00
1 ea.	Color		8.00
1 ea.	Oil & Grease		22.00
1 ea.	Surfactants		25.00
1 ea.	Turbidity		5.00
1 ea.	Total Suspended Solids		11.00
1 ea.	Total Dissolved Solids		11.00
1 ea.	N2+3		15.00
1 ea.	Chloride		12.00
1 ea.	Total Cyanide		25.00
1 ea.	Total Phosphorus		16.00
1 ea.	Arsenic		30.00
1 ea.	Cadmium		15.00
1 ea.	Chromium		15.00
1 ea.	Chromium+6		13.00
1 ea.	Copper		13.00
1 ea.	Lead		15.00
1 ea.	Mercury		30.00
1 ea.	Selenium		30.00
1 ea.	Zinc		13.00
1 ea.	Assoc. of Chemists Stamp		1.00
			$382.00

José G. Vila
General Manager

Item # NVR 1137 © Wheeler Group Inc 1979

REORDER ITEM # NVR-1137

ORIGINAL

198

R2-0004491

LANGSTON LABORATORIES
INC. – PUERTO RICO
RESEARCH • DEVELOPMENT • TESTING

LABORATORY REPORT

007

RECEIVED 83 FEB 28 AM

Received: February 4, 1983
Completed: February 14, 1983
Submitted by: OMARK ANTILLES
Box OC
Cidra, P.R. 00639

Attn: Sr. Meléndez
P. O. No.:
LLI-PR No.: 7295

Sample Description: SLUDGE SAMPLE

Sample Identification	Analysis	Result
Sludge Sample	Arsenic	<0.01 ppm
	Barium	<0.2 ppm
	Cadmium	<0.005 ppm
	Chromium	1.4%
	Lead	<0.020 ppm
	Mercury	<0.2 ppm
	Selenium	<0.01 ppm
	Silver	<0.010 ppm
	Zinc	19 ppm
	Copper	48 ppm
	Cyanide	<0.01 ppm
	Iron	0.29%
	Sulfate	0.52%
	Manganese	42 ppm

Comments:

Cont. on page 2

199

G.P.O. BOX 11174 CAPARRA HEIGHTS, PUERTO RICO 00922 PHONE (809) 788-0007

R2-0004492

Sample Description: OMARK ANTILLES LLI #7295 CONT.

Sample Identification	Analysis	Result
Sludge sample (Cont.)	Total Solids	76.4%
	pH	10.6

APPROVED BY: Gerhardt List
Director

200

R2-0004493

REFERENCE 23

R2-0004494

ESTADO LIBRE ASOCIADO DE PUERTO RICO / OFICINA DEL GOBERNADOR

Junta de Calidad Ambiental

REFERENCE # 23

3 de agosto de 1984

MEMORANDO

A : María V. Rodríguez, Jefe Int.
Secc. Insp., Vig. y Monitoría

DE : Damaris Maldonado Viñas
Inspector Ambiental

ASUNTO : Omark Antilles - PRD091007369

La compañía en epígrafe, sometió información solicitada en carta fechada 14 de junio de 1984, por esta Junta. La misma se relaciona con inspección realizada el día 22 de mayo de 1984. Esta fue evaluada encontrándose que carece de la siguiente información:

falta 1- Plan de Evacuación

falta 2- Bosquejo del programa de adiestramiento para emergencias que se ofrecerá a los empleados

falta 3- El tipo de desperdicio peligroso F001, no fue indicado en la Notificación de Actividad de desperdicios peligrosos.

Recomendaciones:

Enviar comunicación escrita al Sr. Jeny Torres, Gerente de Planta y/o al Sr. Alvin González, Superintendente de Producción de la compañía Omark Caribbean, respectivamente para que dentro de quince (15) días a partir del recibo de la carta, sometan la información.

202

R2-0004495

PLAN DE OPERACION

I. INTRODUCCION:

Nuestra planta genera desperdicios sólidos peligrosos.

La Junta de Calidad Ambiental y (E.P.A.) nos ha otorgado un número de identificación, E.P.A. I.D. No. PR 091007469.

Los desperdicios sólidos peligrosos conllevan un manejo especial. El objetivo de este plan de operacidn es garantizar el cumplimiento de la compañía con los requisitos establecidos por la Junta de Calidad Ambiental y (E.P.A.).

Nuestros desperdicios sólidos peligrosos serán almacenados por un término de noventa (90) días, o menos, después serán transportados, por un transportador designado, a Omark Caribbean, Inc., que tiene un permiso de almacenar por más de noventa (90) dias.

II. TIPOS DE DESPERDICIOS SOLIDOS PELIGROSOS:

Nuestra planta genera los siguientes desperdicios sdlidos peligrosos:

TAPLA I

DESPERDICIOS SOLIDOS PELIGROSOS	E.P.A. WASTE TYPE
1-CHROMIC HIDROXIDE	F006
2-CHROMIC SULFATE	F008
3-ZINC HIDROXIDE	F006
4-CLORURO FERRICO	KO62
5-CLORURO TRICHLOROETHANE	F001

203

R2-0004496

III. DESPERDICIOS SOLIDOS PELIGROSOS GENERADOS AL AÑO:

Actualmente hemos generado, al año, aproximadamente las siguientes cantidades de desperdicios sólidos peligrosos:

TABLA II

DESPERDICIOS SOLIDOS PELIGROSOS	E.P.A. WASTE TYPE	LBS./APROX.
1- CHROMIC SULFATE	F008	600 LB./AÑO
2- CHROMIC SULFATE	F006	180 LB./AÑO

Actualmente no hemos generado todavia, al año, los siguientes desperdicios sólidos peligrosos:

TABLE III

DESPERDICIOS SOLIDOS PELIGROSOS	E.P.A. WASTE TYPE	LBS./APROX.
1- ZINC HYDROXIDE	F006	0 LBS./AÑO
2- CLORURO FERRICO	K062	0 LBS./AÑO
3- 1,1,1, TRICHLORETHANE	F001	0 LBS./AÑO

IV. AREAS DONDE SE GENERAN DESPERDICIOS SOLIDOS PELIGROSOS:

DESPERDICIO SOLIDO PELIGROSO	DEPARTAMENTO	TIPO
1- Chromic Sulfate	Chrome Plate (tanques de produccidn)	Precipitado
2- Chromic Hidroxide	Chrome Plate (tanques de tratamiento)	Reduccidn de ácido cromico en el proceso de destruccidn de cromico.
3- Zinc Hidroxide	Zinc Plating (tanques de produccidn)	Precipitado

R2-0004497

IV. - Continuacidn

DESPERDICIO SOLIDO PELIGROSO	DEPARTAMENTO	TIPO
4- Cloruro Ferrico	ECM Dept. (tanques de produccidn)	Precipitado
5- 1,1,1,Trichlorothane	Parts (tanques de produccidn)	Residue

V. ALMACENAMIENTO:

Los desperdicios sólidos peligrosos generados serán almacenados en receptáculos autorizados y provistos para ello. Deberán ser cerrados totalmente. Luego se rotularán con la siguiente información:

A) Proper D.O.T. Shipping Name - Nombre generico del desperdicio sólido peligroso (Ver Table I)

B) EPA Identification Number - Número de identificación otorgado por la Junta óe Calidad Ambiental y (EPA).

C) EPA Waste Number - Número de identificación del desperdicio sólido peligroso (Ver Tabla I)

D) Accumulation Start Date - Fecha en que se comenzó a almacenar los desperói-cios sólidos peligrosos en el área provista para este fin.

E) Manifest Document Number - Número óe manifiesto que se generó.

F) Aódress of Generator - Dirección del generador.

G) Lables
1 - Corrosive - Ióentificación óel desperóicio sólido peligroso.

R2-0004498

Los desperdicios sólidos peligrosos ya almacenados en los receptáculos serán transferidos al almacén de nuestra planta al área provista para este fin. Todas las transferencias de materiales de las diferentes áreas donde se generan los desperdicios sólidos peligrosos deberán ser anotados en el registro de almacenamiento. La siguiente información deberá ser anotada en el registro:

A) Date In - Fecha en que se comenzó a almacenar los desperdicios sólidos peligrosos en el área provista para este fin.

B) Sample - Nombre del desperdicio sólido peligroso (Ver Tabla I)

C) EPA Waste Type - Número de identificación del desperdicio sólido peligroso (Ver Tabla I)

D) Net Quantity - Cantidad del desperdicio sólido peligroso.

E) Date Out - Fecha en que se sacó el desperdicio sólido peligroso fuera del almacenamiento para enviarlo a Bayamón.

VI. TRANSFERENCIA DE LOS DESPERDICIOS SOLIDOS PELIGROSOS HACIA OMARK CARIBBEAN:

A) El permiso otorgado a nuestra planta solo permite almacenar los desperdicios sólidos peligrosos hasta un máximo de noventa (90) dias. Luego de noventa (90) días los desperdicios sólidos peligrosos deberán ser enviados a la planta de Omark Caribbean, Inc. Esta transferencia también envuelve un procedimiento especial. Estos materiales solo podrán ser acarreados por un transportador autorizado por la Junta de Calidad Ambiental y (E.P.A.) en el manejo de los desperdicios sólidos peligrosos.

B) Todos los desperdicios sólidos peligrosos que se van a transferir a Omark Caribbean, Inc., se procederá a llenar un manifiesto que es el documento provisto por la Junta de Calidad Ambiental para la identificación de la cantidad y composición, el origen, seguimiento y destino de los desperdicios sólidos peligrosos que están siendo transportados para el tratamiento, almacenamiento o disposición.

206

R2-0004499

En este manifiesto de deberá incluir lo siguiente:

1 - Número de Manifiesto

2 - Número de identificación, nombre, telófono y dirección del generador.

3 - Número de identificación, nombre, teléfono y dirección de la facilidad donde se va a almacenar los desperdicios sólidos peligrosos por más de noventa (90) dias.

4 - Número de identificación, nombre, telófono, tablilla de vehículo y direccidn del transportador designado a llevar los desperdicios sólidos peligrosos.

5 - Identificacidn y cantidad del desperdicio sólido peligroso.

6 - El generador se debe quedar con una copia del manifiesto firmada por el transportador designado y por el dueño de la facilidad de almacenamiento por más de noventa (90) dias.

C) Una vez que se haya cumpiimentado debidamente el documento de manifiesto se deberá anotar en el registro de transferencia lo siguente:

1)	Date Out	-	Fecha en que se transfiere los desperdicios sólidos peligrosos a Omark Caribbean, Inc.
2)	Sample	-	Nombre del desperdicio sólido peligroso (Ver Tabla I)
3)	EPA Waste Type	-	Número de identificación de los desperdicios sólidos peligrosos. (Ver Tabla I)
4)	Wet Quantity	-	Cantidad de desperdicios sólidos peligrosos.
5)	Number Manifest Document	-	Número de Manifesto que se originó.
6)	Transport	-	Nombre del transportador que transfiere los desperdicios sólidos peligrosos a Omark Caribbean, Inc.

R2-0004500

VII. RECORD DE ANALISIS:

Todas las pruebas para analizar o cuantificar los desperdicios sdlidos peligrosos, Omark Caribbean, Inc. se encargará de hacerlos y enviar copia a nuestra planta (Omark Antilles, Inc.) para archivarlos en nuestro record. Dicho record se llevará de la siguiente manera:

1 - Sample
2 - Date Collection
3 - Time Collection
4 - PH
5 - Temperature
6 - Laboratories
7 - Location
8 - Description

VIII. INSPECCION:

Con el propdsito de evitar accidentes y garantizar que nuestras facilidades estdn en dptimo estado los siguientes planes de inspeceidn deberán ser llevados.

El área donde se almacena los receptáculos de los desperdicios sdlidos peligrosos se inspeccionarán semanalmente y se llevará record y se inspeccionará lo siguiente:

1 - Ropturas en los receptáculos
  a - Filtraciones

2 - Rotulacidn y marcado
  a - Visible para la inspeceidn
  b - Claro para leerlo

3 - Que esté completamente cerrado.

R2-0004501

A) Nuestra planta de tratamiento de los desperdicios sdlidos peligrosos se inspeccionarán semanalmente y se llevará record y se inspeccionará de la siguiente forma:

1 - Rupturas del tanque
   a - Filtraciones

2 - Chequeo de Bombas
   a - Funcionamiento

3 - Chequeo de Llaves
   a - Funcionamiento

4 - Chequeo de "Flange Couplings"
   a - Filtraciones

5 - Chequeo del Agitador
   a - Funcionamiento

6 - Chequeo de los Sensores de Nivel
   a - Funcionamiento
   b - Limpieza

B) Tanque de almacenamiento para la destruccidn de cromo. Se inspeccionará de la siguiente forma:

1 - Rupturas del Tanque
   a - Filtraciones

2 - Chequeo de Bombas
   a - Funcionamiento

3 - Chequeo de Llaves
   a - Funcionamiento

4 - Chequeo de "Flange Couplings"
   a - Filtraciones

5 - Chequeo de Sensores
   a - Funcionamiento
   b - Limpieza

R2-0004502

IX. PLAN DE CONTINGENCIA:

El siguiente plan está diseñado para minimizar los riesgos en caso de que ocurra accidentes donde están envueltos los desperdicios sélidos peligrosos.

A) Derrames

B) Fuegos

A) Derrames:

1 - El área de almacenamiento y tratamiento está especialmente diseñado para recojer automaticamente los derrames que occuran.

En caso de ocurrir un derrame deberá notificarse inmediatamente a las personas encargadas de este sistema automático.

NOMBRE	DIRECCION	TELEFONO
1-José Baez	Bo. Arenas Pare. Blanco Cidra, PR	--
2-José Meléndez	Urb. Plenicie C-4 Cayey, P.R.	738-6918
3-Rafael Caraballo	Calle Gautier Benítez #40 Cidra, P.R.	739-3531

2 - En las áreas de almacenamiento de los desperdicios sdlidos peligrosos en el "Warehouse" en caso de que haya un derrame ya sea por ruptura del receptáculo y cae al piso se procederá de la siguiente manera.

a - Se recojerá tomando todas las medidas de seguridad como;
1 - Guantes de seguridad
2 - Caretas de seguridad
3 - Uniforme de seguridad
4 - Zapatos de seguridad

b - Se procederá a recojer totalmente el desperdicio sdlido peligroso con palas y echarlo a un receptáculo nuevo identificado y rotulado para el almacenamiento de los desperdicios sdlidos peligrosos.

210

R2-0004503

c - Luego se procede a limpiar los materiales usados y el piso donde hubo el derrame. Todo el "Rinse" que se sacd al limpiar se llevará a la planta de tratamiento.

Personas designadas para actuar en caso de derrames:

NOMBRE	DIRECCION	TELEFONO
1- José Baez	Bo. Arenas Pare. Blanca Cidra, PR	--
2- José Meléndez	Urb. Plenicie C-4 Cayey, PR	738-6918
3- Rafael Caraballo	Calle Gautier Benitez #40 Cidra, PR	739-3531

B) Fuego:

Nuestros desperdicios sólidos peligrosos no son flamables, pero en caso de que ocurra un fuego en el área de almacenamiento o el área de tratamiento para la destrucción de cromo se le notificará al departamento de bomberos.

Si el fuego no ha llegado al área de almacenamiento se debe coger los recipientes y transferirlos a una área segura.

1 - En el área de almacenamiento de los desperdicios sdlidos peligrosos, en caso de fuego tenemos los siguientes equipos para combatir incendios.

a) El sistema de "Fire Sprinkler"
b) Un extinguidor a 10 pies del área.
c) Una manga contra incendios a 50 pies del área.

2 - En el área de almacenamiento y tratamiento para la destruccidn de cromo en caso de fuego tenemos lo siguiente:

a) Un extinguidor a 6 pies del área.
b) Una manguera contra incendios a 50 pies del área.

R2-0004504

Personas designadas para actuar en caso de fuego:

NOMBRE	DIRECCION	TELEFONO
1-José Baez	Bo. Arenas Pare. Blanca Cidra, PR	--
2-José Meléndez	Urb. Planicie C-4 Cayey, PR	738-6918
3-Rafael Caraballo	Calle Gautier Benitez #40 Cidra, PR	739-3531

R2-0004505

RECORD DE ANALISIS DE LOS DESPERDICIOS

SOLIDOS PELIGROSOS

ple	Date Collection	Time Collection	PH	TEMP.	Description	Location	Laboratories	Comments

R2-0004506

-REGISTRO DE ALMACENAMIENTO-
DE LOS DESPERDICIOS SOLIDOS
PELIGROSOS

mark Antilles, Inc. ---- Area de almacenamiento por un periodo de noventa dias (90) o menos.

DATE IN	SAMPLE	WASTE TYPE	NET QUANTITY	DATE OUT	COMMENTS

214

R2-0004507

-REGISTRO DE TRANSFERENCIA-

DE LOS DESPERDICIOS SOLIDOS PELIGROSOS

ark Caribbean Inc. ----- Area de almacenamiento por un periodo de más de noventa dias.

TE IN	SAMP.	WASTE TYPE	NET QUANTITY	NO. MANIFEST	TRANSPORT	COMMENTS

215

R2-0004508

-INSPECCION DEL AREA DE ALMACENAMIENTO-

nacenamiento en Shipping.

SPECCIO I	FECHA					COMENTARIOS
opturas en el Recep-aculos (filtraciones)						
otulacion y Marcado Visible y Claro)						
ue este completamente cerrado.						

R2-0004509

-INSPECCION DEL AREA DE TRATAMIENTO-

nque de Tratamiento para la destrución de Chromio.

PECCION	FECHA					COMENTARIOS
pturas del Tanque (Filtraciones)						
equeo de Bombas Funcionamiento)						
equeo de LLaves Funcionamiento)						
queo de Flanjes iltraciones)						
queo del Agitador ncionamiento)						
ueo de sensores uncionamiento)						
impieza)						

217

R2-0004510

INSPECCION DEL AREA DE TRATAMIENTO-

'anque de Almacenamiento para la destrución de Chromio.

ISPECCION	FECHA					COMENTARIOS
Roturas del tanque (Filtraciones)						
Chequeo de Bombas (Funcionamiento)						
Chequeo de Llaves (Funcionamiento)						
hequeo de Flanjes Funcionamiento)						
nequeo de Sensores (Funcionamiento)						
(Limpieza)						

218

R2-0004511

Record of Hazarduos Waste
Substances

ıte	Sample	Waste Type	Net Quantity	COMMENTS
)6-82	Oil and Grease 005	------	110Gal	Se limpiaron las trampas de grasa y los tanques de la planta tratamiento y se sacaron 110 gal. de aceite y grasa. Se envio una muestra al laboratorio Langston 1/2 galon. Luego se enume raron los drones #1 y #2, y se almacenaron. Se enviaron a Bayamón el 3 de Febrero del 1983.
)4-83	Chromic Sulfate 006	F006	534Lbs	Se le dio mantenimiento preventivo a los tanques de chrome pl y se sacaron 534Lbs de chromic sulfate sludge. Se envio una muestra al laboratorio Langston. . Luego se enumeró el dron # 3 y se almacenó. Se envio a Bayamón el 3 de Febrero 8
)4-83	Chromic Hidroxide 007	F006	62Lbs	Se destruyo el chromio en la planta de tratamiento y se sacar 62 Lbs. Se envio una muestra al laboratorio Langston un galón Luego se enumeró el dron #4 y se almacenó. Se envio a Bayamón el 5-24-84 con manifiesto y nos quedamos con copia en el recc
27-83	Chromic Sulfate 011A	F006	383Lbs	Se le dieron mantenimiento preventiyo a los tanques de Chrome Plate y se sacaron 383Lbs de Chromic Sulfate. Luego se enumer el drum #5 y se almacenó. Se envio a Bayamón el 5-24-84 con manifiesto y nos quedamos con copia en el record.
11-84	Chromic Sulfate 011A	F006	683Lbs	Se le dieron mantenimiento preventivo a los tanques de Chrome Plate y se sacaron 683 Lbs de Chromic Sulfate. Luego se enume el drum #6 y se almacenó. Se envio a Bayamón el 5-24-84 con manifiesto y nos quedamos con copia dn el record.
.6-84	Chromic Sulfate 013A	F006	431Lbs	Se le dio mantenimiento preventivo a los tanques de chrome Pl y ee sacaroh 431Lbs de Chromic Sulfate. Luego se enumeró el drum #8 y se almaceno. Se envio a Bayamón el 5-24-84 con manifiesto y nos quedamos con copia en el record.

R2-0004512

MANIFIESTO

R2-0004513

Manifiesto:

El permiso otorgado a nuestra planta solo permite almacenar los desperdicios sdlidos peligrosos hasta un maximo de noventa (90) días. Luego de noventa (90) días los desperdicios sdlidos peligrosos deberán ser enviados a la planta de Omark Caribbean, Inc.. Esta transferencia también envuelve un procedimiento especial. Estos materiales solo podrán ser acerreados por un transportador autorizado por la Junta de Calidad Ambiental y (E.P.A.) en el manejo de los desperdicios sdlidos peligrosos.

Todos los desperdicios sdlidos peligrosos que se van a transferir a Omark Caribbean, Inc., se procederá a llenar un manifiesto que es el documento provisto por la Junta de Calidad Ambiental para la identificacidn de la cantidad y composicidn, el origen, segulmiento y destino de los desperdicios sdlidos peligrosos que están siendo trasportados para el tratamiento, almacenamiento o disposicidn.

A. En este manifiesto de deberá incluir los siguiente:

1. Número de Manifiesto

2. Número de identificación, nombre, teléfono y direccidn del generador.

3. Número de identificación, nombre, teléfono y direccidn de la facilidad donde se va a almacenar los despedicios sdlido peligrosos por más de (90) noventa dias.

4. Número de identificación, nombre, teléfono, tablilla de vehículo y direccidn del transportador designado a llever los desperdicios sdlidos peligrosos.

5. Identificacidn y cantidad del desperdicio sdlido peligroso.

6. El generador se debe quedar con una copia del manifiesto firmado por el trasportador designado y por el dueño de la facilidad de almacenamiento por mas de noventa (90) dias.

R2-0004514

B. Una vez que se haya cumpiimentado debidamente el documento de Manifiesto se deberá anotar en el registro de transferencias lo siguiente:

1. Date out - Fecha en que se transfiere los desperdicios sólidos peligrosos a Omark Caribbean, Inc.

2. Sample - Nombre del desperdicio sdlido peligroso (Ver tabla I)

3. EPA Waste Type - Número de identificacidn de los desperdicios sólidos peligrosos (Ver tabla I)

4. Wet Quantity - Cantidad de desperdicios sdlidos peligrosos.

5. Number Manifest Document - Número de Manifiesto que se origind.

6. Transport - Nombre del transportador que trasfiere los desperdicios sólidos peligrosos a Omark Caribbean, Inc.

R2-0004515

---MANIFIESTO---

1,1,1, - TrichloroEhtane-

1. Nombre del Generador---------- Omark Antilles,. Inc.
2. Direccion---------- P.O. Box "OC" Cidra, P.R. 00639
3. Telefono---------- 739-8421
4. EPA ID. No.---------- PRD091007369
5. Nombre del Transportador #1--------- Emilio Barbosa Velez
6. Direccion---------- Edificio C-4 Mercado Central Puerte Nue
7. Telefono---------- 781-8758
8. EPA ID No.---------- PRT000010306
9. Storage---------- Omark Caribbean, Inc.
10. Dire ---------- 88-90 Calle D Minillas Ind. Par
11. Telefono---------- 789-9641
12. Proper Us DOT "Shipping Name"------- 1,1,1, -Trichloroethane
13. Us DOT Hazard Class---------- 02
14. UN Number---------- N/A
15. Haz Code---------- T
16. EPA Waste Type---------- D001

223

R2-0004516

---MANIFIESTO---

-Cloruro Ferrico-

1. Nombre del Generador---------- Omark Antilles, Inc.
2. Dirección---------- P.O. Box "OC" Cidra, P.R. 00639
3. Telefono---------- 739-8421
4. EPA ID. No.---------- PRD091007369
5. Nombre del Transportador #1--------- Emilio Barbosa Velez
6. Direccion---------- Edificio C-4 Mercado Central Puerto Nue
7. Telefonc---------- 781-8758
8. EPA ID No.---------- PRT000010306
9. Storage---------- Omark Caribbean, Inc.
10. Direcci---------- 88-90 Calle D Minillas Ind. Park
11. Telefono---------- 789-9641
12. Proper Us DOT "Shipping Name"------- Cloruro Ferrico
13. Us DOT Hazard Class---------- 02
14. UN Number---------- N/A
15. Haz Code---------- T
16. EPA Waste Type---------- K062

R2-0004517

---MANIFIESTO---

-CHROMIC HIDROXIDE-

1. Nombre del Generador---------- Omark Antilles, Inc.
2. Dirección---------- P.O. Box "OC" Cidra, P.R. 00639
3. Telefono---------- 739-8421
4. EPA ID. No.---------- PRD091007369
5. Nombre del Transportador #1---------- Emilio Barbosa Velez
6. Direccion---------- Edificio C-4 Mercado Central Puerto Nuevo
7. Telefono---------- 781-8758
8. EPA ID No.---------- PRT000010306
9. Storage---------- Omark Caribbean, Inc.
10. Dirección---------- 88-90 Calle D Minillas Ind. Park
11. Telefono---------- 789-9641
12. Proper Us DOT "Shipping Name"-------- Chromic Hidroxide
13. Us DOT Hazard Class---------- 02
14. UN Number---------- N/A
15. Haz Code---------- T
16. EPA Waste Type---------- F006

225

R2-0004518

---MANIFIESTO---

-Zinc Hydroxide-

1. Nombre del Generador---------- Omark Antilles, Inc.
2. Dirección---------- P.O. Box "OC" Cidra, P.R. 00639
3. Telefono---------- 739-8421
4. EPA ID. No.---------- PRD091007369
5. Nombre del Transportador #1--------- Emilio Barbosa Velez
6. Direccion---------- Edificio C-4 Mercado Central Puerto Nue
7. Telefono---------- 781-8758
8. EPA ID No.---------- PRT000010306
9. Storage---------- Omark Caribbean, Inc.
10. Dirección---------- 88-90 Calle D Minillas Ind. Park
11. Telefono---------- 789-9641
12. Proper Us DOT "Shipping Name"------- Zinc Hidroxide
13. Us DOT Hazard Class---------- 02
14. UN Number---------- N/A
15. Haz Code---------- T
16. EPA Waste Type---------- F006

226

R2-0004519

---MANIFIESTO---

-Chromic Sulfate-

1. Nombre del Generador---------- Omark Antilles, Inc.
2. Dirección---------- P.O. Box "OC" Cidra, P.R. 00639
3. Telefono---------- 739-8421
4. EPA ID. No.---------- PRD091007369
5. Nombre del Transportador #1--------- Emilio Barbosa Velez
6. Direccion---------- Edificio C-4 Mercado Central Puerto Nuevo
7. Telefono---------- 781-8758
8. EPA ID No.---------- PRT000010306
9. Storage---------- Omark Caribbean, Inc.
10. Dirección---------- 85-90 Calle D Minillas Ind. Park
11. Telefono---------- 789-9641
12. Proper Us DOT "Shipping Name"-------- Chromic Sulfate
13. Us DOT Hazard Class---------- 02
14. UN Number---------- N/A
15. Haz Code---------- 7
16. EPA Waste Type---------- F006

227

R2-0004520

REFERENCE 24

R2-0004521

COMMONWEALTH OF PUERTO RICO / OFFICE OF THE GOVERNOR

Environmental Quality Board

REFERENCE # 24

June 13, 1985

MEMORANDUM:

TO : Eng. Dulcilio Medina DMJ
Acting Director
Hazardous Waste Division

THROUGH : Mrs. Olga Avilés, Chief OA
Inspection, Monitoring and
Surveillanoe Section

FROM : Rafael Gutiérrez Lebrdn RGL
Biologist

SUBJECT : Omark Antilles
PRD091007369

Enclosed please find the following documents related with the Full RCRA Hazardous Waste Generator Inspection of the above mentioned facility that was performed on May 9, 1985:

1. RCRA Inspection Form
2. Summary of Findings
3. Summary of Conclusions and Recommendations
4. Notification to the Industry

Enclosures

229

R2-0004522

June 13, 1985

Eng. Jerry Torres
Plant Manager
Omark Antilles, Inc.
P.O. Box "CC"
Cidra Industrial Park
Cidra. Puerto Rico 00639

Dear Eng. Torres:

Reference is made to the inspection performed to Omark Antilles, Inc., PRD091007369, on May 9, 1985 by the Land Pollution Control Area personnel.

At the time of the inspection the company was in compliance with the Regulation for the Control of Hazardous and Non-Hazardous Solid Wastes, amended version.

This compliance letter is related only and exclusively with the above mentioned inspection.

Thanks for your interest in the preservation of the environment.

Cordially yours,

Eng. Jesús M. Madero
Director
Land Pollution Control Area

230

R2-0004523

SUMMARY OF FINDINGS

The Company Omark Antilles, located in Industrial Park, Cidra, Puerto Rico, was visited by EQB personnel on May 9, 1985 with the purpose of performing a Full RCRA Hazardous Waste Generator Inspection. The telephone and EPA ID. Number of the company are (809) 739-8621 and PRD - 091007369, respectively.

The EQB inspector interviewed Eng. Jerry Torres, Plant Manager, Eng. Rafael Díaz, Engineering Superintendent and Rafael Cruz Pérez, Environmental Consultant of the Company, respectively.

The following findings were gathered as a result of the inspection:

The company Omark Ahtilles is dedicated to the manufacture of the electroplating of chains saw with zinc and chromium.

At the time of the inspection the following hazardous wastes were observed:

Zinc Hydroxide - one (1) steel drums of 55 gallons
Spent Coolant - one (1) steel drums of 55 gallons
Oil and grease - four (4) steel drums of 55 gallons
1-1-1 Trichloroethane - sixteen (16) steel drums of 55 gallons

One (1) steel drums of 5 gallons capacity of Chromic Sulfate (sludge since March 20, 1985).

The Hazardous Waste Storage area was found in compliance with EQB regulations. The hazardous waste storage area is utilized also for the storage of raw materials.

The area is labelled properly with the sign "Danger-Unauthorized Personnel Kept Out". A fire extinguisher is not available at this waste storage facility.

The following hazardous wastes were reported by the company in its "Notification of Hazardous Waste Activity" (submitted on March 4, 1981):

R2-0004524

- F006 Chromic Hydroxide
- F008 Chromic Sulfate
- K062 Ferric Cloride
- D001 Ferric Trichloroethane

Commercial Chemical Products Hazardous Waste:
EPA Waste No. U228

The Company submitted the Evacuation Plan, Contingency Plan, Manifest Copy, Sample Analysis Request, Operating Plan, Personnel Training for the evaluation.

The personnel of the company is trained on hazardous waste handling and safety procedures (last training offered on March 1985). According to Eng. Rafael Cruz Pérez, Environmental Consultant, the changes in company personnel have been avoid in the provision of the necessary training for the current years. The company has established recent training programs.

The operating record of the company indicated that the company is storing hazardous waste in periods of less than ninety (90) days (this is evidenced also by company manifest record). The inspection of the hazardous waste and raw material storage facilities (drums) are performed weekly, (inspection records are available and complete).

After evaluating the documents requested by the Regulation for the Control of Hazardous and Non-Hazardous Solid Wastes, the company was found in compliance.

Recommendation:

Send a letter to Eng. Jerry Torres, Plant Manager notifying the inspection findings.

R2-0004525

RCRA INSPECTION FORM

Report Prepared for:

Generator	✓
Transporter	
HWM (TSB) FACILITY	
Copy of Report Sent to the Facility	

Facility Information

NAME: Owaal Antilles

LOCAL ADDRESS: Industrial Park - Cidra, Puerto Rico Zip Code 00639

POSTAL ADDRESS: P.O. Box "OC", Cidra Industrial Park Cidra, Puerto Rico Zip Code 00639

E.P.A. ID # : PRD-091007369

DATE OF INSPECTION : May 9, 1985

Participating Personnel

E.Q.B. or E.P.A. Personnel: Rafael Gutierrez Lebrón
Environmental Inspector

Facility Personnel: Eng. Jerry Torres
Eng. Rafael Diaz

Report Prepared by: (Name) Rafael Gutierrez Lebrón

Agency: Environmental Quality Board

Telephone Number: 725-5140 Ext-290

Approved for the Director by: _____

R2-0004526

Is there reason to believe that the facility has hazardous waste on-site?

a. If yes, what leads you to believe it is hazardous waste?

Yes Company admits that its waste is hazardous during the inspection.

Yes Company admitted the waste is hazardous in its RCRA notification and/or Part A Permit Applcation.

Yes The waste material is listed in the regulations as a hazardous wastes from a nonspecific source (R. 608)

Yes The waste material is listed in the regulations as a hazardous waste from a specific source (R. 608).

Yes lhs material or product is listed in the regulations as a discarded connercial chemical product (R. 607-A).

Yes Testing has shcwn characteristics of ignitability, corrosivity, reactivity or extraction procedure toxicity, or hss revealed hazardous constituents (please attach analysis report).

No Company is ensure but there is reason to believe that waste materials are hazardous. (Explain).

R2-0004527

REGULATION FOR THE CONTR OF HAZARDOUS AND NON-HA RDOUS SOLID WASTE

GENERATOR INSPECTION CHECKLIST

	YES	NO	N/A
Hazardous Waste determination			
1. Did the generator test its waste to determine whether it is hazardous?	✓	—	—
Is the waste hazardous?	✓	—	—
Rule 702 B(1) Is the generator determininine that its waste exhibits a hazardous waste characteristic(s) based on its knwledge of the material (s) or processes used?	✓	—	—
Rule 703-A - The Manifest			
Hazardous waste been shipped off-site since November 19, 1980?	—	—	✓
If yes, approximately how many shipments, off-site, have been made and describe the approximate size of an average shipment made on a monthly basis. If facility is a small quantity generator, please explain.			
Rule 703-D Does each manifest (or representative sample) have the following information? Please circle the missing elements.			
-a manifest document number?	—	—	✓
- the generators name, mailing address, telephone number and EPA I.D. Nunber?	—	—	✓
- the transporters name and EPA ID Number?	—	—	✓
- the name, address and EPA ID Number of the designated facility?	—	—	✓
- a description of the wastes (DOT)?	—	—	✓
- the total quantity of each hazardous waste by units of weight or volume, and the type and number of containers as loaded into or onto the transport vehicle?	—	—	✓
- a certification that the materials are properly classified, described, package, marked and labeled, and are in proper condition for transportation under regulations of the DOT and EPA?	—	—	✓
(obtain a copy of the incomplete manifest)			

R2-0004528

	Yes	No	N/A
Rule 502-A Recordkeeping and Reporting			
Rule 504-A(1)(2) Has the generator maintained facility records since Nov, 19, 1980?,(manifest, exception report and waste analysis)	___	___	✓
Rule 504-B Has the generator received signed copies (from the TSD facility) of all the manifests for waste shipped off-site more than 35 days ago?	___	___	✓
Rule 504-B(2) If not, have Exception Reports been submitted to EPA covering any of these shipments made more than 45 days ago?	___	___	✓
Pretransportation Requirements			
Rule 704 Before transporting or offering hazardous waste for transportation off-site does the generator:			
Rule 704-A Package the waste in accordance with applicable DOT	___	___	✓
Rule 704-B Label each package according to DOT	___	___	✓
Rule 704-B Mark each package according to DOT	___	___	✓
Rule 704-B Mark each container of 110 gallons or less with the words "Hazardous Waste - Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. EPA." and include the generators name, address, and manifest document number.	___	___	✓
Rule 704 Accumulation Time			
1) How is waste accumulated on site?			
✓ Containers			
___ Tanks			
___ Surface impoundments (complete HWMF checklist)			
___ Files (complete HWMFchecklist)			
Rule 704 D(1)b) Is waste accumulated for more than 90 days?	___	✓	___

R2-0004529

	Yes	No	N/A
If yes, complete HWMF checklist			
- If each container clearly dated with each period of accumulation so as to be visiblefor inspection?	___	___	✓
- Is each container or tank marked or labeled with the words Hazardous Waste" or in compliance with the DOT labeling requirements?	___	___	✓

STOP HERE IF THE HAZARDOUS WASTE MGT FACILITY (TSD) CHECKLIST IS FILLED OUT.

Rule 704 - Short Term Accumulation Standards

(For generators who accumulate waste in tanks or containers for 90 days or less).

CONTAINERS

Rule 812-C - What type of containers are used for storage. Describe the size, type and quantity and nature of waste (e.g. 12 fifty five gallon drums of waste acetone).

Rule 812-C Do the containers appear to be on good condition, not in danger of leaking?	✓	___	___
If not, please describe the type condition and number bf leaking or corroded containers. So detailed and specified.			
Rale 812-D(3) Are hazardous waste stored in containers made of compatible materials?	✓	___	___
If not, please explain.			
Rule 812 D(2) - Are all containers closed except those in use?	✓	___	___
Role 812-D(3) - Do containers appear to be properly opened, handled or stored in a manner which will minimize the risk of the container rupturing or leaking?	✓	___	___

R2-0004530

	Yes	No	N/A
Rule 812(E) Is the storage area inspected at least weekly?	✓		
Rule 812B(5) Are containers holding ignitable and reactive waste located at least 50 feet (15 meters) away from the facility's property line?	✓		
Rule 812D(3) Are incompatible waste stored separate from each other?	✓		
Rule 813(c) Tanks			
1. What are the approximate number and size of tanks containing hazardous waste?	✓		
2. Identify the waste treated/stored in each tank.			
Rule 813(B) General Operating Requirements			
1. Are the tanks maintained so that there is no evidence of past, present, or risk of future leak?	✓		
If not, please explain.			
2. Are there leaking tanks?		✓	
3. Are all hazardous wastes or treatment reagents being placed in tanks compatible with the tank material so that there is no danger of rupture, corrosion, leaks, or other failures?	✓		
4. Do uncovered tanks have at least 2 feet of freeboard or an adequate containment structure?	✓		
5. If waste is continously fed into the tank, is the tank equipped with a means to stop the inflow from the tank? e.g. bypass system to a standy tank.	✓		

R2-0004531

	Yes	No	N/A
Rule 813 D Inspections			
1. Is the tank(s) inspected each operating day for:			
(a) discharge control equipment	✓	—	—
(b) monitoring equipment	—	—	✓
(c) level of waste in tank	—	—	✓
2. Are the tanks and surroundings areas (e.g., dike) inspected weekly for leaks, corrosion or other failures?	✓	—	—
3. Are there underground tanks?	—	—	✓
If yes, how many and can they be entered for inspections?	✓	—	—
Rule 813 (B) Are ignitiable or reactive wastes stored in a manner which protects them from a source of ignition or reaction?	—	—	✓
If not, please explain.			
Rule 813 (B) Does it appear that incompatible wastes are being stored separate from each other?	—	—	✓
Rule 808 C Personnel Training			
1. Have facility personnel successfully completed a program of classroom instruction or on-the-job training within 6 months of having been employed?	✓	—	—
If yes, have facility personnel taken part in an annual review of training?	✓	—	—
2. Is there written documentation of the following			
- job title for each position at the facility related to hazardous waste management and the name of the employee filling each job?	✓	—	—
- type and amount of training to be given to personnel in jobs related to hazardous waste management?	✓	—	—
- actual training or experience received by personnel?	✓	—	—

239

R2-0004532

	Yes	No	N/A
3. Are training records kept on all employees for at least 3 years	—	✓	—
Rule 810 - Preparedness and Prevention			
Rule 810-C Does the facility comply with preparedness and prevention requirements including maintaining:			
- an internal communication or alarm system?	—	✓	—
- a telephone or other devices to summon emergency assistance from local authorities?	✓	—	—
- portable fire equipment?	✓	✓	—
- water at adequate volume and pressure to supply water bose streams, foam producing equipment etc.	✓	—	—
Rule 810 (D) Equipment tested and maintained?	✓	—	—
Rule 810 (E) Is there immediate access to communications or alarm systems during handling of hazardous waste?	✓	—	—
Rule 810 (F) Adequate aisle space?	✓	—	—
If not, please explain storage pattern.			
In your opinion, do the types of waste on-site require all of the above procedures, or are some not needed:	✓	—	—
Rule 207 - Contingency Plan and Emergency Procedures.			
Rule 803E - Does the facility have a written contingency plan for emergency procedures designed to deal with fires, explosions, or any unplanned release of hazardous waste?	✓	—	—

R2-0004533

		Yes	No	N/A
1.	Does the plan describe arrangements made with the local authorities?	✓		
2.	Has the contingency plan been submitted to the local authorities?	✓		
3.	Does the plan list names, address and phone numbers of Emergency Coordinators?	✓		
4.	Does the plan have a list of what emergency equipment is available?	✓		
5.	Is there a provision for evacuating facility personnel?	✓		
6.	Was there an emergency coordinator present or on call at the time of of the inspection?	✓		

R2-0004534

REFERENCE 25

R2-0004535

PR ENVIRONMENTAL QUALITY BOARD **REFERENCE: 25**

SUPERFUND PA/SI PROGRAM **TELECON NOTE**

CONTROL NO:	DATE: August 25, 2000	TIME: 1600
DISTRIBUTION: *ZENITH LABORATORIES CARIBE, INC.*		
BETWEEN: Mr. Rafael Caraballo Vázquez	**OF/FORMER EMPLOYEE OF:** OMARK ANTILLES, INC.	**PHONE:** (787) 739-3531
AND: Frances M. Segarra Environmental Science Specialist (PREQB)	**SUBJECT:** Operations of OMARK ANTILLES, INC	

DISCUSSION: Mr. Caraballo worked at OMARK ANTILLE for 15 years (1978-1985) as an analyst. He was in charge of the different baths used for the rinsates (Acidic, Chromium or Zinc) involved in their manufacture process which consisted of the electroplating of chain saws. According to him the manufacture process was carried out in the interior of one building. This building (C-2) is currently being used by Zenith Laboratories Caribe, Inc.. Mr. Caraballo informed that OMARK operated from 1978 to 1985. In terms of the description of their facilities, he indicated that the manufacture area , the shipping and the warehouse area, and the area for the storage of hazardous wastes were inside this building. He indicated that the chain saws manufactured passed through a washing step to remove oil from metal pieces, a heat treatment to harden the pieces, and an electroplating process which consisted of passing the metal pieces through rinsates with different metals such as Chromium and Zinc. Mr. Caraballo indicated that the hazardous wastes were stored in drums and inside the building. He could not remember the types of wastes generated at the site. Also, he said that there was a roofed environmental area outside and to the west of the building, where a water treatment plant was located. In addition, he indicated that at same location there was a ditch that collected the wastewater generated from their manufacture process. This ditch was capable of storing approximately up to 3,000 gallons. According to his the water treatment consisted of the acidification of the water followed by an alkalinization of it. From the process a sludge was collected and stored in metal tanks for future disposal. Mr. Caraballo said that in the 15 years he worked at OMARK ANTILLES there were no spills at their facilities. However, he indicated that at OMARK CARIBBEAN, INC, in Bayamdn, the company confracted by OMARK ANTILLES for the disposal of the hazardous wastes, had a spill that affected a surface water body nearby. This incident was caused by a leak from a pipeline carrying wastewater. Because of this incident OMARK CARIBBEAN had to paid fmes. According to Mr. Caraballo, these events caused financial problems and OMARK ANTILLES had to be closed. He indicated that the ditch at OMARK ANTILLES never filled up and there were no spills.

CONTINUE ON NEXT PAGE

R2-0004536

PR ENVIRONMENTAL QUALITY BOARD
SUPERFUND PROGRAM
PA/SI SECTION

REFERENCE: 25
Page 2
TELECON NOTE CONTINUATION

Mr. Caraballo agreed to send me a diagram of facilities of OMARK ANTILLES. Also he informed that this company had a discharge permit for the disposal of wastewater into PRASA sewer system after their treatment. He indicated that both OMARK ANTILLES and OMARK C ARIBBEAN ceased operations, and that OMARK CARIBBEAN operated for 20 years at Bayamón.

R2-0004537

REFERENCE 26

R2-0004538

PR ENVIRONMENTAL QUALITY BOARD REFERENCE: 26

SUPERFUND PA/SI PROGRAM **TELECON NOTE**

CONTROL NO:	DATE: August 28, 2000	TIME: 0740

DISTRIBUTION: *ZENITH LABORATORIES CARIBE, INC.*

BETWEEN: Rafael Caraballo Vazquez	OF: FORMER EMPLOYEE OF OMARK ANTILLES, INC.	PHONE: FAX SENT TO PREQB

AND: Frances M. Segarra Environmental Science Specialist (PREQB)	SUBJECT: Operations of OMARK ANTILLES, INC

DISCUSSION:

ATTACHED IS THE DIAGRAM OF OMARK ANTILLES, INC

AT CIDRA, SENT BY MR. RAFAEL CARABALLO VAZQUEZ,

FORMER EMPLOYEE OF THE ABOVE COMPANY.

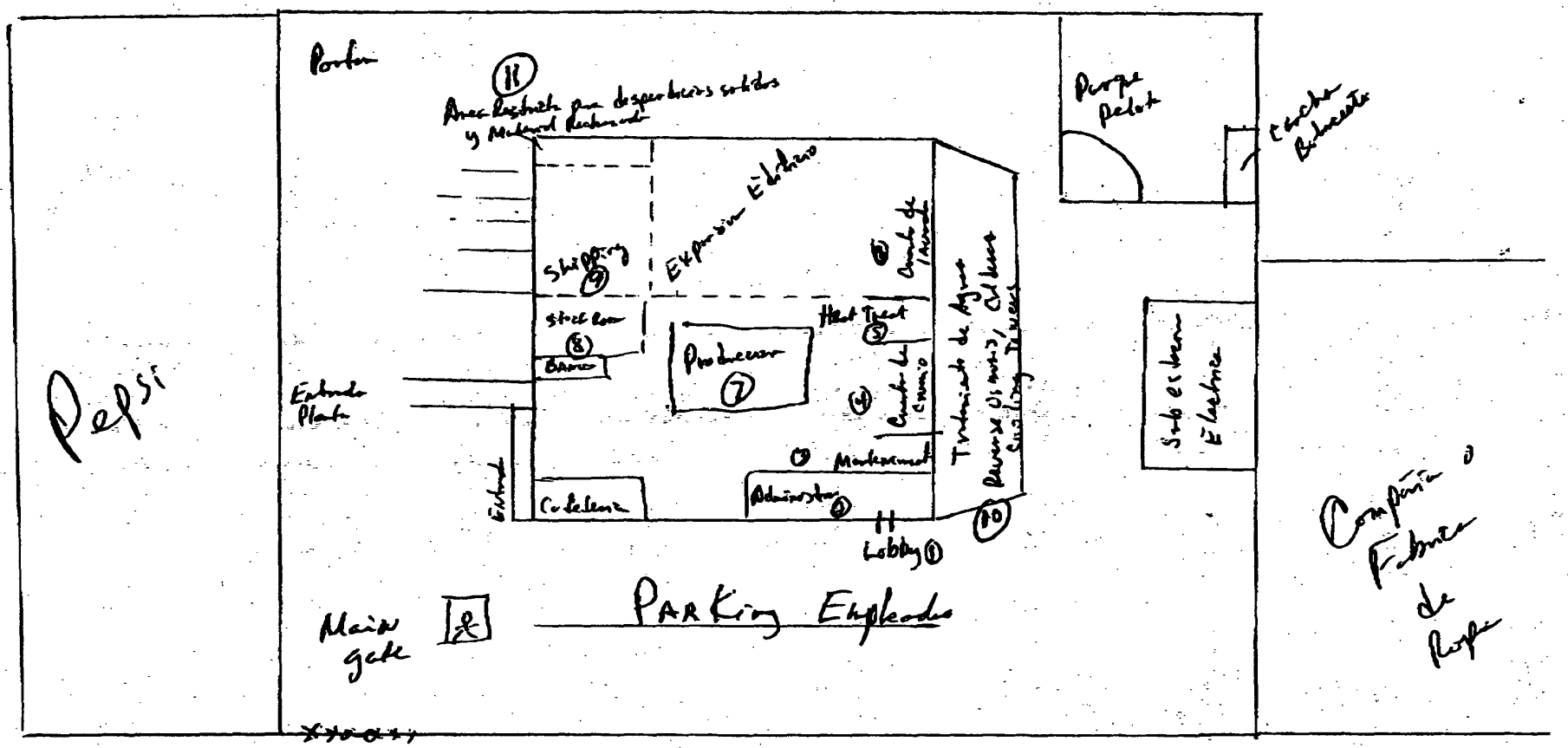
246

R2-0004539

AUG.28. 2000 1:49AM CARIBBEAN REFRESCOS MATERIALES NO.0113 P. 1/1

Atte. Francesc Sagarra

Omark Antilles



(1) Lobby
(2) Administración
(3) Mantenimiento
(4) Cuarto de Baños de Crudo
(5) Heat Treat
(6) Cuarto lavado Piezas
(7) Producción
(8) Stock Room - Piezas
(9) Shipping
(10) Tratamientos de Aguas
Reverse Osmosis
Calderas
Cooling Towers.
(11) Area Restricta.

R2-0004540

REFERENCE 27

R2-0004541

Departamento de Salud
Secretario Auxiliar para Salud Ambiental
Progroma de Agua Potable

2 de agosio de 2000

REFERENCE # 27

Sr. Jean Marc Philipot
Director Técnico y Cumplimiento
Compañia de Aguas de Pueno Rico
Apartado 7066, Bo. Obrero Station
Santurce, Puerto Rico 00916

Re: Determinación de cumplimiento para Químicos Orgánicos Volátiles (VOC)

Estimado señor Philipot:

De acuerdo a los resultados sometidos por la Autpridad de Acueductos y Alcantarillados (AAA) para quimicos orgánicos volátiies (VOC) correspondiemes al trimestre de abril a junio de 2000 los componentes indicados a continuacidn excedieron el nivel máximo de contaminante (NMC) en agua potable.

Pozo Calle Baldorioty #6 – Sistema: Cidra PWSID: 4695

Este pozo está bajo une frecuencia de muestreo trimestral por exhibir detección de tetradoroetileno, tetracloruro de earbono, cis-1,2-dicloroeteno y 1,1-didoroeteno. Para el trimestre de abril a junio de 2000 obtuvo valores sobre el limite de detección para cis-1,2-dicloroeteno y 1,1-dicloroeteno y excedió el NMC para tetradoroetileno. La siguiente tabla refleja los valores obtenidos para tetradoroetileno en los pasados cuatro (4) trimestres:

Trimestre	Resultado (mg/L)
julio-sep 1999	<0.0005
octubre-dic 1999	0.0052
ene-mar 2000	fuera de operación
abril-junio 2000	0.0083 0.0112 (confirmación) 0.0098 (Promedio Trimestre)

Al calcular ei promedio anual rotativo obtenemos un valor de 0.0052 mg/L siendo ei NMC igual a 0.005 mg/L.

Pág 2
Sr. JM Philipot
Re: Determ. Cumplimiento para VOC

Pozo Maguayo 4 – Sistema: Maguayo PWSID: 5597

Este pozo está bajo una frecuencia de muestreo trimestral por exhibir detección de tetracloroetileno y tridoroetileno. Para el trimestre de abril a junio de 2000 obtuvo valores para tricloroetileno sobre el NMC de 0.0070 mg/L. La muestra de confirmadón fue de 0.0012 mg/L. El valor promedio calculado para el trimestre es de 0.0041 mg/L. siendo el NMC de 0.005 mg/L.

Planta Filtración Coto Laurel – Sistema: Coto laurel PWSID: 4524
Esta planta está bajo una frecuenda de muestreo trimestral por exhibir detección de xilenos, clorobenceno y tetracloruro de earbono. Para el trimestre de abril a junio de 2000 obtuvo valores para tetracloruro de earbono de 0.0052 mg/L y <0.0005 mg/L. El valor promedio calculado para el trimestre es de 0.0020 mg/L, siendo el NMC de 0.005 mg/L.

Apercibimos a la Compañia de Aguas de Puerto Rico a mantener cumplimiento con la frecuencia de muestreo requerida para estos componentes a tenor con la reglamentación de agua potable y en beneficio de los usuarios de los sistemas afectados.

De tener alguna duda o pregunta. favor de comunicarse con el Programa de Agua Potable a los teléfonos 754-6350/6370.

Cordialmente.

Olga I. Rivera
Directora
Programa de Agua Potable

cc: Clara O'Neill, AAA; Jocge Flechas. Lab. AAA

250

REFERENCE 28

R2-0004544

REFERENCE #28

Departamento de Salud
Secretaría Auxiliar para Salud Ambiental
Programa de Agua Potable

Ismael: Favor de coordinar una investigación para esta notificación y incluirlo en el pozo de Dorado. Rubén 8/11/00

22 de agosto de 2000

2000 AUG 31 AM 8:04

Sr. Jean Marc Philipot
Director Técnico y Cumplimiento
Compañia de Aguas de Puerto Rico
Apartado 7066, Bo. Obrero Station
Santurce, Puerto Rlco 00916

Re: Notificacidn de Violación 137-00
Pozo Calle Baldorioty #6
Sistema: Cidra Urbano
PWSID: 0004695

Estimado señor Philipot:

El Pozo Calle Baldorioty #6 perteneciente al sistema Cidra Urbano se encuentra en una frecuencia de muestreo trimestral para quimicos orgánicos volátiles (VOC, por sus siglas en inglés), al evidenciar detección sobre 0.0005 mg/L en tetracloroetileno, cis 1,2 dicloroeteno, 1,1-dlcloroeteno, tetracloruro de earbono y tricloroetileno.

Los resultados de los últimos cuatro (4) trimestres se detailan en la siguiente tabla:

Contaminante	Oct-Nov 1999	Ena-Mar 2000	Abr-Jun 2000	Jul-Sep 2000	Promedio Anual	Nivel Máximo Contaminante (NMC)
Tetracloroetlleno	0.0052	FO	0.0083 0.0112 conf. 0.0098 prom.	0.0128 0.0111 conf. 0.0119 prom.	0.0089	0.005
Cis 1,2-dicloroeteno	0.0012	FO	<0.0005 0.0165 0.0085 prom	0.0009 0.0010 0.00095 prom	0.0036	0.07
1,1 - dicloroeteno	<0.0005	FO	0.0051 <0.0005 0.0028 prom	<0.0005 <0.0005	0.0013	0.007
Tricloroetileno	<0.0005	FO	<0.0005	0.0006 0.0005	0.0005	0.005

Resultados en mg/L
FO = Fuera de operacidn

Al calcular el promedio anual para tetracloroetileno se encuentra que el mismo excede el nivel máximo de contaminante (NMC) permitido de 0.005 mg/L.

Acualmente hay tres (3) pozos del sistema Cidra Urbano que han side sacados de operacidn por contaminacidn con tetracloroetileno, a saber: Pozo Cementerio VIII (1996), pozo Calle Padilla Final IV (1996) y Pozo Planta de Alcantarillado III (1999).

252

R2-0004545

A raiz de los comunicados emitidos con relacidn al Pozo Pianta de Alcantarillado III y en contestacidn a nuestros señalamientos, la Autoridad de Acueductos y Alcantarillados (AAA), informa en carta del 16 de septiembre de 1998, lo siguiente:

1. Investigacidn en conjunto con la Junta de Calidad Ambiental (JCA)- Informan que la JCA no tiene informacidn que pueda relacionar las instalaciones aledafias al pozo con el problema de contaminacidn.

   Este Departamento recomendd en carta del 19 de febrero de 1999, que se realizara una investigacidn más amplia en conjunto con la JCA referente a la identificacidn y eliminacidn de las fuentes potenciales de contaminacidn.

2. Fuentes alternas de abasto – La AAA informó que identified varias altemativas potenciales para el desarrollo de nuevos pozos.

Dado a los valores de tetracioroetileno sobre el NMC permitido en agua potable, este Departamento ordena que el pozo Calle Baldorioty #6 no sea utilizado como abasto de agua potable. Este es el cuarto pozo del sistema Cidra Urbano que refleja valores sobre el NMC para tetracioroetileno, por lo que nos reiteramos en la necesidad de la investigacidn mencionada.

El cumplimiento con este requisite es de carácter inmediato en beneficio de la salud de los usuarios del sistema Cidra Urbano.

De tener alguna duda, por favor comunicarse con el Programa de Agua Potable, a los teléfonos 754-6370/6650.

Cordialmente,

Carmen Felieiano de-Melecio, MD
Secretaria de Salud

cc: Carl A.P-Soderberg- CEPD; Hernán Horta-DS; Olga I. Rivera-DS; Javier Torres-DS; Clara O'Neill-AAA; Jorge Flechas-AAA; Roberto Ayala-JCA.

253/253

REFERENCE 105

LookSmart
An Award From The Reader's Digest

AREA DEVELOPMENT ONLINE
SITE AND FACILITY PLANNING

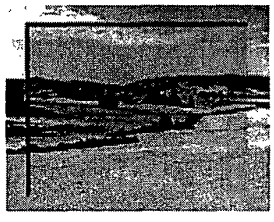
Published December 1999

New This Month
Links & Hotline
Location Information
Past & Future Editions
About Area Development
See Us At
How To Subscribe
Talk to Area Development
Please Tell Us About Yourself
Available Sites Location Information
2002 Select Sites Directory

INDUSTRY UPDATE

News & Trends

Japanese Soy Plant Coming to Iowa



A START-UP COMPANY that is using a patented process for micromilling soybean powder, USA Toshoku L.C., will build an expandable 54,400-square-foot cleaning and processing facility in the World Food Park, Oskaloosa, Iowa. Approximately 285 people will be employed at the facility.

Recognizing the soaring soy food market, USA Toshoku plans to produce a higher value product. Its 1,000-mesh soybean powder, which offers superior nutrition and ease of use as compared with the conventional 100-mesh powder, will be sold in the United States and foreign markets.

Dell Expanding in Nashville

EARLIER THIS YEAR, Dell Computer announced it was locating a 1,000-employee manufacturing/technical support facility in Nashville, Tenn. Now the company has announced plans to bring a second manufacturing facility and 650 more jobs to Tennessee. The new facility will be built next to the 300,000-square-foot building already under construction near Nashville's airport.

Texas-based Dell is the world's leading seller of personal computers directly to customers.

Computer Hardware-Maker to Locate in Spokane

A HIGH-TECH MANUFACTURER of specialty hardware systems, Compulutions, has selected Spokane, Wash., as the site of its new manufacturing and strategic account development center. The company also plans to relocate its distribution center to Spokane and establish a PC configuration staging and integration facility there. Some 200 new jobs will be generated by these moves.

Compulutions produces custom high-tech products such as LCD panels, computer notebooks, personal computers, and monitors. The firm works directly with a number of the world's top manufacturers in computing

1/2

R2-0004548

technology, including Hewlett-Packard and Microsoft.

Maryland Chosen for U.S. Headquarters of German Firm

ANNE ARUNDEL COUNTY'S Hock Business Park will be the site of German-based RAG America's U.S. headquarters. The new facility consolidates the company's administrative operations located in West Virginia, New York, Colorado, and Pennsylvania. The facility should be completed by next spring and will house 90 employees.

RAG Holding, Inc., based in Essen, Germany, is an internationally operating energy and technology group with about 104,000 employees worldwide. The company's core business areas include mining, engineering, trade, power generation, process technology, chemicals, and plastics.

Zenith Labs Completes Puerto Rico Expansion

ZENITH LABORATORIES Caribe, inc., a subsidiary of IVAX Corp.is Zenith Goldline Pharmaceutical, has completed the expansion of its facilities in Cidra, Puerto Rico.

During the past year, Zenithis parent company transferred the production of several generic products to Puerto Rico in order to consolidate its global operations. This move prompted Zenith to undertake the $7 million, 30,000-square-foot expansion of its Puerto Rico facihty, resulting in the creation of 100 new jobs and a facility now measuring 122,000 square feet.

Zenith Laboratories Caribe, Inc., headquartered in Miami, Fla., researches, develops, manufactures, and markets several branded and generic drugs as well as veterinary and diagnostic products in the United States and at a global level.

New Diesel Technology to be Manufactured in Charleston

ROBERT BOSCH CORP. recently announced that it will expand its Charleston, S.C., operations with the addition of a new diesel common rail injector manufacturing plant. This new-generation common rail system is needed to meet North America's demands for cleaner, quieter, more economical and powerful diesel engines.

The expansion will be the first by the German company in the United States to produce components for the new diesel common rail system. Bosch's German operations have experienced dramatic growth in the production of these new engine parts, and company officials expect that trend to carry over into the United States.

Bosch's new Charleston manufacturing facility represents a $150 million capital investment, and it will result in the creation of 200 to 400 new jobs upon completion.

All contents Copyright ©1996-1999 by
Halcyon Business Publications, Inc.

2/2

R2-0004549

REFERENCE 106

COMMONWEALTH OF PUERTO RICO / OFFICE OF THE GOVERNOR

Environmental Quality Board

January 7, 1999

Mr. Israel Torres Rivera
Director
Land Pollution Regulation Program

Mr. Carmelo Vázquez, Chief
Hazardous Waste Compliance Division

Mr. Manuel Vargas Cortés
Environmental Specialist

Inspection Report for
Zenith Laboratories Caribe, Inc.
Cidra, Puerto Rico
PRD 987377702

The above mentioned company was visited on November 2, 1998. During the visit, a Full RCRA Generator Inspection was performed in order to determine their compliance with the Federal Resource Conservation and Recovery Act (RCRA) and the State Regulation for the Control of Hazardous Solid Wastes (RCHSW).

Attached please find the following documents with regard to this inspection:

- Inspection Report
- Notification to the company

/sec

NATIONAL PLAZA BUILDING, 431 PONCE DE LEON AVENUE, HATO REY, PUERTO RICO 00917
P.O. BOX 11488 SANTURCE, PUERTO RICO 00910 PHONE NUMBER: 767-8181

1/4

R2-0004551

Inspection Report

On November 2, 1998, Zenith Laboratories Caribe, Inc., was visited by the subscriber in order to verify compliance with local and federal hazardous wastes regulation. The facility is located at Cidra Industrial Park, Street C, Lots 18 and 19, Cidra, Puerto Rico. The telephone number is (787) 739-8421. During the inspection Mr. Gilberto Cruz, Engineering Manager, was present.

Zenith Laboratories is engaged in the manufacture of generic medicines in solid form (tablets and capsules) such as Diazepan, Fenoprofen, Metronidazole, Tolazamide and Naproxen. The manufacturing process consists of granulation (mixing of the raw materials), followed by encapsulation to fill the capsules or compression and coating to form tablets. After that, the product is packed for its distribution.

No hazardous wastes are generated from the previously described process. The hazardous wastes are generated at the QA/QC Laboratory and from the cleaning of the mixing tanks. At the QA/QC laboratory, samples taken at different steps of the manufacturing process are analyzed. The spent solvents used, such as methylene chloride, methanol, chloroform, hexane and acetonitrile are generated. From the cleaning of the mixing tanks spent Isopropyl Alcohol is generated as well.

During the inspection of the facility, the QA/QC laboratory and the Hazardous Wastes Storage Area (HWSA) were visited. At the laboratory, several generation points were observed. These generation points consist of machines such as HPLC and spectrophotometers. Each machine has a 1 gallon glass bottle comected to them to collect the spent solvents that is generated. These solvents can be any of the mentioned before.

At the Hazardous Waste Storage Area (HWSA), four (4) 55 gallons plastic drums were observed containing hazardous wastes. The wastes description, quantity, accumulation date and waste code is as follows:

Waste Description	Quantity	Acc. Date	Waste Code
-RQ Waste Flammable Liquid WOS, contains Methanol, Acetonitrile UN1193, PG I	2	10-8-98	D001,F002,F003
-" " " "	1	10-19-98	D001,F002,F003
-" " " "	1	10-26-98	D001,F002,F003

R2-0004552

During the records review, the documents regarding to the hazardous waste management were found in comphance.

Requirements for the Land Disposal Restrictions (Part 268) were also evaluated.

Conclusions and Recommendations

As a result of the inspection performed to Zenith Laboratories Caribe, Inc., I found that the facility was in compliance with the minimum requirements set forth in the local and federal regulations.

A letter of compliance will be sent to the company. Please see letter to the company attached for your approval.

MV/sec

R2-0004553

January 7, 1999

Mr. Gilberto Cruz
Engineering Manager
Zenith Laboratories Caribe, Inc.
PO Box 11979
Cidra, Puerto Rico 00739-1979

Dear Mr. Cruz:

Reference is made to the inspection performed to Zenith Laboratories Caribe, Inc. by Mr. Manuel Vargas, from the Land Pollution Regulation Program.

At the time of the inspection, the company was found in compliance with the Regulation for the Control of the Hazardous Solid Wastes (RCHSW) and 40 CFR 262 and 265.

This compliance letter is related only and exclusively with the above mentioned inspection and does not preclude from further enforcement action.

We appreciate your cooperation.

Cordially,

Israel Torres Rivera
Director
Land Pollution Regulation Program

MV/sec

4/4

R2-0004554

REFERENCE 107

GOVERNMENT OF PUERTO RICO / OFFICE OF THE GOVERNOR
ENVIRONMENTAL QUALITY BOARD
EMERGENCY RESPONSE AND SUPERFUND AREA

November 18,1999

Juan E. Dávila
Project Manager
Pre-Remedial Section
Special Projects Branch
U.S. Environmental Protection Agency
290 Broadway 18th Floor
New York N.Y. 10007-1866

RE: Pre CERCLA Screening
Zenith Laboratories Caribe, Inc
Cidra Industrial Park
Cidra, Puerto Rico

Dear Mr. Dávila:

The Puerto Rico Environmental Quality Board (PREQB) is conducting a Pre-CERCLA Screening at the Zenith Laboratories Caribe, Inc. (Zenith), Cidra, Puerto Rico, under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). The purpose of this investigation was to collect information conceming the conditions at the site to assess the potential threat posed to human health and the environment and to determine the need for CERCLA/SARA or other appropriate action. The scope of the inyestigation included a review of available file information, a Comprehensive Target Survey, and an Off Site/On Site Reconnaissance (February 18, 1999). The file information search consisted on the revision of files from the PREQB programs, the Department of Natural and Environmental Resources (DNER), and the Puerto Rico Aqueduct and Sewer Authority (PRASA) system for the Cidra area.

Zenith is located in the Cidra Industrial Park, Street A, Lots 18 and 19, in the city of Cidra, PR. The geographic coordinates are 18° 10' 21"N latitude and 66° 09' 32"W longitude. To reach the site, travel north to south from San Juan on State Road #52 (Luis A. Ferré Highway) towards Caguas. After the first toll take the exit #172 towards Cidra. Continue traveling on road # 172 until its intersection with road # 7733, and tum to the left, on same road (# 7733) tum right onto State Road # 171. The site is located to the right in the Cidra Industrial Park. Zenith is surrounded by other industrial facilities: to the east by Pepsi Cola company, to the west by Warnaco Men's Sportswear, Shelfoam Products, and Porsche Sportswear, and to the north by Enco Paint, and a public use park (recreational). On the West Side of the property there is a warehouse for the storage of hazardous

and non-hazardous wastes and an aboveground water tank. In the southwest side there are an electrical substation and a pretreatment plant.

Zenith is a subsidiary of Zenith Goldline Pharmaceuticals located in Miami, Florida. Zenith has an approximate area of 13.59 acres and consists of two buildings. The process in these buildings consists of weighing, distributing, mixing, granulating, drying, milling, compressing (for tablets), filling (for capsule), and coating. Some substances used and generated in the mentioned process are ***isopropyl and methylene alcohol, methylene chloride, and chloroform.*** This active facility operates since 1982 and is involved in the manufacturing of generic pharmaceutical products. There are 167 employees working in two shifts. An RCRA inspection was performed by the PREQB Land Pollution Control Program on October 17, 1995 and revealed that this is a small quantity generator of hazardous wastes, and not found any violation. The company has an air emission permit issued by the PREQB Air Quality Area for the operation of two new ovens to dry the particulate used in the manufacture of tablets and capsules. On February 18, 1999, personnel from the PREQB Superfimd PA/SI Division performed an on/offsite reconnaissance in the Zenith facility. With regard to the on site extraction wells, Eng. Gilberto Cmz, Engineering Manager, informed that Zenith do a monthly sampling and analysis. According with Eng. Cruz, they have an NPDES permit to discharge in the PRASA systems.

At approximately 984 feet east of the property fence, there is an unnamed creek. The umamed creek is the nearest surface water body to the site. The creek mns to the northeast and connects with the Cidra Lake at approximately 2,034 feet. There is a drinking water intake within 2.5 miles downstream of the site in the Cidra Lake. To the west, at approximately 1,968 feet, there is the Arroyata River. The Arroyata River rums to the northwest and connects with the La Plata River at approximately 9 miles downstream. All the above mentioned surface water bodies flow into the Atlantic Ocean. The Bayamón River, La Plata River, and the Atlantic Ocean are used for recreational purposes including fishing.

Groundwater flows in different directions (northwest, north, and northeast), in the Cidra area. There are 13 municipal water wells located within a 2-mile radius of the site, although some of these wells are located upgradient from the site. PRASA has closed three wells (wells #3, #4, and #8, which are connected to the Cidras urban system), which were found to be contaminated with ***Tetrachloroethane***, ***1,1-Dichloroethane***, and ***Chloroform*** near to the industrial park, these wells serve 28,604 clients. The facility has two onsite wells that are used only for process purposes.

There is evidence of groundwater contamination with hazardous substances used or related to Zenith Laboratories Caribe, Inc. and a potential impact to down gradient water intake. This site is recommended for a high priority Site Inspection.

Sincerely,

Miguel A. Maldonado
Superfund Program
PA/SI Chief

R2-0004557

OFF SITE/ON SITE RECONNAISSANCE
INFORMATION REPORTING FORM

Date: February 18, 1999

Site Name: Zenith Laboratories Caribe, Inc.

Site Address: Cidra Industrial Park.
Cidra, Puerto Rico.

EQB Personnel:	**Name**	**Discipline**
	Jorge L. Crespo Galán	Environmental Inspector
	Nereida Hemandez	Environmental Science Specialist
	Frances Segarra	Jr. Environmental Science Specialist

Weather Conditions (clear, cloudy, rain, snow, etc.):

Mostly Sunny.

Estimated wind direction and wind speed:

Northwest to Southeast.

Estimated temperature at arrival:

78°F

Signature: Jorge L. Crespo **Date:** 18-NOV-99

3

R2-0004558

OFF SITE/ON SITE RECONNAISSANCE INFORMATION REPORTING FORM

Date: February 18, 1999

Site **Name:** Zenith Laboratories Caribe, Inc.

* * *

0845 - Jorge L. Crespo, **N**ereida Hemández, and Frances Segarra from the Superfimd Program PA/SI **D**ivision of the Puerto Rico Environmental Quality Board (PREQB) departed from the PREQB's Office in San Juan to Cidra in order to perform a On/Off Site Recomaissance to Zenith Laboratories Caribe, Inc.

1000 - Arrived at site, the weather mostly sunny, about 78° F, with the wind direction moving northwest to southeast. Around the site there are other industries, these are: Wamaco Men's Sports Wear, Inc., Shelfoam Products Inc., Porshe Sports Wear, and Enco Paints in the north direction. To the south the Peripheral Avenue and to the west the State Road # 171.

1030 – Engineer Gilberto Cruz, Engineering Manager from Zenith, went with us in the On site recomaissance and answered questions about Zenith. The process steps consist on mixing raw materials in several reactors, encapsulating or compressing (tablets), coating, and finally packing. The wastes generated in the process are methanol or methylene chloride mixed with water. The mixing tanks are cleaned with isopropyl alcohol, another hazardous waste. The QA/QC laboratory generates the most hazardous wastes, which are a mixture of solvent or traces of other constituents.

Zenith, therefore, generates hazardous and non-hazardous wastes. OCHOA Co. disposes the hazardous wastes and Proteco disposes the non-hazardous wastes. BFI dispose the solid wastes.

Zenith discharges the waste waters into the PRASA system after they are pretreated. Zenith have

R2-0004559

two wells used for their process. The total area of Zenith consists in 14.42 acres, of which 8.24 acres are green areas. The facility has two buildings, one of them with 72,000 square feet and the other with 20,000 square feet.

R2-0004560

OFF SITE/ON SITE RECONNAISSANCE INFORMATION REPORTING FORM

Date: February 18, 1999

Site Name: Zenith Laboratories Caribe Inc.

Camera: Canon Sure Shot

Film: Kodak color (35 mm)

Photographer: Jorge L. Crespo Galán
Frances M. Segarra Román

PHOTO LOG

ROLL/PHOTO NUMBER	TIME	DESCRIPTION
1	1100	Photographed the discharge 001.
2	1115	Photographed wells near C-2 building
3	1117	Photographed warehouse near C-2 building
4	1200	Photographed the front part of the Main building

R2-0004561

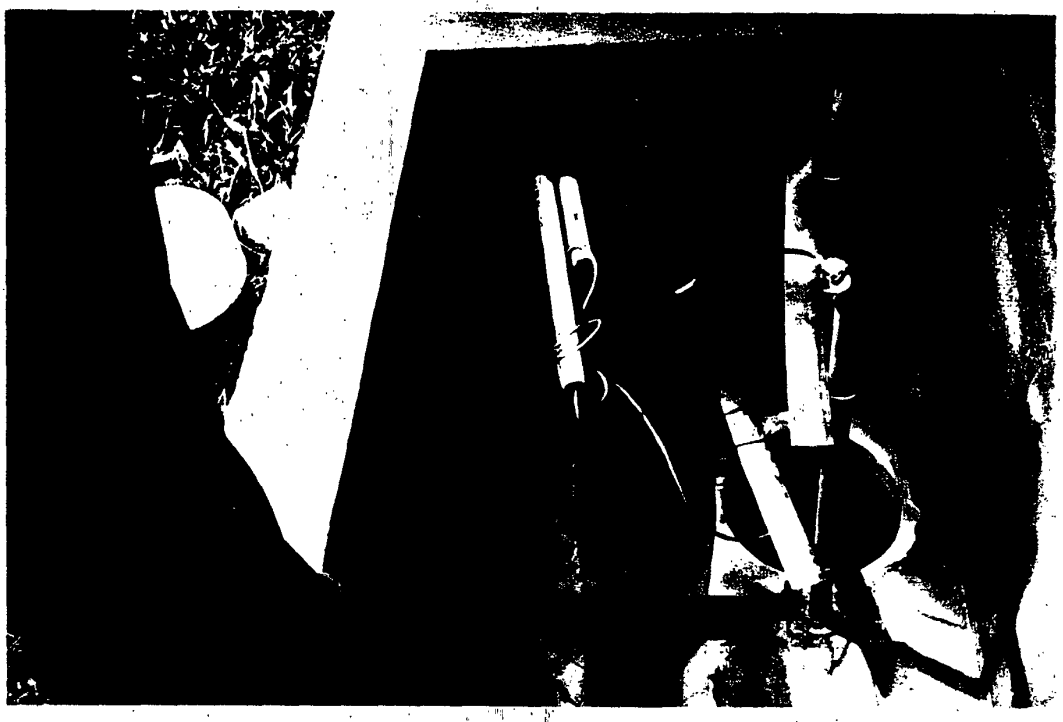


PHOTO # 1

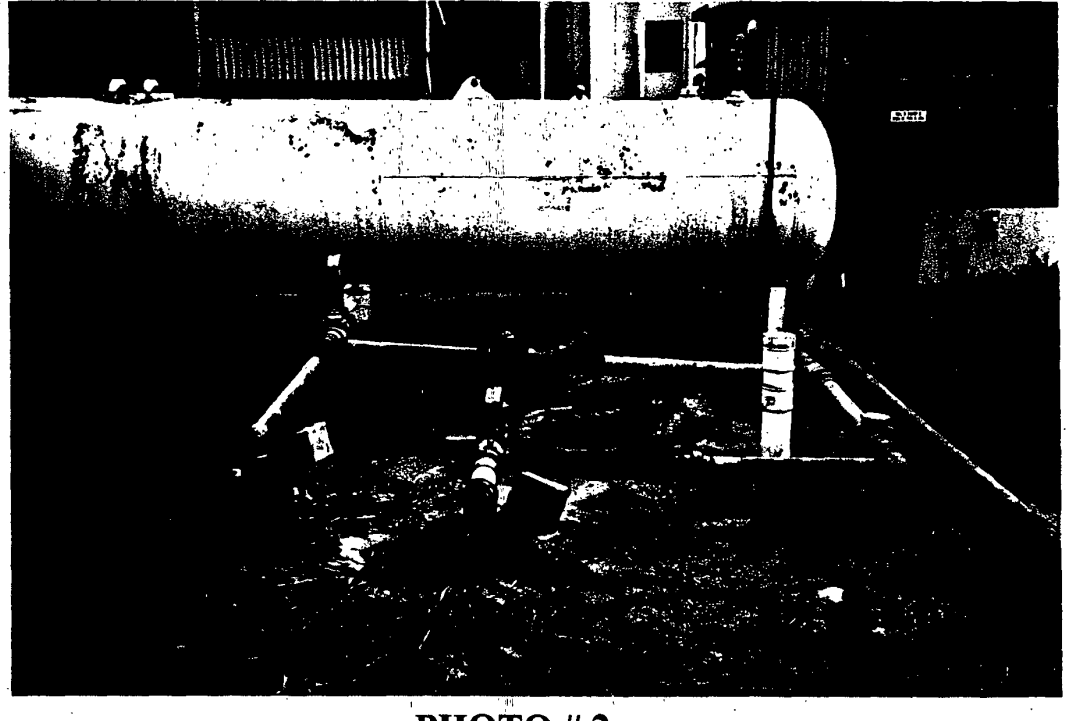


PHOTO # 2

R2-0004562

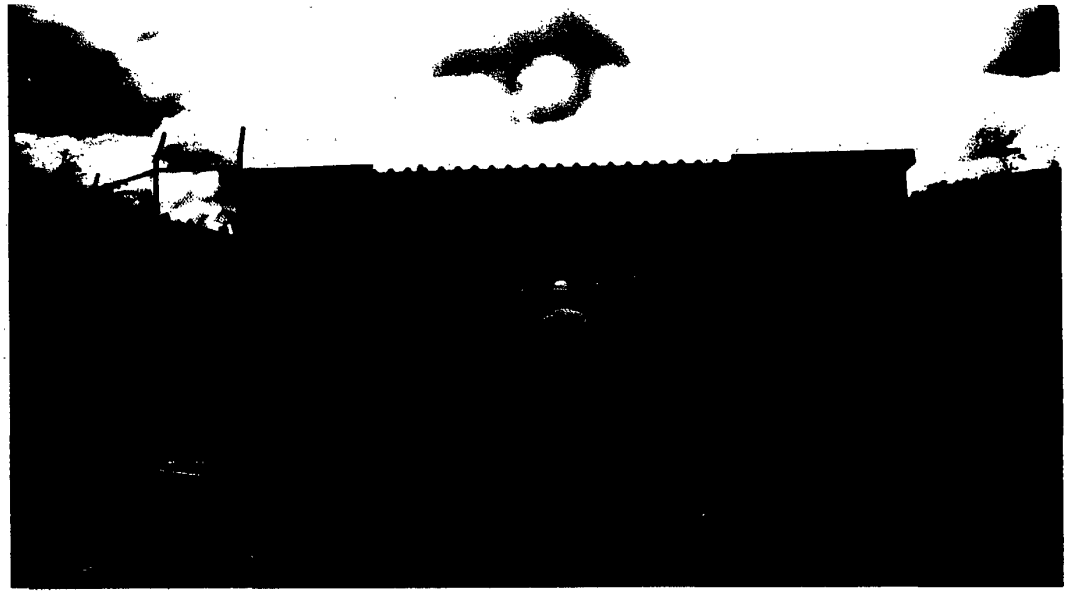
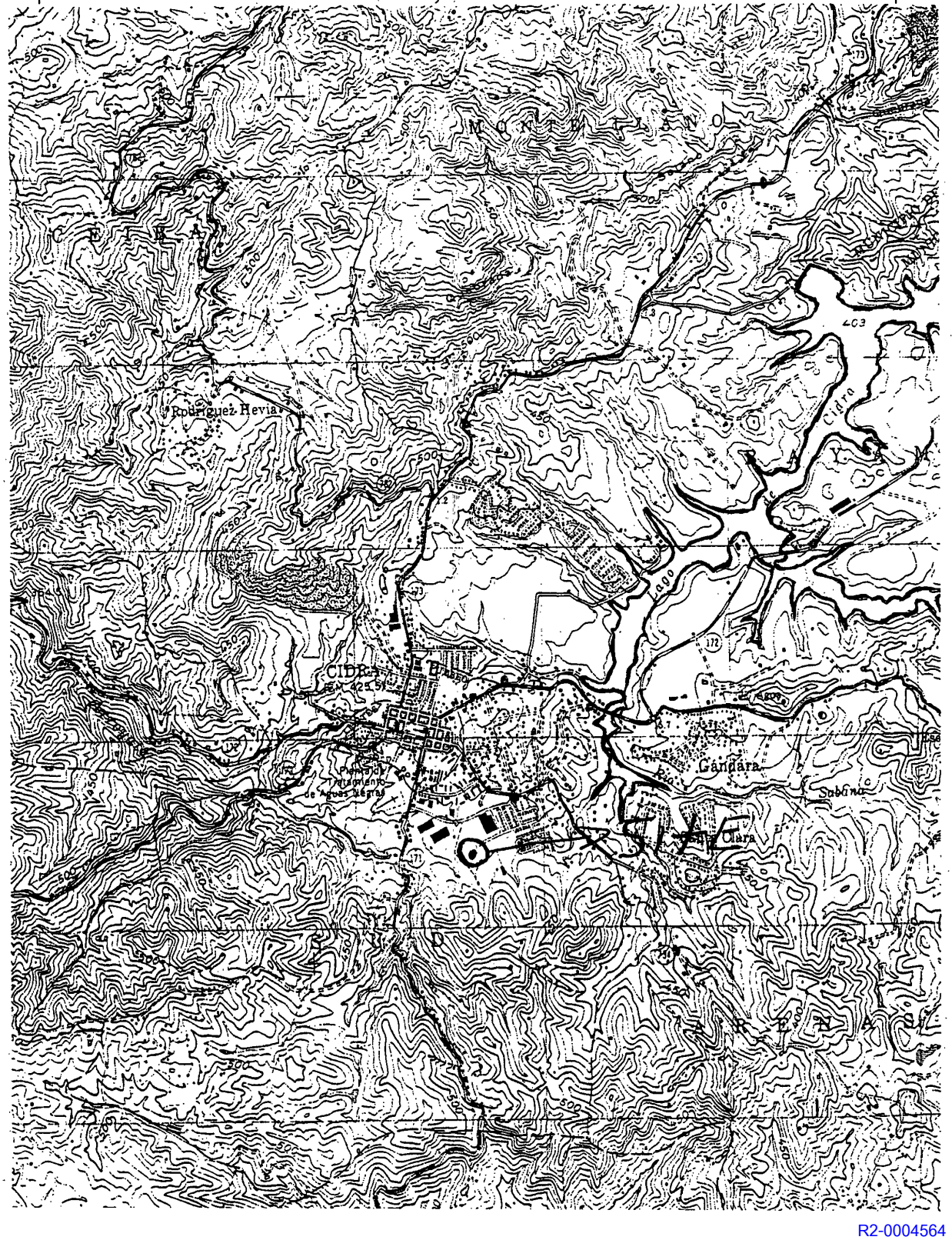


PHOTO # 3

PHOTO # 4

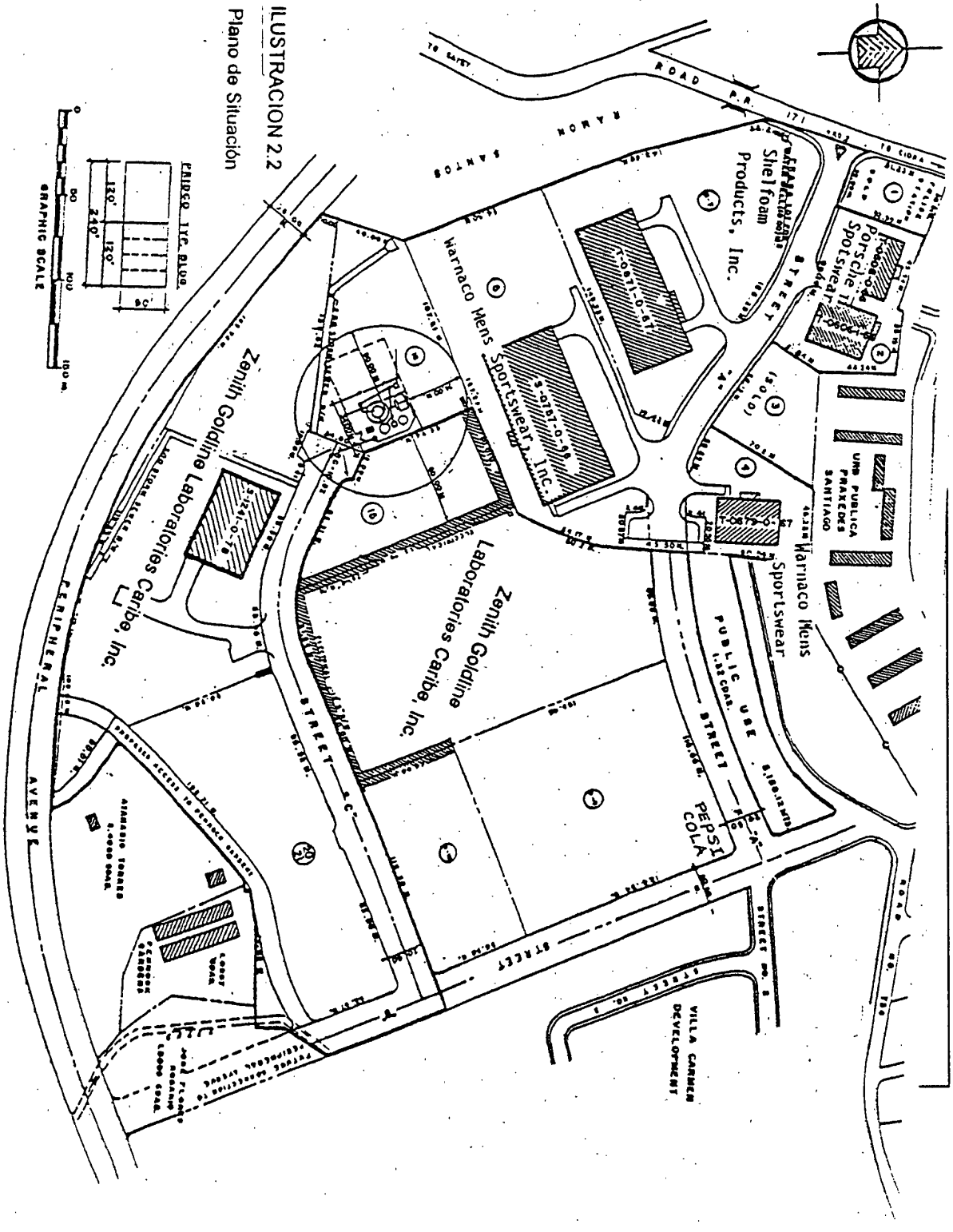
R2-0004563

Figure I
Site Location Map
Zenith Laboratories Caribe Inc.
Cidra, Puerto Rico



9

Figure 2
Site Map
Zenith Laboratories Caribe Inc.
Cidra, Puerto Rico



R2-0004565

LATITUDE AND LONGITUDE CALCULATION WORKSHEET
WHEN USING THE COORDINATE GRID CELL

SITE NAME: Zenith Laboratories CERCLIS #: _____

AKA: _____ SSID: _____

ADDRESS: Street A, Lots 18 and 19, Cidra Industrial Park

CITY: Cidra STATE: PR ZIP CODE: 00739

USGS QUAD MAP NAME: Comerio TOWNSHIP: _____ N/S RANGE: _____ E/W

SCALE: 1:20,000 MAP DATE: 1957 SECTION: _____ 3 _____ 3 _____ 3

MAP DATUM: 1940 PHOTOREVISED: 1982 MERIDIAN: _____

LONGITUDE: 66 E 07 ' 30 " W LATITUDE: 18 E 07 ' 30 " N

COORDINATED FROM LOWER RIGHT (SOUTHEAST) CORNER OF 2.5' GRID CELL:

LONGITUDE: 65 E 09 ' 30 " W LATITUDE: 18 E 10 ' 00 " N

CALCULATIONS: LATITUDE (7.5' QUADRANGLE MAP)

A) ALIGN THE GRID CELL (7.5' WIDE X 2.5' HIGH) WITH THE NEAREST LATITUDE REFERENCE POINT TO THE SITE.
B) ADD TO THE REFERENCE LATITUDE POINT THE CORRESPONDING INCREMENTS OF 1 SECOND UNTIL THE SITE LOCATION.
C) WRITE DOWN THE CORRESPONDING LATITUDE COORDINATE OF THE SITE IN DEGREES, MINUTES AND SECONDS.

SITE LATITUDE: 18 E 10 ' 21 " N

CALCULATIONS: LONGITUDE (7.5' QUADRANGLE MAP)

A) WITHOUT DISPLACING THE GRID CELL, LOOK FOR THE LONGITUDE THAT APPEARS ON THE NORTHEAST CORNER OF THE QUADRANGLE.
B) ADD TO THIS LONGITUDE THE CORRESPONDING INCREMENTS OF ONE SECOND UNTIL THE SITE LOCATION
C) WRITE DOWN THE CORRESPONDING LONGITUDE COORDINATE OF THE SITE IN DEGREES, MINUTES AND SECONDS.

SITE LONGITUDE: 66 E 09 ' 32 " W

PREQB INVESTIGATOR: Jorge L. Crespo Galán DATE: May 6, 1999

11/11

R2-0004566

REFERENCE 108

MARTINEZ ODELL & CALABRIA

Confidencial y Privilegiado
Comunicacidn entre Abogado y Cliente

MEMORANDO

26-62775
RAG

A: Lcdo. Yamil Marrero
Compañia de Fomento Industrial de P.R.

C: Lcda. Haifa Notario Toll
Srta. Igdalie Rodríguez
Sr. Rafael Gutiérrez

DE: Lcdo. Jorge J. Garcia Díaz

FECHA: 9 de febrero de 2000

ASUNTO: **Zenith** Laboratories Inc., Venta Lote **195-61** Solar **16,** *C*idra **P.R.**

OFIC. ASUNTOS AMBIENTALES
2000 FEB 11 PM 3:58

En el dia de hoy visitamos la propiedad de referencia junto a la Srta Igdalie Rodríguez y al Sr. Rafael Gutiérrez de la Oficina de Asuntos Ambientales de la Compañía de Fomento Industrial de Puerto Rico.

En dicha propiedad ubica una planta de tratamiento de aguas usadas la cual se encuentra fiiera de operación. Las estructuras relacionadas a la planta de tratamiento se encuentran dentro de un perímetro cercado con "cyclone fence", el cual a su vez, se encuentra enclavado dentro del solar propiedad de la CFI. Los puntos de colindancia del solar iio estaban visibles y no se pudo determinar, para propósitos de nuestra visita, el límite del solar.

El portón de acceso al área de la planta de tratamiento se encontraba abierto. En el área de la planta de tratamiento observamos la existencia de: (i) un cuarto de máquinas en el que había una batería abandonada, (ii) tres tanques redondos de horhugón que se utilizaban para el tratamiento de las aguas y la tubería relacionada a su interconección, (iii) dos estructuras rectangulares de hormigón y toda la tubería asociada a la interconección de los tanques y las estructuras, (iv) una caseta en la que se encontraban dos cilindros presumiblemente conteniendo cloro, y (v) un tanque de almacenamiento sobre el terreno de aproximadamente 100 galones de capacidad conteniendo combustible diesel.

Observamos que dos de los tres tanques de hormigón contenían una gran cantidad de una substancia liquda. La substancia en uno de los tanques era color verde y en el otro la substancia era color marrón. El tercer tanque de hormigón estaba conipletaniente libre de líquido y seco.

Observamos además que el tanque de almacenamiento soterrado para diesel tiene una filtración del producto hacia el terreno. El tanque no cuenta con un dique o area de contención de derrame, por lo que el terreno inmediatamente debajo del tanque se observaba impregnado de producto.

1/2

A base de nuestras observaciones a la propiedad, recomendamos que previo a que la CFI cierre la compraventa, se realicen las siguientes acciones:

1. Remover el contenido del tanque de almacenamiento de combustible y ei tanque, muestrear el área impactada por el derrame del tanque y disponer en cumplimiento con la reglamentación aplicable el tanque, el contenido del mismo y el terreno afectado.

2. Asignar el caso a un consultor ambiental para que tome muestras de las substancias en ios tanques de hormigón para determinar el método de disposición de las mismas y disponer de éstas. Debe verificarse la condición de las líneas de influente y efluente de la planta para determinar si estas estan abiertas o clausuradas. Nos llamó la atención el hecho de que solo dos de los tres tanques tenían contenido líquido y el tereero no contenía líquido alguno. Esto podría sugerir que el contenido de los otros dos tanques no necesariamente es agua de lluvia acumulada.

3. Aunque para lograr acceso al portón del área de la planta de tratamiento hay que atravesar la propiedad de Zenith, entendemos que debe cerrarse el mismo para evitar que personas extrañas puedan ganar acceso a la planta. De igual forma, los tanques que contienen líquido deben ser vaciados una vez se tome la muestra del contenido de los mismos, ya que al mantenerse éstos llenos de líquido se podria estar creando una condición de riesgo a la CFI o un peligro atrayente.

4. Los dos cilindros presumiblemente con contenido de cloro y la batería abandonada deben ser removidos y dispuestos en cumplimiento con la reglamentación ambiental aplicable.

5. De no estar clausuradas, deben removerse o clausurarse todas las líneas de entrada y de salida de la planta de tratamiento, de forma que se pueda evitar que entren substancias a la planta por cualquiera de estas líneas y que de entrar, éstas puedan salir y ganar acceso a algún cuerpo de agua.

6. La Oficina de Asuntos Ambientales debe verificar el estatus del cierre de la planta de tratamiento y la cancelación del permiso NPDES.

7. Debe considerarse enviar un agrimensor para que realice una mensura de la propiedad y se puedan establecer los límites del solar, de forma que la mensura pueda ser utilizada ai momento de reaiizar la tasación.

En caso de que tenga cualquier pregunta sobre el particular, puede comunicarse a mi oficina al 274-2912.

R2-0004569

REFERENCE 109

Weston Solutions, Inc.
205 Campus Drive
Edison, New Jersey 08837
732-417-5800 • Fax 732-417-5801
www.westonsolutions.com

September 17, 2003

Mr. Ildefonso Acosta
U.S. Environmental Protection Agency
290 Broadway, 18th Floor
New York, NY 10007-1866

Document Control No.: SAT.20103.1047.521

Subject: **Expanded Site Inspection/Remedial Investigation (ESI/RI) Report**
Work Assignment No.: 047, Cidra Groundwater Plume
Contract No.: 68-W-00-121

Dear Mr. Acosta:

Weston Solutions, Inc. (WESTON) is pleased to submit the draft Expanded Site Inspection/Remedial Investigation Report for Cidra Groundwater Plume. If you have any questions, please contact me at (732) 417-5826.

Very truly yours,

WESTON SOLUTIONS, INC.

Gerald V. Gilliland, P.G.
Project Manager

enclosure

cc: W.S. Butterfield, WESTON (w/o enclosure)

EXPANDED SITE INSPECTION/REMEDIAL INVESTIGATION REPORT
CIDRA GROUNDWATER PLUME
CIDRA, PUERTO RICO

VOLUME 1 of 3

EPA Contract No. 68-W-00-121
W.O. No. 20103.001.001.1047.00
Document Control No. SAT.20103.1047.521

September 2003

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Prepared by:
Region 2 Site Assessment Team
Weston Solutions, Inc.
Edison, New Jersey 08837

R2-0004572

EXPANDED SITE INSPECTION/REMEDIAL INVESTIGATION REPORT
CIDRA GROUNDWATER PLUME
CIDRA, PUERTO RICO

Prepared by:

Region 2 Site Assessment Team
Weston Solutions, Inc.
Edison, New Jersey

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

EPA Contract No. 68-W-00-121
W.O. No. 20103.001.001.1047.00
Document Control No. SAT.20103.1047.521

September 2003

Reviewed and Approved:

Gerald V. Gilliland, P.G.
Project Manager

Date 9/17/03

FOR

W. Scott Butterfield, CHMM
Program Manager

Date 9/17/03

R2-0004573

SITE SUMMARY

Cidra Groundwater Plume is located in Cidra, Puerto Rico, just south of the village of Cidra and west of the northern end of Road 171 [Ref. 4, p. 1; 5, p. 2]. The site consists of a groundwater plume with no identified source(s) of contamination. Puerto Rico Department of Health (PRDOH) ordered the following four public supply wells in Cidra to be closed due to contamination by tetrachioroethylene (PCE): Cidra Well 4 (Calle Padilla Final) in March 1996; Cidra Well 8 (Frente Cementerio) in October 1996; Cidra Well 3 (Planta Alcantarillado) in Febmary 1999; and Cidra Well 6 (Calle Baldorioty) in August 2000 [Ref. 6, p. 1; 7, pp. 2, 3; 8, pp. 2, 3]. Otiier chlorinated volatile organic compounds (VOC), including 1,1-dichloroethylene (1,1-DCE) and trichloroethylene (TCE), were also detected in the wells before they were closed [Ref. 6, p. 2; 7, pp. 5, 8; 8, p. 2; 9, pp. 2, 3, 4, 6 through 10, 14, 17]. The approximate geographic coordinates of the groundwater plume site are 18° 10' 31.0" N latitude and 66° 09' 43.0" W longitude [Ref. 5, pp. 1, 2]. A site location map is presented in Figure 1.

In Jume 2002, the U.S. Enviromnental Protection Agency's (EPA) Region 2 Site Assessment Team (SAT) collected groundwater samples from the closed wells and 20 other active and inactive wells in Cidra [Ref. 10, pp. 2 through 60; 11, pp. 3 through 10]. The groundwater sample locations are shown in Figure 2. PCE was detected in the closed wells at concentrations ranging from 0.64 to 12 micrograms per hter (ug/L), and was also detected in two industrial/potable supply wells and three industrial wells. Related chlorinated solvents, including 1,1-DCE; 1,1-dichloroethane (I,1-DCA); cis-1,2-dichloroethylene (cis-1,2-DCE); carbon tetrachloride; and TCE, were also detected in groundwater samples. The Maximum Contaminant Levels (MCL) for PCE (5 ug/L) and 1,1-DCE (7 ug/L) were exceeded, however, the exceedances did not occur in active drinking water wells [Ref. 11, pp. 8, 9; 12, pp. 61, 62, 65, 73, 74, 76, 77, 79, 80, 86, 131, 132, 134, 135, 137, 138, 140, 141, 152, 153; 13, pp. 5, 6, 8]. Other VOCs were also detected, in most cases at estimated concentrations below the sample quantitation limits (SQL) [Ref. 12, pp. 43 through 101, 131 through 168]. A summary of the VOC groundwater analytical data is presented in Table 1.

The groundwater samples were also analyzed for semivolatile organic compounds (SVOC), pesticides, polychlorinated biphenyls (PCB), and inorganic parameters [Ref. 11, pp. 2, 3, 4]. There were no detections of SVOCs, pesticides, or PCBs above SQLs [Ref. 14, pp. 60 through 135, 148 through 179]. Inorganic parameters were not detected above MCLs in the groumdwater samples, except thallium, which was reported at estimated concentrations above the MCL (2 ug/L) but below the Contract-Required Detection Limit (CRDL) (10 ug/L) in three samples [Ref. 13, pp. 3, 4; 15, pp. 40 through 72; 16, p. 2]. Thallium is not known to be associated with the groundwater plume site.

In January and Febmary 2003, Region 2 SAT investigated 12 industrial sites in Cidra as potential sources of contamination to the groundwater plume [Ref. 10, pp. 63 through 109]. Eleven of the sites are listed in EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Hazardous Waste Sites database, and one site is listed in the Archived Sites database [Ref. 17, pp. 1 through 24]. Region 2 SAT used direct-push technology to complete soil borings at the 12 industrial sites plus two background sites and retrieve soil cores (and in one case, a groundwater sample) from each borehole at 5-foot intervals. The soil cores and groundwater sample were then screened for VOCs with the HAPSITE® Headspace Sampling System [Ref. 10, pp. 63 through 109; 18, all pages; 19, all pages; 20, p. 1]. Figure 3 shows the locations of the sites investigated by Region 2 SAT. The sites are described at the end of this section.

SITE SUMMARY (continued)

The field-screening results indicated the presence of PCE, TCE, and trans-1,2-dichloroethylene (trans-1,2-DCE) in soils collected from the International Dry Cleaners (INT) site. The samples where solvents were detected came from depths of 2 to 7 feet at the INT site. The field-screening results indicated concentrations of PCE, TCE, and trans-1,2-DCE ranging from approximately 7 to 255 parts per billion (ppb), with the highest readings in a 4-foot-depth sample [Ref. 19, p. 26, 33]. Other detections included vinyl chloride in a sample from the Cidra Convention Center (CCC) site and 1,1,2,2-tetrachloroethane (1122-TCA) in a sample from the Tech Group Puerto Rico (TGP) site, both at concentrations less than 3 ppb [Ref. 19, pp. 2, 22]. The field-screening data that was retrieved from the HAPSITE® unit at the conclusion of field activities indicated the presence of other VOCs in soil samples from some sites, mostly at concentrations below 1 ppb, and chloroform in the groundwater sample collected from the TGP site [Ref. 19, pp. 41 through 820]. A summary of the HAPSITE® data is presented in Table 2.

Region 2 SAT used the HAPSITE® screening results, particularly the PCE readings mentioned above, to select samples for VOC analysis through the Contract Laboratory Program (CLP). At sites where there were no detections, the CLP samples represent each borehole location and the full depth range [Ref. 19, pp. 2, 22, 26, 33; 21, pp. 2 through 16]. The CLP soil sample locations are shown in Figures 4 through 4E.

The CLP analytical results confirm that PCE and related substances are present in soil at the INT site. PCE at 11,000 micrograms per kilogram (ug/kg); TCE at 2,800 ug/kg; and cis-1,2-DCE at 5,100 ug/kg were detected in the 4-foot sample. The same compounds were detected in the 7-foot sample at lower concentrations, while just cis-1,2-DCE at 6,700 ug/kg was detected in the 2-foot sample [Ref. 21, p. 15; 22, pp. 345, 346, 354, 355, 360]. The levels of PCE, TCE, and cis-1,2-DCE exceed EPA's generic migration-to-groundwater Soil Screening Levels (SSL) [Ref. 23, pp. 12, 14]. The only other significant concentrations were 1,1-DCE above the generic SSL in a soil sample from the Zenith Laboratories (ZEN) site, and an estimated concentration for 2-butanone in a sample from the Caribbean Manufacturing Co. (CMC) site [Ref. 21, pp. 13, 16; 22, pp. 93, 324; 23, p. 12]. The results also confirmed the presence of chloroform in the groundwater sample from the TGP site [Ref. 21, p. 12; 22, p. 183].

During the field investigation, Region 2 SAT collected two sediment samples from drainage channels in Cidra Industrial Park [Ref. 10, pp. 107, 108, 109; 21, p. 16]. The sample locations are shown in Figure 4A. Site-related VOCs were not detected in the drainage channel samples [Ref. 22, pp. 378 through 382]. Region 2 SAT also collected surface water and sediment samples from five locations in Cidra Lake (Lago de Cidra) to evaluate the interconnection between the lake and the groundwater plume [Ref. 10, pp. 110 through 115; 21, pp. 17, 18]. The surface water/sediment sample locations are shown in Figure 4E. Field-screening and CLP analytical results indicated that there were no significant concentrations of site-related VOCs in the lake surface water and sediment samples [Ref. 19, p. 40; 22, pp. 222, 223, 255 through 277, 363 through 373]. Table 3 presents a summary of the CLP analytical data for the January-February 2003 field investigations.

SITE SUMMARY (continued)

The aquifer of concern in Cidra is the Pre-Robles Volcanic Rock that underlies the area. During the subsurface investigations with direct-push technology, Region 2 SAT drilled through 17 to 73 feet of clay, silty clay, silt, and weathered bedrock minerals before encountering equipment refusal. Compact material and an increase in weathered bedrock minerals in the deeper intervals might be an indication of approaching the bedrock surface [Ref. 18, pp. 5 through 114]. Region 2 SAT's field investigation results correspond with existing well logs, which indicate that 9 to 120 feet of clay and 10 to 30 feet of decomposed rock overlie the bedrock throughout the municipality of Cidra. Based on the existing well logs, water-bearing zones in the bedrock range from 40 to 360 feet below ground surface in a confined aquifer [Ref. 24, pp. 1 through 46]. Groundwater flows toward and discharges to Cidra Lake [Ref. 24, p. 1; 25, pp. 1, 13]. The closed and active wells all are finished in the bedrock aquifer at total depths ranging from 110 to 705 feet below ground surface, with surface casing lengths ranging from 8 to 224 feet [Ref. 24, pp. 1, 2, 15, 27].

The current concentrations detected in the closed public supply wells are used to document actual contamination because the well closures are attributable to the site. Conservative estimates of the populations served at the time of closure are 112.7 persons for Cidra 3 and 0 persons for Cidra 8 subject to Level I concentrations, and 177.1 persons for Cidra 4 and 206.7 persons for Cidra 6 subject to Level II concentrations [Ref. 26, p. 1]. In addition, there are 15 active drinking water wells located within 4 miles of the site, serving a total population of 8,838 people who are subject to potential contamination [Ref. 24, p. 2; 27, p. 10; 28, p. 1].

Surface water runoff from the Cidra Groundwater Plume site location flows to the Lago de Cidra watershed via the municipality's storm water management system [Ref. 29, pp. 1 through 7]. The distance to surface water via this overland migration pathway is 0.5 mile, and the probable point of entry (PPE) is at an unnamed tributary to the lake [Ref. 29, pp. 1, 8]. The in-water segment includes the tributary, Lago de Cidra, and Rio de Bayamón [Ref. 27, p. 11]. Flow rates for the water bodies along the pathway range from 0.5 to 19 cubic feet per second (cfs) [Ref. 29, pp. 11, 12; 30, p. 12]. The 2-year, 24-hour rainfall for Cidra is about 5 inches [Ref. 31, pp. 2, 3], and the site is located outside the 500-year flood boundary [Ref. 32, pp. 2, 3].

An intake located about 2.2 miles downstream of the PPE in Lago de Cidra serves approximately 30,148 people [Ref. 24, p. 2; 27, p. 11]. The surface water withdrawal is also used for watering of commercial livestock [Ref. 33, pp. 5, 24]. The lake is also a popular fishing destination [Ref. 10, p. 113; 34, pp. 1, 2]. Wetlands are not mapped in central Puerto Rico where Cidra is located, however, habitats for endangered and threatened species are documented along the surface water pathway and within a 4-mile radius of the site [Ref. 27, pp. 10, 11; 35, p. 1; 36, pp. 1, 18, 19]. There is a residential population of approximately 52,774 persons within 4 miles of the Cidra Groundwater Plume site [Ref. 37, p. 1].

SITE SUMMARY (continued)

Site Descriptions:

The 12 sites investigated by Region 2 SAT are described below, in alphabetical order:

1. Caribbean Manufacturing Co. (CMC). CERCLIS No. PRN000204331

The building at this site, Lot 3 on Principal Street (a.k.a. El Jibaro Avenue) in El Jibaro Industrial Park, was buih by Puerto Rico Industrial Development Company (PRIDCO) in June 1993 [Ref. 38, pp. 3, 7]. It is located about 0.6 mile north-northeast of Cidra Well 6 [Ref. 27, p. 3]. Caribbean Manufacturing Corporation, a manufacturer of doors and windows, occupied all or part of the buildmg from June 1994 through December 1998 [Ref. 38, pp. 3, 5, 7; 39, p. 10]. Caribbean Manufacturing was not classified as a hazardous waste generator [Ref. 38, p. 5], nor was it included in the lists of Cidra companies that submitted Superfimd Amendments and Reauthorization Act (SARA) SARA Title III Tier 1 and 2 Reports to EPA in 1997 or 1998 [Ref. 40, p. 3; 41, p. 6]. Additionally, it was not identified as a significant violator by the Puerto Rico Aqueduct and Sewer Authority (PRASA) Prefreatment Program in any of its operating years [Ref. 42, p. 1]. PRIDCO completed an environmental evaluation of the site in March 2000, and found that environmental conditions at the site posed no unacceptable risks. There were no solid wastes stored or abandoned at the site during the inspection [Ref. 38, pp. 1 through 5].

During an EPA investigation in June 2000, the site was found to be inactive [Ref. 43, p. 4]. Currently, Rexam Medical Packaging, a manufacturer of labels and inserts for pharmaceutical containers, uses the front half of the building as a warehouse for nonhazardous raw materials [Ref. 10, pp. 102, 103; 44, pp. 1, 2; 45, p. II; 46; p. 6]. Pan de la Montaña Inc., a bakery company, occupies the rear portion of the building and is listed in the curtent Puerto Rico directory of plants operating in Cidra [Ref. 18, p. 168; 43, p. 5; 46, p. 5]. Rexam's manufacturing facility (also located in Cidra) is listed in the directory of plants, however, the warehouse site is not listed [Ref. 46, p. 6]. None of the current or former occupants of this site is included in EPA's Resource Conservation and Recovery Act (RCRA) facility list for Cidra [Ref. 47, pp. 2, 16, 17, 18, 19].

2. CCL Label de Puerto Rico (CCL) CERCLIS No. PRN000204329

This PRIDCO-owned site is located on A Street in Cidra Industrial Park, less than 0.1 mile east of Cidra Well 8 [Ref. 17, p. 3; 27, p. 3; 43, pp. 4, 86; 48, p. 1]. Use of the building began in Febmary 1967, either by Meyers & Son Mfg. Co., a manufacturer of work clothes, or Porsche Sportswear, Inc., a manufacturer of pre-washed jeans and jackets that occupied the building through November 1987 [Ref. 49, p. 1; 50, p. 1; 51, p. 10]. Porscbe was listed in the April 1983 Puerto Rico directory of manufacturers [Ref. 51, p. 10]. In 1986, neighboring residents complained of hydrogen sulfide and chlorine odors emanating from Porsche, causing them to evacuate their homes in some cases. PRIDCO investigated in July 1986 and discovered an unauthorized underground sedimentation tank, the cleaning of which was responsible for the odors [Ref. 48, pp. 1, 2, 3]. PRIDCO suggested that Porsche relocate the plant to solve the problem and Porsche's parent company, Society Brand Industries, began to investigate relocation in January 1987 [Ref. 48, p. 4; 52, p. 2]. As of March 1988, PRIDCO would not cancel the lease due to environmental concems [Ref. 53, p. 1].

SITE SUMMARY (continued)

Soil samples collected from the site in May 1989 did not exhibit characteristics of ignitabitity, corrosivity, or reactivity, and did not show the presence of E.P. toxicity metals [Ref. 54, pp. 4 through 10]. Based on the laboratory tests and an environmental study of the site, PRIDCO reported in September 1989 that there were no known or suspected environmental problems or areas of concem at the site, and concluded that the site was not contaminated [Ref. 55, p. 1]. PRIDCO leased the building to Productos Mi Viejo, a manufacturer of frozen food, from January 1990 through May 1992 [Ref. 50, p. 1]. Productos Mi Viejo was not listed in the April 1992 Puerto Rico directory of manufacturers [Ref. 56, p. 26]. In July 1992, PRIDCO reported again that there were no known or suspected environmental problems or areas of concem at the site, and concluded that the site was not contaminated [Ref. 50, p. 2]. In November 1996, PRIDCO informed CCL Label de Puerto Rico that Productos Mi Viejo was the last tenant of the building [Ref. 50, p. 1].

CCL Label de PR moved into the building in 1997 and has operated there since 1998 [Ref. 57, p. 1]. The company, which manufactures and prints labels for the pharmaceutical industry, submitted a Notification of Hazardous Waste Activity to EPA in March 1998 and is included in EPA's RCRA list for Cidra under facility ID PR0002426062 [Ref. 47, p. 2; 58, pp. 1, 2, 3]. CCL Label was hsted in the February 2000 and current Puerto Rico directories of manufacturers [Ref. 45, p. 10; 46, p. 3]. The company generates liquid and solid waste containing ethyl acetate and methyl ethyl ketone. Manifests available at the plant indicate that the company generated 110 dmms of waste from 1998 through 2002 and shipped them off-site for disposal [Ref. 57, pp. 1, 21 through 35]. Based on a list obtained in April 2000, CCL Label does not have an Underground Injection Control (UIC) permit [Ref. 59, pp. 1, 3]. Puerto Rico Envfronmental Quality Board (EQB) inspections of the site in July 2001 and May 2002 found a number of administrative violations. In both cases, CCL Label subsequently addressed the violations to EQB's satisfaction [Ref. 57, pp. 36 through 40; 60, pp. 1 through 7; 61, p. 1].

3. Cidra Convention Center (CCC) CERCLIS No. PRN000204333

This site located on A Street in Cidra Industrial Park, about 0.1 mile east of Cidra Well 8, is owned by Ramaflo Bros. Printing, Inc., a former operator at the site [Ref. 17, p. 5; 27, p. 3; 43, pp. 7, 86; 62, p. I; 63, pp. I, 2]. During inspections of the neighboring Porsche and Shelfoani facilities in January 1988 and May 1992, respectively, Ramallo & Escribano, Inc. - Linear Packaging Divisibn was observed to be operating at the CCC site [Ref. 49, pp. 1, 2; 82, pp. 6, 13]. Ramallo allegedly had numerous environmental issues associated with the site, including discolored wastewater flowing through drainage systems near the facility and into the street. Another former occupant of the building was Sierra Instruments, a label maker [Ref. 43, p. 7]. The last occupant of the building, Cidra Convention Center, Inc., used the building for weddings, dances, banquets, and conferences for about one year in 1996 [Ref. 62, p. 1].

None of the former occupants of the CCC site was listed in the April 1983 or April 1992 Puerto Rico directories of manufacturers [Ref. 51, pp. 32, 33; 56, p. 26]. The former occupants are not included in EPA's RCRA facility hst for Cidra [Ref. 47, pp. 4, 5, 18, 19, 20], nor were they included in the list of Cidra companies that submitted Tier 1 and 2 Reports to EPA in 1993 [Ref. 64, pp. 7, 8]. The companies never obtained UIC permits, and were not identified as significant violators by the PRASA Pretreatment Program from 1990 through1998 [Ref. 42, p. 1; 59, p. 3].

SITE SUMMARY (continued)

4. Cidra Metallic Caskets (CMT) CERCLIS No. PRN000204335

The CMT site is located at Road 172 kilometer 7.9 in the Certenejas Ward of Cidra, about 3.4 miles northeast of the groundwater plume [Ref. 17, p. 7; 27, p. 3]. Cidra Metallic Casket, Inc. has fabricated and finished metal caskets at the site since 1970, currently making 150 to 175 caskets per week [Ref. 65, p. 4; 66, p. 2]. The fmishes and thimer used on site contain toluene, methyl ethyl ketone (MEK), and other chemicals, but they do not use chlorinated solvents such as TCE or PCE [Ref. 66, pp. 2, 14 through 57]. Cidra Metallic Casket has used the same thinner since it began operation; the company added Orange degreaser to enhance the cleaning process in approximately 1992 [Ref. 65, p. 4]. Wastes generated on site include dried paint waste, which is picked up for nonhazardous off-site disposal, and used paint thinner, which is either picked up and reused by a local contractor or placed in drums and allowed to evaporate [Ref. 10, p. 105; 65, p. 3; 66, p. 3]. Cidra Metallic Casket does not produce or receive manifests or other waste disposal documents. Rags soaked with thinner and degreaser are discarded with regular trash [Ref. 65, p. 3; 66, pp. 3, 4].

Cidra Metallic Casket operates under an EQB air permit for its stacks and generator [Ref. 65, p. 7; 66, pp. 4, 59 through 87]. The company has had previous violations of its air permits, including objectionable odors in the neighboring residential areas [Ref. 67, pp. 1 through 7]. EQB approved a modification to increase paint and generator usage in December 2000 [Ref. 65, p. 7; 66, p. 59]. During inspections in June 2000 and April 2002, EPA observed paint and chemical odors at the site. EPA also noticed wastewater discharging through floors directly to soil, dmms scattered about the premises, and stressed vegetation [Ref. 43, p. 7; 65, pp. 3 through 7]. Some of the drums contained liquid, and EPA observed the presence of nist, dents, and bulges on some dmms [Ref. 66, p. 3].

Cidra Metalhc Casket was hsted in the April 1992, February 2000, and current Puerto Rico directories of manufacturers, however, it was not listed in the April 1983 directory [Ref. 45, p. 21; 46, p. 3; 51, pp. 32, 33; 56, p. 25]. The firm was not included in EPA's RCRA facility hst fbr Cidra [Ref. 47, pp. 4, 5], nor was it included in the lists of Cidra companies that submitted Tier 1 and 2 Reports to EPA in 1993, 1997, or 1998 [Ref. 40, p. 3; 41, p. 6; 64, pp. 7, 8]. Additionally, Cidra Metallic Casket does not have a UIC permit, and was not identified as a significant violator by the PRASA Pretreatlnent Program from 1990 tlirough1998 [Ref. 42, p. 1; 59, p. 3].

5. CMM Laundry (CMM) CERCLIS No. PRN000204330

The CMM site is located on Road 172 in Barrio Cañaboncito, Caguas, just beyond the Cidra border and about 3.9 miles northeast of the groundwater plume [Ref. 17, p. 9; 27, p. 3; 68, p. 1]. The dry-cleaning business has operated at this location since approximately 1983, as Advance Laundry Co., CMM Laundry Co., and currently under the same management as Country Dry Cleaners, Inc. [Ref. 43, p. 5; 68, p. 1]. PCE is stored and used at the site [Ref. 18, pp. 31, 163; 43, p. 5]. The business operator leases the building space from the property owner. The laundry discharged wastewater to a cesspool behind the building at a lower elevation until early to mid-2001, when the property owner installed a new cesspool and required the dry cleaner to install a wastewater collection tank. Laundry wastewater flows to the aboveground steel tank, which is situated behind the building at a lower elevation, via a PVC pipe that is suspended ptecariously over the ground. A waste hauler removes the tank contents on an as-needed basis [Ref. 10, pp. 92, 93; 18, pp. 30, 160 through 163; 68, p. 1].

SITE SUMMARY (continued)

6. Creative Medical Corp. (CRE) CERCLIS No. PRN000204336

The CRE site is located at Road 172 kilometer 9.4, about 2.5 miles northeast of the groundwater plume [Ref. 17, p. 11; 27, p. 3]. Loprey Rattan, Inc. (a.k.a. Rattan Specialties of Puerto Rico) manufactured rattan fiuniture and cushions at the building from the 1970s until July 1984 [Ref. 69, pp. 4, 5; 70, pp. 2, 20]. Knogo Caribe, Inc., a manufacturer of electronic surveillance devices, bought tiie property in August 1984 and operated until 1998 [Ref. 69, p. 5; 70, pp. 1, 2, 21; 71, p. 2]. Creative Medical Corporation, the building owner since Febmary 1999, manufactures over-the-counter medicines such as cough symp [Ref. 10, p. 67; 43, p. 8; 71, p. 2; 72, p. 3].

When Loprey and Knogo occupied the facility, process and sanitary wastewater was treated in an on-site wastewater treatment plant. The effluent was discharged through sprinklers to irrigate a grassy area in the rear portion of the property [18, p. 8; 43, pp. 8, 88; 69, pp. 5, 7; 71, p. 2]. Knogo operated under UIC pennit 84-0312 [Ref. 60, p. 3; 69, p. 1; 71, p. 2], and was not identified as a significant violator by the PRASA Pretreatment Program from 1990 through1998 [Ref. 42, p. 1]. The liquids used by Knogo included solvents containing methanol, trichlorotrifluoroethane, isopropanol, and toluene. The company also used lead solder to make its cfrcuit boards [Ref. 73, pp. 6, 7]. In June 2000, EPA reported that Knogo used a licensed contractor for off-site disposal of hazardous wastes [Ref. 43, p. 8].

Since beginning its operation in 1999, Creative Medical has not treated wastewater on site [Ref. 43, p. 8; 71, p. 1; 74, p. 1]. Wastewater generated by the company is collected in a tank for off-site disposal by a licensed contractor [Ref. 10, p. 67; 18, p. 8; 43, p. 8]. Wastes that were manifested for off-site disposal, with Creative Medical listed as a small quantity generator, have included waste flammable liquids NOS, ammonia solutions, hypochlorite solutions, corrosive liquids, and non-regulated liquids [Ref. 75, pp. 1 through 10]. Sanitary wastes from the septic tank are removed separately [Ref. 76, pp. 1 through 30]. In August 2001, EQB reported that Creative Medical does not generate hazardous wastes [Ref. 77, p. 3]. However, Creative Medical submitted a Notification of Hazardous Waste Activity to EPA in September 2001 and is currently included in EPA's RCRA hst for Cidra under facility ID 000012573904 [Ref. 47, p. 7; 72, pp. 1, 2, 3].

The former occupants of the CRE site, Loprey and Knogo, were listed in the April 1983 and April 1992 Puerto Rico directories of manufacturers, respectively [Ref. 51, p. 15; 56, p. 20]. Knogo was not included in the lists of Cidra companies that submitted Tier 1 and 2 Reports to EPA in 1993, 1997, or 1998 [Ref. 40, p. 3; 41, p. 6; 64, pp. 7, 8]. Creative Medical was not llsted in the Febmary 2000 or current directories of manufacturers [Ref. 45, p. 23; 46, pp. 2 through 6].

7. Excellent Laundry (EXC) CERCLIS No. PRN000204338

The EXC site is located on Road 172, about 0.3 mile northeast of Cidra Well 4 [Ref. 17, p. 13; 27, p. 3]. Excellent Lamdry has operated in Cidra since about 1970, first in the village and at the current location since approximately 1988. The business operator has always used a petroleum distillate, Exxol D40, as the dry-cleaning solvent, and has never used PCE [Ref. 43, p. 10; 78, pp. 1, 2]. The business used a septic tank in the rear of the facility until recently being hooked up to the public sewer system [Ref. 78, p. 1].

SITE SUMMARY (continued)

EQB performed an inspection of Excellent Laundry in May 1994, and reported that the facility did not have the required UIC permit for its septic tank or an SPCC Plan for a 500-gallon diesel tank observed on site [Ref. 79, p. 1]. EQB re-inspected the facility in May 1995 [Ref. 80, p. 1]. During both inspections, EQB reported that laundry wash waters were gaining access to the floor of the facility, and to the nearby Lago de Cidra via storm water channels [Ref. 79, pp. 4, 5; 80, pp. 1, 2, 3].

Excellent Laundry was not listed in the April 1983, April 1992, Febmary 2000, or current Puerto Rico directories of manufacturers [Ref. 45, p. 23; 46, pp. 2 through 6; 51, p. 32; 56, p. 26]. The company is not included in EPA's RCRA facility list for Cidra [Ref. 47, pp. 11, 12], nor was it included in the lists of Cidra companies that submitted Tier 1 and 2 Reports to EPA in 1993, 1997, or 1998 [Ref. 40, p. 3; 41, p. 6; 64, pp. 7, 8]. Excellent Laundry does not have a UIC permit, and was not identified as a significant violator by the PRASA Prefreatment Program from 1990 through1998 [Ref. 42, p. 1; 59, p. 3].

8. Intemational Dry Cleaners (INT) CERCLIS No. PRN000204340

The INT site is located on Muñoz Rivera Avenue in the village of Cidra, less than 0.1 mile northeast of Cidra Well 4 [Ref. 10, p. 61; 17, p. 15; 27, p. 3]. Dry cleaning has been performed at the facility since approximately 1994. The current operator bought the business in 1996, and leases the building from a private property owner [Ref. 10, p. 61]. Intemational Dry Cleaners uses PCE in diesel-operated machinery, and captures the solvent for reuse. Fihers and spent solvent are periodically removed by a transporter, however, the facihty does not operate under any permits. Intemational does not discharge any waste to the sewer system [Ref. 43, p. 10].

International Dry Cleaners was not llsted in tlie Febmary 2000 or current Puerto Rico directory of manufacturers [Ref. 45, p. 23; 46, pp. 2 through 6]. The company is not included in EPA's RCRA facihty list for Cidra [Ref. 47, p. 13], nor was it included in the hsts of Cidra companies that submitted Tier 1 and 2 Reports to EPA in 1993, 1997, or 1998 [Ref. 40, p. 3; 41, p. 6; 64, pp. 7, 8]. Intemational Dry Cleaners does not have a UIC permit, and was not identified as a significant violator by the PRASA Pretreatment Program from 1990 through1998 [Ref. 42, p. 1; 59, p. 3].

9. Shellfoam Products (SHE) CERCLIS No. PRD987377264

This PRIDCO-owned site is located on A Street in Cidra Industrial Park, about 0.1 mile southeast of Cidra Well 8 [Ref. 17, p. 24; 27, p. 3; 43, pp. 4, 86; 48, p. 1]. PRIDCO constmcted the building in 1968 and leased it to Bersford Shoe Company Inc. for shoe manufacturing from November 1968 until December 1969. The second occupant, Rosan Industries Inc., produced women's stockings at the facility from July 1970 through August 1971 [Ref. 81, p. 6]. The current occupant, Shelfoam Products Inc., has manufactured foam containers from expandable polystyrene at the site since Febmary 1972 [Ref. 81, p. 6; 82, p. 7]. The site is currently on EPA's list of Archived Sites under EPA ID number PRD987377264 [Ref. 17, p. 24].

PRIDCO investigated the site in 1992. Soil samples collected from the lot adjacent to the Shelfoam building in March 1992 indicated the presence of total petroleum hydrocarbons (TPH) at concentrations ranging from 108 to 393 milligrams per kilogram (mg/kg). PRIDCO reported that

SITE SUMMARY (continued)

the results were indicative of environmental contamination [Ref. 81, pp. 7 through 16]. EQB completed a Preliminary Assessment (PA) of the SHE site in July 1992. The EQB inspectors observed that foam particles generated by the manufacturing process are sold to be reused for gardening, and cooling water is recycled through the machinery [Ref. 82, pp. 8, 9, 44]. EQB recommended no further action under Superfund because Shelfoam does not generate hazardous wastes [Ref. 82, pp. 1, 14].

In July 1987, Shelfoam closed in place a 10,000-gallon underground storage tank (UST) that had been used for storage of Combustible Bunker C petroleum fuel [Ref. 82, p. 7; 83, pp. 3, 4]. In July 1994, the company notified EQB about the past UST closure [Ref. 83, pp. 1 through 4]. Shelfoam completed soil borings and collected soil samples in the tank vicinity in August 1995 and March 1996. The samples were analyzed for TPH, and the resuhs ranged from non-detect to 152 mg/kg [Ref. 84, pp. 9, 16; 85, pp. 9, 16]. Based on the results, EQB required no further environmental investigation regarding the UST [Ref. 86, p. 2].

An EPA inspection in 2000 indicated that Shelfoam periodically cleans its machinery with degreasing solvents. Poor materials handling and housekeeping practices were observed during the EPA inspection. The only dangerous substance observed on site by EPA was diesel fuel, which was stored in aboveground tank with secondary containment [Ref. 43, p. 13]. Similar observations were made by Region 2 SAT during the ESI/RI field activities in Febmary 2003 [Ref. 10, p. 84; 18, pp. 20, 139 tirough 143].

Shelfoam Products Inc. was listed in the April 1983, April 1992, Febmary 2000, and current Puerto Rico directories of manufacturers [Ref. 45, p. 14; 46, p. 6; 51, p. 23; 56, p. 15]. Shelfoam is not included in EPA's RCRA facihty list for Cidra [Ref. 47, p. 20], nor was it included in the lists of Cidra companies that submitted Tier 1 and 2 Reports to EPA in 1993, 1997, or 1998 [Ref. 40, p. 3; 41, p. 6; 64, pp. 7, 8]. Shelfoam does not have a UIC permit, and was not identified as a significant violator by the PRASA Pretreatinent Program from 1990 through1998 [Ref. 42, p. 1; 59, p. 3].

10. SmithKline Beecham Pharmaceuticals Inc. (SKB) CERCLIS No. PRD090023250

The SKB site is located at Road 172 kilometer 9.1, about 2.7 miles northeast of the groundwater plume [Ref. 17, p. 17; 27, p. 3]. SmithKline companies have manufactured pharmaceutical products at the plant since 1978 [Ref. 45, p. 12; 51, p. 18; 56, p. 11; 87, pp. 2, 9; 88, pp. 9, 17, 19, 20]. The site was listed in the April 1983 Puerto Rico directory of manufacturers as S.K.&F. Co. [Ref. 51, p. 18], and in the April 1992, February 2000, and current directories as SmithKline Beecham Pharmaceuticals Co. [Ref. 45, p. 12; 46, p. 4; 56, p. 11]. The current operating name is SB Pharmco Puerto Rico, hic. [Ref. 89, p. 1; 90, p. 1].

The manufacturing process at the SKB plant does not generate hazardous wastes, however, the facility operates under a RCRA Part A Permit due to hazardous waste generation in its three on-site laboratories and from expired reagents [Ref. 47, p. 19; 87, pp. 2, 3]. The company uses or has used PCE, TCE, methylene chloride, chlorobenzene, and other materials in its laboratories and generates those substances as hazardous wastes [Ref. 87, pp. 2, 3, 4, 11, 12, 13; 91, pp. 1, 2].

SITE SUMMARY (continued)

The SKB plant is hsted as S K & F Co. in EPA's RCRA list under facility ID PRD090023250 [Ref. 47, p. 19]. EQB performed a full RCRA Generator and TSF Inspection at the SKB facility on October 9, 1992. As a result of the inspection, EQB found that the company was not in fiill comphance with RCRA standards [Ref. 87, pp. 1, 5]. The facihty submitted Tier I and 2 Reports to EPA in 1993 and 1997, however, it did not submit Tier 1 and 2 Reports in 1998. Methylene chloride, chloroform, and other substances were reported as wastes generated in 1997 [Ref. 40, p. 3; 41, p. 6; 64, p. 8].

SB Pharmco discharged treated process wastewater to an unnamed stream under National Pollutant Discharge Elimination System (NPDES) Permit PR0021997 until March 2001 [Ref. 89, p. 11; 92, pp. 1, 4; 93, pp. 1, 3]. EQB or EPA performed compliance evaluation inspections with respect to tne NPDES permit in February 1990, November 1993, June 1999, June 2000, and June 2001 [Ref. 93, p. 1; 94, p. 3; 95, p. 1; 96, p. 1; 97, p. 1]. In March 2000, EPA issued SB Pharmco an Administrative Order for violations with respect to the NPDES permit [Ref. 98, pp. 1 through 4]. Since March 2001, SB Pharmco discharges treated process wastewater to the sewer system under Pretreatment Permit GDA-01-505-044 [Ref. 93, p. 3]. SmithKline was not identified as a significant violator by the PRASA Pretreatment Program trom 1990 tiurough1998 [Ref. 42, p. 1].

SB Pharmco is authorized to discharge industrial storm water runoff to the unmamed stream under NPDES Multi-Sector General Permit PRR05A784 [Ref. 93, pp. 1, 3]. A septic tank at tne facihty is regulated under UIC Permit 84-21-0288 [Ref. 59, p. 3; 99, p. 1; 100, p. 1]. EPA performed a Multimedia Inspection of the site with respect to water programs in May 2000. In addition to reporting on the aforementioned discharge permits, EPA reported that the company has its own water supply in the form of two on-site wells [Ref. 89, pp. 1, 12, 13, 20 through 31]. SmithKline maintains Air Permit PFE-21-0996-1021-I-II-III-O for emissions of VOCs and other parameters [Ref. 101, pp. I, 4, 11; 102, pp. 1, 2; 103, pp. 1 tiirough 16]. As a result of a September 1999 inspection, EQB issued SmithKline a Notice of Violation regarding the air permit [Ref. 104, p. 1; 105, pp. 1, 2].

II. Tech Group de Puerto Rico, hic. (TGP) CERCLIS No. PRN000204348

The TGP site is located at Route 1 kilometer 48.7, about 4.4 miles east of the groundwater plume [Ref. 17, p. 19; 27, p. 3]. The original occupant, Boums Puerto Rico Inc., manufactured electrical potentiometers at the plant until 1987 [Ref. 10, p. 63; 106, p. 3]. The current occupant, Tech Group Puerto Rico, has manufactured injection-molded plastic parts for the medical and electronics industries at the plant since 1989 [Ref. 10, pp. 63, 65; 43, p. 14; 107, p. 2].

Boums PR, Inc. was classified as a RCRA large quantity generator (LQG) under Facility ID PRD090057878, and is still included in EPA's RCRA hst for Cidra [Ref. 47, pp. 1, 2; 108, p. 1]. Hazardous wastes generated by Boums PR included 1,1,1-trichloroethane (1,1,1-TCA) and MEK [Ref. 109, pp. 2, 4]. Boums operated an on-site wastewater treatment plant, which included aeration of industrial wastewater and subsequent irrigation of the property with the effluent. In May 1984, EQB cited Boums PR for violations of its effluent limits [Ref. 106, pp. 3, 4, 5]. Boums subsequently agreed to upgrade its wastewater treatment system and meet a compliance schedule dictated by EQB [Ref. 110, pp. 2 through 5]. In 1988, Boums PR performed closure of the treatment plant and shipped 25,000 gallons of nonhazardous sludge to a landfill for disposal [Ref. 111, pp. 1 through 6].

SITE SUMMARY (continued)

Tech Group PR uses the same on-site wastewater treatment plant as Boums PR [Ref. 10, p. 63]. The company cleans its equipment with isopropyl alcohol on a daily basis, and with mineral spirits and acetone on a less frequent basis. Rags from the cleaning activities are discarded with domestic garbage [Ref. 107, p. 2]. The Tech Group PR facility operates electrical generators and maintains two diesel tanks under afr permit PFE-LC-RG-21-0800-0033-I-II-O [Ref. 112, p. 1].

Boums PR Inc. was listed in the April 1983 Puerto Rico directory of manufacturers [Ref. 51, p. 30]. Tech Group was listed in the April 1992 directory as Tech CBI Inc, and in the February 2000 and current directories as Tech Group PR Inc. [Ref. 45, p. 16; 46, p. 4; 56, p. 18]. Tech Group PR is not listed in EPA's RCRA facility list [Ref. 47, p. 20], nor was it included in the lists of Cidra companies that submitted Tier 1 and 2 Reports to EPA in 1993, 1997, or 1998 [Ref. 40, p. 3; 41, p. 6; 64, pp. 7, 8]. The facility does not have a UIC pennit, and was not identified as a significant violator by the PRASA Pretreatment Program from 1990 through1998 [Ref. 42, p. 1; 59, p. 3].

12. Zenith Laboratories Caribe, Inc. (ZEN) CERCLIS No. PRD987377702

The ZEN site is located on A Street in Cidra Industrial Park, about 0.2 mile east of Cidra Well 8 [Ref. 17, p. 21; 27, p. 3; 43, pp. 4, 86]. There are two buildings on site that support manufacturing. Building C-2 was occupied by Omark Antilles, Inc., a manufacturer of electroplated chainsaws, from 1978 until 1985 and by Zenith Laboratories Caribe, Inc. (a.k.a. IVAX Pharmaceuticals), a pharmaceuticals manufacturer, since 1985. Zenith/IVAX has occupied building C-1 since 1983 [Ref. 113, pp. 1, 2]. Zenith/IVAX completed a 30,000-square-foot expansion and fransferred the production of several products to its Cidra facilities in 1999 [Ref. 114, p. 2].

Omark Antilles, Inc. notified EPA that it was a generator of hazardous waste in March 1981 [Ref. 113, pp. 169, 170]. The company, which was classified as a RCRA-LQG, used and generated as waste 1,1,1-TCA and other hazardous chemicals, including chromium hydroxide. Omark generated approximately 1,400 pounds of chromium sludge annually [Ref. 113, p. 2]. EQB perfonned a RCRA inspection of the Omark facillty in May 1984 and found that the site was not in full compliance with RCRA regulations [Ref. 113, pp. 190 through 193]. EQB inspected the facility agin in May 1985 and found Omark to be in compliance [Ref. 113, pp. 230 through 241].

Zenith/IVAX uses methylene chloride and methanol as solvents in its manufacturing processes, and isopropanol to clean the machinery [Ref. 113, p. 2]. The company is classified as a Conditionally Exempt Small Quantity Generator (CESQG) under RCRA and maintains a Hazardous Waste Container Storage Area (HWCSA) on site [Ref. 113, p. 3]. EQB performed RCRA inspections of Zenith in October 1995, October 1997, and November 1998, and found the facility to be in compliance each time [Ref. 113, pp. 98 through 107; 115, pp. 1 through 4]. During pre-CERCLA inspections in February 1999 and May 2000, EQB noted the presence of 55-gallon dmms containing acetonitrile, chloroform, and solvent mixture (methanol, hexane) in the HWCSA and observed stressed vegetation near it [Ref. 113, p. 3; 116, pp. 1 through 5].

There is an old wastewater treatment plant on the ZEN site. PRIDCO personnel inspected the facility in Febmary 2000, and recommended closure of the wastewater treatment plant since it was no longer in use [Ref. 117, pp. 1, 2].

SITE SUMMARY (continued)

Omark Antilles Inc. was listed in the April 1983 Puerto Rico directory of manufacturers [Ref. 51, p. 26]. Zenith Laboratories Caribe Inc. was listed in the April 1992 and Febmary 2000 directories, and IVAX Pharmaceuticals Caribe, Inc. is listed in the current directory [Ref. 45, p. 12; 46, p. 5; 56, p. 12]. Omark (EPA Facility ID PRD091007369) and IVAX (EPA Facility ID PRD987377702) are both listed in EPA's RCRA facility list for Cidra [Ref. 47, pp. 13, 16]. Zenith Laboratories submitted Tier 1 and 2 Reports to EPA in 1993, 1997, 1998, and 1999. Chloroform, methanol, and isopropyl alcohol were reported as wastes generated in 1997 [Ref. 40, p. 3; 41, p. 6; 64, p. 8; 113, pp. 109 through 117]. Zenith Laboratories Caribe, Inc. discharged to the sewer system under PRASA pemit GDA-90-505-013. The facility was identified as a significant violator by the PRASA Pretreatment Program from 1991 through1997 [Ref. 42, pp. 1, 5, 12, 16, 22, 27, 32].

R2-0004585

Document Control No.: SAT.20103.1047.521

SITE ASSESSMENT REPORT:

EXPANDED SITE INSPECTION/REMEDIAL INVESTIGATION

PART I: SITE INFORMATION

1. Site Name/Alias Cidra Groundwater Plume

   Street Road 171 (Avenida Muñoz Rivera)

   City Cidra State PR Zip 00739

2. County Cidra County Code 041 Cong. Dist. N/A

3. CERCLIS ID No. none

4. Block No. various Lot Nos. various

5. Latitude 18° 10' 31.0" N Longitude 66° 09' 43.0" W

   USGS Quad(s) Comerio, PR

6. Approx. size of site 6 acres (approximate extent of plume)

7. Ownership:

   Owner PR Aqueduct and Sewer Authority Tel. No. (787) 756-0630

   Street PO Box 7066 City Santurce State PR Zip 00916

   Years of Ownership 1996-present

8. Operator same (PRASA) Telephone No. same

9. Type of Ownership

   ___ Private ___ Federal X State

   ___ County ___ Municipal ___ Unknown ___ Other_____

10. Owner/Operator Notification on File

    ___ RCRA 3001 ___ Date ___ CERCLA 103c Date _____

    X None ___ Unknown

R2-0004586

11. Permit Information

The site is a groundwater plume site; permit information is not applicable.

12. Site Status

_X_ Active ___ Inactive ___ Unknown

13. Years of Operation: 1996-present

14. Identify the types of waste sources (e.g., landfill, surface impoundment, piles, stained soil, above- or below-ground tanks or containers, land treatment, etc.) on site. Initiate as many waste unit numbers as needed to identify all waste sources on site.

(a) Waste Sources

Waste Unit No.	Waste Source Type	Facility Name for Unit
1	Groundwater plume	Wells: Cidra 3, 4, 6, and 8
2	Contaminated soil	International Dry Cleaners (INT) site

(b) Other Areas of Concern

There were small hits of 1,1-DCE in deep soil (62 feet) and groundwater at the former Zenith Labs (ZEN) site (currently IVAX). Chloroform was detected at 170 ppb in the groundwater sample collected at the TGP site.

Ref. 21, pp. 12, 13, 16; 22, pp. 93, 183, 324; 23, p. 12

15. Describe the regulatory history of the site, including the scope and objectives of any previous response actions, investigations and litigation by State, Local and Federal agencies (indicate type, affiliation, date of investigations).

- Well Closures, PRDOH: PRDOH ordered the following four public supply wells in Cidra to be closed due to PCE contamination: Cidra Well 4 (Calle Padilla Final) in March 1996; Cidra Well 8 (Frente Cementerio) in October 1996; Cidra Well 3 (Planta Alcantarillado) in February 1999; and Cidra Well 6 (Calle Baldorioty) in August 2000 [Ref. 6, p. 1; 7, pp. 2, 3; 8, pp. 2, 3].

- Pre-CERCLIS Screening, EPA: In October 2000, EPA completed a Pre-CERCLIS Screening Report identifying sites in Cidra for further evaluation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). In support of the evaluation, EPA personnel conducted file searches, interviews, and field reconnaissance surveys at 31 sites. Twenty-one sites were recommended for entry into CERCLIS [Ref. 43, pp. 3 through 16].

- ESI/RI, Region 2 SAT: EPA's Region 2 SAT has conducted an Expanded Site Inspection/Remedial Investigation (ESI/RI) of the Cidra Groundwater Plume site. In June 2002, Region 2 SAT collected groundwater samples from the closed wells and 20 other active and inactive wells in Cidra. In January and February 2003, Region 2 SAT investigated 12 industrial sites in Cidra as potential sources of contamination to the groundwater plume. Region 2 SAT completed soil borings at the 12 industrial sites plus two background sites and retrieved soil cores (and a groundwater sample, in one case) from each borehole. Based on field screening of the soil cores and groundwater sample for VOCs, Region 2 SAT selected samples for VOC analysis through CLP. Region 2 SAT also collected sediment samples from drainage channels in Cidra Industrial Park and surface water and sediment samples from Lago de Cidra to evaluate the interconnection between the lake and the groundwater plume [Ref. 10, all pages; 11, pp. 3 through 10; 18, all pages; 19, all pages; 20, p. 1; 21, pp. 2 through 18]. The resuhs of the ESI/RI sampling activities are discussed in Section HI.

a) Is the site or any waste source subject to Petroleum Exclusion? Identify petroleum products and byproducts that justify this decision.

The site is a groundwater plume site delineated by the presence of PCE and related substances in former public supply wells. Therefore, the site and waste sources are not subject to Petroleum Exclusion.

Ref. 6, p. 2; 7, p. 1; 8, p. 2; 9, pp. 1 through 20

b) Has normal farming application of pesticides registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) occurred at the site? Have pesticides been produced or stored at the site? Have there been any leaks or spills of pesticides on site?

Since the site is caused solely by VOC contamination, the question is not applicable. There are agricultural areas in the vicinity of the groundwater plume site, however, the type of pesticide use is unknown. Pesticides regulated under FIFRA are not known to have been produced or stored at the site. Pesticides were not detected in groundwater samples collected by Region 2 SAT.

Ref. 14, pp. 117 through 135, 172 through 179

c) Is the site or any waste source subject to RCRA Subtitle C (briefly explain)?

Neither the site nor any waste source is subject to RCRA Subtitle C. The listed sources are the groundwater plume, which is strictly a CERCLA source, and International Dry Cleaners, which is not regulated as a generator or treatment, storage, disposal facility (TSDF) by EQB or EPA under RCRA. Neither source has had RCRA corrective action activity.

Ref. 47, pp. 1 through 21

d) Is the site or any waste source maintained under the authority of the Nuclear Regulatory Commission (NRC)?

Neither the site nor any waste source is maintained under the authority of the NRC.

Ref. 10, pp. 1 through 62

16. Do any conditions exist on site which would warrant immediate or emergency action?

Region 2 SAT did not observe conditions that warranted immediate or emergency action during the field investigations in June 2002 and January/February 2003.

Ref. 10, all pages

17. Information available from:

Contact Ildefonso Acosta Agency EPA Region 2 Tel. No. (212) 637-4434

Preparer Gerald Gilliland Agency Weston Solutions, Inc. Date: September 2003

PART II: WASTE SOURCE INFORMATION

For each of the waste units identified in Part I, complete the following items.

Waste Unit 1 - Groundwater plume

Source Type

_____	Landfill	_____	Contaminated Soil
_____	Surface Impoundment	_____	Pile
_____	Drums	_____	Land Treatment
_____	Tanks/Containers	X	Other (groundwater plume)

Description:

1. Describe the types of containers, impoundments, or other storage systems (i.e., concrete - lined surface impoundments) and any labels that may be present.

   PRDOH ordered the following four public supply wells in Cidra to be closed due to PCE contamination: Cidra Well 4 (Calle Padilla Final) in March 1996; Cidra Well 8 (Frente Cementerio) in October 1996; Cidra Well 3 (Planta Alcantarillado) in February 1999; and Cidra Well 6 (Calle Baldorioty) in August 2000. Other chlorinated VOCs, including 1,1-DCE and TCE, were also detected in the wells before they were closed. The approximate geographic coordinates of the groundwater plume site are 18° 10' 31.0" N latitude and 66° 09' 43.0" W longitude. The wells are currently inactive.

   Ref. 5, pp. 1, 2; 6, pp. 1, 2; 7, pp. 2, 3, 5, 8; 8, pp. 2, 3; 9, pp. 2, 3, 4, 6 through 10, 14, 17; 10, p. 33; 27, p. 1

2. Describe the physical condition of the containers or storage systems (i.e., rusted and/or bulging drums).

   The wells associated with the groundwater plume are currently inactive. The pumps are still in place, however, the wells are disconnected from electric power supply. Region 2 SAT had to connect a generator to the control boxes to turn on the pumps for sample collection.

   Ref. 10, pp. 4, 6, 10, 25 through 36

3. Describe any secondary containment that may be present (e.g., dmms on concrete pad in building or aboveground tank surrounded by berm).

   Region 2 SAT did not observe secondary containment associated with the groundwater plume during the groundwater sampling activities in June 2002.

   Ref. 10, pp. 25 through 36

Hazardous Waste Quantity

The groundwater plume currently extends across an area of approximately 6 acres. Therefore, the waste quantity is an unknown volume or area greater than zero.

Ref: 27, p. 1; 29, p. 1

Hazardous Substances/Physical State

Analytical results for groundwater samples from the closed public supply wells and two nearby industrial wells indicated the presence of the following hazardous substances:

1,1-DCE
1,1-DCA
Cis-1,2-DCE
Carbon tetrachloride
PCE

The listed compounds were not deteeted above the SQL of 0.5 ug/L in any of four background wells (two inactive public wells, Zapera 1 and Zapera 2, and two active drinking water wells, Villa del Carmen and Pelegrin Santos, are evaluated as background due to similar depths and screened intervals as the wells where observed releases occurred). Since the hazardous substances were detected in groundwater samples, the physical state of the waste is liquid.

Ref: 11, pp. 8, 9, 10; 12, pp. 52, 53, 73 through 80, 88, 89, 131 through 147, 152, 153

PART II: WASTE SOURCE INFORMATION (continued)

For each of the waste units identified in Part I, complete the following items.

Waste Unit 2 - International Dry Cleaners

Source Type

____	Landfill	__X__	Contaminated Soil
____	Surface Impoundment	____	Pile
____	Drums	____	Land Treatment
____	Tanks/Containers	____	Other

Description:

1. Describe the types of containers, impoundments, or other storage systems (i.e., concrete - lined surface impoundments) and any labels that may be present.

   Region 2 SAT completed two soil borings at the INT site on February 9, 2003. Soil cores from the boreholes were screened for VOCs. The field-screening results indicated the presence of PCE, TCE, and trans-1,2-DCE in soils collected from the INT site. The samples where solvents were detected came from depths of 2 to 7 feet, with the highest readings in a 4-foot-depth sample. Region 2 SAT used the field-screening results to select samples for VOC analysis through CLP.

   The CLP analytical resuhs confirm that PCE and related substances are present in soil at the INT site. PCE at 11,000 ug/kg; TCE at 2,800 ug/kg; and cis-1,2-DCE at 5,100 ug/kg were detected in the 4-foot sample. The same compounds were detected in the 7-foot sample at lower concentrations, while just cis-1,2-DCE at 6,700 ug/kg was detected in the 2-foot sample. The levels of PCE, TCE, and cis-1,2-DCE exceed EPA's generic migration-to-groundwater SSLs, and the maximum PCE concentration equals the generic inhalation SSL.

   Ref. 10, pp. 94, 95, 96, 100; 18, pp. 27, 28, 90 through 93, 152, 153; 19, pp. 26, 33 ; 21, pp. 2 through 16; 22, pp. 345, 346, 354, 355, 360; 23, pp. 12, 14

2. Describe the physical condition of the containers or storage systems (i.e., rusted and/or bulging dmms).

   There are no groundwater or runoff containment measures in place at the INT site. Contaminated soil samples were collected at depths ranging from 2 to 7 feet below ground surface. The area where contaminated soil is present is accessible.

   Ref. 10, pp. 94, 95, 96, 100; 18, pp. 27, 28, 90 through 93, 152, 153

3. Describe any secondary containment that may be present (e.g., dmms on concrete pad in building or aboveground tank surrounded by berm).

There is no secondary containment of the contaminated soil at the INT site, as evidenced by the soil boring logs that show no liner in the areas where the ESI/RI sampling documents soil contamination.

Ref. 18, pp. 27, 28, 90 through 93

Hazardous Waste Quantity

The area of contaminated soil is documented by just two borehole locations. Therefore, area or volume of contaminated soil cannot be calculated or estimated. The waste quantity is an unknown area greater than zero. The scope of the ESI/RI sampling did not include an attempt to delineate the full extent of soil contamination.

Ref. 10, pp. 94, 95, 96, 100; 18, pp. 27, 28, 90 through 93, 152, 153; 21, pp. 8, 15; 27; p. 6

Hazardous Substances/Physical State

Analytical results for soil samples collected from the INT site indicated the presence of the following hazardous substances at concenfrations significantly above background and greater than generic SSLs:

Cis-1,2-DCE
TCE
PCE

The listed compounds were not detected above the SQLs in any of five background soil samples. The contaminants were detected in soil samples and the waste source currently being evaluated is contaminated soil, so the physical state of the hazardous substances is solid. However, the substances were probably deposited as hquids since they are solvents used in the dry-cleaning industry.

Ref. 21, pp. 14, 15; 22, pp. 345, 346, 354, 355, 360, 465 through 478

PART HI: EXISTING ANALYTICAL DATA

PREVIOUS SAMPLING

PRASA/PRDOH - The following concentrations, in milligrams per liter (mg/L) were reported for Cidra Wells 3, 4, 6, and before they were closed by **PRDOH** ("NR" indicates that the data was not reported in the available references) [Ref 7, p. 8; 8, p. 2; 9, pp. 1 through 23]:

Well	Date	PCE	1,1-DCE	cis-1,2-DCE	TCE	Carbon Tet.
Cidra 3	3/17/98	0.0073	<0.0005	0.0012	<0.0005	<0.0005
	5/15/98	0.0100	0.0006	0.0014	<0.0005	<0.0005
	6/3/98	0.011	0.0007	0.0016	<0.0005	<0.0005
	8/26/98	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	12/29/98	0.0178	<0.0005	0.0042	0.0005	<0.0005
	1/13/99	0.0085	<0.0005	0.0020	<0.0005	<0.0005
	1/20/99	0.0052	0.0006	0.0007	<0.0005	<0.0005
	1/27/99	0.0074	<0.0005	0.0011	<0.0005	<0.0005
	2/3/99	0.0062	<0.0005	0.0012	<0.0005	<0.0005
	3/4/99	0.0154	<0.0005	0.0024	0.0005	<0.0005
Cidra 4	3/1/96	0.0078	NR	NR	NR	NR
	3/7/96	0.0177	NR	NR	NR	NR
	3/30/96	0.0109	NR	NR	NR	NR
Cidra 6	3/17/98	0.0026	<0.0005	<0.0005	<0.0005	<0.0005
	5/13/98	0.0028	<0.0005	0.0006	<0.0005	<0.0005
	8/26/98	0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	11/11/98	0.0021	<0.0005	0.0005	<0.0005	0.0007
	3/14/99	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	5/11/99	0.0043	<0.0005	0.00071	<0.0005	<0.0005
	8/18/99	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	Oct-Nov 1999	0.0052	<0.0005	0.0012	<0.0005	NR
	Apr-Jun 2000	0.0083	0.0051	<0.0005	<0.0005	NR
	Apr-Jun 2000	0.0112	<0.0005	0.0165	NR	NR
	Jul-Sep 2000	0.0128	<0.0005	0.0009	0.0006	NR
	Jul-Sep 2000	0.0111	<0.0005	0.0010	0.0005	NR
Cidra 8	4th Qtr 1995	0.0038	NR	NR	NR	NR
	1st Qtr 1996	0.0075	NR	NR	NR	NR
	2nd Qtr 1996	0.0160	NR	NR	NR	NR
	3rd Qtr 1996	0.0034	NR	NR	NR	NR
	7/22/96	0.0029	0.0014	<0.0005	<0.0005	<0.0005

ESI/RI SAMPLING RESULTS

Region 2 SAT has completed ESI/RI sampling activities in connection with the Cidra Groundwater Plume site, as discussed below.

Groundwater Sampling, June 2002 - From June 10 to June 17, 2002, Region 2 SAT collected groundwater samples from the four closed public supply wells and 20 other active and inactive wells in Cidra [Ref. 10, pp. 2 through 60; 11, pp. 2 through 10]. The samples were analyzed by a CLP laboratory for Target Compound List (TCL) organic parameters, including low-concentration VOCs, and Target Analyte List (TAL) metals and cyanide [Ref. 11, p. 2]. The groundwater sample locations are shown in Figure 2.

PCE was detected in the closed wells at concentrations ranging from 0.64 ug/L to 12 ug/L, and was also detected in two industrial/potable supply wells and three industrial wells. Related chlorinated solvents, including 1,1-DCE; 1,1-DCA; cis-1,2-DCE; carbon tetrachloride; and TCE, were also detected in groundwater samples. The MCLs for PCE (5 ug/L) and 1,1-DCE (7 ug/L) were exceeded, however, the exceedances did not occur in active drinking water wells [Ref. 11, pp. 8, 9; 12, pp. 61, 62, 65, 73, 74, 76, 77, 79, 80, 86, 131, 132, 134, 135, 137, 138, 140, 141, 152, 153; 13, pp. 5, 6, 8]. Other VOCs were also detected, in most cases at estimated concentrations below the SQLs [Ref. 12, pp. 43 through 101, 131 through 168].

Table 1 provides a summary of the groundwater VOC analytical data for samples that showed detections above SQLs. Background concentrations, MCLs, and Removal Action Levels (RAL) are also included in the table.

The groundwater samples were also analyzed for SVOCs, pesticides, PCBs, and inorganic parameters [Ref. 11, pp. 2, 3, 4]. There were no detections of SVOCs, pesticides, or PCBs above SQLs [Ref. 14, pp. 60 through 135, 148 through 179]. Inorganic parameters were not detected above MCLs in the groundwater samples, except thallium, which was reported at estimated concentrations above the MCL (2 ug/L) but below the CRDL (10 ug/L) in three samples [Ref. 13, pp. 3, 4; 15, pp. 40 through 72; 16, p. 2]. Thallium is not known to be associated with the groundwater plume site.

Field Screening and Collection of Soil, Sediment, and Surface Water Samples, January-February 2003 - In January and February 2003, Region 2 SAT investigated 12 industrial sites in Cidra as potential sources of contamination to the groundwater plume [Ref. 10, pp. 63 through 109]. Region 2 SAT used direct-push technology to complete soil borings at the 12 industrial sites plus two background sites, and retrieved soil cores (and in one case, a groundwater sample) from each borehole at 5-foot intervals. The soil cores and groundwater sample were then screened for VOCs with the HAPSITE® Headspace Sampling System [Ref. 10, pp. 63 through 109; 18, all pages; 19, all pages; 20, p. 1]. Based on the field-screening results, Region 2 SAT selected samples for VOC analysis through CLP [Ref. 10, pp. 63 through 109; 18, all pages; 19, all pages; 20, p. 1; 21, pp. 2 through 16]. Figure 3 shows the locations of the sites investigated by Region 2 SAT.

The field-screening results indicated the presence of PCE, TCE, and trans-1,2-DCE in soils collected from the INT site. The samples where solvents were detected came from depths of 2 to 7 feet at the INT site, with the highest readings in a 4-foot-depth sample [Ref. 19, p. 26, 33]. Other detections included vinyl chloride in a sample from the CCC site, and 1,1,2,2-tetrachloroethane (1122-TCA) in a sample from the TGP site [Ref. 19, pp. 2, 22]. The field-screening data that was retrieved from the HAPSITE® unit at the conclusion of field activities indicated the presence of other VOCs in soil samples from some sites, mostly at concentrations below 1 ppb, and chloroform in the groundwater sample collected from the TGP site [Ref. 19, pp. 41 through 820]. Table 2 presents a summary of the field-screening data for the samples in which VOCs were detected by the HAPSITE® unit.

Region 2 SAT used the HAPSITE® screening results, particularly the PCE readings mentioned above, to select samples for VOC analysis through CLP. At sites where there were no detections, the CLP samples represent each borehole location and the full depth range [Ref. 19, pp. 2, 22, 26, 33; 21, pp. 2 through 16]. The CLP soil sample locations are shown in Figures 4 through 4E.

The CLP analytical results confirm that PCE and related substances are present in soil at the INT site. PCE at 11,000 ug/kg; TCE at 2,800 ug/kg; and cis-1,2-DCE at 5,100 ug/kg were detected in the 4-foot sample. The same compounds were detected in the 7-foot sample at lower concentrations, while just cis-1,2-DCE at 6,700 ug/kg was detected in the 2-foot sample [Ref. 21, p. 15; 22, pp. 345, 346, 354, 355, 360]. The levels of PCE, TCE, and cis-1,2-DCE exceed EPA's generic migration-to-groundwater SSLs, and the maximum PCE concentration equals the generic inhalation SSL [Ref. 23, pp. 12, 14]. The only other significant concentrations were 1,1-DCE above the generic SSL in a soil sample from the ZEN site, and an estimated concentration for 2-butanone in a sample from the CMC site [Ref. 21, pp. 13, 16; 22, pp. 93, 324; 23, p. 12]. The results also confirmed the presence of chloroform in the groundwater sample from the TGP site [Ref. 21, p. 12; 22, p. 183].

Table 3 presents a summary of the soil analytical data for samples that showed detections above SQLs and significantly above background concentrations. The background data and generic SSLs are also included in the table.

During the field investigation, Region 2 SAT collected two sediment samples from drainage channels in Cidra Industrial Park [Ref. 10, pp. 107, 108, 109; 21, p. 16]. Site-related VOCs were not detected in the drainage channel samples [Ref. 22, pp. 378 through 382]. The sample locations are shown in Figure 4A.

Region 2 SAT also collected surface water and sediment samples from five locations in Lago de Cidra to evaluate the interconnection between the lake and the groundwater plume [Ref. 10, pp. 110 through 115; 21, pp. 17, 18]. Field-screening and CLP analytical results indicated that there were no significant concentrations of site-related VOCs in the lake surface water and sediment samples [Ref. 19, p. 40; 22, pp. 222, 223, 255 through 277, 363 through 373]. The surface water/sediment sample locations are shown in Figure 4E.

PART IV: HAZARD ASSESSMENT

GROUNDWATER ROUTE

1. Describe the likelihood of a release of contaminant(s) to the groundwater as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence and relationship to background.

An observed release of contaminants to groundwater is documented by chemical analysis. From March 1996 to August 2000, PRDOH ordered four public supply wells in Cidra to be closed due to contamination by PCE. Other VOCs, including 1,1-DCE and TCE, were also detected in the wells before they were closed.

In June 2002, EPA Region 2 SAT collected groundwater samples from the closed wells and 20 other active and inactive wells in Cidra. PCE was detected in the four closed wells and two nearby industrial wells at concentrations ranging from 0.64 ug/L to 12 ug/L. The PCE breakdown products 1,1-DCE and cis-1,2-DCE were also detected above SQLs in some of the same closed wells and industrial wells. Chlorinated solvents were not detected at or above the SQL of 0.5 ug/L in any of four background wells (two inactive public wells, Zapera 1 and Zapera 2, and two active drinking water wells, Villa del Carmen and Pelegrin Santos, are evaluated as background due to similar depths and screened intervals as the wells where observed releases occurred). In what appears to be unrelated groundwater contamination, PCE and other VOCs were detected in industrial/potable supply wells located about 3 to 3.5 miles northeast of the site. A summary of groundwater VOC analytical data, including observed release data, is presented in Table 1.

Ref 6, pp. 1, 2; 7, pp. 2, 3, 5, 8; 8, pp. 2, 3; 9, pp. 2, 3, 4, 6 through 10, 14, 17; 10, pp. 2 through 60; 11, pp. 3 through 10; 12, pp. 52, 53, 58, 59, 64, 65, 73 through 80, 85, 86, 88, 89, 131 through 147, 152, 153; 24, pp. 2, 3, 5, 7, 12, 15, 21 through 27, 29, 30, 44, 80, 83, 85, 88; 27, p. 10

2. Describe the aquifer of concern; include information such as depth, thickness, geologic composition, areas of karst terrain, permeability, overlying strata, confining layers, interconnections, discontinuities, depth to water table, groundwater flow direction.

The aquifer of concern in the Cidra area is the Pre-Robles Volcanic Rock that underlies the region. Well data and logs obtained from PRASA, U.S. Geological Survey (USGS), and well owners/operators indicate that active and inactive wells in Cidra are finished in the rock formation, described in well logs mainly as blue, brown, or black volcanic rock. USGS (1971) describes the pre-Robles sequence as sparsely fossiliferous, massive rock including pyroxene andesite pyroclastic rock and lava. Closed and active wells throughout Cidra all are finished in the bedrock aquifer at total depths ranging from 110 to 705 feet below ground surface, with surface casing lengths ranging from 8 to 224 feet.

During the subsurface investigations with direct-push technology, Region 2 SAT drilled through 17 to 73 feet of clay, silty clay, silt, and weathered bedrock minerals before

encountering equipment refusal. Compact material and an increase in weathered bedrock minerals in the deeper intervals might be an indication of approaching the bedrock surface. Region 2 SAT's field investigation results correspond with existing data, which indicate that 9 to 120 feet of clay and 10 to 30 feet of decomposed rock overlie the volcanic bedrock throughout the municipality of Cidra.

Based on well logs, water-bearing zones in the bedrock range from 40 to 360 feet below ground surface in a confined aquifer. Region 2 SAT encountered groundwater at a depth of 47 to 50 feet in one borehole, where equipment refusal was reached. Groundwater flows toward and discharges to Cidra Lake (USGS, 1997).

Ref. 18, pp. 5 through 114; 24, pp. 1 through 46, 59, 64; 25, pp. 1, 13; 27, pp. 1, 2, 10

3. **What is the depth from the lowest point of waste disposal/storage to the highest seasonal level of the saturated zone of the aquifer of concern?**

The depth from the lowest known point of hazardous substances to the highest seasonal level of the aquifer of concem is 0 feet. This measurement is based upon the detection of site-attributable contaminants in groundwater samples from closed public supply wells.

Ref. 1, p. 51600; 12, pp. 52, 53, 58, 59, 64, 65, 73 through 80, 85, 86, 88, 89, 131 through 147, 152, 153

4. **What is the permeability value of the least permeable continuous intervening stratum between the ground surface and the top of the aquifer of concern?**

The least permeable continuous intervening stratum between the groimd surface and the top of the aquifer of concem is silty clay, which has an estimated hydraulic conductivity of 10^{-6} centimeters per second (cm/s).

Ref. 1, p. 51601; 18, pp. 38 through 114

5. **What is the net precipitation at the site (inches)?**

The net precipitation at the site is greater than 30 inches.

Ref. 1, pp. 51598, 51600

6. **What is the distance to and depth of the nearest well that is currently used for drinking purposes?**

The nearest well that is currently used for drinking purposes is the Pepsi industrial/potable supply well, located approximately 0.3 mile east-southeast of the closed Cidra 8 (Frente Cementerio) public supply well. The well is screened in the pre-Robles Volcanic Rock and is 465 feet deep.

Ref. 24, pp. 2, 33 through 38; 27, p. 10

7. If a release to groundwater is observed or suspected, determine the number of people that obtain drinking water from wells that are documented or suspected to be actually contaminated by hazardous substance(s) attributed to an observed release from the site.

Residents of Cidra obtained drinking water from the closed public supply wells (Cidra 3, 4, 6, and 8) until they were closed due to the PCE contamination associated with the Cidra Groundwater Plume site. Analytical data for samples collected in June 2002 document that the wells remain actually contaminated by hazardous substances attributed to the observed release from the site. Therefore, the estimated populations served by those wells at the time of closure are assigned a level (I or II) of contamination based on the lab data, as follows:

Based on 1995 data, 1,240 people were served by groundwater withdrawals in Cidra (the population number is considerably lower than the 5,569 people currently served by four active wells in the Cidra system, and so serves the purpose of providing conservative estimates). Withdrawal data for wells in the Cidra system show that no single well provided more than 40% of the total groundwater supply from 1996 through 1999. Therefore, the groundwater population (i.e., 1,240) is apportioned equally among the active wells in a given year. There were seven active wells in 1996, eleven active wells in 1999, and six active wells in 2000. There was no withdrawal from Cidra 8 throughout the 1990s; therefore, a population of 0 is assigned to that well. The apportioned populations and levels of contamination are presented below:

Well	Year Closed	Total GW Population		Number of Active Wells		Apportioned Population	Level of Contamination
Cidra 4	1996	1,240	÷	7	=	177.1	Level II
Cidra 3	1999	1,240	÷	11	=	112.7	Level I
Cidra 6	2000	1,240	÷	6	=	206.7	Level II
Cidra 8	1996	insufficient data				0	N/A

Ref 26, pp. 1, 6, 9, 18, 33, 42

8. Identify the population served by wells located within 4 miles of the site that draw from the aquifer of concern.

The populations currently served by wells located within 4 miles of the site that draw from the aquifer of concem are:

Distance	Population
0 - ¼ mile	0
>¼ - ½ mile	2,263
>½ - 1 mile	2,811
>1 - 2 miles	1,866
>2 - 3 miles	1,898
>3 - 4 miles	0

Ref 24, p. 2; 27, p. 10; 28, p. 1

State whether groundwater is blended with surface water, groundwater, or both before distribution.

Groundwater drawn from public supply wells operated by PRASA is blended with surface water and groundwater prior to distribution.

Ref 24, p. 2

Is a designated wellhead protection area within 4 miles of the site?

There are designated wellhead protection areas (WHPA) within 4 miles of the site.

Ref. 27, p. 10; 28, pp. 1, 2

Does a waste source overlie a designated or proposed wellhead protection area? If a release to groundwater is observed or suspected, does a designated or proposed wellhead protection area lie within the contaminant boundary of the release?

The waste sources do not overlie the designated WHPAs. The designated WHPAs do not lie within the contaminant boundary of the release.

Ref 27, p. 10; 28, pp. 1, 2

9. **Identify one of the following resource uses of groundwater within 4 miles of the site (i.e., commercial livestock watering, ingredient in commercial food preparation, supply for commercial aquaculture, supply for major, or designated water recreation area, excluding drinking water use, irrigation (5-acre minimum) of commercial food or commercial forage crops, unusable).**

Available background information indicates that groundwater within 4 miles of the site is used as an ingredient in commercial food preparation.

Ref 24, p. 89

R2-0004600

SURFACE WATER ROUTE

10. Describe the likelihood of a release of contaminant(s) to surface water as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence and relationship to background.

An observed release to the surface water pathway is not observed or suspected. In Febmary 2003, Region 2 SAT collected surface water and sediment samples from five locations in Lago de Cidra to evaluate the intercomection between the lake and the groundwater plume. The surface water/sediment sample lpcations are shown in Figure 4E. Field-screening and CLP analytical results indicated that there were no significant concentrations of site-related VOCs in the lake surface water and sediment samples. The distance to surface water from the site is approximately 0.5 mile via the Cidra storm water management system. Based on these factors, an observed release is not considered likely.

Ref. 10, pp. 110 through 115; 19, p. 40; 21, pp. 17, 18; 22, pp. 222, 223, 255 through 277, 363 through 373; 29, pp. 1, 8

11. Identify the nearest downslope surface water. If possible, include a description of possible surface drainage patterns from the site.

Surface water runoff flows from the site location to the Lago de Cidra watershed via the Cidra storm water management system. The nearest downslope surface water is an unnamed lake tributary located approximately 0.5 mile from the site along the drainage pathway. The unnamed tributary flows to Lago de Cidra approximately 0.2 mile downsfream of the PPE, and Lago de Cidra flows to Rio de Bayamón about 2.2 miles downstream of the PPE. Rio de Bayamón completes the 15-mile target distance limit (TDL).

Ref. 27, p. 11; 29, pp. 1, 8

12. What is the distance in feet to the nearest downslope surface water? Measure the distance along a course that runoff can be expected to follow.

The distance to the umamed tributary along the expected runoff course (i.e., the storm water management system along Roads 171 and 172) is approximately 2,640 feet (0.5 mile).

Ref. 29, pp. 1, 8

13. Identify all surface water body types within 15 downstream miles.

Name	Water Body Type	Flow (cfs)	Sahne/Fresh/Brackish
unnamed tributary	minimal stream	0.5	Fresh
Lago de Cidra	small to mod. stream (lake)	16.2	Fresh
Río de Bayamón	small to mod. stream (lake)	19.0	Fresh

Ref. 1, pp. 51613, 51614; 27, p. 11; 29, pp. 1, 11, 12; 30, p. 12

14. **Determine the 2-year, 24-hour rainfall (inches) for the site.**

The 2-year, 24-hour rainfall for the site is approximately 5 inches.

Ref 31, p. 3

15. **Determine size of the drainage area (acres) for sources at the site.**

The drainage area for the Cidra Groundwater Plume site is approximately 6 acres.

Ref 27, p. 1; 29, p. 1

16. **Describe the predominant soil group in the drainage area.**

The predominant soil types encountered by Region 2 SAT in the Lago de Cidra watershed are clay and silty clay. Therefore, the predominant soil group in the drainage area is Soil Group D (fine-textured soils with very low infiltration rates).

Ref 1, p. 51611; 18, pp. 38 through 114; 25, p. 5

17. **Determine the type of floodplain that the site is located within.**

The Cidra Groundwater Plume site is located in an area of minimal flooding outside the boundary of the 500-year floodplain, as designated by Federal Emergency Management Agency (FEMA) on the flood insurance rate map for the area.

Ref 32, pp. 2, 3

18. **Identify drinking water intakes in surface waters within 15 miles downstream of the point of surface water entry. For each intake identify: the name of the surface water body in which the intake is located, the distance in miles from the point of surface water entry, population served, and stream flow at the intake location.**

Intake	Distance	Population Served	Flow (cfs)
Lago de Cidra Dam	2.2 miles	30,149	16.2

Ref 24, p. 2; 27, p. 11; 29, p. 12

19. **Identify fisheries that exist within 15 miles downstream of the point of surface water entry. For each fishery specify the following information:**

Fishery Name	Water Body Type	Flow (cfs)	Saline/Fresh/Brackish
Lago de Cidra	small to mod. stream (lake)	16.2	Fresh

Ref. 10, p. 113; 27, p. 11; 34, pp. 1, 2

20. **Identify surface water sensitive enyironments that exist within 15 miles of the point of surface water entry.**

Wetiands are not mapped in Cidra, however, habitats for endangered and threatened species are documented along the surface water pathway.

Environment	Water Body Type	Flow (cfs)	Distance from PPE
State-listed threatened species habitat in Lago de Cidra			
	small to mod. stream	16.2	0.9 mile
Federal-listed endangered species habitat in Rio de Bayamón			
	small to mod. sfream	19.0	2.7 miles

Ref 27, p. 11; 35, p. 1; 36, pp. 1, 18

21. **If a release to surface water is observed or suspected, identify any intakes, fisheries, and sensitive environments from question Nos. 18-20 that are or may be actually contaminated by hazardous substahce(s) attributed to an observed release of from the site.**

A release to surface water is not observed or suspected; see Question 10 for a description of the likelihood of a release.

Intake: not subject to site-attributable actual contamination

Fishery: not subject to site-attributable actual contamination

Sensitive Environment: not subject to site-attributable actual contamination

Ref 10, pp. 110 through 115; 19, p. 40; 21, pp. 17, 18; 22, pp. 222, 223, 255 through 277, 363 through 373

22. **Identify whether the surface water is used for any of the following purposes, such as: irrigation (5 acre minimum) of commercial food or commercial forage crops, watering of commercial livestock, commercial food preparation, recreation, potential drinking water supply.**

Surface water withdrawals from Lago de Cidra are used for watering of commercial livestock.

Ref 33, pp. 5, 24

SOIL EXPOSURE PATHWAY

23. **Determine the number of people that occupy residences or attend school or day care on or within 200 feet of observed contamination.**

The property on which soil contamination is documented (i.e., the INT site) is strictly commercial. There are no people who occupy residences, attend school, or attend day care on the property.

Ref. 10, pp. 61, 62, 154, 158

24. **Determine the number of people that regularly work on or within 200 feet of observed contamination.**

Three people regularly work on or within 200 feet of the observed contaniination.

Ref. 10, pp. 61, 62, 154, 158

25. **Identify terrestrial sensitive environments on or within 200 feet of observed contamination.**

There are no terrestrial sensitive environments on or within 200 feet of observed contamination.

Ref. 36, pp. 1, 18

26. **Identify whether there are any of the following resource uses, such as commercial agriculture, silviculture, livestock production or grazing within an area of observed or suspected soil contamination.**

There are no resource uses within the area of observed soil contamination.

Ref. 10, pp. 61, 62, 154, 158

AIR PATHWAY

27. **Describe the likelihood of release of hazardous substances to air as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence and relationship to background.**

A release of hazardous substances to air is not observed or suspected. Air sampling was not conducted in connection with the Cidra Groundwater Plume site.

Ref. 10, pp. 1 through 116

28. **Determine populations that reside within 4 miles of the site.**

Distance	Population
On site	0
>0 - ¼ mi	773
>¼ - ½ mi	2,757
>½ - 1 mi	4,015
>1 - 2 mi	9,644
>2 - 3 mi	14,766
>3 - 4 mi	20,819

Ref. 37, p. 1

29. **Identify sensitive environments, including wetlands and associated wetlands acreage, within 4 miles of the site.**

Wetlands are not mapped in Cidra, however, habitats for endangered and threatened species are documented within a 4-niile radius of the site.

Distance	Wetlands Acreage	Sensitive Environments
0 - ¼ mi	information not available	Federal-listed endangered species habitat
>¼ - ½ mi	information not available	None identified
>½ - 1 mi	information not available	Federal-listed endangered species habitat
>1 - 2 mi	information not available	State-listed threatened species habitat Federal-listed endangered species habitat
>2 - 3 mi	information not available	None identified
>3 - 4 mi	information not available	State-listed threatened species habitat

Ref. 27, p. 10; 35, p. 1; 36, pp. 1, 18, 19

30. **If a release to air is observed or suspected, determine the number of people that reside or are suspected to reside within the area of air contamination from the release.**

A release of hazardous substances to air is not observed or suspected; see Question No. 27 for a description of the likelihood of a release.

31. **If a release to air is observed or suspected, identify any sensitive environments, listed in question No. 29, that are or may be located within the area of air contamination from the release.**

A release of hazardous substances to air is not observed or suspected; see Question No. 27 for a description of the likelihood of a release.

R2-0004606

REFERENCES

1. U.S. Environmental Protection Agency (EPA). Hazard Ranking System, 40 CFR Part 300, Appendix A, 55 FR 51532. Federal Register. December 14, 1990. [137 pages]

2. EPA. Superfimd Chemical Data Matrix, SCDM Data Version: JUN96, Appendix B Tables. Office of Emergency and Remedial Response (OERR). June 1996. [90 pages]

3. Hemández, Nereida, Puerto Rico Environmental Quality Board (EQB). Fax to Jorge Quiñones, Weston Solutions, inc. (WESTON), Re: County FIPS Codes of Puerto Rico. September 5, 2002. [1 page]

4. U.S. Department of the Interior Geological Survey (USGS). Comerio Quadrangle, Puerto Rico, 7.5-Minute Series (Topographic). 1957, photorevised 1982. [1 page]

5. Gilliland, Gerald, WESTON. Latitude and Longitude Calculation Worksheet, Cidra Groundwater Plume. March 13, 2003. [2 pages]

6. Feliciano de Melecio, Carmen, Puerto Rico Department of Health (PRDOH). Letter to Perfecto Ocasio, Puerto Rico Aqueduct and Sewer Authority (PRASA), Re: Cidra Well 3, System: Urban Cidra, PWSID: 0004695. December 16, 1998. [4 pages]

7. Horta Cruz, Hemán, PRDOH. Letter with attachments to Oriando Colón, PRASA, Re: Notification of Violation 053-99, Cidra Well 3 (Planta Alcantarillado), PWS I.D. #000-4695, MCL Violation - VOC Regulations. February 19, 1999. [10 pages]

8. Maldonado Negrón, Roberto, Water Company of Puerto Rico. Fax to Sebastien Desanlis, Subject: Notification of Violation 137-00, Urban Cidra System. August 29, 2000. [3 pages]

9. Gilliiand, Gerald, WESTON. Project Note to Cidra Groundwater Plume site file, Subject: Attached Lab Data - Cidra Wells 3, 4, 6, and 8. March 14, 2003. [23 pages]

10. WESTON. Site Logbook No. SAT.047.001, Cidra Groundwater Plume; with attached Photograph Log. June 10, 2002 - February 14, 2003. [158 pages]

11. Gilliiand, Gerald, WESTON. Transmittal Letter to Ildefonso Acosta, EPA, Subject: [Enclosed] Sampling Trip Report - Groundwater Sampling, Cidra Groundwater Plume, Cidra PR. June 28, 2002. [36 pages]

12. Trotter, Janet, Region 2 ESAT/RSCC. Record of Communication to Dennis Foerter, WESTON, Subject: [Enclosed] Quality Assured Data, Cidra Groundwater Plume 30582 Librty Org LC Voa 33 Water. August 22, 2002. [169 pages]

13. EPA. Ground Water & Drinking Water, Current Drinking Water Standards. Office of Water; http://www.epa.gov/safewater/mcl/html. Printed August 8, 2002. [12 pages]

REFERENCES (continued)

14. Trotter, Janet, Region 2 ESAT/RSCC. Record of Communication to Dennis Foerter, WESTON, Subject: [Enclosed] Quality Assured Data, Cidra Groundwater Plume 30582 Org Librty 27 Water. August 23, 2002. [179 pages]

15. Trotter, Janet, Region 2 ESAT/RSCC. Record of Communication to Dennis Foerter, WESTON, Subject: [Enclosed] Quality Assured Data, Cidra Groundwater Plume 30582 Librty lnorg 27 Water. August 5, 2002. [73 pages]

16. EPA. Quick Reference Fact Sheet: Multi-Media, Multi-Concentration, Inorganic Analytical Service for Superfund (ILM 04.1)*. Office of Solid Waste and Emergency Response (OSWER) publication 9240.0-09-FSD. February 2000. [4 pages]

17. EPA. CERCLIS Hazardous Waste Sites: Caribbean Manufacturing Co.; CCL Label de Puerto Rico; Cidra Convention Center; Cidra Metallic Caskets; CMM Laundry; Creative Medical Corp.; Excellent Laundry; Intemational Dry Cleaners; Smithkline Beecham Pharmaceuticals Inc.; Tech Group de Puerto Rico, Inc.; and Zenith Laboratories Caribe, Inc.; and Archived Sites: Shellfoam Products. Office of Emergency and Remedial Response at http://www.epa.gov/superfund/sites. Printed March 28 and April 1, 2002. [24 pages]

18. Mello, Gilberto, WESTON. Site Logbook No. SAT.047.002, Cidra Groundwater Plume; with attached Boring Logs and Photograph Log. January - February 2003. [173 pages]

19. Schkolovyi, Tamra, WESTON. Site Logbook No. SAT.047.003, HAPSITE Logbook, Cidra Groundwater Plume; with attached HAPSITE® data. January - February 2003. [820 pages]

20. INFICON. HAPSITE® Field-Portable Headspace Sampling System, fact sheet and specifications. 1999. [2 pages]

21. Gilliland, Gerald V., WESTON. Transmittal Letter to Ildefonso Acosta, EPA, Subject: [Enclosed] Sampling Trip Report - Soil/Surface Water/Sediment Sampling, Cidra Groundwater Plume, Cidra, PR. February 21, 2003. [45 pages]

22. Trotter, Janet, Region 2 ESAT/RSCC. Record of Communication to W. Scott Butterfield, WESTON, Subject: [Enclosed] Quality Assured Data, Cidra Groundwater Plume 31383 Ceimic Org 59S/14W. April 16, 2003. [479 pages]

23. EPA. Soil Screening Guidance: Technical Background Document, EPA/540/R95/128; excerpts. Office of Solid Waste and Emergency Response. May 1996. [20 pages]

24. Gilliland, Gerald, WESTON. Project Note to Cidra Groundwater Plume site file, Subject: Geology/Aquifer of Concern, Water Supply, and Groundwater Use in Cidra; with attachments. September 20, 2002. [90 pages]

REFERENCES (continued)

25. Ramos-Ginés, Orlando, USGS. Water Balance and Quantification of Total Phosphoms and Total Nitrogen Loads Entering and Leaving the Lago de Cidra, Central Puerto Rico. Water-Resources Investigations Report 96-4222. 1997. [28 pages]

26. Giliiland, Gerald, WESTON. Project Note to Cidra Groundwater Plume site file, Subject: Populations Apportioned to Closed Public Supply Wells; with attachments. July 11, 2003. [58 pages]

27. WESTON. Figure 1: Site Location Map; Figure 2: Well Sample Location Map, June 2002; Figure 3: Site Investigation Locations; Figures 4, 4A through 4E: Sample Location Maps, January/Febmary 2003; Figure 5: Four-Mile Radius Map; and Figure 6: Fifteen-Mile Surface Water Pathway Map, Cidra Groundwater Plume, Cidra, Puerto Rico. July 2003. [11 pages]

28. Giliiland, Gerald, WESTON. Project Note to Cidra Groundwater Plume site file, Subject: Distance Ring Populations - Potential Contamination Level. July 25, 2003. [I page]

29. Gilliland, Gerald, WESTON. Project Note to Cidra Groundwater Plume site file, Subject: Distance to Surface Water, Probable Point of Entry, Stream Flow, and Drainage Area; with attachments. March 20, 2003. [12 pages]

30. Diaz, Pedro L., et al, USGS. Water Resources Data, Puerto Rico and the U.S. Virgin Islands, Water Year 2001. Water-Data Report PR-01-1; excerpts. 2002. [12 pages]

31. Miller, John F., U.S. Weather Bureau. Two- to Ten-Day Rainfall for Retum Periods of 2 to 100 Years in Puerto Rico and Virgin Islands. Weather Bureau Technical Paper 53; excerpts. 1965. [3 pages]

32. Federal Emergency Management Agency (FEMA). Flood Insurance Rate Map, Commonwealth of Puerto Rico, Community-Panel Number 720000 0174 B (Panel 174 of 325); excerpts. July 19, 1982. [3 pages]

33. Molina-Rivera, Wanda L., USGS. Estimated Water Use in Puerto Rico 1995. Open-Flle Report 98-276-A. 1998. [28 pages]

34. Puerto Rico Fishing & Outdoors. Fresh Water Fishing in Puerto Rico. Internet sitename http://fishingpr.8k.com. Printed September 6, 2002. [2 pages]

35. Snyder, Scott, Region 2 Site Assessment Team (SAT). Telecon Note, conversation with Charlle Storrs, U.S. Fish and Wildlife Service, Subject: NWI Coverage for Central Puerto Rico. September 23, 2002. [2 pages]

36. Gilllland, Gerald, WESTON. Project Note to Cidra Groundwater Plume site file, Subject: Sensitive Environments; with attachments. March 14, 2003. [19 pages]

REFERENCES (continued)

37. Giliiland, Gerald, WESTON. Project Note to Cidra Groundwater Plume site file, Subject: Estimated Populations Within 4 Miles of Site; with attachment. March 14, 2003. [4 pages]

38. López, Francisco J. and Victor Rivera Morales, Puerto Rico Industrial Development Company (PRIDCO). Memorandum to Jorge Boj, Re: Environmental Evaluation Report, Caribbean Manufacturing Corp., Building: T-1472-0-91-01 and 02, L-391, Cidra, PR, Case 98/106. March 21, 2000. [8 pages]

39. Rodriguez, Igdalie and Victor Rivera Morales, PRIDCO. Memorandum to Maritza González, Re: Environmental Evaluation Report, Mentor Caribe, Inc., T-1392-0-86, Cidra, PR, Case 99/028. June 4, 1999. [10 pages]

40. EPA. hdustries that Submitted Tier 1 and 2 Reports, Sectlon 312 SARA Title III Puerto Rico 1997. [7 pages]

41. EPA. Puerto Rico Sectlon 312 Tier 1 and 2 Reports 1998. [13 pages]

42. Gilliland, Gerald, WESTON. Project Note to Cidra Groundwater Plume site file, Subject: Attached excerpts from PRASA Pretreatment Program Violator Reports 1990-1998. March 14, 2003. [37 pages]

43. WESTON. Pre-CERCLIS Screening Report, Puerto Rico Well Field Survey Project, Cidra, Puerto Rico. October 2000. [124 pages]

44. Snyder, Scott, Region 2 SAT. Site Logbook No. SAT.058.001, Rexam Medical Packaging, Cidra, PR. August 22, 2002. [14 pages]

45. PRIDCO. Puerto Rico Directory of Plants; excerpts. Office of Economic Research. February 2000. [27 pages]

46. PRJDCO. Plants Operating in Puerto Rico by its Geographic Location; excerpts. Intemet sitename www.pridco.com. Printed March 2003. [6 pages]

47. EPA. RCRAINFO Query Results, County Name: Cidra, PR. Envirofacts Warehouse. March 27, 2002. [21 pages]

48. Carlo, Luis A. and Anibal Vélez, PRIDCO. Memorandum to Femanda Román, Subject: Porsche Sportswear, Inc., Cidra, Puerto Rico, Environmental Problem. July 2, 1986. [18 pages]

49. Vélez, Anibal, PRIDCO. Memorandum to Femanda Román, Subject: Porsche Sportswear, hc., Bldg. T-0606-0-66, Cidra, Puerto Rico, Case # 87-198. March 21, 1988. [4 pages]

50. Gómez, Lourdes M., PRIDCO. Letter to Hector Pagán, CCL Label de PR, Re: T-0606-1-69 and T-0606-0-66, Cidra, Puerto Rico. November 29 1996. [2 pages]

R2-0004610

REFERENCES (continued)

51. Economic Development Administration. Puerto Rico Directory of Manufacturers, excerpts. Office of Economic Research. April 1983. [33 pages]

52. Society Brand Industries. Letter to Rafael Ignacio, PRIDCO, Subject: odor and noise issues at the Porsche plant in Cidra, PR. January 12, 1987. [3 pages]

53. Román, Femanda, PRIDCO. Memorandum to Zwinda Terán, Subject: Porsche Sportswear, inc. March 17, 1988. [1 page]

54. Chévere, Iris M., Envirolabs Inc. Letter to Luis Carlo, PRIDCO, Re: Enclosed results of analyses. June 26, 1989. [10 pages]

55. Riviera, Pedro José, PRIDCO. Environmental Evaluation Report, Project ID: T-0606-0-66, Cidra, Puerto Rico, Code 871-198. September 28, 1989. [1 page]

56. Economic Development Administration. Puerto Rico Directory of Manufacturers, excerpts. Office of Economic Research. April 1992. [32 pages]

57. Gilliland, Gerald, WESTON. Project Note to Cidra Groundwater Plume site file, Subject: CCL Label de PR. February 7, 2003. [40 pages]

58. EPA. Acknowledgment of Notification of Hazardous Waste Activity, CCL Label de PR Inc; with attached notification. March 9, 1998. [3 pages]

59. Gilliiand, Gerald, WESTON. Project Note to Cidra Groundwater Plume site file, Subject: UIC Permits - Cidra. March 14, 2003. [3 pages]

60. Vázquez Femández, Carmelo, EQB. Memorandum to Marta J. Martinez Román, Re: CCL Label de Puerto Rico, Cidra, Puerto Rico. September 18, 2001. [10 pages]

61. Vázquez Femández, Carmelo, EQB. Memorandum to Marta J. Martinez Román, Re: CCL Label de Puerto Rico, Cidra, Puerto Rico, PRR 000008565. November 28, 2001. [1 page]

62. Gilllland, Gerald, WESTON. Telecon Note, Conversation with Sonia, Tropical Produce, Inc. Re: Cidra Convention Center site. January 15, 2003. [1 page]

63. Giliiland, Gerald, WESTON. Telecon Note (w/map attached), Conversation with Marta Rodriguez, Centro de Recaudacion de Ingresos Municipales (CRIM), Caguas, PR, Re: Owner of Lot # 275-045-055-42. January 16, 2003. [2 pages]

64. EPA. Zone 1, Section 312 Tiers 1 & 2, 1993. [18 pages]

65. Gilliland, Gerald, WESTON. Project Note to Cidra GW Plume site file, Subject: Logbook for Site Reconnaissance at Cidra Metallic Caskets. April 30, 2002. [8 pages]

R2-0004611

REFERENCES (continued)

66. Gilliiand, Gerald, WESTON. Transmittal Letter to Ildefonso Acosta, EPA, Subject: [Enclosed] Removal Assessment Checklist, Cidra Metallic Casket, Cidra, PR. July 24, 2003. [87 pages]

67. EQB. Administrative Order, Re: Cidra Metallic Casket, Inc., Case No. DL-95-02-B-I-17. August 3, 1995. [7 pages]

68. Giliiland, Gerald, WESTON. Project Note to Cidra Groundwater Plume site file, Subject: CMM Laundry. February 7, 2003. [I page]

69. Garrett, Carlos R., CRG Associates. Letter to Tomás Rivera, EQB, Re: Knogo Caribe, Inc., C-AG-79-0008, UIC 84-0312. July 26, 1988. [9 pages]

70. Knogo Caribe, Inc. (Knogo). Environmental Evaluation, Case CFI No. 84-26-1-106. December 1987. [40 pages]

71. Campos, Luis, Water Management Associates. Closure Plan for Wastewater Treatment Plant, Creative Medical, Inc., Cidra, Puerto Rico. April 1999. [51 pages]

72. EPA. Acknowledgment of Notification of Hazardous Waste Activity, Creative Medical Corp; with attached notification. October 25, 2001. [3 pages]

73. Pérez, Emiliano, Knogo. Memoranda to Carlos Garrett, Subject: lists of materials. November 23, 1987. [8 pages]

74. Santiago, Maria , Creative Medical Corporation (Creative). Letter to Roberto Ayala Prado, EQB, Re: closure of UIC system. July 24, 2000. [I page]

75. Santiago, Maria , Creative. Uniform Hazardous Waste Manifests. March 14, 2000 to December 6, 2001. [10 pages]

76. Metro Pozos, Inc. Receipts for Pumping of Septic Tank at Creative Medical Corp., Cidra. January 5, 2001 to February 13, 2002. [30 pages]

77. Rodriguez, Maricarmen, EQB. Memorandum to Carmelo Vázquez Femández, Israel Tories Rivera, and Manuel Vargas, Re: Creative Medical, Cidra, Puerto Rico. August 22, 2001. [3 pages]

78. Gilliiand, Gerald, WESTON. Project Note to Cidra Groundwater Plume site file, Subject: Excellent Laundry; with attached Phone Conversation Record. Febmary 7, 2003. [2 page]

79. Nieves Rivera, José M., EQB. Memorandum to Wanda Garcia and Francisco Canabai II, Re: Excellent Laundry and Dry Cleaned, Road #172, Km 13.0, Cidra, PR (NF-94-020); with attached Inspection Form and Photographs. May 13, 1994. [5 pages]

R2-0004612

REFERENCES (continued)

80. Nieves, José M., EQB. Memorandum to Roberto Ayala Prado, Re: Excellent Laundry and Dry Cleaners, Road 172/Km 13.0 Cidra/Puerto Rico, NF-94-020; with attached photos. October 3, 1995. [3 pages]

81. Carasquillo, Harold, PRIDCO. Memorandum to Tomás Sanabria, Subject: Cidra Convention Center, hic., Plot: L-274-(A)-73, Lot No. 6, Cidra, Puerto Rico, Case: 921-61. September 17, 1992. [16 pages]

82. Viilegas Henriquez, Enid Y., EQB. Preliminary Assessment, Shelfoam Products, Inc., State Road #171, Km 0.5, Sud Ward, Cidra, Puerto Rico. July 29, 1992. [174 pages]

83. Santiago, Edwin, Shelfoam Products Inc. (Shelfoam). EQB Notification for Underground Storage Tank. July 26, 1994. [5 pages]

84. Santiago, Edwin, Shelfoam. Letter to Lucinia Ghigliotty, EQB, Re: Transmittal of site investigation results. October 19, 1995. [27 pages]

85. Negrón Rodriguez, Anibal and Luis D. Figueroa, Apphed Geosciences and Environmental Services (AGES). Results of a Site Characterization Program, Shelfoam Products, Inc., Cidra, Puerto Rico. June 26, 1996. [29 pages]

86. Ghighotty, Lucinia, EQB. Letter to Edwin Santiago, Shelfoam, Re: Final Closure Report, Shelfoam Products, hic., Road 171 Km 0.5, Cidra, PR, PR 02-94-0159. October 22, 1996. [2 pages]

87. Mariani, Félix M., EQB. Memorandum to Flor L. Del Valle López and Carmelo Vásquez, Re: Inspection Report for Smith Kline Beecham Pharmaceuticals, Cidra, Puerto Rico, PRD0023250; with attachments. December 3, 1992. [20 pages]

88. SB Phannco Puerto Rico, hic. (SBPPRI). Second Amendment, DN-94-0971 (CFI), Revision and Modification of Flexible Operations Plan. November 1998. [124 pages]

89. Garcia Hernández, Wanda E., EQB. Memorandum to José Lajara, Re: Multimedia Inspection, SB Pharmco Puerto Rico, Inc., State Road 172, Km 9.1, Cidra, Puerto Rico, NPDES No. PR0021997. May 23, 2000. [31 pages]

90. Garcia Márquez, Antonio, SBPPRI. Letter to Luz Dary Sánchez, EQB, Re: C-AG-01-21-0004. March 15, 2002. [2 pages]

91. Garcia, José M., SK&F Co. Letter to Miles Morse, EPA, Re: SK&F Co. RCRA Permit No. PRT000040758. March 10, 1982. [3 pages]

92. Harvey, Patrick J., EPA. Letter to Carios A. Acevedo, SBPPRI, Re: Notice of Issuance of Final Pennit Decision, NPDES Pemit No. PR0021997 - SB Pharmco Puerto Rico, hic. December 26, 2000. [86 pages]

REFERENCES (continued)

93. O'Neill, Carlos E., EPA. Letter to José L. Rosado, SBPPRI, Subject: Compliance Evaluation hispection, SB Pharmco - NPDES Pennit No. PR0021997. September 12, 2001. [6 pages]

94. EQB Water Quality Area. Compliance Sampling Report on SK & F Co., Cidra, Puerto Rico, NPDES Pennit PR-0021997. 1990. [20 pages]

95. Kushwara, John S., EPA. Letter to Ismael Guzmán, SBPPRI, Re: Compliance Evaluation Inspection, SB Pharmco (formerly SmithKline Beecham Pharmaceuticals), NPDES Permit No. PR0021997, NPDES Stormwater General Pennit No. PRR00A040. February 4, 1994. [7 pages]

96. Garcia Hemández, Wanda E., EQB. Letter to Patrick Durack, EPA, Re: NPDES Water Compliance Inspection Report, SB Pharmco Co., NPDES Permit No. PR0021997. July 9, 1999. [7 pages]

97. Mazzucca, Henry, EPA. Letter to Carlos Acevedo, SBPPRI, Subject: Comphance Evaluation hispection, SB Pharmco - NPDES Permit No. PR0021997. September 28, 2000. [5 pages]

98. Pavlou, George, EPA. Letter to Carlos Acevedo, SBPPRI, Re: Administrative Order CWA-02-2000-3066, SB Phannco, NPDES Pennit No. PR0021997. March 31, 2000. [8 pages]

99. Marrero Huertas, Jorge, EQB. Authorization to Inject in accordance with the Underground Injection Control Certification Regulation, SmithKline Beecham Pharmaceuticals, UIC-84-0288. June 30, 1998. [I page]

100. Rivera Ramos, Angel, EQB. Authorization to Inject in accordance with the Underground Injection Control Certification Regulation, SmithKline Beecham Pharmaceuticals, Renewal UIC-84-0288. June 9, 2000. [1 page]

101. Marrero Vázquez, Maribelle and Luis Rubén Rodriguez, EQB. Air Quality Operation Permit for a Minor Synthetic Emission Source, SmithKline Beecham Pharmaceuticals Co., Cidra, PR. March 31, 1997. [11 pages]

102. Marrero Huertas, Jorge, EQB. Letter to Carlos A. Acevedo Kuinlam, SBPPRI, Subject: Correction Appendix to SmithKline Beecham Pharmaceuticals Co., Cidra, PR, PFE-21-0996-1021-I-II-III-O. May 22, 1997. [2 pages]

103. Garcia Márquez, Antonio, SBPPRI. Letter to José Vega, EQB, Re: Demolition of Two hicineration Units, Permit #PFE-21-1021-I-II-III-O. April 2, 2001. [16 pages]

104. Rodriguez, Otoniel, EQB. Memorandum to Félix Delgado, Re: SmithKline Beecham, Cidra, PR, PFE-21-0996-1021-I-II-III-O. October 8, 1999. [2 pages]

REFERENCES (continued)

105. Muñoz Matos, Elisabeth, EQB. Letter to Carlos A. Acevedo, SBPPRI, Re: Notice of Violation, SmithKline Beecham, Cidra, PR, PFE-21-0996-1021-I-II-III-O. December 1, 1999. [2 pages]

106. Gelabert, Pedro A., EQB. Statement of Facts, Order to Do and to Show Cause, Re: Boums Puerto Rico, Inc. (Cidra, Puerto Rico), Case No: C-AG-76-0016, Ref DL-84-003-032. May 1984. [6 pages]

107. Toro, Zulma M., EQB. Memorandum to Israel Torres Rivéra and Carmelo Vásquez, Re: Inspection Report for Boums Puerto Rico, Inc. (Tech Group PR), Cidra, Puerto Rico, PRD090057878. January 29, 1999. [2 pages]

108. EPA. Detailed Facility Report, Boums Puerto Rico, Inc. Office of Enforcement and Compliance Assurance at http://www.epa.gov/cgi-bin. Printed December 12, 2002. [2 pages]

109. Orlandi, José, Boums PR Inc Cidra (BPRI). Generator Annual Hazardous Waste Reports [EQB fonns] for 1982 and 1983, Generator's EPA ID Number PRD090057878. August 11, 1983 and February 28, 1984. [4 pages]

110. Gelabert, Pedro A., EQB. Resolution and Notification, Order to Do and to Show Cause, Re: Boums Puerto Rico, Inc., Case No. C-AG-76-0016, Ref DL-84-003-032. December 1984. [5 pages]

111. Pérez, Misael, BPRI. Letter with enclosures to Tomás Rivera, EQB, Re: Boums Puerto Rico, hnc., Road #1 Km 48.7, Barrio Beatriz, Cidra Puerto Rico, C-AG, 76-0016. March 16, 1989. [6 pages]

112. Rivera Ramos, Angel, EQB. Letter to Bill Gerard, Tech Group Puerto Rico hnc (TGPRI), Re: Tech Group Puerto Rico, Cidra, Puerto Rico, PFE-LC-RG-21-0800-0033-I-II-O. September 27, 2000. [2 pages]

113. Maldonado, Miguel A., EQB. Letter Report to Denise Zeno, EPA, Re: Pre-CERCLA Screening, Zenith Laboratories Caribe, Inc., Cidra Industrial Park, Cidra, Puerto Rico. September 14, 2000. [253 pages]

114. Area Development Online. Industry Update, December 1999: Zenith Labs completes Puerto Rico expansion. Halcyon Business Publications, Inc. at http://www.area-development.com. Printed July 12, 2002. [2 pages]

115. Vargas Cortés, Manuel, EQB. Memorandum to Israel Torres Rivéra and Carmelo Vásquez, Re: Inspection Report for Zenith Laboratories Caribe, Inc., Cidra, Puerto Rico, PRD987377702. January 7, 1999. [4 pages]

REFERENCES (continued)

116. Maldonado, Miguel A., EQB. Letter Report to Juan E. Dávila, EPA, Re: Pre-CERCLA Screening, Zenith Laboratories Caribe, Inc., Cidra Industrial Park, Cidra, Puerto Rico. November 18, 1999. [11 pages]

117. Garcia Diaz, Jorge L., Martinez Odell & Calabria. Memorandum to Yamil Marrero, PRIDCO, Subject: Zenith Laboratories Inc., Block 195-61 Lot 16, Cidra, PR. February 9, 2000. [2 pages]

Table 1
Summary of Groundwater VOC Analytical Data
Cidra Groundwater Plume site
Cidra, Puerto Rico
June 2002

Sample Number [1] :			B0J40		B0J41		B0J42		B0J58		B0J34		B0J36		B0J37	
Sampling Location :	MCL [2]	RAL [3]	1047-GW09		1047-GW10		1047-GW11		1047-GW27		1047-GW03		1047-GW05		1047-GW-06	
Page numbers, Ref. 12 :			52-53		143-144		146-147		88-89		131-132		134-135		137-138	
Well Name :			Villa del Carmen		Zapera 1		Zapera 2		Pelegrin Santos		Cidra 3		Cidra 6		Cidra 6	
Well Use :			Drinking Water		Inactive		Inactive		Drinking Water		Drinking Water [4]		Drinking Water [4]		Drinking Water [4]	
Sample Status :			BACKGROUND		BACKGROUND		BACKGROUND		BACKGROUND		RELEASE		RELEASE		RELEASE	
Matrix :	Water	Water	Water		Water		Water		Water		Water		Water		Water	
Units :	ug/L [5]	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :			06/10/2002		06/17/2002		06/17/2002		06/12/2002		06/17/2002		06/14/2002		06/14/2002	
Time Sampled :			16:15		15:35		14:35		10:05		10:50		13:15		13:20	
Dilution Factor :			1.0		1.0		1.0		1.0		1.0		1.0		1.0	
Volatile Compound	Criterion	Criterion	Result	Flag [6]	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Trichlorofluoromethane	NL [7]	3000	0.50	U	0.50	U	0.50	U	0.50	U	0.23	J	0.13	J	0.18	J
1,1-Dichloroethene	7	70	0.50	UJ	0.50	U	0.50	U	0.50	UJ	0.29	J	0.50	U	0.50	U
1,1,2-Trichloro-1,2,2-trifluoroethane	NL	1100000	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
1,1-Dichloroethane	NL	NL	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
cis-1,2-Dichloroethene	70	400	0.50	U	0.50	U	0.50	U	0.50	U	**1.0**		0.50	U	0.50	U
Chloroform [8]	80	100	0.50	U	0.50	U	0.50	U	0.50	U	**6.0**		**6.3**		**6.1**	
Carbon Tetrachloride	5	30	0.50	U	0.50	U	0.50	U	0.50	U	**0.55**		0.16	J	0.17	J
Bromodichloromethane	80	100	0.50	U	0.50	U	0.50	U	0.50	U	**0.80**		**0.86**		**0.84**	
Tetrachloroethene	5	70	0.50	U	0.50	U	0.50	U	0.50	U	**10**		**0.64**		**0.72**	

Bold indicates detections above sample quantitation limits (SQL).

[1] Only background samples and samples that showed detections above SQLs are listed.

[2] MCL = Maximum Contaminant Level (EPA, 2002)

[3] RAL = Removal Action Level (EPA, 1997)

[4] Public supply well closed due to site-related PCE contamination; scored for actual contamination.

[5] ug/L = micrograms per liter

[6] Flags: U = not detected; J = estimated concentration

[7] NL = not listed in guidance

[8] Chloroform was also detected in the rinsate and trip blanks.

R2-0004617

48

Table 1
Summary of Groundwater VOC Analytical Data
Cidra Groundwater Plume site
Cidra, Puerto Rico
June 2002

Sample Number [1] :	B0J39		B0J54		B0J51		B0J52		B0J53		B0J46		B0J48		B0J56	
Sampling Location :	1047-GW08		1047-GW23		1047-GW20		1047-GW21		1047-GW22		1047-GW15		1047-GW17		1047-GW25	
Page numbers, Ref. 12 :	140-141		152-153		73-74		76-77		79-80		58-59		64-65		85-86	
Well Name :	Cidra 4		Cidra 8		IVAX 1		IVAX 2		IVAX 2		Ciba-Vision 1		SB Pharmco 2		Millipore Cidra	
Well Use :	Drinking Water [4]		Drinking Water [4]		Industrial		Industrial		Industrial		Indus./Potable		Indus./Potable		Industrial	
Sample Status :	RELEASE		RELEASE		RELEASE		RELEASE		RELEASE		unrelated		unrelated		unrelated	
Matrix :	Water		Water		Water		Water		Water		Water		Water		Water	
Units :	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :	06/14/2002		06/14/2002		06/12/2002		06/12/2002		06/12/2002		06/11/2002		06/12/2002		06/11/2002	
Time Sampled :	14:35		11:30		14:00		14:00		14:05		16:45		17:05		10:45	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0	
Volatile Compound	Result	Flag [6]	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Trichlorofluoromethane	**0.60**		0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	**0.81**	
1,1-Dichloroethene	0.50	U	0.19	J	8.4	J	7.6	J	12	J	0.50	UJ	0.50	UJ	0.50	UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	**5.2**		0.50	U	**87**	**DJ**
1,1-Dichloroethane	0.50	U	0.50	U	0.51		0.62		0.70		0.50	U	0.50	U	0.50	U
cis-1,2-Dichloroethene	0.50	U	**0.95**		0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
Chloroform [8]	6.5		12		12		7.6		7.6		0.50	U	2.6		0.50	U
Carbon Tetrachloride	0.41	J	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
Bromodichloromethane	0.82		0.32	J	0.21	J	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
Tetrachloroethene	**0.74**		**12**		**3.5**		**3.6**		**4.1**		0.50	U	**1.3**		**1.7**	

Bold indicates detections above sample quantitation limits (SQL).
[1] Only background samples and samples that showed detections above SQLs are listed.
[2] MCL = Maximum Contaminant Level (EPA, 2002)
[5] RAL = Removal Action Level (EPA, 1997)
[4] Public supply well closed due to site-related PCE contamination; scored for actual contamination.
[5] ug/L = micrograms per liter
[6] Flags: U = not detected; J = estimated concentration
[7] NL = not listed in guidance
[8] Chloroform was also detected in the rinsate and trip blanks.

R2-0004618

Table 2
HAPSITE Data Summary
Cidra Groundwater Plume site
Cidra, Puerto Rico
January-February 2003

Sample Interval [1] :	CMC-B2-07	CMC-B2-17	CMC-B2-27	CCL-B1-12	CCL-B2-47	CCC-B1-12	CCC-B1-52	CCC-B2-27	CCC-B2-32
Date Retrieved from Borehole :	02/11/2003	02/11/2003	02/11/2003	02/03/2003	02/03/2003	02/06/2003	02/06/2003	02/06/2003	02/06/2003
HAPSITE File ID :	CMCB207	CMCB217	CMCB227	CCLB112	CCLB247	CCCB112	CCCB152	CCCB227	HSSMPL43
Page numbers, Ref. 19 :	125-127	131-133	137-139	158-160	209-211	221-223	245-247	269-271	272-274
Matrix :	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units :	ppbv [2]	ppbv	ppbv	ppby	ppbv	ppbv	ppbv	ppbv	ppbv
Date Analyzed w/HAPSITE :	02/11/2003	02/11/2003	02/11/2003	02/03/2003	02/03/2003	02/06/2003	02/06/2003	02/06/2003	02/06/2003
CLP Sample (y/n) :	n	n	n	n	n	n	n	y	n
Volatile Compound	Result	Result	Result	Result	Result	Result	Result	Result	Result
Vinyl Chloride	nd [3]	nd	nd	nd	nd	nd	nd	**2.76**	nd
Bromomethane	**73.01**	nd	nd	nd	nd	nd	nd	nd	nd
Chloroethane	nd	**8.81**	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	nd	**0.48**	nd	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	nd	nd	**0.63**	nd	nd	**0.34**	**0.32**	nd	nd
1,2-Dichloroethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloroethylene	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	nd	nd	nd	**0.94**	**0.4**	nd	nd	nd	nd
Tetrachloroethylene	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
Isopropylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
n-Propylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
sec-Butylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Butylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	**0.07**

Bold indicates detection of a compound that was not detected in background samples.

[1] Only samples that showed detections above background are listed.

[2] ppbv = parts per billion by volume

[3] nd = not detected

Table 2
HAPSITE Data Summary
Cidra Groundwater Plume site
Cidra, Puerto Rico
January-February 2003

Sample Interval [1] :	CCC-B2-46	CMM-B2-07	CRE-B1-27	CRE-B2-27	CRE-B2-42	iNT-B1-02	INT-B1-07	INT-B2-02	INT-B2-04
Date Retrieved from Borehole :	02/06/2003	02/10/2003	01/29/2003	01/29/2003	01/29/2003	02/09/2003	02/09/2003	02/09/2003	02/09/2003
HAPSITE File ID :	CCCB246	CMMB207	HSSMPL19	HSSMPL27	HSSMPL29	INTB102	INTB107	INTB202	INTB204
Page numbers, Ref. 19 :	281-283	407-409	458-460	491-493	500-502	515-517	518-520	551-553	554-556
Matrix :	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units :	ppbv [2]	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
Date Analyzed w/HAPSITE :	02/07/2003	02/10/2003	02/01/2003	02/01/2003	02/01/2003	02/09/2003	02/09/2003	02/10/2003	02/10/2003
CLP Sample (y/n) :	n	n	n	n	n	n	y	y	y
Volatile Compound	Result	Result	Result	Result	Result	Result	Result	Result	Result
Vinyl Chloride	nd [3]	nd	nd	nd	nd	nd	nd	nd	nd
Bromomethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloroethane	nd	nd	nd	nd	nd	nd	nd	nd	**10.86**
1,1-Dichloroethene	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	nd	nd	nd	nd	nd	**2.68**	nd	**184.31**	**255.71**
Chloroform	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	nd	**0.24**	nd	nd	nd	nd	nd	nd	nd
Benzene	**0.18**	nd	**0.09**	nd	nd	nd	nd	nd	nd
Trichloroethylene	nd	nd	nd	nd	nd	nd	nd	**29.51**	**58.6**
1,3-Dichloropropane	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethylene	nd	nd	nd	nd	nd	nd	**7.32**	**104.96**	**254.84**
1,1,2,2-Tetrachloroethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
Isopropylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
n-Propylbenzene	nd	nd	nd	**0.02**	**0.02**	nd	nd	nd	nd
1,3,5-Trimethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
sec-Butylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Butylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd

Bold indicates detection of a compound that was not detected in background samples.
[1] Only samples that showed detections above background are listed.
[2] All results are in parts per billion by volume (ppbv).
[3] nd = not detected

R2-0004620

57

Table 2
HAPSITE Data Summary
Cidra Groundwater Plume site
Cidra, Puerto Rico
January-February 2003

Sample Interval [1] :	SHE-B2-02	SHE-B2-07	SHE-B2-17	SKB-B1-12	SKB-B1-32	SKB-B1-37	SKB-B1-42	SKB-B1-52	SKB-B2-12
Date Retrieved from Borehole :	02/05/2003	02/05/2003	02/05/2003	01/30/2003	01/30/2003	01/30/2003	01/30/2003	01/30/2003	01/30/2003
HAPSITE File ID :	SHEB207	SHEB207B	SHEB217	HSSMPL40	HSSMPL09	HSSMPL36	HSSMPL32	HSSMPL30	SKBB212
Page numbers, Ref. 19 :	578-580	581-583	587-589	599-601	602-604	605-607	608-610	614-616	626-628
Matrix :	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units :	ppbv [2]	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
Date Analyzed w/HAPSITE :	02/05/2003	02/05/2003	02/05/2003	02/02/2003	01/31/2003	02/01/2003	02/01/2003	02/01/2003	02/02/2003
CLP Sample (y/n) :	y	n	y	n	n	n	n	h	n
Volatile Compound	Result	Result	Result	Result	Result	Result	Result	Result	Result
Vinyl Chloride	nd [3]	nd	nd	nd	nd	nd	nd	nd	nd
Bromomethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloroethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	nd	nd	nd	nd	nd	nd	nd	**0.25**	nd
1,1-Dichloroethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	nd	nd	**0.35**	nd	**0.35**	nd	**0.27**	nd	nd
1,2-Dichloroethane	nd	**0.99**	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloroethylene	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	**0.3**	nd	nd	nd	nd	nd	nd	nd	**0.54**
Tetrachloroethylene	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	nd	nd	nd	nd	nd	nd	nd	nd	nd
Isopropylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
n-Propylbenzene	nd	nd	nd	nd	nd	**0.01**	nd	nd	nd
1,3,5-Trimethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	nd	nd	nd	**0.1**	nd	nd	nd	nd	nd
sec-Butylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd
Butylbenzene	nd	nd	nd	nd	nd	nd	nd	nd	nd

Bold indicates detection of a compound that was not detected in background samples.
[1] Only samples that showed detections above background are listed.
[2] All results are in parts per billion by volume (ppbv).
[3] nd = not detected

Table 2
HAPSITE Data Summary
Cidra Groundwater Plume site
Cidra, Puerto Rico
January-February 2003

Sample Interval [1] :	SKB-B3-02	SKB-B3-42	SKB-B4-07	TGP-B1-47	TGP-B2-02	TGP-GW01	ZEN-B1-57	ZEN-B2-12
Date Retrieved from Borehole :	01/31/2003	01/31/2003	01/31/2003	01/28/2003	01/28/2003	01/28/2003	02/04/2003	02/04/2003
HAPSITE File ID :	HSSMPL02	HSSMPL04	SKBB407	TGBB147	HSSMPL14	HSSMPL11	ZENB157	ZENB212
Page numbers, Ref. 19 :	653-655	671-673	677-679	695-697	698-700	710-712	746-748	758-760
Matrix :	Soil	Soil	Soil	Soil	Soil	Water	Soil	Soil
Units :	ppbv [2]	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
Date Analyzed w/HAPSITE :	01/31/2003	01/31/2003	02/02/2003	02/02/2003	02/01/2003	02/01/2003	02/04/2003	02/04/2003
CLP Sample (y/n) :	n	n	n	n	y	y	n	n
Volatile Compound	Result	Result	Result	Result	Result	Result	Result	Result
Vinyl Chloride	nd [3]	nd	nd	nd	nd	nd	nd	nd
Bromomethane	nd	nd	**59.74**	nd	nd	nd	nd	**98.38**
Chloroethane	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	nd	nd	nd	**0.39**	nd	nd	nd	nd
trans-1,2-Dichloroethene	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	nd	nd	nd	nd	nd	**101.05**	nd	nd
1,2-Dichloroethane	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	nd	nd	nd	nd	nd	nd	**0.2**	nd
Trichloroethylene	nd	nd	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethylene	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	nd	nd	nd	nd	**1.53**	nd	nd	nd
Isopropylbenzene	**0.03**	nd	nd	nd	nd	nd	nd	nd
n-Propylbenzene	nd	nd	nd	nd	nd	nd	nd	nd
1,3,5-Trimethylbenzene	**0.06**	nd	nd	nd	nd	nd	nd	nd
1,2,4-Trimethylbenzene	nd	nd	nd	nd	nd	nd	nd	nd
sec-Butylbenzene	nd	**0.04**	nd	nd	nd	nd	nd	nd
Butylbenzene	nd	nd	nd	nd	nd	nd	nd	nd

Bold indicates detection of a compound that was not detected in background samples.
[1] Only samples that showed detections above background are listed.
[2] All results are in parts per billion by volume (ppbv).
[3] nd = not detected

R2-0004622

Tabie 3
Soil Anaiyticai Data Summary
Cidra Groundwater Plume site
Cidra, Puerto Rico
January-February 2003

Sample Number [1] :	Generic SSLs [2]				B0JA1		B0JA2		B0JA3		B0JC3	
Sampling Location :					1047-BKG-SS01A		1047-BKG-SS01B		1047-BKG-S02		1047-BKG-SS02A	
Page numbers, Ref. 22 :					468-469		471-472		474-475		477-478	
Matrix :	Soil	Soil	Soil	Soil	Soil		Soil		Soil		Soil	
Units [3] :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :					02/6/2003		02/06/2003		02/07/2003		02/07/2003	
Time Sampled :					12:00		12:30		14:35		15:00	
%Moisture :					15		14		22		24	
pH :					7.0		7.0		7.0		7.0	
Dilution Factor :					1.0		1.0		1.0		1.0	
Volatile Compound	Ingestion	Inhalation	Migration to GW (20 DAF)	Migration to GW (1 DAF)	Result	Flag [4]	Result	Flag	Result	Flag	Result	Flag
1,1-Dichloroethene	1,000	70	60	3	12	U	12	U	11	UJ	11	UJ
cis-1,2-Dichloroethene	780,000	1,200,000	400	20	12	U	12	U	11	UJ	11	UJ
2-Butanone	NL [5]	NL	NL	NL	12	U	12	U	11	UJ	11	UJ
Chlorotorm	N/A [6]	N/A	N/A	N/A	12	U	12	U	11	UJ	11	UJ
Trichloroethene	58,000	5,000	60	3	12	U	12	U	11	UJ	11	UJ
Tetrashlcroethene	12,000	11,000	60	3	12	U	12	U	11	UJ	11	UJ

Bold indicates detections above sample quantitation limits (SQL) and significantly above background concentrations.

[1] Only background samples and samples fhat showed detections above SQLs and significantly above background are listed.

[2] SSL = Soil Screening Level (EPA, 1996)

[3] ug/Kg = micrograms per kilogram; ug/L = micrograms per liter

[4] Flags: U = not detected; J = estimated concentration

[5] NL = not listed in guidance

[6] N/A = not applicable; compound was only detected in a water sample

R2-0004623

Table 3
Soil Analytical Data Summary
Cidra Groundwater Plume site
Cidra, Puerto Rico
January-February 2003

Sample Number [1] :	Generic SSLs [2]				B0JA0		B0GF3		B0J74		B0J76	
Sampling Location :					1047-BKG-SS02B		1047-CMC-S01		1047-INT-SS01A		1047-INT-S02	
Page numbers, Ref. 22 :					465-466		324-325		354-355		360-361	
Matrix :	Soil	Soil	Soil	Soil	Soil		Soil		Soil		Soil	
Units [3] :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :					02/07/2003		02/11/2003		02/09/2003		02/10/2003	
Time Sampled :					15:15		10:40		14:55		11:05	
%Moisture :					21		20		26		31	
pH :					7.0		7.0		7.0		7.0	
Dilution Factor :					1.0		1.0		1.0		1.0	
Volatile Compound	Ingestion	Inhalation	Migration to GW (20 DAF)	Migration to GW (1 DAF)	Result	Flag [4]	Result	Flag	Result	Flag	Result	Flag
1,1-Dichloroethene	1,000	70	60	3	11	UJ	10	U	13	U	2200	U
cis-1,2-Dichloroethene	780,000	1,200,000	400	20	11	UJ	1	J	**51**		**6700**	
2-Butanone	NL [5]	NL	NL	NL	11	UJ	**16**	**J**	13	UJ	4700	U
Chloroform	N/A [6]	N/A	N/A	N/A	11	UJ	10	U	13	U	2200	U
Trichloroethene	58,000	5,000	60	3	11	UJ	10	U	**14**		2200	U
Tetrachloroethene	12,000	11,000	60	3	11	UJ	10	U	**78**		2200	U

Bold indicates detections above sample quantitation limits (SQL) and significantly above background concentrations.

[1] Only background samples and samples that showed detections above SQLs and significantly above background are listed.

[2] SSL = Soil Screening Level (EPA, 1996)

[3] ug/Kg = micrograms per kilogram; ug/L = micrograms per liter

[4] Flags: U = not detected; J = estimated concentration

[5] NL = not listed in guidance

[6] N/A = not applicable; compound was only detected in a water sample

R2-0004624

Table 3
Soil Analytical Data Summary
Cidra Groundwater Plume site
Cidra, Puerto Rico
January-February 2003

Sample Number [1] :	Generic SSLs [2]				B0J70		B0J93		B0J97	
Sampling Location :					1047-INT-SS02		1047-TGP-GW01		1047-ZEN-SS01B	
Page numbers, Ref. 22 :					345-346		183-184		93-94	
Matrix :	Soil	Soil	Soil	Soil	Soil		Water		Soil	
Units [3] :	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg		ug/L		ug/Kg	
Date Sampled :					02/10/2003		01/28/2003		02/04/2003	
Time Sampled :					12:10		13:00		15:30	
%Moisture :					34		N/A		33	
pH :					7.0				7.0	
Dilution Factor :					1.0		1.0		1.0	
Volatile Compound	Ingestion	Inhalation	Migration to GW (20 DAF)	Migration tp GW (1 DAF)	Result	Flag [4]	Result	Flag	Result	Flag
1,1-Dichloroethene	1,000	70	60	3	1500	U	10	U	**20**	
cis-1,2-Dichloroethene	780,000	1,200,000	400	20	**5100**		10	U	14	U
2-Butanone	NL [5]	NL	NL	NL	3000	U	10	U	14	UJ
Chloroform	N/A [6]	N/A	N/A	N/A	1500	U	**170**		14	U
Trichloroethene	58,000	5,000	60	3	**2800**		10	U	14	U
Tetrachloroethene	12,000	11,000	60	3	**11000**		2	J	14	U

Bold indicates detections above sample quantitation limits (SQL) and significantly above background concentrations.

[1] Only background samples and samples that showed detections above SQLs and significantly above background are listed.

[2] SSL = Soil Screening Level (EPA, 1996)

[3] ug/Kg = micrograms per kilogram; ug/L = micrograms per liter

[4] Flags: U = not detected; J = estimated concentration

[5] NL = not listed in guidance

[6] N/A = not applicable; compound was only detected in a water sample

R2-0004625

REFERENCE 110

PROJECT NOTE — Region 2 Site Assessment Team

To: Cidra Ground Water Plume — Date: December 17, 2003

From: Michele Capriglione, Weston Solutions, Inc.

Subject: Global Positioning System (GPS) Collection Methodology and Well Depth Determination

For the purpose of surveying the wells sampled in accordance with the Cidra Groundwater Plume site in Cidra, Puerto Rico, Weston Solutions, Inc. rented a Trimble Pro XRS GPS instrument. The critical settings of the GPS unit were set in accordance with the Region 2 SOP. Pathfinder Office software was used as a guide to determine the times of day when we could expect the greatest satellite availability and PDOP readings.

Sampling locations (namely wells and soil borings as well as any outstanding site features) were recorded with the instrument.

All the information collected using the GPS unit was downloaded from the datalogger in accordance with the mentioned Region 2 SOP. All the points collected were corrected using the nearest available base station, located in Isabella, Puerto Rico for increased accuracy. Both a latitude and longitude projection and a NAD 27 projection were generated.

Once the wells were surveyed and corrected the depth of the well was subtracted from the overall elevation of the well to obtain the elevation above mean sea-level (AMSL).

Signature Michele Capriglione

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 111

U.S. Environmental Protection Agency

Region 2 Water

Serving New Jersey, New York, Puerto Rico, US Virgin Islands and 7 Tribal Nations

Biosolids
Dredging
Drinking Water
Estuaries
Great Lakes
Groundwater
Infrastructure
Lakes, Rivers, Streams
Non-point Pollution
Oceans
Permits & Compliance
Stormwater
Waste Water
Water Quality
Watershed Protection
Wetlands

Wellhead Protection Program

- The Safe Drinking Water Act Amendments of 1986 requested states to establish a Wellhead Protection Program (WHP) for ground water-based public water supplies. (The term "wellhead" is essentially synonymous with either a well or the column or "head" of water within a well.)

- Each state was asked to develop, with public participation, a Wellhead Protection Program Plan that was to be reviewed and approved by EPA. The Plan would describe how the state would accomplish the following three tasks:

  1. Determination of a wellhead protection area based on ground water flow and other hydrogeologic information;

  2. Development of an inventory of potential pollution sources within the wellhead protection area;

  3. Management and control of the potential sources of pollution identified within the wellhead protection area. Anticipated management techniques would range from purely voluntary approaches such as outreach and education to regulatory approaches such as ordinances containing land-use prohibitions.

- Between 1990 and 1991, New York, New Jersey, and Puerto Rico submitted Wellhead Protection Program Plans that were approved by EPA. (The U.S. Virgin Islands has not yet submitted its final plan for approval.)

- Since 1992, the states have been receiving EPA funding to implement the various components of wellhead protection. The states are required to submit to EPA a Biennial Wellhead Protection Report, summarizing their accomplishments.

WHP State Contacts:

- New York: Ron Entringer, NYSDOH, 518-458-6743
- New Jersey: Robert Kecskes, NJDEP, 609-777-1053
- Puerto Rico: Roberto Ayala, PREQB, 787-767-8073

Contact: Gould.Stephen@epa.gov

Last updated on Tuesday, April 29th, 2003
URL: http://www.epa.gov/region02/water/whp.htm

R2-0004630

THIS PAGE

INTENTIONALLY

LEFT BLANK

REFERENCE 112

United States Environmental Protection Agency | Solid Waste and Emergency Response | EPA 540-F-94-028
OSWER 9285.7-14FS
PB94-963311
November 1996

Using Qualified Data to Document an Observed Release and Observed Contamination

Office of Emergency and Remedial Response (5204G) — Quick Reference Fact Sheet

This fact sheet discusses the use of the U.S. Enviromnental Protection Agency's (EPA) Contract Laboratory Program (CLP) data and other sources of data qualified with a "J", "U", or "UJ" qualifier or flag. This guidance provides a management decision tool for the opdonal use of qualified data to document an observed release and observed contamination by chemical analysis under EPA's Hazard Ranking System (HRS). The analyte and sanqle matrix (i.e., soil or water) specific adjustment factors given in this fact sheet allow biased CLP and non-CLP data to be adjusted to meet the HRS criteria for documenting an observed release and observed contamination with data that are of known and documented quality. This fact sheet does not address using qualified data for identifying hazardous substances in a source.

INTRODUCTION

The EPA established the HRS to rank hazardoirs waste sites for National Priorities List (NPL) purposes under the Comprehensive Environmental Response, Conqensation, and Liability Act of 1980 (CERCLA) as amended by the Superfimd Amendments and Reauthorization Act of 1986 (SARA). This fact sheet was developed in response to a need to determine the usability of qualified data for site assessment and HRS scoring purposes. This fact sheet illustrates that qualified data are often of sufficiently known and documented quality, and may be used in establishing an observed release ahd observed contamination. This fact sheet explains the rationale for why some qualified data may be used for HRS purposes; presents the background information needed to use qualified data with and without adjustment factors; provides examples of qualified data use; and discusses issues raised during the development of the adjustment factor appmach.

Under the HRS, chemical analytical data are often used to demonstrate an observed release and observed contamination when the release sample concentration is three times the background concentration and background levels are greater than or equal to the appropriate detection limit; or if the release sample concentration is greater than or equal to dre appropriate quantitation limit when background levels are below the appropriate detection limit. The release must also be at least partially attributable to the site under investigation (*Hazard Ranking System, Final Rule*, 40 CFR Part 300, App. A). The data used to establish the release must be of known and documented quality. (*Hazard Ranking System Guidance Manual*, Interim Final, November 1992, OSWER Directive 9345.1-07). Data that cannot be validated may not be of known and documented quality. For more infonnation on observed release and observed contamination, refer to the fact sheets: *Establishing an Observed Release*, September 1995, PB94-963314; *Establishing Areas of Observed Contamination*, September 1995, PB94-963312; and *Establishing Background Levels*, September 1995, PB94-963313. The factor of three represents the minimum difference in sample results that demonstrate an increase in contaminant concentration above background levels, with reasonable confidence.

Although much of the analytical data used for ideatifying an observed release is generated under EPA's CLP, this fact sheet applies to all data regardless of the source of the data (non-CLP data). EPA procedures require that

R2-0004633

CLP analytical data be reviewed, or validated by EPA or third party reviewers, to ensure the data are of known and documented quality and that the determination be discussed in a data validation report that accompanies the analytical results. Based on this data validation, CLP data are classified into three categories: (1) data for which all quality control (QC) requirements have passed contract-required acceptance criteria; (2) data for which at least one QC requirement has not met acceptance criteria; and (3) data for which most or all QC requirements have not met acceptance criteria. Data in the first category typically are not qualified. Data in the second category are often qualified with a "J" qualifier and, as discussed in this fact sheet, are usually usable for HRS purposes. Data in the third category are usually qualified by an "R" qualifier and are not usable for HRS purposes.

Whether data are placed into the second or third category is determined by the amount of bias associated with the analytical results. Data validation evaluates biases resulting from laboratory analytical deficiencies or sample matrices to determine whether the data are usable. Bias indicates that the reported concentration is either higher or lower than the true concentration, and the data validation report identifies the direction of the bias or if the bias is unknown.

The EPA CLP also sets minimum quantitation limits for all analytes; the Contract Required Quantitation Limit (CRQL) for organic analytes and the Contract Required Detection Limit (CRDL) for inorganic analytes. For HRS purposes and for this fact sheet, the term CRQL refers to both the contract required quantitation limit and the contract required detection limit. (40 CFR Part 300, App. A). The CRQLs are substance specific levels that a CLP laboratory must be able to routinely and reliably detect in specific sample matrices (i.e., soil, water, sediment). The CRQLs are usually set above most instrument detection limits (IDLs) and method detection limits (MDLs).

CONSIDERATIONS FOR NON-CLP DATA

Because various laboratories and analytical methods may be used to develop non-CLP data, the following list provides the general information sufficient for determining whether non-CLP data are usable for HRS purposes.

(1) Identification of the method used for analysis. Methods include RCRA methods, SW-846, EPA methods, etc.
(2) Quality control (QC) data. Check each method of analysis to determine if specific QC requirements are defined. If not, seek out another method.
(3) Instrument-generated data sheets for sample results. These data sheets would be the equivalent of Form I's in CLP data.
(4) MDLs and sample quantitation limits (SQLs). The analytical method should provide the MDL. The SQL is an adjusted MDL using sample specific measurements such as percent moisture and weight.
(5) Data validation report.

USE OF BIASED QUALIFIED DATA

In the past, all qualified data have been inappropriately perceived by some people as data of low confidence or poor quality and have not been used for HRS evaluation. With careful assessment of the nature of the analytical biases or QC deficiencies in the data on a case-by-case basis, qualified data can represent an additional resource of data for establishing an observed release. Further, the D.C. District Court of Appeals in 1996 upheld EPA's case-by-case approach to assess data quality. In reviewing the use of qualified data to identify an observed release, the Court stated that if there are deficiencies in the data, "...the appropriate response is to review the deficiencies on a 'case-by-case basis' to determine their impact on 'usability of the data.'" The Court also stated with regards to data quality that, "...EPA does not face a standard of absolute perfection....Rather, it is statutorily required to 'assure, to the maximum extent *feasible*,' that it 'accurately assesses the relative degree of risk' posed by sites" [*Board of Regents of the University of Washington, et al., v. EPA*, No. 95-1324, slip op. at 8-10 (D.C. Cir. June 25, 1996).]

As discussed in this fact sheet, the application of adjustment factors to "J" qualified data can serve as a management decision tool to "adjust," or take into account, the analytical uncertainty in the data indicated by the qualifier, thereby making qualified data usable for HRS evaluation. The use of adjustment factors to account for the larger uncertainty in "J" qualified data is a conservative approach enabling a quantitative comparison of the data for use in documenting an observed release. It should be noted that the use of

R2-0004634

adjustment factors only addresses analytical variability and does not take into account variabilities which may be introduced during field sampling. Some guidelines for using the adjustment factor approach are discussed in Exhibit 1.

CLP QA/QC PROCEDURES

CLP qualifiers are applied to analytical data based on the results of various Quality Assurance/Quality Control (QA/QC) procedures used at the laboratory. EPA analytical methods use a number of QA/QC mechanisms during sample analysis in order to assess qualitative and quantitative accuracy (*Contract Laboratory Program Statement of Work for Inorganic Analyses*, Document No. ILM02.0; *Contract Laboratory Program Statement of Work for Organic Analyses*, Document No. OLM1.8; *Quality Assurance/Quality Control Samples*, Environmental Response Team Quality Assurance Technical Information Bulletin; *Test Methods for Evaluating Solid Waste (SW-846): Physical and Chemical Methods*, Document No. SW-846). To assess data quality, the laboratory uses matrix spikes, matrix spike duplicates, laboratory control samples, surrogates, blanks, laboratory duplicates, and quarterly blind performance evaluation (PE) samples. The Agency assumes that if biases are found in the QA/QC samples, the field sample concentrations may also be biased.

Surrogates are chemically similar to the analytes of interest. They are added or "spiked" at a known concentration into the field samples before analysis. Also, selected target analytes are "spiked" into samples at a specified frequency to assess potential interferences from the sample matrix. These samples are called matrix spikes. Comparison of the known concentration of the surrogates and matrix spikes with their actual analytical results reflects the analytical accuracy. Because the surrogates are expected to behave similarly to the target analytes, they may indicate bias caused by interferences from the sample matrices. These types of interferences from the sample matrix are known as matrix effects (*CLP National Functional Guidelines for Inorganic Data Review*, Publication 9240.1-05-01; *CLP National Functional Guidelines for Organic Data Review*, Publication 9240.1-05; *Test Methods for Evaluating Solid Waste (SW-846): Physical and Chemical Methods*, Document No. SW-846).

Laboratory control samples are zero blind samples which contain known concentrations of specific analytes and are analyzed in the same batch as field samples. Their results are used to measure laboratory accuracy. Blanks are analyzed to detect any extraneous contamination introduced either in the field or in the laboratory.

Laboratory duplicates are created when one sample undergoes two separate analyses. The duplicate results are compared to determine laboratory precision. Quarterly blind PE samples are single blind samples that evaluate the laboratory's capability of performing the specified analytical protocol.

CLP and other EPA analytical methods include specifications for acceptable analyte identification, target analytes, and minimum and maximum percent recovery of the QA/QC compounds. Data are validated according to guidelines which set performance criteria for instrument calibration, analyte identification, and identification and recovery of QA/QC compounds (*CLP Statement of Work and SW-846*). The *National Functional Guidelines for Data Review*, used in EPA validation, was designed for the assessment of data generated under the CLP organic and inorganic analytical protocols (*CLP Statement of Work; National Functional Guidelines for Data Review*). The guidelines do not preclude the validation of field and other non-CLP data. Thus, many EPA Regions have also adapted the *National Functional Guidelines for Data Review* to validate non-CLP data. Data which do not meet the guidelines' performance criteria are qualified to indicate bias or QA/QC deficiencies. The data validation report usually explains why the data were qualified and indicates the bias direction when it can be determined. Validated data that are not qualified are considered unbiased and can be used at their reported numerical value for HRS evaluation.

QUALIFIER DEFINITIONS

Most EPA validation guidelines use the data qualifiers presented in Exhibit 2 (*CLP National Functional Guidelines for Data Review*). Other qualifiers besides these may be used; the validation report should always be checked for the exact list of qualifiers and their meanings.

It should be emphasized that not meeting one or some of the contract required QA/QC acceptance criteria is often an indication that the sample was difficult to analyze, not that there is low confidence in the analysis (i.e., the

R2-0004635

EXHIBIT 1 GUIDELINES FOR THE USE OF ADJUSTMENT FACTORS
• The use of adjustment factors identified in this fact sheet is a management tool for the optional use of "J" qualified data generated under CLP or other sources of data to document an observed release.
• Adjusted qualified data should be used with non-qualified data whenever possible.
• EPA maintains a "worst sites first" policy for placing sites on the NPL (*Additional Guidance on "Worst Sites" and "NPL Caliber Sites" to assist in SACM Implementation*, OSWER Directive 9320.2-07).
• EPA Regions should use adjustment factors with discretion on a case-by-case basis and should always carefully consider the use of qualified data in borderline cases.
• Resampling and/or reanalysis may be warranted if qualified data do not appear adequate to document an observed release.
• EPA Regions may substitute higher adjustment factors based on documented, justifiable reasons but may never use a lower adjustment factor value.
• The adjustment factors should only be applied to analytes listed in the tables. These adjustment factors should not be interpolated or extrapolated to develop factors for analytes not listed in the tables.
• The adjustment factors apply only to "J" qualified data above the CRQL.
• Detection below the CRQL is treated as non-quantifiable for HRS purposes.
• "UJ" data may be used under strict circumstances as explained in this fact sheet.
• The adjustment factors only apply to biased "J" qualified data, not to other "J" qualified data.
• The adjustment factors do not apply to "N", "NJ", or "R" qualified data. These data can not be used to document an observed release for HRS purposes.

analysis is "under control" and can be adequate for HRS decision making). Often "J", "U", and "UJ" qualified data fall into this category.

There are instances when qualified data cannot be used since the uncertainty of the results is unknown. For example, violations of laboratory instrument calibration and tuning requirements, and gross violations of holding times reflect the possibility that the results are of unknown quality (i.e., the analysis is "out of control"). Most often these data would be qualified with an "R" or an "N" (not usable for HRS purposes).

USING "U" QUALIFIED DATA

The "U" qualifier simply means that the reported concentration of the analyte was at or below the CRQL–there can be confidence that the true concentration is at or below the quantitation limit. Therefore, "U" qualified data can be used for establishing background levels. If the release sample concentration is above this level, as specified in the HRS, an observed release can be established. The quantitation limit for that analyte could be used as a maximum background concentration if a more conservative background level seems appropriate.

USING "J" QUALIFIED DATA

As discussed previously, some "J" qualified data can be used in establishing an observed release if the uncertainty in the reported values is documented. Qualified data should always be carefully examined by the Regions to determine the reasons for qualification before use in HRS evaluation. Resampling and/or reanalysis may be warranted if qualified data only marginally document an observed release. Whenever possible, qualified data should be used in conjunction with non-qualified data.

R2-0004636

As described in Exhibit 2, "J" qualified data indicates that bias has been detected in the sample analysis and although the analyte is definitively present, the reported concentration is an estimate. Depending on the reasons and the direction of bias, with the use of adjustment factors, "J" qualified data can represent data of known and documented quality sufficient for use in establishing an observed release and observed contamination under the HRS.

USING "UJ" QUALIFIED DATA

A combination of the "U" and "J" qualifiers indicates that the reported value may not accurately represent the concentration necessary to positively detect the analyte in the sample. Under limited conditions, "UJ" qualified data can be used to represent background concentrations for establishing an observed release. These conditions are: instances when there is confidence that the background concentration is not detectable above the CRQL, the background concentration is biased high, and the sample measurement establishing the observed release equals or exceeds the CRQL.

DIRECTION OF BIAS IN "J" QUALIFIED DATA

It is important to understand the direction of bias associated with "J" qualified data before using the data to document an observed release. Qualified data may have high, low, or unknown bias. A low bias means that the reported concentration is likely an underestimate of the true concentration. For example, data may be biased low when sample holding times for volatile organic compounds (VOCs) are moderately exceeded or when recovery of QA/QC compounds is significantly less than the amount introduced into the sample. Low surrogate recovery would also indicate a low bias. A high bias means the reported concentration is likely an overestimate of the true concentration. For example, data may be biased high when recovery of QA/QC compounds is significantly higher than the amount in the sample. A bias is unknown when it is impossible to ascertain whether the concentration is an overestimate or an underestimate. For example, an unknown bias could result when surrogate recoveries exceed method recovery criteria and matrix spike/matrix spike duplicate compounds below method recovery criteria fail the relative percent difference (RPD) criteria in the same sample.

Despite the bias, certain qualified data may be used without application of adjustment factors for determining an observed release under certain circumstances. The following are examples of using "J" qualified data without adjustment factors:

- Low bias release samples are likely to be underestimates of true concentrations. If the reported concentration of a low bias release sample is three times above unbiased background levels, these release samples would still meet the HRS criteria. The true concentrations would still be three times above the background level.

- High bias background samples are likely to be overestimates of true concentrations. If the reported concentration of unbiased release samples are three times above the reported background concentration, they would still meet the HRS observed release criteria because they would still be three times above the true background concentration.

The above examples show that both low bias "J" qualified release samples at their reported concentrations and high bias "J" qualified background samples may be used at their reported concentrations in these situations.

High bias release samples may not be used at their reported concentrations because they are an overestimate of true concentrations in this situation; resampling and/or re-analysis of the release samples should be considered. The true difference in the background and release concentrations may be less than the HRS criteria for establishing an observed release. The reported concentration for low bias background concentrations may not be compared to release samples because it is most likely an underestimate of background level; the release sample concentration may not significantly exceed the true background concentration. However, in lieu of re-sampling and/or re-analysis, high bias release data and low bias background data may be used with adjustment factors which compensate for the probable uncertainty in the analyses.

ADJUSTMENT FACTORS FOR BIASED "J" QUALIFIED DATA

Applying adjustment factors to "J" qualified data will enable EPA to be more confident that the increase in contaminant concentrations between the background and

R2-0004637

EXHIBIT 2
EPA CLP DATA QUALIFIERS AND THEIR USABILITY FOR DOCUMENTING AN OBSERVED RELEASE

Usable*		Not Usable	
"U"	The substance or analyte was analyzed for, but no quantifiable concentration was found at or above the CRQL (*CLP National Functional Guidelines for Data Review*).	"N"	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification" (*CLP National Functional Guidelines for Data Review*).
"J"	The analyte was positively identified–the associated numerical value is the approximate concentration of the analyte in the sample. The "J" qualifier indicates that one or more QA/QC requirements have not met contract required acceptance criteria, but the instrumentation was functioning properly during the analysis. For example, a "J" qualifier may indicate that the sample was difficult to analyze or that the value may lay near the low end of the linear range of the instrument. "J" data are considered biased, but provide definitive analyte identification (*CLP National Functional Guidelines for Data Review*).	"R"	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte can not be verified and the result has been rejected. A sample result may be qualified with an "*R*" qualifier when the instrument did not remain "in control" or the stability or sensitivity of the instrument were not maintained during the analysis (*CLP National Functional Guidelines for Data Review*).
"UJ"	The analyte was not quantifiable at or above the CRQL. In addition to not being quantifiable, one or more QA/QC requirements have not met contract acceptance criteria (*CLP National Functional Guidelines for Data Review*).	"NJ"	The analysis indicates the presence of the analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration (*CLP National Functional Guidelines for Data Review*).

* Usable under certain circumstances as explained in this fact sheet.

release samples is due to a release. The adjustment factors are applied as "safety factors" to compensate for analytical uncertainty, allowing biased data to be used for determining an observed release. Dividing the high bias result by an adjustment factor deflates it from the high end of the acceptable range towards a low bias value. Multiplying a low bias concentration by an adjustment factor inflates it to the high end of the acceptable range.

Tables 1 through 4 (pages 11 - 18) present analyte and matrix-specific adjustment factors to address the analytical uncertainty when determining an observed release using high bias release samples and low bias background data. The factors are derived from percent recoveries of matrix spikes, surrogates, and laboratory control samples in the CLP Analytical Results Database (CARD) from January 1991 to March 1996. A total of 32,447 samples were reviewed for volatile organic analytes; 32,913 samples for semivolatile organic analytes; 59,508 samples for pesticides/PCB analytes; and 5,954 samples for inorganic analytes.

The range of CARD data for each analyte includes 97 percent of all percent recoveries in the database, discarding outliers. The adjustment factors are ratios of percent recovery values at the 98.5 and 1.5 percentiles. The ratios generally show a consistent pattern.

Adjustment factors have been determined for all analytes in the CLP Target Compound List (organic analytes) and Target Analyte List (inorganic analytes). A tiered approach was used to derive the organic adjustment factors. Percent recoveries for surrogates were

R2-0004638

examined first, followed by matrix spike recoveries. When both matrix spike and surrogate data were available for the same analyte, the larger adjustment factor (representing more extreme high and low percent recoveries) was used. Laboratory control samples were used to calculate the inorganic adjustment factors. Quarterly blind sample data were not used to determine adjustment factors because of the small data set available. A default adjustment factor of 10 was used for analytes when percent recovery data were unavailable.

Adjustment factors do not correct the biased sample concentration to its true value, as such "correction" is not possible. CARD data do not differentiate and quantify individual sources of variation. Instead, the ratio of percentile used to develop adjustment factors represents a "worst-case" scenario. Adjustment factors either inflate background values to the high end of the range or deflate release data to the low end. Therefore, adjustment factors compensate or adjust for the apparent analytical variability when comparing a high bias value to a low bias value (see Exhibit 3).

USING THE ADJUSTMENT FACTORS

This section of the fact sheet demonstrates how adjustment factors can be used with "J" qualified data for HRS scoring purposes, including documentation and detection limit issues.

Documentation Requirements for Using Qualified Data

In using "J" qualified data to determine an observed release, include a discussion of "J" qualifiers from the data validation report and cite it as a reference in the site assessment report or HRS documentation record. If adjustment factors are applied to "J" qualified data, reference and cite this fact sheet. These steps will ensure that the direction of bias is documented and will demonstrate how biases have been adjusted.

Detection Limit Restrictions

Adjustment factors may only be applied to "J" qualified data with concentrations above the CLP CRQL for organics or CRDL for inorganics. "J" qualified data with concentrations below the CRQL can not be used to document an observed release except as specified in the previous section entitled "Using "UJ" Qualified Data."

Application of Factors

Exhibit 3 shows how to apply the factors to "J" qualified data. Multiply low bias background sample results by the analyte-specific adjustment factor or the default factor of 10 when an analyte-specific adjustment factor is not available. The resulting new background value effectively becomes a high bias value that may be used to determine an observed release. Divide high bias release sample data by the analyte-specific adjustment factor or the default factor of 10 when an analyte-specific adjustment factor is not available. The resulting new release sample value effectively becomes a low bias value that may be used to determine an observed release.

Note: High bias background data, low bias release data, and unbiased data may be used at their reported concentrations.

Note: Adjusted release and background values must still meet HRS criteria (e.g., release concentration must be at least three times above background level) to determine an observed release.

Examples Using Trichloroethene in Soil and Water

1. *Release water sample is unbiased, background water sample is unbiased but all data are qualified with a "J" due to an contractual laboratory error not analytical error.*

Background sample value: 12 µg/L (J) no *bias*
Release sample value: 40 µg/L (J) no *bias*

The CRQL for trichloroethene is 10 µg/Kg for soil and 10 µg/L for water.

In this example, the qualification of the data is not related to bias in the reported concentrations. Thus, using adjustment factors is not needed and an observed release is established if all other criteria are met.

2. *Release soil sample data is biased low, background soil sample data is biased high.*

Background sample value: 12 µg/Kg (J) *high bias*
Release sample value: 40 µg/Kg (J) *low bias*

In this example, the direction of bias indicates that the true release value may be higher and the true background value may be lower than reported values. The release sample concentration still exceeds background by more than three times, so an observed release is established, provided all other HRS criteria are met. Using adjustment factors is not needed.

R2-0004639

EXHIBIT 3 USE OF ADJUSTMENT FACTORS FOR "J" QUALIFIED DATA		
Type of Sample	Type of Bias	Action Required
Background Sample	No Bias	None: Use concentration without factor
	Low Bias	Multiply concentration by factor
	High Bias	None: Use concentration without factor
	Unknown Bias	Multiply concentration by factor
Release Sample	No Bias	None: Use concentration without factor
	Low Bias	None: Use concentration without factor
	High Bias	Divide concentration by factor
	Unknown Bias	Divide concentration by factor

3. *Release soil sample data is unbiased, background soil sample is biased low.*

Background sample value: 12 µg/Kg (J) *low bias*
Release sample value: 30 µg/Kg *no bias*

In this example, the true background value is assumed to be less than the reported value; however, an observed release may still be possible. To use the data to establish an observed release, multiply the background sample data value by the adjustment factor given for trichloroethene in soil (2.11). No adjustment factor is needed for the release sample.

New background sample value:
(12 µg/Kg) x (2.11) = 25.32 µg/Kg (J) *high bias*

The release sample concentration does not meet or exceed the new background level by three times, so an observed release is not established.

4. *Release water sample data is biased high, background water sample data is unbiased.*

Background sample value: 15 µg/L *no bias*
Release sample value: 70 µg/L (J) *high bias*

In this example, the true release value may be lower than the reported value; however, an observed release may still be possible. To use the data to establish an observed release, divide the release sample by the adjustment factor for trichloroethene in water (1.66). No adjustment factor is needed for the background sample.

New release sample value:
(70 µg/L) ÷ (1.66) = 42.17 µg/L (J) *low bias*

The new release sample concentration does not meet or exceed the background level by three times, so an observed release is not established.

5. *Release soil sample data has unknown bias; background soil sample data has unknown bias.*

The following example is the most conservative approach to using adjustment factors with qualified data.

Background sample value: 20 µg/Kg (J) *unknown bias*
Release sample value: 325 µg/Kg (J) *unknown bias*

In this example, it is not possible to determine from the reported values if an observed release is possible. To use the data to establish an observed release, divide the release sample value and multiply the background sample value by the adjustment factor given for trichloroethene in soil (2.11).

New release sample value:
(325 µg/Kg) ÷ (2.11) = 154.03 µg/Kg (J) *low bias*

New background sample value:
(20 µg/Kg) x (2.11) = 42.2 µg/Kg (J) *high bias*

R2-0004640

The new release sample is at least three times the new background concentration, so an observed release is established, provided all other HRS criteria are met.

ISSUES WITH USING ADJUSTMENT FACTOR APPROACH

Some issues were raised regarding the application of adjustment factors to qualified data during the Agency's internal review process.

One issue is that "J" qualifiers are added to analytical results for many reasons that may or may not affect the accuracy and precision of the analytical result. The application of an adjustment factor to "J" qualified data in which bias is not affected could be considered overly conservative.

All qualified data should be carefully evaluated to determine if the data are biased. Based on the reasons for bias, the use of an adjustment factor should only be considered as a management tool that provides a quick screening of the data for site assessment, not a means for correcting the biased value to a true value. Application of adjustment factors are intended for use with qualified data reported at or above the CRQL and may not be applicable to data which are qualified but technically sound. As stated previously, qualified data should always be carefully reviewed on a case-by-case basis prior to use in HRS evaluation.

Another issue is the validity of "10" as a default adjustment factor. A default adjustment factor of 10 was a policy decision based on the range of adjustment factors and an industry approach. The default was chosen in order to account for the maximum variability regardless of the direction of the bias. Therefore, the default value of 10 is generally considered to be a conservative adjustment factor. EPA reviewed the use of the default value of 10 and determined that this value was conservative.

Even if using adjustment factors is sometimes overly conservative, this approach is preferable to not using the data at all. EPA maintains a "worst sites first" policy that only the sites considered most harmful to human health and/or the environment should be listed. EPA considers the use of adjustment factors appropriate as a management decision tool. However, discretion is needed when applying adjustment factors. The use of adjustment factors may not be appropriate in all cases.

USE OF OTHER ADJUSTMENT FACTORS

EPA Regions may substitute higher, but never lower, adjustment factor values for the ones listed in this fact sheet on a case-by-case basis when technically justified. For example, other adjustment factors may be applied to conform with site-specific Data Quality Objectives (DQOs) or with Regional Standard Operating Procedures (SOPs) (*Data Quality Objectives Process for Superfund*, Publication 9355.9-01).

SUMMARY

For site assessment purposes, EPA Regions should not automatically discard "J" qualified data. However, site-specific data usability determinations may result in the data's not being used.

Data qualified under the EPA's CLP or from other sources of validated data may be used to demonstrate an observed release if certain measures are taken to ensure that the bias of the data qualifier is adjusted using the factor approach specified in this fact sheet. (This fact sheet provides a management decision tool for making qualified data usable for documenting an observed release.) The analyte and matrix-specific adjustment factors provided in Tables 1 through 4 of this fact sheet present these adjustment factors.

The scope of this fact sheet is limited to the situations described in Exhibit 1. The use of qualified analytical data without the adjustment factors presented in this fact sheet is limited. Higher adjustment factors may be substituted by EPA Regions on a case-by-case basis when technically justified by site-specific DQOs or SOPs.

R2-0004641

REFERENCES

1. U.S. Government Printing Office, *Federal Register*, Part II, Environmental Protection Agency, 40 CFR Part 300, Hazani Ranking System, Final Rule, December 14, 1990.

2. U.S. Environmental Protection Agency, *Hazard Ranking System Guidance Manual*, Office of Solid Waste and Emergency Response, PB92-963377, November 1992.

3. U.S. Environmental Protection Agency, 1995. *Establishing an Observed Release*. Office of Emergency and Remedial Response. PB94-963314.

4. U.S. Environmental Protection Agency, 1995. *Establishing Areas of Observed Contamination*. Office of Emergency and Remedial Response. PB94-963312.

5. U.S. Environmental Protection Agency, 1995. *Establishing Background Levels*. Office of Emergency and Remedial Response. PB94-963313.

6. U.S. Environmental Protection Agency, 1994. *CLP National Functional Guidelines for Inorganic Data Review*. Office of Solid Waste and Emergency Response. Publication 9240.1-05-01.

7. U.S. Environmental Protection Agency, 1993. *CLP National Functional Guidelines for Organic Data Review*. Office of Solid Waste and Emergency Response. Publication 9240.1-05.

8. U.S. Environmental Protection Agency, 1991. *Contract Laboratory Program Statement of Work for Inorganic Analysis*. Document No. ILM02.0.

9. U.S. Environmental Protection Agency, 1991. *Contract Laboratory Program Statement of Work for Organic Analysis*. Document No. OLM1.8.

10. U.S. Environmental Protection Agency, 1993. *Additional Guidance on "Worst Sites" and "NPL Caliber Sites" to Assist in SACM Implementation*. Office of Emergency and Remedial Response. PB94-963206.

11. *Board of Regents of die University of Washington, et al., v. EPA*, No. 95-1324, slip op, at 10 (D.C. Cir. June 25, 1996).10.

12. U.S. Environmental Protection Agency, 1991. *Guidance for Performing Preliminary Assessments Under CERCLA*. Office of Solid Waste and Emergency Response. Publication 9345.0-01-A.

13. U.S. Environmental Protection Agency, 1992. *Guidance for Performing Site Inspections Under CERCLA*. Office of Solid Waste and Emergency Response. PB92-963375.

14. U.S. Environmental Protection Agency, 1992. *Quality Assurance/Quality Control Samples*. Environmental Response Team Quality Assurance Technical Infonnarion Bulietin.

15. U.S. Environmental Protection Agency, 1986. *Test Methods for Evabiating Solid Waste (SW-846): Physical anul Chenical Methods*. Office of Solid Waste and Emergency Response. Document No. SW-846.

16. U.S. Environmental Protection Agency, 1993. *Data Quality Objectives Process for Superfimd*. Office of Emergency and Remedial Response. Publication 9355.9-01.

R2-0004642

TABLE 1
FACTORS FOR VOLATILE ORGANIC ANALYTES

VOLATILE ORGANIC ANALYTES	SOIL MATRIX		WATER MATRIX	
	Number of CARD Samples Reviewed	Factor	Number of CARD Samples Reviewed	Factor
1,1,1-TRICHLOROETHANE	—	10.0	—	10.0
1,1,2,2-TETRACHLOROETHANE	—	10.0	—	10.0
1,1,2-TRICHLOROETHANE	—	10.0	—	10.0
1,1-DICHLOROETHANE	—	10.0	—	10.0
1,1-DICHLOROETHENE	7,031	2.71	5,015	2.35
1,2-DICHLOROETHANE-D4	32,446	1.52	25,516	1.38
1,2-DICHLOROETHENE (TOTAL)	—	10.0	—	10.0
1,2-DICHLOROPROPANE	—	10.0	—	10.0
2-BUTANONE	—	10.0	—	10.0
2-HEXANONE	—	10.0	—	10.0
4-METHYL-2-PENTANONE	—	10.0	—	10.0
ACETONE	—	10.0	—	10.0
BENZENE	7,024	1.97	5,001	1.64
BROMODICHLOROMETHANE	—	10.0	—	10.0
BROMOFORM	—	10.0	—	10.0
BROMOFLUOROBENZENE	32,444	1.7	25,518	1.26
BROMOMETHANE	—	10.0	—	10.0
CARBON DISULFIDE	—	10.0	—	10.0

R2-0004643

TABLE 1
FACTORS FOR VOLATILE ORGANIC ANALYTES

VOLATILE ORGANIC ANALYTES	SOIL MATRIX		WATER MATRIX	
	Number of CARD Samples Reviewed	Factor	Number of CARD Samples Reviewed	Factor
CARBON TETRACHLORIDE	—	10.0	—	10.0
CHLOROBENZENE	7,018	2.0	5,015	1.54
CHLOROETHANE	—	10.0	—	10.0
CHLOROFORM	—	10.0	—	10.0
CHLOROMETHANE	—	10.0	—	10.0
CIS-1,3-DICHLOROPROPENE	—	10.0	—	10.0
DIBROMOCHLOROMETHANE	—	10.0	—	10.0
ETHYLBENZENE	—	10.0	—	10.0
METHYLENE CHLORIDE	—	10.0	—	10.0
STYRENE	—	10.0	—	10.0
TETRACHLOROETHENE	—	10.0	—	10.0
TOLUENE-D8	32,447	1.63	25,526	1.21
TRANS-1,3-DICHLOROPROPENE	—	10.0	—	10.0
TRICHLOROETHENE	6,988	2.11	4,938	1.66
VINYL CHLORIDE	—	10.0	—	10.0
XYLENE (TOTAL)	—	10.0	—	10.0

R2-0004644

TABLE 2
FACTORS FOR SEMIVOLATILE ORGANIC ANALYTES

SEMIVOLATILE ORGANIC ANALYTES	SOIL MATRIX		WATER MATRIX	
	Number of CARD Samples Reviewed	Factor	Number of CARD Samples Reviewed	Factor
1,2,4-TRICHLOROBENZENE	6,792	4.83	4,605	3.71
1,2-DICHLOROBENZENE-D4	32,848	4.22	21,506	3.0
1,3-DICHLOROBENZENE	—	10.0	—	10.0
1,4-DICHLOROBENZENE	6,796	6.0	4,599	3.85
2,2'-OXYBIS(1-CHLOROPROPANE)	—	10.0	—	10.0
2,4,6-TRIBROMOPHENOL	32,605	9.38	21,509	3.57
2,4,5-TRICHLOROPHENOL	—	10.0	—	10.0
2,4,6-TRICHLOROPHENOL	—	10.0	—	10.0
2,4-DICHLOROPHENOL	—	10.0	—	10.0
2,4-DIMETHYLPHENOL	—	10.0	—	10.0
2,4-DINITROPHENOL	—	10.0	—	10.0
2,4-DINITROTOLUENE	6,798	4.88	4,623	3.52
2,6-DINITROTOLUENE	—	10.0	—	10.0
2-CHLORONAPHTHALENE	—	10.0	—	10.0
2-CHLOROPHENOL-D4	32,798	4.08	21,506	2.92
2-FLUOROBIPHENYL	32,913	3.38	21,532	2.84
2-FLUORPHENOL	32,781	5.05	21,511	3.34
2-METHYLNAPHTHALENE	—	10.0	—	10.0
2-METHYLPHENOL	—	10.0	—	10.0
2-NITROANILINE	—	10.0	—	10.0
2-NITROPHENOL	—	10.0	—	10.0
3,3'-DICHLOROBENZIDINE	—	10.0	—	10.0
3-NITROANILINE	—	10.0	—	10.0
4,6-DINITRO-2-METHYLPHENOL	—	10.0	—	10.0
4-BROMOPHENYL-PHENYLETHER	—	10.0	—	10.0

R2-0004645

TABLE 2 FACTORS FOR SEMIVOLATILE ORGANIC ANALYTES				
SEMIVOLATILE ORGANIC ANALYTES	SOIL MATRIX		WATER MATRIX	
	Number of CARD Samples Reviewed	Factor	Number of CARD Samples Reviewed	Factor
4-CHLORO-3-METHYLPHENOL	6,715	6.26	4,609	4.46
4-CHLOROANILINE	—	10.0	—	10.0
4-CHLOROPHENYL-PHENYLETHER	—	10.0	—	10.0
4-METHYLPHENOL	—	10.0	—	10.0
4-NITROANILINE	—	10.0	—	10.0
4-NITROPHENOL	6,627	9.33	4,586	5.96
ACENAPHTHENE	6,773	4.68	4,600	3.63
ACENAPHTHYLENE	—	10.0	—	10.0
ANTHRACENE	—	10.0	—	10.0
BENZO(A)ANTHRACENE	—	10.0	—	10.0
BENZO(A)PYRENE	—	10.0	—	10.0
BENZO(B)FLUORANTHENE	—	10.0	—	10.0
BENZO(G,H,I)PERYLENE	—	10.0	—	10.0
BENZO(K)FLUORANTHENE	—	10.0	—	10.0
BIS(2-CHLOROETHOXY)METHANE	—	10.0	—	10.0
BIS(2-CHLOROETHYL)ETHER	—	10.0	—	10.0
BIS(2-ETHYLHEXYL)PHTHALATE	—	10.0	—	10.0
BUTYLBENZYLPHTHALATE	—	10.0	—	10.0
CARBAZOLE	—	10.0	—	10.0
CHRYSENE	—	10.0	—	10.0
DI-N-BUTYLPHTHALATE	—	10.0	—	10.0
DI-N-OCTYLPHTHALATE	—	10.0	—	10.0
DIBENZ(A,H)ANTHRACENE	—	10.0	—	10.0
DIBENZOFURAN	—	10.0	—	10.0
DIETHYLPHTHALATE	—	10.0	—	10.0

R2-0004646

TABLE 2 FACTORS FOR SEMIVOLATILE ORGANIC ANALYTES				
SEMIVOLATILE ORGANIC ANALYTES	SOIL MATRIX		WATER MATRIX	
	Number of CARD Samples Reviewed	Factor	Number of CARD Samples Reviewed	Factor
DIMETHYLPHTHALATE	—	10.0	—	10.0
FLUORANTHENE	—	10.0	—	10.0
FLUORENE	—	10.0	—	10.0
HEXACHLOROBENZENE	—	10.0	—	10.0
HEXACHLOROBUTADIENE	—	10.0	—	10.0
HEXACHLOROCYCLOPENTADIENE	—	10.0	—	10.0
HEXACHLOROETHANE	—	10.0	—	10.0
INDENO(1,2,3-CD)PYRENE	—	10.0	—	10.0
ISOPHORONE	—	10.0	—	10.0
N-NITROSO-DI-N-PROPYLAMINE	6,725	4.92	4,513	4.0
N-NITROSODIPHENYLAMINE(1)	—	10.0	—	10.0
NAPHTHALENE	—	10.0	—	10.0
NITROBENZENE-D5	32,867	3.96	21,533	2.73
PENTACHLOROPHENOL	6,597	72.5	4,550	10.12
PHENANTHRENE	—	10.0	—	10.0
PHENOL-D5	32,855	3.85	21,489	3.53
PYRENE	6,543	11.86	4,612	5.67
TERPHENYL-D14	32,899	4.35	21,541	6.32

R2-0004647

TABLE 3
FACTORS FOR PESTICIDES/PCB ANALYTES

VOLATILE ORGANIC ANALYTES	SOIL MATRIX		WATER MATRIX	
	Number of CARD Samples Reviewed	Factor	Number of CARD Samples Reviewed	Factor
4,4'-DDD	—	10.0	—	10.0
4,4'-DDE	—	10.0	—	10.0
4,4'-DDT	5,343	12.82	3,850	7.14
AIDRIN	5,526	14.26	3,829	6.63
ALPHA-BHC	—	10.0	—	10.0
ALPHA-CHLORDANE	—	10.0	—	10.0
AROCLOR-1016	—	10.0	—	10.0
AROCLOR-1221	—	10.0	—	10.0
AROCLOR-1232	—	10.0	—	10.0
AROCLOR-1242	—	10.0	—	10.0
AROCLOR-1248	—	10.0	—	10.0
AROCLOR-1254	—	10.0	—	10.0
AROCLOR-1260	—	10.0	—	10.0
BETA-BHC	—	10.0	—	10.0
DECACHLOROBIPHENYL	57,315	17.79	33,592	10.0
DELTA-BHC	—	10.0	—	10.0
DIELDRIN	5,539	11.93	3,861	4.87

R2-0004648

TABLE 3 FACTORS FOR PESTICIDES/PCB ANALYTES				
VOLATILE ORGANIC ANALYTES	SOIL MATRIX		WATER MATRIX	
	Number of CARD Samples Reviewed	Factor	Number of CARD Samples Reviewed	Factor
ENDOSULFAN I	—	10.0	—	10.0
ENDOSULFAN II	—	10.0	—	10.0
ENDOSULFAN SULFATE	—	10.0	—	10.0
ENDRIN	5,521	14.13	3,850	5.33
ENDRIN ALDEHYDE	—	10.0	—	10.0
ENDRIN KETONE	—	10.0	—	10.0
GAMMA-BHC (LINDANE)	5,545	11.79	3,832	10.0
GAMMA-CHLORDANE	—	10.0	—	10.0
HEPTACHLOR	5,548	7.88	3,836	5.26
HEPTACHLOR EPOXIDE	—	10.0	—	10.0
METHOXYCHLOR	—	10.0	—	10.0
TETRACHLORO-M-XYLENE	59,508	8.5	33,787	5.29
TOXAPHENE	—	10.0	—	10.0

R2-0004649

TABLE 4
FACTORS FOR INORGANIC ANALYTES

INORGANIC ANALYTES	SOIL MATRIX		WATER MATRIX	
	Number of CARD Samples Reviewed	Factor	Number of CARD Samples Reviewed	Factor
ALUMINUM	5387	1.66	6208	1.30
ANTIMONY	5392	1.98	6170	1.27
ARSENIC	5675	1.74	6303	1.35
BARIUM	5360	3.99	6201	1.25
BERYLLIUM	5399	1.28	6208	1.25
CADMIUM	5385	1.41	6166	1.29
CALCIUM	5383	1.28	6201	1.24
CHROMIUM	5389	1.29	6210	1.30
COBALT	5392	1.25	6212	1.27
COPPER	5394	1.22	6205	1.25
CYANIDE	3281	1.55	225	1.36
IRON	5391	1.34	6216	1.27
LEAD	5982	1.44	6384	1.31
MAGNESIUM	5397	1.23	6210	1.24
MANGANESE	5395	1.24	6214	1.28
MERCURY	5954	1.83	256	1.50
NICKEL	5400	1.35	6210	1.29
POTASSIUM	3874	17.49	6175	1.24
SELENIUM	5620	2.38	6278	1.41
SILVER	5392	1.74	6215	1.42
SODIUM	5024	25.43	6195	1.26
THALLIUM	5621	1.86	6253	1.37
VANADIUM	5393	1.34	6212	1.25
ZINC	5404	1.50	6224	1.29

R2-0004650

REFERENCE 113

USEPA CONTRACT LABORATORY PROGRAM

STATEMENT OF WORK

FOR

ANALYSIS OF
LOW CONCENTRATION ORGANIC

OLC03.2
December 2000

R2-0004652

THIS PAGE INTENTIONALLY LEFT BLANK

STATEMENT OF WORK

TABLE OF CONTENTS

EXHIBIT A: SUMMARY OF REQUIREMENTS

EXHIBIT B: REPORTING AND DELIVERABLES REQUIREMENTS

EXHIBIT C: TARGET COMPOUND LIST AND CONTRACT REQUIRED QUANTITATION LIMITS

EXHIBIT D: ANALYTICAL METHODS

EXHIBIT E: QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES AND REQUIREMENTS

EXHIBIT F: CHAIN-OF-CUSTODY, DOCUMENT CONTROL, AND WRITTEN STANDARD OPERATING PROCEDURES

EXHIBIT G: GLOSSARY OF TERMS

EXHIBIT H: DATA DICTIONARY AND FORMAT FOR DATA DELIVERABLES IN COMPUTER-READABLE FORMAT

THIS PAGE INTENTIONALLY LEFT BLANK

EXHIBIT A

SUMMARY OR REQUIREMENTS

R2-0004656

THIS PAGE INTENTIONALLY LEFT BLANK

R2-0004657

Exhibit A - Summary of Requirements

Table of Contents

Section			Page
1.0	PURPOSE		5
2.0	DESCRIPTION OF SERVICE		5
3.0	DATA USES		5
4.0	SUMMARY OF REQUIREMENTS		5
	4.1	Introduction to the Organic Low Concentration Statement of Work	5
	4.2	Overview of Major Task Areas	6
	4.3	Technical and Management Capability	13

R2-0004658

THIS PAGE INTENTIONALLY LEFT BLANK

R2-0004659

1.0 PURPOSE

The purpose of the Low Concentration (Water) Organic analytical service is to provide analytical data for use by the U.S. Environmental Protection Agency (USEPA) in support of the investigation and clean-up activities under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA). Other USEPA Program Offices that have similar analytical data needs also use this service.

2.0 DESCRIPTION OF SERVICE

The organic analytical service provides a contractual framework for laboratories to apply USEPA Contract Laboratory Program (CLP) analytical methods for the isolation, detection, and quantitative measurement of 50 volatile, 65 semivolatile, and 28 pesticide/Aroclor target compounds in water samples. The analytical service provides the methods to be used and the specific contractual requirements by which USEPA will evaluate the data. This service uses Gas Chromatography/Mass Spectrometry (GC/MS) and Gas Chromatography/Electron Capture Detector (GC/ECD) methods to analyze the target compounds.

3.0 DATA USES

This analytical service proyides data which USEPA uses for a variety of purposes such as: determining the nature and extent of contamination at a hazardous waste site; assessing priorities for response based on risks to human health and the environment; determining appropriate clean-up actions; and determining when remedial actions are complete. The data may be used in all stages in the investigation of hazardous waste sites, including: site inspections; Hazard Ranking System (HRS) scoring; remedial investigation/feasibility studies; remedial design; treatability studies; and removal actions. In addition, this service provides data that are available for use in Superfund enforcement/ litigation activities.

4.0 SUMMARY OF REQUIREMENTS

4.1 Introduction to the Organic Low Concentration Statement of Work

This Statement of Work (SOW) is designed as part of the documentation for a contract between USEPA and a commercial laboratory performing analyses in support of USEPA Superfund programs. The SOW is comprised of eight exhibits. Exhibit A provides an overview of the SOW and its general requirements. Exhibit B contains a description of the reporting and deliverables requirements, in addition to the data reporting forms and instructions. Exhibit C specifies the Organic Target Compound list for this SOW with the contract required quantitation limits for the sample matrix. Exhibit D details the required analytical procedures to be used with this SOW and resulting contracts. Exhibit E provides descriptions of required Quality Assurance/Quality Control (QA/QC), Standard Operating Procedures (SOPs), QA/QC performance, and the reporting of data. Exhibit F contains Chain-of-Custody and sample documentation requirements which the Contractor shall follow. To ensure proper understanding of the terms utilized in this SOW, a glossary can

R2-0004660

be found in Exhibit G. When a term is used in the text without explanation, the glossary meaning shall be applicable. Specifications for reporting data in computer-readable format appear in Exhibit H.

4.2 Overview of Major Task Areas

For each sample, the Contractor shall perform the tasks described in each section. Specific requirements for each task are detailed in the exhibits referenced.

4.2.1 Task I: Sample Receiving, Storage, and Disposal

4.2.1.1 Chain-of-Custody

The Contractor shall receive and maintain samples under proper Chain-of-Custody. All associated document control and inventory procedures shall be developed and followed. Documentation described herein shall be required to show that all procedures are strictly followed. This documentation shall be reported as the Complete Sample Delivery Group File (CSF) (Exhibit B). The Contractor shall establish and use appropriate procedures to handle confidential information received from USEPA.

4.2.1.2 Sample Scheduling/Shipments

Sample shipments to the Contractor's facility will be scheduled and coordinated by the Contract Laboratory Program (CLP) Sample Management Office (SMO). The Contractor shall communicate with SMO personnel by telephone, as necessary throughout the process of sample scheduling, shipment, analysis, and data reporting, to ensure that samples are properly processed.

4.2.1.2.1 Samples will be shipped routinely to the Contractor through an overnight delivery service. However, as necessary, the Contractor shall be responsible for any handling or processing of the receipt of sample shipments. This includes the pick-up of samples at the nearest servicing airport, bus station, or other carrier within the Contractor's geographical area. The Contractor shall be available to receive sample shipments at any time the delivery service is operating, including Saturdays.

4.2.1.2.2 If there are problems with the samples (e.g., mixed media, containers broken or leaking) or sample documentation and paperwork [e.g., Traffic Reports (TRs) not with shipment, sample and TR do not correspond], the Contractor shall immediately contact SMO for resolution. The Contractor shall immediately notify SMO regarding any problems and laboratory conditions that affect the timeliness of analyses and data reporting. In particular, the Contractor shall immediately notify SMO personnel in advance regarding sample data that will be delivered late and shall specify the estimated delivery date.

R2-0004661

4.2.1.2.3 To monitor the temperature of the sample shipping cooler more effectively, each USEPA Regional Office may include a sample shipping cooler temperature blank with each cooler shipped. The temperature blank will be clearly labeled: USEPA COOLER TEMPERATURE INDICATOR. The Contractor shall record the presence or absence of the cooler temperature indicator bottle on Form DC-1, Item 9.

4.2.1.2.3.1 When the USEPA Regional Office supplies a cooler temperature indicator bottle in the sample shipping cooler, the Contractor shall use the USEPA supplied cooler temperature indicator bottle to determine the cooler temperature. The temperature of the cooler shall be measured at the time of sample receipt by the Contractor.

4.2.1.2.3.2 The temperature of the sample shipping cooler shall be measured and recorded immediately upon opening the cooler, and prior to unpacking the samples or removing the packing material.

4.2.1.2.3.3 To determine the temperature of the cooler, the Contractor shall locate the cooler temperature indicator bottle in the sample shipping cooler, remove the cap, and insert a calibrated thermometer into the cooler temperature indicator bottle. Prior to recording the temperature, the Contractor shall allow a minimum of 3 minutes, but not greater than 5 minutes, for the thermometer to equilibrate with the liquid in the bottle. At a minimum, the calibrated thermometer (±1°C) shall have a measurable range of 0-50°C. Other devices which can measure temperature may be used if they can be calibrated to ±1°C and have a range of 0-50°C. If a temperature indicator bottle is not present in the cooler, an alternative means of determining cooler temperature shall be used. Under no circumstances shall a thermometer or any other device be inserted into a sample bottle for the purpose of determining cooler temperature. The Contractor shall contact SMO and inform them that a temperature indicator bottle was not present in the cooler. The Contractor shall document the alternative technique used to determine cooler temperature in the Sample Delivery Group (SDG) Narrative.

4.2.1.2.3.4 If the temperature of the sample shipping cooler's temperature indicator exceeds 10°C, the Contractor shall contact SMO and inform them of the temperature deviation. SMO will contact the Region from which the samples were shipped for instruction on how to proceed. The Region will either require that no sample analysis(es) be performed or that the Contractor proceed with the analysis(es). SMO will in turn notify the Contractor of the Region's decision. The Contractor shall document the Region's decision and the EPA sample numbers of all samples for which temperatures exceeded 10°C in the SDG Narrative.

R2-0004662

4.2.1.2.3.5 The Contractor shall record the temperature of the cooler on Form DC-1, under Item 10 - Cooler Temperature, and in the SDG Narrative.

4.2.1.2.4 The Contractor shall accept all samples scheduled by SMO, provided that the total number of samples received in any calendar month does not exceed the monthly limitation expressed in the contract. Should the Contractor elect to accept additional samples, the Contractor shall remain bound by all contract requirements for analysis of those samples accepted.

4.2.1.2.5 The Contractor is required to retain unused sample volume and partially used sample volume in original sample containers for a period of 60 days after data submission. From time of receipt until analysis, the Contractor shall maintain all water (preserved and unpreserved) samples at 4°C (±2°C).

4.2.1.2.6 The Contractor shall be required to routinely return sample shipping containers (e.g., coolers) to the appropriate sampling office within 14 calendar days following shipment receipt (see clause titled, "Government Furnished Supplies and Materials").

4.2.1.3 Modified Analysis

The Contractor may be requested by USEPA to perform modified analyses. These modifications will be within the scope of this SOW and may include, but are not limited to, analysis of additional analytes and/or lower quantitation limits. These requests will be made by the USEPA Regional CLP Project Officer (CLP PO), USEPA OERR Analytical Operations/Data Quality Center (AOC) Organic Program Manager, and Contracting Officer (CO) in writing, prior to sample scheduling. If the Contractor voluntarily elects to perform these modified analyses, these analyses will be performed with no increase in per sample price. All contract requirements specified in the SOW/Specifications will remain in effect unless the USEPA CO provides written approval for the modification(s) and a waiver for associated defects. The USEPA CO approval must be obtained prior to sample scheduling.

4.2.2 Task II: Sample Preparation and Analysis

4.2.2.1 Overview

The Contractor is advised that the samples received under this contract are usually from known or suspected hazardous waste sites and may contain high (greater than 15 percent) levels of organic and inorganic materials of a potentially hazardous nature and of unknown strncture and concentration, and should be handled throughout the analysis with appropriate caution. It is the Contractor's responsibility to take all necessary measures to ensure laboratory safety.

4.2.2.2 Sample analyses will be scheduled by groups of samples, each defined as a Case and identified by a unique USEPA Case number assigned by SMO. A Case signifies a group of samples collected at

R2-0004663

one site or geographical area over a finite time period, and will include one or more field samples with associated blanks. Samples may be shipped to the Contractor in a single shipment or multiple shipments oyer a period of time, depending on the size of the Case.

4.2.2.2.1 A Case consists of one or more SDGs. An SDG is defined by the following, whichever is most frequent:

- Each Case of field samples received, or
- Each 20 field samples [excluding Performance Evaluation (PE) samples] within a Case, or
- Each 7 calendar day period during which field samples in a Case are received (said period beginning with the receipt of the first sample in the SDG).
- In addition, all samples and/or sample fractions assigned to an SDG must have been scheduled under the same contractual turnaround time. Preliminary Results have no impact on defining the SDG.

4.2.2.2.2 Samples shall be assigned to SDGs at the time the samples are received, and shall not be assigned retroactively. However, PE samples received within a Case shall be assigned to an SDG containing field samples for that Case.

4.2.2.2.3 Each sample receiyed by the Contractor will be labeled with an EPA sample number, and accompanied by a TR bearing the sample number and descriptive information regarding the sample. The Contractor shall complete and sign the TR, recording the date of sample receipt and sample condition on receipt for each sample container.

4.2.2.2.4 The Contractor shall submit signed copies of TRs for all samples in an SDG to SMO within three working days following receipt of the last sample in the SDG. Faxed copies of TRs do not meet this requirement. TRs shall be submitted in SDG sets (i.e., all TRs for an SDG shall be clipped together) with an SDG Cover Sheet containing information regarding the SDG, as specified in Exhibit B.

4.2.2.2.5 USEPA Case numbers, SDG numbers, and EPA sample numbers shall be used by the Contractor in identifying samples received under this contract, both verbally and in reports/correspondence.

4.2.2.3 If insufficient sample volume (less than the required amount) is received to perform the analysis, the Contractor shall contact SMO to apprise them of the problem. SMO will contact the Region for instructions. The Region will either approve that no sample analysis be performed, or require that a reduced volume be used for the sample analysis. No other changes in the analysis will be permitted. SMO will notify the Contractor of the Region's

R2-0004664

decision. The Contractor shall document the Region's decision in the SDG Narrative.

4.2.2.4 Analytical Techniques: The Target Compounds listed in Exhibit C shall be identified, as described in the methodologies given in Exhibit D. Automated computer programs may be used to facilitate the identification of compounds.

4.2.2.5 Preparation Techniques. The Contractor will prepare samples as described in Exhibit D. For semivolatile and pesticide/Aroclor samples, an aliquot is extracted with a solvent and concentrated. The concentrated extract is subjected to cleanup procedures and then analyzed by Gas Chromatography/Mass Spectrometry (GC/MS) for semivolatile or Gas Chromatography/Electron Capture Detector (GC/ECD) for the pesticide/Aroclor target compounds listed in Exhibit C. For volatile samples, an aliquot is purged with an inert gas, trapped on a solid sorbent, and then desorbed onto the GC/MS for analysis of the target compounds listed in Exhibit C.

4.2.2.6 Qualitative Verification of Compounds. The volatile and semivolatile compounds identified by GC/MS techniques shall be verified by an analyst competent in the interpretation of mass spectra by comparison of the suspect mass spectrum to the mass spectrnm of a standard of the suspected compound. This procedure requires the use of multiple internal standards.

4.2.2.6.1 If a compound initially identified by GC/MS techniques cannot be verified, but in the technical judgment of the mass spectral interpretation specialist the identification is correct, then the Contractor shall report that identification and proceed with quantitation.

4.2.2.6.2 The pesticide/Aroclor compounds identified by GC/ECD techniques shall be verified by an analyst competent in the interpretation of gas chromatograms and by comparison of the retention times of the suspected unknowns with the retention times of respective standards of the suspected compounds. Compounds shall also be confirmed by GC/MS techniques if the compounds are of sufficient concentration to be detected by the GC/MS.

4.2.2.7 Quantitation of Verified Compounds. The Contractor shall quantitate components identified by GC/MS techniques by the internal standard method stipulated in Exhibit D. Where multiple internal standards are required by USEPA, the Contractor shall perform quantitation utilizing the internal standards specified in Exhibit D. The Contractor shall quantitate components analyzed by GC/ECD techniques by the external standard method stipulated in Exhibit D. The Contractor shall also perform an initial calibration, verify its linearity, determine the breakdown of labile components, and determine calibration factors for all standards analyzed by GC/ECD techniques as described in Exhibit D.

4.2.2.8 Tentative Identification of Non-Target Sample Components. For each analysis of a sample, the Contractor shall conduct mass spectral library searches to determine tentative compound

R2-0004665

identifications as follows: For each volatile sample, the Contractor shall conduct a search to determine the possible identity of up to 30 organic compounds of greatest concentration which are not deuterated monitoring compounds or internal standards and are not listed in Exhibit C under volatiles or semivolatiles. For each semivolatile sample, the Contractor shall conduct a search to determine the possible identification of up to 30 organic compounds of greatest concentration which are not surrogates or internal standards and are not listed in Exhibit C under volatiles or semivolatiles. In performing searches, the NIST/EPA/NIH (May 1992 release or later) and/or Wiley (1991 release or later), or equivalent, mass spectral library shall be used.

NOTE: Substances with responses less than 10 percent of the nearest internal standard are not required to be searched in this fashion.

4.2.2.9 Quality Assurance/Quality Control (QA/QC) Procedures

4.2.2.9.1 The Contractor shall strictly adhere to all specific QA/QC procedures prescribed in Exhibits D and E. Records documenting the use of the protocol shall be maintained in accordance with the document control procedures prescribed in Exhibit F, and shall be reported in accordance with Exhibits B and H.

4.2.2.9.2 The Contractor shall maintain a Quality Assurance Plan (QAP) with the objective of providing sound analytical chemical measurements. This program shall incorporate the QC procedures, any necessary corrective action, and all documentation required during data collection, as well as the quality assessment measures performed by management to ensure acceptable data production.

4.2.2.9.3 Additional QC shall be conducted in the form of the analysis of Performance Evaluation samples submitted to the laboratory by USEPA. Unacceptable results of all such QC or Performance Evaluation samples may be used as the basis for an equitable adjustment to reflect the reduced value of the data to USEPA or rejection of the data for specific analyte(s) within an SDG or the entire SDG. Also, unacceptable results may be used as the basis for contract action. "Compliant performance" is defined as that which yields correct analyte identification and concentration values, as determined by USEPA, as well as meeting the contract requirements for analysis (Exhibit D), QA/QC (Exhibit E), data reporting and other deliverables (Exhibits B and H), and sample custody, sample documentation, and Standard Operating Procedure (SOP) documentation (Exhibit F). As an alternative to data rejection, USEPA may require re-analysis of non-compliant samples. Re-analysis will be performed by the Contractor at no additional cost to USEPA, unless it is determined that the Performance Evaluation sample(s) was defective.

R2-0004666

4.2.3 Task III: Sample Reporting and Resubmission of Data

4.2.3.1 USEPA has provided, to the Contractor, formats for the reporting of data (Exhibits B and H). The Contractor shall be responsible for completing and submitting analysis data sheets and computer-readable data on diskette (or via an alternate means of electronic transmission approved in advance by USEPA) in a format specified in this SOW and within the time specified in Exhibit B, Section 1.1.

4.2.3.2 Use of formats other than those designated by USEPA will be deemed as non-compliant. Such data are unacceptable. Resubmission in the specified format, at no additional cost to USEPA, shall be required.

4.2.3.3 Computer-generated forms may be submitted in the hardcopy Sample Data Package(s), provided that the forms are in exact USEPA format. This means that the order of data elements is the same as on each USEPA-required form, including form numbers and titles, page numbers, and header information.

4.2.3.4 If the submitted data package does not conform to the specified contractual or technical criteria, the Contractor will be required to resubmit the data package with all deficiencies corrected at its own expense. The Contractor will respond within seven days to requests for additional information or explanations that result from the Government's inspection activities. If the Contractor is required to submit or resubmit data as a result of a Regional request, the data shall be clearly marked as ADDITIONAL DATA. The Contractor shall include a cover letter which describes which data are being delivered, to which USEPA project the data pertain, and who requested the data. Any and all resubmissions must be in accordance with the documentation requirements of this SOW.

4.2.3.5 The data reported by the Contractor on the hardcopy data forms and the associated computer-readable data submitted by the Contractor on diskette (or via an alternate means of electronic transmission, if approved in advance by USEPA) shall contain identical information. If discrepancies are found during Government inspection, the Contractor shall be required to resubmit either the corrected hardcopy forms or the corrected computer-readable data, or both sets of corrected data, at no additional cost to USEPA.

4.2.3.6 In addition, the Contractor must be aware of the importance of maintaining the integrity of the data generated under this contract, since it is used to make major decisions regarding public health and environmental welfare. The data may also be used in litigation against Potentially Responsible Parties (PRPs) in the enforcement of Superfund legislation.

R2-0004667

4.3 Technical and Management Capability

4.3.1 Personnel

The Contractor shall have adequate personnel at all times during the performance of the contract to ensure that USEPA receives data that meet the terms and conditions of the contract.

4.3.2 Instrumentation

The Contractor shall have a sufficient Gas Chromatograph/Electron Capture/Data System (GC/ECD/DS), Gas Chromatograph/Mass Spectrometer/Data System (GC/MS/DS), including magnetic tape storage devices to meet all the terms and conditions of the contract.

4.3.3 Facilities

The Contractor shall maintain a facility suitable for the receipt, storage, analysis of the samples, and delivery of the product meeting the terms and conditions of the contract.

R2-0004668

EXHIBIT B

REPORTING AND DELIVERABLES REQUIREMENTS

R2-0004669

THIS PAGE INTENTIONALLY LEFT BLANK

R2-0004670

Exhibit B - Reporting and Deliverable Requirements

Table of Contents

Page			Section
1.0	CONTRACT REPORTS/DELIVERABLES DISTRIBUTION		5
	1.1	Report Deliverable Schedule.	5
	1.2	Distribution	8
2.0	REPORTING REQUIREMENTS AND ORDER OF DATA DELIVERABLES		10
	2.1	Introduction	10
	2.2	Resubmission of Data	10
	2.3	Quality Assurance Plan (QAP) and Standard Operating Procedures	11
	2.4	Sample Traffic Reports	11
	2.5	Sample Data Package	12
	2.6	Complete SDG File	25
	2.7	Data in Computer-Readable Format	26
	2.8	Preliminary Results	26
	2.9	GC/MS and GC/ECD Tapes	27
	2.10	Extracts	27
3.0	FORM INSTRUCTIONS		28
	3.1	Introduction	28
	3.2	General Information	28
	3.3	Header Information	29
	3.4	Organic Analysis Data Sheet (Form I, All Fractions)	33
	3.5	Organic Analysis Data Sheet: Tentatively Identified Compounds (Form I LCV-TIC and Form I LCSV-TIC)	36
	3.6	Deuterated Monitoring Compound (DMC) Recovery (Form II LCV-1, LCV-2 and Form II LCSV-1, LCSV-2)	37
	3.7	Surrogate Recovery (Form II LCP)	38
	3.8	Matrix Spike/Matrix Spike Duplicate Recovery (Form III, All Fractions, LCV, LCSV, LCP-1)	39
	3.9	Method Blank Summary (Form IV, All Fractions)	41
	3.10	GC/MS Instrnment Performance Check (Form V LCV and Form V LCSV)	42
	3.11	GC/MS Initial Calibration Data (Form VI LCV-1, LCV-2, LCV-3 and Form VI LCSV-1, LCSV-2, LCSV-3)	43
	3.12	GC/EC Initial Calibration Data (Form VI LCP-1, LCP-2, LCP-3)	43
	3.13	GC/MS Continuing Calibration Data (Form VII LCV-1, LCV-2, LCV-3 and Form VII LCSV-1, LCSV-2, LCSV-3)	46
	3.14	GC/ECD Calibration Verification Summary (Form VII, LCP-1, LCP-2)	46
	3.15	Internal Standard Area and RT Summary (Form VIII LCV and Form VIII LCSV-1, LCSV-2)	47
	3.16	Pesticide Analytical Sequence (Form VIII LCP)	49
	3.17	Pesticide Cleanup Summary (Form IX, LCP)	50
	3.18	Pesticide/Aroclor Identification (Form X, LCP-1, LCP-2)	51
	3.19	Sample Log-In Sheet (Form DC-1)	52
	3.20	Complete SDG File (CSF) Inventory Sheet (Form DC-2)	53
4.0	DATA REPORTING FORMS		54

THIS PAGE INTENTIONALLY LEFT BLANK

R2-0004672

1.0 CONTRACT REPORTS/DELIVERABLES DISTRIBUTION

1.1 Report Deliverable Schedule. The following table reiterates the contract reporting and deliverable requirements specified in the Contract Schedule (Performance/Delivery Schedule) and specifies the distribution that is required for each deliverable. The turnaround times for items B through E listed below are 7, 14, and 21 days.

NOTE: Specific recipient names and addresses are subject to change during the term of the contract. The USEPA Analytical Operations/Data Quality Center (AOC) Organic Program Manager will notify the Contractor in writing of such changes when they occur.

Table 1

	Item	No. of Copies[A]	Delivery Schedule	Distribution: SMO	Distribution: Region
A.[2]	Sample Traffic Reports	1	3 working days after receipt of last sample in Sample Delivery Group (SDG).[1]	X	
B.[2]	Sample Data Package[C]	1	XX[B] days after receipt of last sample in SDG.	X	
C.[2]	Data in Computer-Readable Format	1	XX[B] days after receipt of last sample in SDG.	X	X
D.[2, 3]	Complete SDG File	1	XX[B] days after receipt of last sample in SDG.		X
E.[5]	Preliminary Results (VOA Analyses)	1	Within 48 hours after receipt of each sample at laboratory, if requested.	X	X
	Preliminary Results (SV and Pest Analyses)	1	Within 72 hours after receipt of each sample at laboratory, if requested.	X	X

	Item	No. of Copies	Delivery Schedule	Distribution	
				SMO	Region
F.[4]	Standard Operating Procedures--Technical and Evidentiary	1	Revise within 60 days after contract award.		
			Submit within 7 days of receipt of written request to recipients as directed.		As directed
G.[4]	Quality Assurance Plan	1	Revise within 60 days after contract award.		
			Submit within 7 days of receipt of written request to recipients as directed.		As directed
H.	GC/MS and GC/ECD Tapes	Lot	Retain for 3 years after data submission.		As directed
			Submit within 7 days after receipt of written request by CLP PO.		
I.	Extracts	Lot	Retain for 365 days after data submission.		As directed
			Submit within 7 days after receipt of written request by CLP PO or SMO, at USEPA's direction.		
J.[6]	Method Detection Limit Study		Submit to USEPA within 7 days after receipt of written request by CLP PO or SMO, at USEPA's discretion.		As directed

R2-0004674

Footnotes:

[A]The number of copies specified is the number of copies required to be delivered to each recipient.

[B]The number of days associated with these elements will be provided in the associated laboratory contract document, and will also be provided at the time of the sample scheduling by the Sample Management Office (SMO) Contractor.

[C]Contractor-concurrent delivery to USEPA designated recipient (e.g., QATS) may be required upon request by the CLP PO. Retain for 365 days after data submission, and submit as directed within 7 days after receipt of written request by the CLP PO.

---

[1]A Sample Delivery Group (SDG) is a group of samples within a Case, received over a period of 7 days or less, not exceeding 20 samples, (excluding PE samples) and scheduled under the same contractual turnaround (Preliminary Results have no impact on defining the SDGs). Data for all samples in the SDG are due concurrently. The date of delivery of the SDG or any samples within the SDG is the date that the last sample in the SDG is received. See Exhibit A for further description.

[2]**DELIVERABLES ARE TO BE REPORTED TOTAL AMD COMPLETE.** Concurrent delivery required. Delivery shall be made such that all designated recipients receive the item on the same calendar day. This includes resubmission of both the hardcopy and electronic deliverable. The date of delivery of the SDO, or any sample within the SDG, is the date all samples have been delivered. If the deliverables are due on a Saturday, Sunday, or Federal holiday, then they shall be delivered on the next business day. Deliverables delivered after this time will be considered late.

[3]Complete SDG File will contain the original Sample Data Package plus all of the original documents described under Section 2.6.

[4]See Exhibit E and Exhibit F for a more detailed description.

[5]If requested at the time of sample scheduling, the Contractor shall provide Preliminary Results, consisting of Form I and Form I TIC analytical results, by fraction, for field and QC sample analyses via telefacsimile (fax). The Contractor may submit Preliminary Results in electronic format after obtaining permission from USEPA. The Contractor will be notified of the fax number or E-mail address at the time of sample scheduling. Sample Traffic Reports (TRs) and SDG cover sheets shall be submitted with the Preliminary Results. The Contractor shall contact SMO after confirming transmission. The Contractor shall document all communication in a telephone contact log.

[5]Method Detection Limit Study is performed annually or for each new instrnment, whichever is more frequent. The information should be available on file and provided to USEPA within 7 days after the receipt of a written request.

Preliminary Results Delivery Schedule:

If the sample arrives before 5 p.m., the Preliminary Results for that sample are due within the required turnaround time. If the sample is received after 5 p.m., the Preliminary Results for that sample are due within the required turnaround time beginning at 8 a.m. the following day. **DELIVERABLES ARE TO BE REPORTED TOTAL AND COMPLETE.** Concurrent

R2-0004675

Footnotes (Con't):

delivery is required. Delivery shall be made such that all designated recipients receive the item on the same calendar day. If the deliverables are due on a Saturday, Sunday, or Federal holiday, then they shall be delivered on the next business day. Deliverables delivered after this time will be considered late.

NOTE: As specified in the Contract Schedule (Government Furnished Supplies and Materials), unless otherwise instrncted by the CLP SMO based on a Regional decision, the Contractor shall dispose of unused sample volume and used sample bottles/containers no earlier than sixty days following submission of the reconciled Complete SDG File. Sample disposal and disposal of unused sample bottles/containers is the responsibility of the Contractor, and should be done in accordance with all applicable laws and regulations governing disposal of such materials.

1.2 Distribution

The following addresses correspond to the "Distribution" column in the tables in Sections 1.1.

SMO: USEPA Contract Laboratory Program
Sample Management Office (SMO)[1]
2000 Edmund Halley Dr.
Reston, VA 20191-3436

Region: USEPA Region: The SMO will provide the Contractor with the list of addresses for the 10 USEPA Regions. SMO will provide the Contractor with updated Regional address/name lists as necessary throughout the period of the contract and identify other client recipients on a case-by-case basis.

USEPA AOC Organic Program Manager:

Mailing Address: USEPA OERR Analytical Operations/
Data Quality Center
Ariel Rios Building (5204G)
1200 Pennsylvania Ayenue, N.W.
Washington, DC 20469
Attn: CLP Organic Program Manager

Fed-Ex/Overnight Delivery: USEPA OERR Analytical Operations/
Data Quality Center
1235 Jefferson Davis Highway
Crystal Gateway I, 12th Floor
Arlington, VA 22202
Attn: CLP Organic Program Manager

---

[1]The Sample Management Office (SMO) is a contractor-operated facility operating under the CLASS contract awarded and administered by USEPA.

R2-0004676

USEPA Regional CLP Project Officer (CLP PO):

SMO will provide the Contractor with the list of addresses for the CLP POs. SMO will provide the Contractor with updated name/address lists as necessary throughout the period of the contract.

QATS

USEPA Contract Laboratory Program (CLP)
Quality Assurance Technical Support (QATS) Laboratory[2]
2700 Chandler Avenue, Building C
Las Vegas, NV 89120
Attn: Data Audit Staff

[2]The Quality Assurance Technical Support (QATS) Laboratory is a contractor operated facility operating under the QATS contract awarded and administered by the USEPA.

R2-0004677

2.0 REPORTING REQUIREMENTS AND ORDER OF DATA DELIVERABLES

2.1 Introduction

The Contractor shall provide reports and other deliverables as specified in the Contract Schedule (Performance/Delivery Schedule). The required content and form of each deliverable is described in this exhibit. All reports and documentation must be:

- Legible;
- Clearly labeled and completed in accordance with instructions in this exhibit;
- Arranged in the order specified in this section;
- Paginated consecutively in ascending order starting from the Sample Delivery Group (SDG) Narrative;
- Copies must be legible and double-sided; and
- Information reported on the forms listed in Exhibit B (excluding the Sample Log-in Sheet [DC-1] and the Complete SDG File (CSF) Inventory Sheet [DC-2]) must be either typewritten or computer-generated. Handwritten corrections of the information must be legible, signed, and dated.

NOTE: Complete SDG files need not be double-sided. (The CSF is composed of original documents.) However, Sample Data Packages delivered to Sample Management Office (SMO) must be double-sided.

2.1.1 Requirements for each deliverable item cited in the Contract Schedule (Contract Performance/Delivery Schedule) are specified in Sections 2.3 to 2.9. Prior to submission, the Contractor shall arrange items and the components of each item in the order listed in these sections.

2.1.2 The Contractor shall use USEPA Case numbers (including SDG numbers) and EPA sample numbers to identify samples received under this contract, both verbally and in reports/correspondence. The contract number shall be specified in all correspondence.

2.2 Resubmission of Data

If submitted documentation does not conform to the above criteria, the Contractor shall resubmit such documentation with deficiency(ies) corrected, at no additional cost to USEPA.

2.2.1 The Contractor shall respond within seven days to written requests from data recipients for additional information or explanations that result from the Government's inspection activities, unless otherwise specified in the contract.

2.2.2 Whenever the Contractor is required to submit or resubmit data as a result of an on-site laboratory evaluation, or through a Contract Laboratory Program Project Office (CLP PO) action, or through a Regional data reviewer's request, the data shall be clearly marked as ADDITIONAL DATA and shall be sent to both contractual data recipients (SMO and the Region; to USEPA designated recipient, upon written request). The Contractor shall include a cover letter which describes which data are being delivered, to which USEPA Case(s) the data pertain, and who requested the data.

R2-0004678

2.2.3 Whenever the Contractor is required to submit or resubmit data as a result of Contract Compliance Screening (CCS) review by SMO, the data shall be sent to both contractual data recipients (SMO and the Region; to the USEPA designated recipient (e.g., QATS), when a written request for the Sample Data Package has been made). In all instances, the Contractor shall include a color-coded COVER SHEET (Laboratory Response to Results of Contract Compliance Screening) provided by SMO.

2.3 Quality Assurance Plan (QAP) and Standard Operating Procedures (SOPs)

The Contractor shall adhere to the requirements in Exhibits E and F.

2.4 Sample Traffic Reports (TRs)

Each sample received by the Contractor will be labeled with a EPA sample number, and will be accompanied by a Sample TR bearing the sample number and descriptive information regarding the sample. The Contractor shall complete the TR (marked "Lab Copy for Return to SMO"), recording the date of sample receipt and sample condition upon receipt for each container, and shall sign the TR. Information shall be recorded for each sample in the SDG.

2.4.1 The Contractor shall submit TRs in SDG sets (i.e., TRs for all samples in an SDG shall be clipped together), with an SDG cover sheet attached. The SDG cover sheet shall contain the following items:

- Laboratory name;
- Contract number;
- Sample analysis price (full sample price from the contract);
- Case number; and
- List of EPA sample numbers of all samples in the SDG, identifying the first and last samples received, and their dates of receipt (LRDs).

NOTE: When more than one sample is received in the first or last SDG shipment, the "first" sample received would be the lowest sample number (considering both alpha and numeric designations); the "last" sample received would be the highest sample number (considering both alpha and numeric designations).

2.4.2 Each TR shall be clearly marked with the SDG number, entered below the laboratory receipt date on the TR. The TR for the last sample received in the SDG shall be clearly marked "SDG--FINAL SAMPLE". The SDG number is the EPA sample number of the first sample received in the SDG. When several samples are received together in the first SDG shipment, the SDG number shall be the lowest sample number (considering both alpha and numeric designations) in the first group of samples received under the SDG.

2.4.3 If samples are received at the laboratory with multi-sample TRs, all the samples on one multi-sample TR may not necessarily be in the same SDG. In this instance, the Contractor shall make the appropriate number of photocopies of the TR, and submit one copy with each SDG cover sheet.

R2-0004679

2.5 Sample Data Package

The Sample Data Package is divided into the five major units described in this section. The last three units are each specific to an analytical fraction (volatiles, semivolatiles, and pesticides/Aroclors). If the analysis of a fraction is not required, then that fraction-specific unit is not required as a deliverable. The Sample Data Package shall include data for the analyses of all samples in one SDG, including field samples, dilutions, re-analyses, blanks, Laboratory Control Samples, and any requested Matrix Spike/Matrix Spike Duplicate(s) (MS/MSD). The Contractor shall retain a copy of the CSF for 365 days after final acceptance of data. After this time, the Contractor may dispose of the package.

2.5.1 SDG Narrative. This document shall be clearly labeled "SDG Narrative" and shall contain: laboratory name; Case number; EPA sample numbers in the SDG, differentiating between initial analyses and re-analyses; SDG number; Contract number; and detailed documentation of any quality control, sample, shipment and/or analytical problems encountered in processing the samples reported in the data package. The Contractor shall include any technical and administrative problems encountered, the corrective actions taken, the resolution, and an explanation for all flagged edits (e.g., manual edits) on quantitation lists. This includes documenting the alternative technique used to determine cooler temperature if a temperature indicator bottle is not present in the cooler. The Contractor shall also provide, in the SDG Narrative, sufficient information, including equations or curves (at least one equation or curve per method), to allow the recalculation of sample results from raw instrument output. The Contractor shall also include a discussion of any flexibility SOW modification. This includes attaching a copy of the approved modification form to the SDG Narrative. Additionally the Contractor shall also identify and explain any differences which exist between the Form Is and supporting documentation provided in the data package and those previously provided as preliminary results.

All Gas Chromatograph (GC) columns used for analysis shall be documented here, by fraction. List the GC column identification--brand name, the internal diameter, in millimeters (mm), and the length, in meters, packing/coating material and film thickness. The trap used for volatile analysis shall be described here. List trap name, when denoted by manufacturer, its composition [packing material/brand name, amount of packing material, in length, centimeters (cm)]. All tentatively identified (semi-volatile) alkanes and their estimated concentrations are to be reported here. The EPA sample number, the CAS number, when available, the alkane compound (or series) name, and its estimated concentration shall be provided in tabular format. The Contractor shall document in the SDG Narrative all instances of manual integration. The SDG Narrative shall contain the following statement, verbatim: "I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature." This statement shall be directly followed by an original signature of the laboratory manager or their designee with a typed line below it containing the signer's name and title, and the date of signature.

R2-0004680

2.5.1.1 The samples analyzed under this contract should not exhibit a matrix effect which would prevent the Contractor from meeting the requirements of the contract. Sample re-extraction/re-analyses performed as a result of suspected matrix interferences beyond the scope of the method will be reviewed on a case-by-case basis for payment purposes by the CLP PO. Send or telefax to the CLP PO a copy of the SDG Narrative (include your contract number), a description of the situation and the requested CLP PO action, either prior or concurrent with the delivery of the Sample Data Package.

2.5.1.2 The Contractor shall list the pH determined for each water sample submitted for volatiles analysis. This information may appear as a simple list or table in the SDG Narrative. The purpose of this pH determination is to ensure that all water volatiles samples were acidified in the field. No pH adjustment is to be performed by the Contractor on water samples for volatiles analysis.

2.5.2 Traffic Reports. The Contractor shall include a copy of the TRs submitted in Section 2.4 for all of the samples in the SDG. The TRs shall be arranged in increasing EPA sample number order, considering both letters and numbers. Copies of the SDG cover sheet are to be included with the copies of the TRs. (See Section 2.4 for more detail on reporting requirements for TRs.) In the case of multi-sample TRs, the Contractor shall make the appropriate number of photocopies of the TR so that a copy is submitted with each applicable data package. In addition, in any instance where samples from more than one multi-sample TR are in the same data package, the Contractor shall submit a copy of the SDG cover sheet with copies of the TRs.

2.5.3 Volatiles Data

2.5.3.1 Volatiles QC Summary

2.5.3.1.1 Deuterated Monitoring Compound Recovery (Form II LCV-1, LCV-2).

2.5.3.1.2 Matrix Spike/Matrix Spike Duplicate Recovery (Form III LCV). This data shall be provided upon Region's request.

2.5.3.1.3 Method Blank Summary (Form IV LCV): If more than a single form is necessary, forms shall be arranged in chronological order by date of analysis of the blank, by instrument.

2.5.3.1.4 GC/MS instrument performance check (Form V LCV): If more than a single form is necessary, forms shall be arranged in chronological order, by instrument.

2.5.3.1.5 Interual Standard Area and RT Summary (Form VIII LCV): If more than a single form is necessary, forms shall be arranged in chronological order, by instrument.

2.5.3.2 Volatiles Sample Data. Sample data, including dilutions, and re-analyses data, shall be arranged in packets with the Organic Analysis Data Sheet (Form I LCV-1, LCV-2, including Form I LCV-TIC), followed by the raw data for volatile samples. These sample packets shall be placed in increasing EPA sample number order, considering both letters and numbers.

2.5.3.2.1 Target Compound Results, Organic Analysis Data Sheet (Form I LCV-1, LCV-2). Tabulated results (identification and quantitation) of the specified target compounds (Exhibit C,

R2-0004681

Volatiles) shall be included. The validation and release of these results are authorized by a specific, signed statement in the SDG Narrative (Section 2.5.1). In the event that the laboratory manager cannot verify all data reported for each sample, the laboratory manager shall provide a detailed description of the problems associated with the sample in the SDG Narrative.

2.5.3.2.2 Tentatively Identified Compounds (Form 1 LCV-TIC). Form I LCV-TIC is the tabulated list of the highest probable match for up to 30 organic compounds that are not deuterated monitoring compounds or interual standard compounds and are not listed in Exhibit C. It inciudes the Chemical Abstracts Service (CAS) registry number (if applicable), tentative identification, and estimated concentration. This form shall be included even if no compounds are found. If no compounds are found, indicate this on the form by entering "0" in the field for "Number Found".

2.5.3.2.3 Reconstructed Total Ion Chromatograms (for each sample or sample extract, including dilutions and re-analyses). Reconstructed ion chromatograms shall be normalized to the largest nonsolvent component and shall contain the following header information:

- EPA sample number;
- Date and time of analysis;
- GC/MS rustrument identifier;
- Lab file identifier, and
- Analyst ID.

2.5.3.2.3.1 Interual standards and deuterated monitoring compounds shall be labeled with the names of compounds, either directly out from the peak or on a printout of retention times, if retention times (or scan numbers) are printed above the peak.

2.5.3.2.3.2 If automated data system procedures are used for preliminary identification and/or quantitation of the target compounds, the complete data system report shall be included in all Sample Data Packages, in addition to the reconstructed ion chromatogram. The complete data system report shall include all of the information listed below. For laboratories which do not use the automated data system procedures, a laboratory "raw data sheet" containing the following information shall be included in the Sample Data Package, in addition to the chromatogram:

- EPA sample number;
- Date and time of analysis;
- Retention time or scan number of identified target compounds;
- Ion used for quantitation with measured area;
- Copy of area table from data system;

R2-0004682

- GC/MS instrument identifier;
- Lab file identifier; and
- Analyst ID.

2.5.3.2.3.3 In all instances where the data system report has been edited, or where manual integration or quantitation has been performed, the GC/MS operator shall identify such edits or manual procedures by initialing and dating the changes made to the report, and shall include the integration scan range. In addition, a hardcopy printout of the Extracted Ion Current Profile (EICP) of the quantitation ion displaying the manual integration shall be included in the raw data. This applies to all compounds listed in Exhibit C (Volatiles), interual standards and deuterated monitoring compounds.

- EICPs displaying each manual integration.

2.5.3.2.4 Other Required Information. For each sample, by each compound identified, the following items shall be included in the data package.

- Copies of raw spectra and copies of background-subtracted mass spectra of target compounds listed in Exhibit C (Volatiles) that are identified in the sample and corresponding background-subtracted target compound standard mass spectra. Spectra shall be labeled with EPA sample number, lab file identifier, date and time of analysis, and GC/MS instrument identifier. Compound names shall be clearly marked on all spectra.
- Copies of mass spectra of non-deuterated monitoring/non-interual standard organic compounds not listed in Exhibit C with associated best-match spectra (minimum of one, maximum of three best matches). Spectra shall be labeled with EPA sample number, lab file identifier, date and time of analysis, and GC/MS instrument identifier. Compound names shall be clearly marked on all spectra.

2.5.3.3 Volatiles Standards Data

2.5.3.3.1 Initial calibration data (Form VI LCV-1, LCV-2, LCV-3) shall be included in order by instrument, if more than one instrument is used.

- Volatile standard(s) reconstructed ion chromatograms and quantitation reports for the initial (five-point) calibration, labeled as in Section 2.5.3.2.3. Spectra are not required.
- All initial calibration data that pertain to samples in the data package shall be included, regardless of when it was performed and for which Case. When more than one initial calibration is performed, the data shall be in chronological order, by instrument.
- EICPs displaying each manual integration.

R2-0004683

2.5.3.3.2 Continuing calibration data (Form VII LCV-1, LCV-2, LCV-3) shall be included in order by instrument, if more than one instrument is used.

- Volatile standard(s) reconstructed ion chromatograms and quantitation reports for all continuing (12-hour) calibrations, labeled as in Section 2.5.3.2.3. Spectra are not required.
- When more than one continuing calibration is performed, forms shall be in chronological order, by instrument.
- EICPs displaying each manual integration.

2.5.3.3.3 In all instances where the data system report has been edited, or where manual integration or quantitation has been performed, the GC/MS operator shall identify such edits or manual procedures by initialing and dating the changes made to the report, and shall include the integration scan range. In addition, a hardcopy printout of the EICP of the quantitation ion displaying the manual integration shall be included in the raw data. This applies to all compounds listed in Exhibit C (Volatiles), interual standards and deuterated monitoring compounds.

2.5.3.4 Volatiles Raw QC Data

2.5.3.4.1 4-Bromofluorobenzene (BFB) data shall be arranged in chronological order by instrument for each 12-hour period, for each GC/MS system utilized.

- Bar graph spectrum, labeled as in Section 2.5.3.2.4.
- Mass listing, labeled as in Section 2.5.3.2.4.
- Reconstructed total ion chromatogram, labeled as in Section 2.5.3.2.3.

2.5.3.4.2 Blank data shall be arranged by type of blank (method, storage, instrument) and shall be in chronological order by instrument.

NOTE: This order is different from that used for samples.

- Tabulated results (Form I LCV-1, LCV-2).
- Tentatively identified compounds (Form I LCV-TIC) even if none are found.
- Reconstructed ion chromatogram(s) and quantitation report(s), labeled as in Section 2.5.3.2.3.
- Target compound spectra with laboratory-generated standard spectra, labeled as in Section 2.5.3.2.4. Data systems which are incapable of dual display shall provide spectra in the following order:

-- Raw target compound spectra.

-- Enhanced or baekground-subtraeted spectra.

-- Laboratory-generated standard spectra.

R2-0004684

- GC/MS library search spectra for tentatively identified compounds, labeled as in Section 2.5.3.2.4.

- Quantitation/calculation of tentatively identified compound concentrations.

2.5.3.4.3 Volatiles Matrix Spike Data

- Tabulated results (Form I LCV-1, LCV-2) of target compounds. Form I LCV-TIC is not required.

- Reconstructed ion chromatogram(s) and quantitation report(s), labeled as in Section 2.5.3.2.3. Spectra are not required.

2.5.3.4.4 Volatiles Matrix Spike Duplicate Data

- Tabulated results (Form I LCV-1, LCV-2) of target compounds. Form I LCV-TIC is not required.

- Reconstructed ion chromatogram(s) and quantitation report(s), labeled as in Section 2.5.3.2.3. Spectra are not required.

2.5.4 Semivolatiles Data

2.5.4.1 Semivolatiles QC Summary

2.5.4.1.1 Deuterated Monitoring Compound Recovery (Form II LCSV-1, LCSV-2).

2.5.4.1.2 Matrix Spike/Matrix Spike Duplicate Recovery (Form III LCSV): This data shall be provided upon Region's request.

2.5.4.1.3 Method Blank Summary (Form IV LCSV): If more than a single form is necessary, forms shall be arranged in chronological order by date of analysis of the blank, by instrument.

2.5.4.1.4 GC/MS Instrument Performance Check (Form V LCSV): If more than a single form is necessary, forms shall be arranged in chronological order, by instrument.

2.5.4.1.5 Interual Standard Area and RT Summary (Form VIII LCSV): If more than a single form is necessary, forms shall be arranged in chronological order, by instrument.

2.5.4.2 Semivolatiles Sample Data. Sample data, including dilutions and re-analysis samples, shall be arranged in packets with the Organic Analysis Data Sheet (Form I LCSV-1, LCSV-2, including Form I LCSV-TIC), followed by the raw data for semivolatile samples. These sample packets shall be placed in increasing EPA sample number order, considering both letters and numbers.

2.5.4.2.1 Target Compound Results, Organic Analysis Data Sheet (Form I LCSV-1, LCSV-2). Tabulated results (identification and quantitation) of the specified target compounds (Exhibit C, Semivolatiles) shall be included. The validation and release of these results are authorized by a specific, signed statement in the SDG Narrative (Section 2.5.1). In the event that the laboratory manager cannot verify all data reported for each sample, the laboratory manager shall provide a detailed

R2-0004685

description of the problems associated with the sample in the SDG Narrative.

2.5.4.2.2 Tentatively Identified Compounds (Form I LCSV-TIC). Form I LCSV-TIC is the tabulated list of the highest probable match for up to 30 organic compounds that are not deuterated monitoring compounds, or internal standard organic compounds and are not listed in Exhibit C (Volatiles, Semivolatiles). It includes the CAS registry number (if applicable), tentative identification, and estimated concentration. This form shall be included even if no compounds are fbund. If no compounds are found, indicate this on the form by entering "0" in the field for "Number TICs found."

2.5.4.2.3 Reconstructed Total Ion Chromatograms (for each sample, including dilutions and re-analyses). Reconstructed ion chromatograms shall be normalized to the largest nonsolvent component and shall contain the following header information:

- EPA sample number;
- Date and time of analysis;
- GC/MS instrument identifier;
- Lab file identifier; and
- Analyst ID.

2.5.4.2.3.1 Interual standards and deuterated monitoring compounds shall be labeled with the names of compounds, either directly out from the peak or on a printout of retention times if retention times (or scan numbers) are printed over the peak.

2.5.4.2.3.2 If automated data system procedures are used for preliminary identification and/or quantitation of the target compounds, the complete data system report shall be included in all Sample Data Packages, in addition to the reconstructed ion chromatogram. The complete data system report shall include all of the information listed below. For laboratories which do not use the automated data system procedures, a laboratory "raw data sheet" containing the following information shall be included in the Sample Data Package, in addition to the chromatogram:

- EPA sample number;
- Date and time of analysis;
- Retention time or scan number of identified target compounds;
- Ion used for quantitation with measured area;
- Copy of area table from data system;
- GC/MS instrument identifier;
- Lab file identifier; and
- Analyst ID.

R2-0004686

2.5.4.2.3.3 In all instances where the data system report has been edited, or where manual integration or quantitation has been performed, the GC/MS operator shall identify such edits or manual procedures by initialing and dating the changes made to the report, and shall include the integration scan range. In addition, a hardcopy printout of the EICP of the quantitation ion displaying the manual integration shall be included in the raw data. This applies to all compounds listed in Exhibit C (Semivolatiles), interual standards and deuterated monitoring compounds.

- EICPs displaying each manual integration.

2.5.4.2.4 Other Required Information. For each sample, by each compound identified, the following shall be included in the data package.

- Copies of raw spectra and copies of background-subtracted mass spectra of target compounds listed in Exhibit C (Semivolatiles) that are identified in the sample and corresponding background-subtracted target compound standard mass spectra. Spectra shall be labeled with EPA sample number, lab file identifier, and date and time of analysis, and GC/MS instrument identifier compound names shall be clearly marked on all spectra.

- Copies of mass spectra of non-deuterated monitoring compounds/non-interual standard organic compounds not listed in Exhibit C (Volatiles and Semivolatiles) with associated best-match spectra (minimum of one, maximum of three best matches). This includes the mass spectra for tentatively identified alkanes. Spectra shall be labeled with EPA sample number, lab file identifier, and date and time of analysis, and GC/MS instrument identifier compound names shall be clearly marked on all spectra.

2.5.4.3 Semivolatiles Standards Data

2.5.4.3.1 Initial calibration data (Form VI LCSV-1, LCSV-2, LCSV-3) shall be included in order by instrument, if more than one instrument is used.

- Semivolatile standard(s), reconstructed ion chromatograms, and quantitation reports for the initial (five-point) calibration, labeled as in Section 2.5.4.2.3. Spectra are not required.

- All initial calibration data that pertain to samples in the data package shall be included, regardless of when it was performed and for which Case. When more than one initial calibration is performed, the data shall be in chronological order, by instrument.

- EICPs displaying each manual integration.

2.5.4.3.2 Continuing calibration data (Form VII LCSV-1, LCSV-2, LCSV-3) shall be included in order by instrument, if more than one instrument used.

- Semivolatile standard(s) reconstructed ion chromatograms and quantitation reports for all continuing (12-hour)

R2-0004687

calibrations, labeled as in Section 2.5.4.2.3. Spectra are not required.

- When more than one continuing calibration is performed, forms shall be in chronological order, by instrument.

- EICPs displaying each manual integration.

2.5.4.3.3 In all instances where the data system report has been edited, or where manual integration or quantitation has been performed, the GC/MS operator shall identify such edits or manual procedures by initialing and dating the changes made to the report, and shall include the integration scan range. In addition, a hardcopy printout of the EICP of the quantitation ion displaying the manual integration shall be included in the raw data. This applies to all compounds listed in Exhibit C (Semivolatiles), internal standards, and deuterated monitoring compounds.

2.5.4.4 Semivolatiles Raw QC Data

2.5.4.4.1 Decafluorotriphenylphosphine (DFTPP) data shall be arranged in chronological order by instrument for each 12-hour period, for each GC/MS system utilized.

- Bar graph spectrum, labeled as in Section 2.5.4.2.4.

- Mass listing, labeled as in Section 2.5.4.2.4.

- Reconstructed total ion chromatogram, labeled as in Section 2.5.4.2.3.

2.5.4.4.2 Blank data shall be included in chronological order by extraction date.

NOTE: This order is different from that used for samples.

- Tabulated results (Form I LCSV-1, LCSV-2).

- Tentatively identified compounds (Form I LCSV-TIC) even if none are found.

- Reconstructed ion chromatogram(s) and quantitation report(s), labeled as in Section 2.5.4.2.3.

- Target compound spectra with laboratory-generated standard spectra, labeled as in Section 2.5.4.2.4. Data systems which are incapable of dual display shall provide spectra in the following order:

  -- Raw target compound spectra.

  -- Enhanced or background-subtracted spectra.

  -- Laboratory-generated standard spectra.

- GC/MS library search spectra for tentatively identified compounds, labeled as in Section 2.5.4.2.4.

- Quantitation/calculation of tentatively identifled compound concentrations.

R2-0004688

2.5.4.4.3 Semivolatiles Matrix Spike Data

- Tabulated results (Form I LCSV-1, LCSV-2) of target compounds. Form I LCSV-TIC is not required.
- Reconstructed ion chromatogram(s) and quantitation report(s), labeled as in Section 2.5.4.2.3. Spectra are not required.

2.5.4.4.4 Semivolatiles Matrix Spike Duplicate Data

- Tabulated results (Form I LCSV-1, LCSV-2) of target compounds. Form I LSV-TIC is not required.
- Reconstructed ion chromatogram(s) and quantitation report(s), labeled as in Section 2.5.4.2.3. Spectra are not required.

2.5.5 Pesticide/Aroclor Data

2.5.5.1 Pesticide/Aroclor QC Summary

2.5.5.1.1 Surrogate Percent Recovery Summary (Form II LCP).

2.5.5.1.2 Matrix Spike/Matrix Spike Duplicate Recovery (Form III LCP-1): This data shall be provided upon Region's request.

2.5.5.1.3 Laboratory Control Sample Recovery (Form III LCP-2).

2.5.5.1.4 Method Blank Summary (Form IV LCP): If more than a single form is necessary, forms shall be arranged in chronological order by date of analysis of the blank.

2.5.5.2 Pesticide/Aroclor Sample Data. Sample data including dilutions and re-analyses shall be arranged in packets with the Organic Analysis Data Sheet (Form I LCP) and the raw data for pesticide samples. These sample packets should then be placed in increasing EPA sample number order, considering both letters and numbers.

2.5.5.2.1 Target Compound Results, Organic Analysis Data Sheet (Form I LCP). Tabulated results (identification and quantitation) of the specified target compounds (Exhibit C, Pesticides/Aroclors) shall be included. The validation and release of these results is authorized by a specific, signed statement in the SDG Narrative (see Section 2.5.1). In the event that the laboratory manager cannot verify all data reported for each sample, the laboratory manager shall provide a detailed description of the problems associated with the sample in the SDG Narrative.

2.5.5.2.2 Copies of Pesticide Chromatograms. Positively identified (identified according to the criteria in Exhibit D Pesticides and Aroclors) compounds for each column shall be labeled with the names of compounds, either directly out from the peak on the chromatogram, or on a printout of retention times on the data system printout if retention times are printed over the peak on the chromatogram. All chromatograms shall meet the acceptance criteria in Exhibit D Pesticides and Aroclors, and shall be labeled with the following information:

- EPA sample number;
- Volume injected (µL);

R2-0004689

- Date and time of injection;
- GC column identifier (by stationary phase and internal diameter);
- GC instrument identifier; and
- Scaling factor.

2.5.5.2.3 Copies of pesticide chromatograms from the second GC column shall be included and labeled as in Section 2.5.5.2.2.

2.5.5.2.4 Data System Printout. A printout of retention time and corresponding peak height or peak area shall accompany each chromatogram. The printout shall be labeled with the EPA sample number. In all instances where the data system report has been edited, or where manual integration or quantitation has been performed, the GC/ECD operator must identify such edits or manual procedures by initialing and dating the changes made to the report, and shall include the integration time range.

2.5.5.2.5 All manual work sheets shall be included in the Sample Data Package.

2.5.5.3 Pesticide/Aroclor Standards Data

2.5.5.3.1 Initial Calibration of Single Component Analytes (Form VI LCP-1, LCP-2): for all GC columns, all instruments, in chronological order by GC column and instrument.

2.5.5.3.2 Initial Calibration of Multicomponent Analytes (Form VI LCP-3): for all GC columns, all instruments, in chronological order by GC column and instrument.

2.5.5.3.3 Analyte Resolution Summary (Form VI LCP-4): for all GC columns and instruments, in chronological order by GC column and instrument.

2.5.5.3.4 Performance Evaluatibn Mixture (Form VI LCP-5): for all GC columns and instruments, in chronological order by GC column and instrument.

2.5.5.3.5 Individual Standard Mixture A (Form VI LCP-6): for all GC columns and instruments, in chronological order by GC column and instrument.

2.5.5.3.6 Individual Standard Mixture B (Form VI LCP-7): for all GC columns and instruments, in chronological order by GC column and instrument.

2.5.5.3.7 Calibration Verification Summary (Form VII LCP-1): for all performance evaluation mixtures and instrument blanks, on all GC columns and instruments, in chronological order by GC column and instrument. Report for each associated instrument blank.

2.5.5.3.8 Calibration Verification Summary (Form VII LCP-2): for all mid-peint eeneentratiens of Individual Standard Mixtures A and B and reported for all instrument blanks used for calibration verification, on all GC columns and instruments, in chronological order by GC column and instrument.

R2-0004690

2.5.5.3.9 Analytical Sequence (Form VIII LCP): for all GC columns and instruments, in chronological order by GC column and instrument.

2.5.5.3.10 Florisil Cartridge Check (Form IX LCP): for all lots of cartridges used to process samples in the SDG.

2.5.5.3.11 Pesticide Identification Summary for Single Component Analytes (Form X LCP-1): for all samples with positively identified single component analytes, in order by increasing EPA sample number.

2.5.5.3.12 Pesticide Identification Summary for Multicomponent Analytes (Form X LCP-2): for all samples with positively identified multicomponent analytes, in order by increasing EPA sample number.

2.5.5.3.13 Chromatograms and data system printouts shall be included for all standards including the following:

- Resolution check mixture;
- Performance evaluation mixtures, all;
- Individual Standard Mixture A, at three concentrations, each initial calibration;
- Individual Standard Mixture B, at three concentrations, each initial calibration;
- All multicomponent analytes (toxaphene and Aroclors), each initial calibration;
- All mid-point concentrations of Individual Standard Mixtures A and B used for calibration verification; and
- All multicomponent analyte standards analyzed for confirmation.

2.5.5.3.14 A printout of retention time and corresponding peak height or peak area shall accompany each chromatogram. The printout shall be labeled with the EPA sample number. In addition, all chromatograms shall meet the acceptance criteria in Exhibit D Pesticides and Aroclors, and shall be Iabeled with the following:

- EPA sample number for the standard, e.g., INDA, INDB, etc. (See Section 3.3.7.6 for details);
- Labels of all standard peaks for all individual compounds either directly out from the peak on the chromatogram or on the printout of retention times on the data system printout if retention times are printed over the peak on the chromatogram;
- Total nanograms injected for each standard. When total nanograms injected appear on the printout, it is not necessary to include them on the chromatogram;
- Date and time of injection;

R2-0004691

- GC column identifier (by stationary phase and internal diameter);
- GC instrument identifier; and
- Scaling factor.

NOTE: In all instances where the data system repdrt has been edited, or where manual integration or quantitation has been performed, the GC/EC operator must identify such edits or manual procedures by initialing and dating the changes made to the report, and shall include the integration time range.

2.5.5.4 Pesticide/Aroclor Raw QC Data

2.5.5.4.1 Blank data shall be arranged by type of blank (method, instrument, sulfur cleanup) and shall be in chronological order by instrument.

NOTE: This order is different from that used for samples.

- Tabulated results (Form I LCP).
- Chromatogram(s) and data system printout(s) (GC) for each GC column and instrument used for analysis, labeled as in Sections 2.5.5.2.2 and 2.5.5.2.4.

2.5.5.4.2 Laboratory Control Sample Data

- Tabulated results (Form I LCP) of target compounds.
- Chromatogram(s) and data system printout(s) (GC), labeled as in Sections 2.5.5.2.2 and 2.5.5.2.4 and for both columns as in Section 2.5.5.2.3.

2.5.5.4.3 Pesticides Matrix Spike

- Tabulate results (Form I LCP) of target compounds.
- Chromatogram(s) and data system printout(s) (GC), labeled as in Section 2.5.5.2.2 and 2.5.5.2.4 and for both columns as in Section 2.5.5.2.3.

2.5.5.4.4 Pesticides Matrix Spike Duplicate Data

- Tabulate results (Form I LCP) of target compounds.
- Chromatogram(s) and data system printout(s) (GC), labeled as in Section 2.5.5.2.2 and 2.5.5.2.4 and for both columns as in Section 2.5.5.2.3.

2.5.5.5 Raw Florisil Data. The chromatogram and data system report(s) shall be arranged in chronological order by Florisil cartridge performance check analyses.

- Chromatograms and data system reports labeled as specified in Sections 2.5.5.2.2 and 2.5.5.2.4 for the florisil cartridge performance check analyses.
- Chromatograms and data system reports for standard analyses used to quantify compounds in the Florisil cartridge performance check analysis, labeled as specified in Section

R2-0004692

2.5.5.3.14 (i.e., Individual Standard Mixture A and Individual Standard Mixture B and the 2,4,5 Trichlorophenol solution).

2.6 Complete SDG File (CSF)

As specified in Section 1, the Contractor shall deliver one Complete SDG File (CSF) including the original Sample Data Package to the Region concurrently with delivery of the Sample Data Package to SMO. (Delivery to a USEPA designated recipient is only required upon written request.)

2.6.1 The CSF will contain all original documents as specified in Section 3 and Exhibit F, and in Form DC-2 (see Section 4). No photocopies of original documents will be placed in the CSF unless the original data was initially written in a bound notebook, maintained by the Contractor, or the originals were previously submitted to USEPA with another Case/SDG in accordance with the requirements described in Exhibit F. The contents of the CSF shall be numbered according to the specifications described in Section 3.20.

2.6.2 The CSF will consist of the following original documents in addition to the documents in the Sample Data Package.

NOTE: All SDG-related documentation may be used or admitted as evidence in subsequent legal proceedings. Any other SDG-specific documents generated after the CSF is sent to USEPA, as well as copies that are altered in any fashion, are also deliverables to USEPA. (Deliver the original to the Region and a copy to SMO. Delivery to a USEPA-designated recipient is only upon written request.)

2.6.2.1 The original Sample Data Package.

2.6.2.2 A completed and signed document inventory sheet (Form DC-2).

2.6.2.3 All original shipping documents including, but not limited to, the following documents:

- USEPA Chain-of-Custody Record;
- Airbills (if an airbill is not received, include a hardcopy receipt requested from the shipping company or a printout of the shipping company's electronic tracking information);
- USEPA TRs; and
- Sample tags (if present) sealed in plastic bags.

2.6.2.4 All original receiving documents including, but not limited to, the following documents:

- Form DC-1;
- Other receiving forms or copies of receiving logbooks; and
- SDG cover sheet.

2.6.2.5 All original laboratory records, not already submitted in the Sample Data Package, of sample transfer, preparation and analysis including, but not limited to, the following documents:

- Original preparation and analysis forms or copies of preparation and analysis logbook pages;

R2-0004693

- Internal sample and sample extract transfer chain-of-custody records;
- Screening records; and
- All instrnment output, including strip charts from screening activities.

2.6.2.6 All other original SDG-specific documents in the possession of the Contractor including, but not limited to, tbe following documents:

- Telephone contact logs;
- Copies of personal logbook pages;
- All handwritten SDG-specific notes; and
- Any other SDG-specific documents not covered by the above.

2.6.3 If the Contractor does submit SDG-specific documents to USEPA after submissibn of the CSF, the documents should be identified with unique accountable numbers, a revised Form DC-2 should be submitted, and the unique accountable numbers and the locations of the documents in the CSF should be recorded in the "Other Records" section on the revised Form DC-2. Alternatively, the Contractor may number the newly submitted SDG-specific documents to USEPA as a new CSF and submit a new Form DC-2. The revised Form DC-2 or new Form DC-2 should be submitted to the USEPA Regions only.

2.7 Data in Computer-Readable Format

The Contractor shall provide a computer-readable copy of the data on data reporting Forms I-X for all samples in the SDG as specified in Exhibit H, and delivered as specified in the Contract Schedule (Contract Performance/Delivery Schedule). Computer-readable data deliverables shall be submitted on IBM or IBM-compatible, 3.5-inch high-density 1.44 MB diskette (or via an alternate means of electronic transmission approved in advance by the USEPA).

2.7.1 When submitted, the diskette(s) shall be packaged and shipped in such a manner that the diskette(s) cannot be bent or folded, and will not be exposed to extreme heat or cold or any type of electromagnetic radiation. The diskette(s) shall be included in the same shipment as the hardcopy data and shall, at a minimum, be enclosed in a diskette mailer. The diskette(s) shall be labeled as specified in Exhibit H, Section 8.4.

2.7.2 The data shall be recorded in ASCII, text file format, and shall adhere to the file, record, and field specifications listed in Exhibit H.

2.8 Preliminary Results

The Form I data results shall be submitted for all samples in one SDG of a Case. This includes tabulated target compound results (Form I) for the volatile, semivolatile, and pesticide fractions, and tentatively identified compounds (Form I TIC) for the volatile and semivolatile fractions. The Contractor shall clearly identify the Preliminary Results by labeling each Form I and Form I TTC as "Preliminary Results" under each form title (e.g., under Volatile Organics Analysis Data Sheet, Volatile Organics Analysis Data Sheet Tentatively Identified Compounds).

R2-0004694

2.8.1 The Contractor shall also include a disclaimer at the bottom of all Form Is stating that the "Data results contained on this Form I are for scanning purposes only and may not have been validated fro CLP criteria."

2.8.2 Sample Traffic Reports and SDG Cover Sheets shall be submitted with the Preliminary Results.

2.9 GC/MS and GC/ECD Tapes

The Contractor shall adhere to the requirements in Section 13 of Exhibit E.

2.10 Extracts

The Contractor shall preserve sample extracts at 4°C (±2°C) in bottles/vials with PTFE-lined septa. Extract bottles/vials shall be labeled with EPA sample number, Case number, and SDG number. The Contractor shall maintain a logbook of stored extracts, listing EPA sample numbers and associated Case and SDG numbers. The Contractor shall retain extracts for 365 days following submission of the reconciled complete Sample Data Package. During that time, the Contractor shall submit extracts and associated logbook pages within seven days following receipt of a written request from the CLP PO.

R2-0004695

3.0 FORM INSTRUCTIONS

3.1 Introduction

This section includes specific instructions for completing the data reporting forms required under this contract. Each of the forms is specific to a given fraction (volatile, semivolatile, or pesticide/Aroclor). The Contractor shall submit only those forms pertaining to the fractions analyzed for a given sample(s). For instance, if a sample is scheduled for volatiles analysis only, the Contractor shall provide only forms for the volatile fraction.

3.2 General Information

The Contractor shall report values on the hardcopy forms according to the individual form instructions in this section. For instance, all results for concentrations of target compounds shall be reported to two significant figures. Values that exceed the maximum length allowed shall be reported to the maximum possible, maintaining the specified significance.

3.2.1 The data reporting forms presented in Section 4 have been designed in conjunction with the computer-readable data format specified in Exhibit H. The specific length of each variable for computer-readable data transmission purposes is also given in Exhibit H. Information entered on these forms shall not exceed the size of the field given on the form, including such laboratory-generated items as lab name and lab sample identifier.

NOTE: The space provided for entries on the hardcopy forms (Section 4) is greater in some instances than the length prescribed for the variable as written to the electronic deliverable (see Exhibit H). Greater space is provided on the hardcopy forms for visual clarity.

3.2.2 When submitting data, the Contractor shall reproduce <u>all</u> characters that appear on the data reporting forms in Section 4. The format of the forms submitted shall be identical to that shown in the contract. No information may be added, deleted, or moved from its specified position without prior written approval from the Contract Laboratory Program Project Officer (CLP PO). The names of the various fields and compounds (e.g., "Lab Code," "Chloromethane") shall appear as they do on the forms in the contract. For items appearing on the uncompleted forms (Section 4), the use of uppercase and lowercase letters is optional.

3.2.3 Alphabetical entries made on the forms by the Contractor shall be in ALL UPPERCASE letters (e.g., "ABCDE", not "Abcde" or "abode"). If an entry does not fill the entire blank space provided on the form, null characters shall be used to remove the remaining underscores that comprise the blank line. However, the Contractor shall <u>not</u> remove the underscores or vertical bars that delineate "boxes" on the forms. The only exception would be those underscores at the bottom of a "box" that are intended as a data entry line. (For instance, on Form 2LCV, line 30, if data is entered on iine 30, it will replace the underscores.)

R2-0004696

3.3 Header Information

Six pieces of information are common to the header section of each data reporting form: lab name, contract, lab code, Case number, Client number and Sample Delivery Group (SDG) number. Except as noted for Client number, this information shall be entered on every form and shall match on every form.

3.3.1 Lab Name. The lab name shall be the name chosen by the Contractor to identify its laboratory. It shall not exceed 25 characters.

3.3.2 Contract. Contract refers to the number of the USEPA contract under which the analyses were performed.

3.3.3 Lab Code. The lab code is an alphabetical abbreviation of up to six letters, as assigned by USEPA, to identify the laboratory and aid in data processing. This lab code will be assigned by USEPA at the time a contract is awarded, and shall not be modified by the Contractor, except at the direction of USEPA. If a change of name or ownership occurs at the laboratory, the lab code will remain the same until the Contractor is directed by USEPA to use another lab code.

3.3.4 Case Number. The Case number is the USEPA-assigned Case number associated with the sample. This number is reported on the Traffic Report (TR).

3.3.5 Client Number. The Client number is a unique number identifying the client and the project. This number may be the USEPA-assigned number for analyses performed under Non-Routine Analytical Services (NRAS). If samples are to be analyzed under NRAS only, and reported on these forms, then enter the NRAS number as "Client No." and leave the Case number blank. If samples are analyzed according to the Routine Analytical Services (RAS) protocol and have additional NRAS requirements, list both the Case number and NRAS number on all forms. If the analyses have no NRAS requirements, leave the "Client No." field blank.

NOTE: Some samples in an SDG may have a Client Number where as other may not.

3.3.6 SDG Number. The "SDG No." is the Sample Delivery Group (SDG) number. The SDG number is the EPA sample number of the first sample received in the SDG, except when this would cause duplication. When several samples are received together in the first SDG shipment, the SDG number shall be the lowest sample number (considering both alpha and numeric designations) in the first group of samples received under the SDG. If fractions of the same field samples are scheduled under different turnaround times, thus creating separate SDG's containing the same sample numbers, a different sample number shall be utilized in the assignment of the SDG number for each SDG. If a situation arises where there are an insufficient number of samples for assignment of SDG numbers the Contractor shall contact SMO for the assignment of an SDG number.

3.3.7 Sample Number. This number appears either in the upper right-hand corner of the form, or as the left column of a table summarizing data from a number of samples. When the EPA sample number is entered in the triple-spaced box in the upper right-hand corner of Form I, Form IV, or Porm X, it should be entered on the middle line of the three lines that comprise the box.

R2-0004697

3.3.7.1 The Contractor shall identify all samples, including dilutions and re-analyses, Laboratory Control Samples, requested Matrix Spike/Matrix Spike Duplicate(s) (MS/MSD) (as described in Section 3.3.7.4), blanks, and standards with an EPA sample number. For field samples, the EPA sample number is the five digit unique identifying number given in the TR that accompanied that sample. In order to facilitate data assessment, the Contractor shall use the following sample suffixes:

XXXXX	=	EPA sample number
XXXXXMS	=	Matrix spike sample
XXXXXMSD	=	Matrix spike duplicate sample
XXXXXRE	=	Re-extracted and re-analyzed sample
XXXXXDL	=	Sample analyzed at a dilution
XXXXXDL2	=	Sample analyzed at a secondary dilution
XXXXXDL3	=	Sample analyzed at a third dilution

NOTE: The Region may approve up to one additional dilution be performed beyond the one dilution for volatiles and semivolatiles and two dilutions for pesticides specified in Exhibit D. The approval of the additional dilution by the Region must be documented in the SDG Narrative and include the Telephone Record Conversation between SMO and the Contractor communicating USEPA's decision.

3.3.7.2 There may be instances when all samples analyzed must be listed on the form, regardless of whether or not they are part of the SDG being reported (e.g., Form VIII LCP). In these instances, use ZZZZZ as the EPA sample number for any sample analysis not associated with the SDG being reported.

3.3.7.3 For blanks, the Contractor shall use the following identification scheme for the EPA sample number:

- Volatile method blanks shall be identified as VBLK##;
- Volatile instrument blanks shall be identified as VIBLK##;
- Volatile storage blanks shall be identified as VHBLK##;
- Semivolatile method blanks shall be identified as SBLK##;
- Pesticide/Aroclor method blanks and/or sulfur cleanup blanks shall be identified as PBLK##; and
- Pesticide/Aroclor instrument blanks shall be identified as PIBLK##.

3.3.7.3.1 The EPA sample number shall be unique for each blank within an SDG. Within a fraction, the Contractor shall achieve this by replacing the two-character terminator (##) of the identifier with one or two characters or numbers, or a combination of both. For example, possible identifiers for volatile blanks would be VBLK1, VBLK2, VBLKA1, VBLKB2, VBLKI0, VBLKAB, etc.

3.3.7.3.2 If the method blank is analyzed on multiple instruments, then an additional two-character suffix shall be added to make the blank EPA sample number unique.

R2-0004698

3.3.7.4 The EPA sample number shall be unique for each Laboratory Control Sample within an SDG. The EPA sample number for a Laboratory Control Sample must be PLCS##.

Where:

P = fraction (P for pesticides/Aroclors)

LCS = indicates a Laboratory Control Sample

= suffix consisting of characters or numbers or both that makes the EPA sample number for the LCS unique in the SDG.

(1) = When reporting results on Form I, a "(1)" is appended on to the sample number to indicate that the results are from Gas Chromatograph (GC) column(1) [e.g., PLCS01(1)].

(2) = When reporting results on Form I, a "(2)" is appended on to the sample number to indicate that the results are from GC column(2) [e.g., PLCS01(2)].

3.3.7.5 Volatile and semivolatile standards shall be identified as FSTD***##.

Where:

F = Fraction code (V for volatiles; S for semivolatiles)

STD = Standard

*** = Concentration of volatile standards in µg/L (e.g., 0.5, 001, 005, 010, and 025) or the amount injected in ng for semivolatile standards (e.g., 005, 010, 020, 050, and 080)

= One or two characters, numbers, or combinations of both to create a unique EPA sample number within an SDG.

3.3.7.6 The Contractor shall use the following scheme to identify pesticide/Aroclor standards:

Name	EPA Sample Number
Individual Mix A (low point)	INDAL##
Individual Mix A (mid-point)	INDAM##
Individual Mix A (high point)	INDAH##
Individual Mix B (low point)	INDBL##
Individual Mix B (mid-point)	INDBM##
Individual Mix B (high point)	INDBH##
Resolution Check	RESC##
Performance Evaluation Mixture	PEM##
Toxaphene	TOXAPH##
Aroclor 1016	AR1016##
Aroclor 1221	AR1221##
Aroclor 1232	AR1232##
Aroclor 1242	AR1242##
Aroclor 1248	AR1248##

R2-0004699

Name	EPA Sample Number
Aroclor 1254	AR1254##
Aroclor 1260	AR1250##
Aroclor 1016/1260 Mix	AR1660##

The Contractor shall replace the two-character terminator (##) of the identifier with one or two characters or numbers, or a combination of both, to create a unique EPA sample number within an SDG.

3.3.7.6.1 If the standards are injected onto both GC columns on the same instrument simultaneously, the same EPA sample number may be used for reporting data for the standards for both columns. If simultaneous injections are not made, then the same number shall not be used.

3.3.7.7 The EPA sample number for florisil shall be FLO#########, where ######### is the florisil cartridge lot number. If the florisil cartridge lot number is more than nine characters, truncate at the ninth character.

3.3.8 Other Common Fields. Several other pieces of information are common to many of the data reporting forms. These include purge volume/sample volume, lab sample identifier, lab file identifier, instrument ID, and page _ of _.

3.3.8.1 "Purge Volume" or "Sample Volume", is the total volume of water that was purged or extracted, in milliliters (mL).

3.3.8.2 The lab sample identifier is a unique laboratory-generated internal identifier pertaining to a particular analysis. The Contractor can enter up to 12 alpha-numeric characters in the "Lab Sample ID" field. The Contractor may use the EPA sample number as the lab sample identifier.

3.3.8.3 The lab file identifier is the unique laboratory-generated name of the GC/MS data system file containing information pertaining to a particular analysis. The Contractor can enter up to 14 alpha-numeric characters in the "Lab File ID" field.

3.3.8.4 The "Instrument ID" field is common to the forms containing calibration data. The identifier used by the Contractor shall include some indication of the manufacturer and/or model of the instrument, and shall contain additional characters that differentiate between all instruments of the same type in the laboratory.

3.3.8.5 The GC column identifier, and inner diameter are common to many of the reporting forms for the volatile and pesticide fractions. In addition, column length is entered on the volatile reporting forms. Under "GC Column", enter the column identification as denoted by the manufacturer. Enter the inner diameter in the "ID" field in millimeters (mm) (to two decimal places), and the column length in the "Length" field in m (in whole numbers).

3.3.8.6 Forms II, III, IV, V, VIII, IX, and X contain a field labeled "page _ of _" in the bottom lefthand coruer. If the number of entries required on any of these forms exceeds the available space, continue entries on another copy of the same fraction-specific form, duplicating all header information. If a second page is required, number the pages consecutively (i.e.,

R2-0004700

"page 1 of 2" and "page 2 of 2"). If a second page is not required, number the page "page 1 of 1."

NOTE: These forms are fraction-specific. For example, Form II LCV and Form II LCSV are for different data. Therefore, do not number the pages of all three versions of Form II as "1 of 6," "2 of 6," etc. Number only pages corresponding to the fraction-specific form.

3.3.9 Rounding Rule. For rounding off numbers to the appropriate level of precision, the Contractor shall follow these rules. If the figure following those to be retained is less than 5, drop it (round down). If the figure is greater than or equal to 5, drop it and increase the last digit to be retained by 1 (round up).

3.4 Organic Analysis Data Sheet (Form I, All Fractions)

3.4.1 Purpose. This form is used for tabulating and reporting sample analysis, including dilutions, re-analysis, blank, Laboratory Control Sample for target compounds and requested MS/MSD. If all fractions are not requested for analysis, only the pages for the fractions required shall be submitted. For example, if only volatiles analysis is requested, Form I LCV-1, LCV-2 and Form I LCV-TIC shall be submitted. If only the pesticide/Aroclor fraction is requested for analysis, Form I LCP shall be submitted. Furthermore, pesticide instrument blanks (PIBLKs) shall be reported on a per column/per analysis basis on Form I LCP. Each PIBLK shall be named with a unique EPA sample number. Also, the Laboratory Control Sample and the MS/MSD shall be reported on a per column basis. Distinguish between GC column(1) and GC column(2) results by appending a suffix "(1)" for GC column(1) and "(2)" for GC column(2).

3.4.2 Instructions. Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions.

3.4.2.1 Enter the date of sample receipt at the laboratory, as noted on the TR (i.e., the VTSR), in the "Date Received" field. The date shall be entered as MM/DD/YYYY.

3.4.2.2 Complete the "Date Extracted" and "Date Analyzed" fields in the same format (MM/DD/YYYY). For the continuous liquid-liquid extraction procedures, enter the date that the procedure was started in the "Date Extracted" field. If separatory funnel (pesticides only) was used, enter the date the procedure was completed in the "Date Extracted" field. For pesticide/Aroclor samples, enter the date of the first GC analysis performed in the "Date Analyzed" field. The date of sample receipt will be compared with the extraction and analysis dates of each fraction to ensure that contract holding times were not exceeded.

3.4.2.3 For volatiles on Form I LCV-1 and LCV-2, enter the GC column identifier in the "GC Column" field, the interual diameter in mm, to two decimal places in the "ID" field, and the length in meters (m), as a whole number, as described in Section 3.3.

3.4.2.4 For pesticides/Aroclors, enter the method of extraction in the "Extraction" field on Form I LCP as "SEPF" for separatory funnel, or "CONT" for continuous liquid-liquid extraction.

R2-0004701

3.4.2.5 For semivolatiles and pesticides/Aroclors, enter the actual volume of the most concentrated sample extract, in microliters (µL), in the "Concentrated Extract Volume" field on Form I LCSV-1, LCSV-2 or LCP. For semivolatiles, this volume will typically be 1,000 µL. For pesticides/Aroclors, the volume of the most concentrated extract will typically be 2,000 µL. If a dilution of the sample extract is made in a subsequent analysis, this volume will remain the same, but the dilution factor will change.

3.4.2.6 For semivolatiles and pesticides/Aroclors, enter the volume of the sample extract injected into the GC in the "Injection Volume" field on Form I LCSV-1, LCSV-2 or LCP. Report this volume in microliters (µL) to one decimal place (e.g., 1.0 µL).

3.4.2.7 If pesticides/Aroclors are analyzed using two GC columns connected to a single injection port, enter the amount of half the volume in the syringe in the "Injection Volume" field (i.e., assume that the extract injected is evenly divided between the two columns).

3.4.2.8 If a sample or sample extract has been diluted for analysis, enter the dilution factor as a single number (e.g., enter 100.0 for a 1 to 100 dilution of the sample) in the "Dilution Factor" field. The dilution factor shall not be entered as a fraction. If a sample was not diluted, enter 1.0. Report dilution factors to one decimal place.

3.4.2.9 If sulfur cleanup is employed, enter Y in the "Sulfur Cleanup" field; if not, enter N on Form 1 LCP.

3.4.2.10 For positively identified target compounds, the Contractor shall report the concentrations as uncorrected for blank contaminants.

3.4.2.11 Report all analytical results to two significant figures.

3.4.2.12 Under the column labelod "Q" for qualifier, flag each result with the specific data reporting qualifiers listed below. When reporting results to USEPA, the Contractor shall use these contract-specifio qualifiers. The Contractor shall not modify the qualifiers. Up to five qualifiers may be reported on Form I for each compound. The Contractor is encouraged to use additional flags or footnotes (see the X qualifier).

The USEPA-defined qualifiers to be used are:

U: This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL) shall be adjusted according to the equation listed in Exhibit D. CRQLs are listed in Exhibit C.

J: This flag indicates an estimated value. This flag is used (1) when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL but greater than zero, and (3) when the retention time data indicate the presence of a compound that meets the identification criteria for a pesticide and/or an Aroclor, and the result is less than the CRQL but greater than zero. For example, if the sample quantitation limit is 5.0 µg/L, but a concentration of 3.0 µg/L is calculated, report it as 3.0J.

R2-0004702

NOTE: The J flag is not used and the compound is not reported as being identified for pesticide/Aroclor results less than the CRQL if the pesticide residue analysis expert determines that the peaks used for compound identification resulted from instrument noise or other interferences (column bleed, solvent contamination, etc.).

N: This flag indicates presumptive evidence of a compound. This flag is only used for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N flag is not used.

P: This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a P. The P flag is not used unless a compound is identified on both columns.

C: This flag is not used under this contract, but it is reserved for USEPA use.

B: This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warms the data user to take appropriate action. This flag shall be used for a TIC as well as for a positively identified target compound.

The combination of flags BU or UB is expressly prohibited. Blank contaminants are flagged B only when they are detected in the sample.

E: This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a concentration greater than the upper level of the calibration range, the sample or extract shall be diluted and re-analyzed according to the specifications in Exhibit D; exceptions are also noted in Exhibit D. All such compounds with concentrations greater than the upper level of the calibration range shall have the concentrations flagged with an E on Form I for the original analysis. The results of both analyses shall be reported on separate copies of Form I. The Form I for the diluted sample shall have for the volatile and semivolatile dilutions "DL" or ("DL2", when this additional dilution was approved by the Region) and for the pesticides dilution "DL" or "DL2" (or "DL3", when approved by the Region) suffix appended to the sample number.

NOTE: For total xylenes, where three isomers are quantified as two peaks, the calibration range of <u>each peak</u> shall be considered separately. For example, a diluted analysis is <u>not</u> required for total xylenes unless the concentration of the peak representing the single isomer exceeds 25 µg/L or the peak representing the two co-eluting isomers on that GC column exceeds 50 µg/L.

D: This flag is used for all compounds identified in an analysis as diluted. If a sample or extract is re-analyzed with a dilution factor greater than 1, for example, when the concentration of the analyte exceeds the upper calibration range, the "DL", "DL2" or "DL3" suffix is appended to the sample number on Form I for the more diluted sample, and <u>all</u> reported

concentrations on that Form I are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis, i.e., compounds reported with the CRQL and the U flag.

NOTE 2: Separate Form Is are required for reporting the original analysis (EPA Sample No. XXXXX) and the more diluted sample analyses, i.e., the results from these analyses cannot be combined on a single Form I.

A: This flag indicates that a Tentatively Identified Compound (TIC) is a suspected aldol-condensation product.

X:Other specific flags may be required to properly define the results. If used, the flags shall be fully described in the SDG Narrative. Begin by using X. If more than one flag is required, use Y and Z as needed. If more than five qualifiers are required for a sample result, use the X flag to represent a combination of several flags. For instance, the X flag might combine the B and D flags for some samples. The lahoratory-defined flags are limited to X, Y, and Z.

3.5 Organic Analysis Data Sheet: Tentatively Identified Compounds (Form I LCV-TIC and Form I LCSV-TIC)

3.5.1 Purpose. These forms are used to report analysis results for non-target compounds (e.g., compounds not listed in Exhibit C), excluding deuterated monitoring compounds and interual standards. See Exhibit D for instructions on identification and quantitation. The Contractor shall submit Form I LCV-TIC or LCSV-TIC for every analysis, including required dilutions and re-analyses, and blanks, even if no TICs are found.

3.5.2 Instructions. Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions in addition to the instructions in Section 3.4.

3.5.2.1 Report all TICs including CAS number (if applicable), compound name, retention time, and the estimated concentration as uncorrected for blank contaminants. Report all analytical results to two significant figures. (Criteria for reporting TICs are given in Exhibit D, Section 11). Retention time shall be reported in minutes and decimal minutes, not seconds or minutes:seconds.

3.5.2.2 Total the number of TICs found, and enter this number in the "Number TICs found" field. If no TICs were found, enter 0 (zero).

3.5.2.3 If the name of a compound exceeds the 28 spaces in the TIC column, truncate the name to 28 characters. If the compound is an unknown, restrict the description to no more than 28 characters (e.g., unknown hydrocarbon).

R2-0004704

3.6 Deuterated Monitoring Compound (DMC) Recovery (Form II LCV-1, LCV-2 and Form II LCSV-1, LCSV-2)

3.6.1 Purpose. For volatiles and semivolatiles, Form II LCV-1, LCV-2 and Form II LCSV-1, LCSV-2 are used to report the recoveries of the DMCs added to each volatile and semivolatile sample, including dilutions, re-analyses, blanks and requested MS/MSD. The DMCs are used to monitor the performance of the purge and trap for volatiles, the extraction and injection for semivolatiles, and the GC/MS system as a whole.

3.6.2 Instructions. Complete the header information according to the instructions in Section 3.3.

3.6.2.1 For each volatile DMC listed in Table 2 and each semivolatile DMC listed in Table 3, report the percent recovery to the nearest whole percentage point, and to the number of significant figures given by the QC limits at the bottom of the form.

Table 2
Volatile Deuterated Monitoring Compounds

Volatile Deuterated Monitoring Compounds		CAS Number
VDMC1	Vinyl Chloride-d3	6745-35-3
VDMC2	Chloroethane-d5	19199-91-8
VDMC3	1,1-Dichloroethene-d2	22280-73-5
VDMC4	2-Butanone-d5	24313-50-6
VDMC5	Chloroform-d	865-49-6
VDMC6	1,2-Dichloroethane-d4	17060-07-0
VDMC7	Benzene-d6	1076-43-3
VDMC8	1,2-Dichloropropane-d6	93952-08-0
VDMC9	Toluene-d8	2037-26-5
VDMC10	trans-1,3-Dichloropropene-d4	93951-86-1
VDMC11	2-Hexanone-d5	4840-82-8
VDMC12	Bromoform-d	2909-52-6
VDMC13	1,1,2,2-Tetrachloroethane-d2	33685-54-0
VDMC14	1,2-Dichlorobenzene-d4	2199-69-1

R2-0004705

Table 3
Semivolatile Deuterated Monitoring Compounds

Semivolatile Deuterated Monitoring Compounds		CAS Number
SDMCi	Phenol-d5	4165-62-2
SDMC2	bis-(2-Chloroethyi)ether-d8	93952-02-4
SDMC2	2-Chlorophenol-d4	93951-73-6
SDMC4	4-Methylphenol-d8	190780-66-6
SDMC5	Nitrobenzene-d5	4165-60-0
SDMC6	2-Nitrophenol-d4	93951-78-1
SDMC7	2,4-Dichiorophenol-d3	93951-74-7
SDMC8	4-Chloroaniline-d4	191656-33-4
SDMC9	Dimethylphthalate-d6	85448-30-2
SDMCI0	Acenaphthylene-d8	93951-97-4
SDMCI1	4-Nitrophenol-d4	93951-79-2
SDMC12	Fluorene-dl0	81103-79-9
SDMCI3	4,6-Dinitro-methylphenol-d2	93951-76-9
SDMC14	Anthracene-dl0	1719-06-8
SDMCi5	Pyrene-dl0	1718-52-1
SDMC16	Benzo(a)pyrene-dl2	63466-71-7

3.6.2.2 Flag each DMC recovery outside the QC limits with an asterisk (*). The asterisk shall be placed in the last space in each appropriate column, under the "#" symbol.

3.6.2.3 In the "TOT OUT" column, total the number of DMC recoveries that were outside the QC limits for each sample. If no DMCs were outside the limits, enter 0 (zero).

3.6.2.4 If the sample is a dilution and the deuterated monitoring compounds (DMCs) are outside the acceptance window, enter the calculated recovery and flag the DMC recoveries with a D in the column under the "#" symbol. Do not include recoveries flagged with a D in the total number of recoveries for each sample outside the QC limits.

3.6.2.5 Number all pages as described in Section 3.3.

3.7 Surrogate Recovery (Form II LCP)

3.7.1 Purpose. Form II LCP Is used to report the recoveries of the surrogate compounds added to each pesticide/Aroclor sample, blank, Laboratory Control Sample and requested MS/MSD.

R2-0004706

3.7.2 Instructions. Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instrmctions.

3.7.2.1 For each surrogate listed in Table 4, report the percent recovery to the nearest whole percentage point.

3.7.2.2 Flag each surrogate recovery outside the QC limits with an asterisk (*). The asterisk shall be placed in the last space in each appropriate column, under the "#" symbol.

3.7.2.3 In the "TOT OUT" column, total the number of surrogate recoveries that were outside the QC limits for each sample. If no surrogates were outside the limits, enter 0 (zero).

3.7.2.4 If the samples is a dilution and the surrogates are outside the acceptance window in any analysis, enter the calculated recovery, and flag the surrogate recoveries with a D in the column under the "#" symbol. Do not include results flagged with a D in the total number of recoveries for each sample outside the QC limits.

3.7.2.5 The pesticide surrogate recoveries shall be reported from each GC column used for the analyses. Therefore, identify each GC column at the top of Form II LCP, entering the stationary phase in the "GC Column" field, and the intermal diameter of the column in mm in the "ID" field.

3.7.2.5 The assignment of columns as "1" and "2" is left to the discretion of the Contractor when the analyses are performed by simultaneous injection into a GC containing two columns. If so analyzed, the assignment of "GC Column 1" and "GC Column 2" shall be consistent across all the reporting forms. If the analysis is not performed by simultaneous injection, then the assignment of GC column number shall be based on the chronological order of the two analyses.

3.7.2.7 Number all pages as described in Section 3.3.

Table 4
Pesticide Surrogates

Pesticide Surrogates	CAS Number
Decachlorobiphenyl (DCB)	2051-24-3
Tetrachloro-m-xylene (TCX)	877-09-8

3.8 Matrix Spike/Matrix Spike Duplicate Recovery (Form III, All Fractions, LCV, LCSV, LCP-1)

3.8.1 Matrix Spike/Matrix Spike Duplicate Recovery and Laboratory Control Sample Recovery

3.8.1.1 Purpose. This form is used to report the results of the analyses of MS/MSD. This form should only be submitted if the analysis of MS/MSD samples have been requested by the Region. Complete Form III LCP-1 for each GC column used for analysis.

3.8.1.2 Instructions. Complete the header information according to the instructions in Section 3.3. Include the EPA sample number for the matrix spike, without the suffixes MS or MSD. Complete the remainder of the form using the following instructions. For each

R2-0004707

Form III LCP-1 enter the Instrument ID, the stationary phase in the "GC Column" field, and the internal diameter of the column in mm in the "ID" field. The order of reporting is not important but must be consistent with Form X.

3.8.1.2.1 In the first table under the "SPIKE ADDED" column, enter the amount of spike added in µg/L for each analyte.

3.8.1.2.2 Enter the sample concentration in the next column of each spike compound detected in the original sample. If a spike compound was not detected during the analysis of the original sample, enter the sample result as 0 (zero).

3.8.1.2.3 In the "MS CONCENTRATION" column, enter the actual concentration of each spike compound detected in the matrix spike aliquot.

3.8.1.2.4 Calculate the percent recovery of each spike compbund in the matrix spike aliquot to the nearest whole percent, according to Exhibit D. Enter the percent recovery in the "MS % REC" column.

3.8.1.2.5 Flag all percent recoveries outside the QC limits with an asterisk (*). The asterisk shall be placed in the last space of the "MS % REC" column, under the "#" symbol.

3.8.1.2.6 Follow Sections 3.8.1.2.1 through 3.8.i.2.5 to complete the lower tabie, using the results of the analysis of the MSD aliquot.

3.8.1.2.7 Calculate the relative percent difference (RPD) between the matrix spike recovery and the matrix spike duplicate recovery, and enter this value in the "RPD" column. Report the RPD to the nearest whole percent.

3.8.1.2.8 Compare the RPDs to the QC limits given on the form, and flag each RPD outside the QC limits with an asterisk (*) in the last space of the "RPD" column, under the "#" symbol.

3.3.1.2.9 Summarize the values outside the QC limits at the bottom of the page. No further action is required by the Contractor.

3.8.2 Laboratory Control Sample Recovery (Form Ill LCP-2)

3.8.2.1 Purpose. Form III LCP-2 is used to report the results of the analyses of the Laboratory Control Samples.

3.8.2.2 Instructions. Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions.

3.8.2.2.1 If the LCS solution is purchased by the Contractor from a third party, report the identification number used by the third party to identify the LCS lot, if available. If the LCS solution was prepared in-house, leave this entry blank.

3.8.2.2.2 The "LCS Aliquot" is the volume in microliters (µL) of LCS spiking solution that was added to reagent water before extraction.

R2-0004708

3.8.2.2.3 The LCS is reported for each GC column. Enter the Instrument ID, GC column, and intermal diameter (ID) for both GC columns. The order of reporting is not important, but must be consistent with the information reported on Form X. If simultaneous injections are not made, the "Date Analyzed" is the earlier date of the two LCS analyses. The dates should be entered in MM/DD/YYYY format.

3.8.2.2.4 In the box (upper for Pesticides) in Form III, under "AMOUNT ADDED", enter the amount in nanograms (ng) of each analyte added to the sample. Under "AMOUNT RECOVERED", enter the amount in ng of each analyte in the sample calculated from analysis. Calculate the percent recovery of each compound in the sample to the nearest whole percent, according to Exhibit D, and enter under "% REC". Flag all percent recoveries which do not meet the contract requirements with an asterisk (*). The asterisk must be placed in the last space of the percent recovery column, under the "#" symbol.

3.8.2.2.5 Complete the lower box according to the instructions in Section 3.8.2.2.4.

3.8.2.2.6 Summarize the values outside the QC limits at the bottom of the page.

NOTE: This means the results for both columns.

3.9 Method Blank Summary (Form IV, All Fractions)

3.9.1 Purpose. This form summarizes the samples associated with each method blank analysis. The Contractor shall submit the appropriate Porm IV for each blank.

3.9.2 Instructions. Complete the header information according to the instructions in Section 3.3. The EPA sample number entered in the upper right-hand coruer shall be the same number entered on Form I for the blank. Complete the remainder of the form using the following instructions.

3.9.2.1 Complete the following fields: "Instrument ID", "Date Analyzed", and "Time Analyzed". Dates shall be entered as MM/DD/YYYY. The time shall be reported in military time.

3.9.2.2 Pesticide/Aroclor contaminants shall meet the identification criteria requiring analysis of the blank on two different GC columns (see Exhibit D PEST). Enter the date, time, and instrument ID of both analyses of the blank on the pesticide method blank summary (Form IV LCP). The information on the two analyses is differentiated as Date Analyzed (1), Date Analyzed (2), etc. If the analyses were run simultaneously, the order of reporting is not important, but shall be consistent with the information reported on all other pesticide forms. Otherwise, Date Analyzed (1) shall indicate the analysis on column 1, and Date Analyzed (2) shall indicate the analysis on column 2.

3.9.2.3 For pesticide/Aroclor blanks, enter the method of extraction as "SEPF" for separatory funnel, or "CONT" for continuous liquid-liquid extraction on Form IV LCP.

3.9.2.4 Identify the GC column, internal diameter, and length in the appropriate fields, as indicated in Section 3.3.

R2-0004709

3.9.2.5 For semivolatile and pesticide/Aroclor method blanks, enter the date of extraction of the blank on Form IV LCSV or LCP.

3.9.2.6 If the samples associated with pesticide/Aroclor blank are subjected to sulfur cleanup, then the blank shall also be subjected to sulfur cleanup. If sulfur cleanup is employed, enter Y in the "Sulfur Cleanup" field; if not, enter N on Form IV LCP. If only some of the samples associated with the method blank are subjected to sulfur cleanup, a separate sulfur cleanup blank is required (see Exhibit D PEST). If a separate sulfur cleanup blank is prepared, complete one version of Form IV associating all the samples with the method blank, and a second version of Form IV listing only those samples associated with the separate sulfur cleanup blank.

NOTE: Subjecting all samples associated with a method blank to sulfur cleanup avoids the need for two forms.

3.9.2.7 For all three fractions, as appropriate, summarize the samples associated with a given method blank in the table, entering the EPA sample number and lab sample identifier. For volatiles, enter the lab file identifier and the time of analysis of each sample. For semivolatiles, enter the iab file identifier and date of analysis. Por pesticides/Aroclors, enter the dates of both analyses as Date Analyzed (1) and Date Analyzed (2), as discussed previously.

3.9.2.8 Number all pages as described in Section 3.3.

3.10 GC/MS Instrument Performance Check (Porm V LCV and Form V LCSV)

3.10.1 Purpose. This form is used to report the results of the GC/MS instrument performance check for the volatile and semivolatile fractions and to summarize the date and time of analyses of samples, including dilutions and re-analyses, standards, blanks, and requested MS/MSD associated with each analysis of the instrument performance check solution.

3.10.2 Instructions. Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions.

3.10.2.1 Enter the date and time of injection of the instrument performance check solution (BFB for volatiles--CAS Number 460004, DFTPP for semivolatiles--CAS Number 5074715). The date shall be entered as MM/DD/YYYY. The time shall be reported as military time.

3.10.2.2 For volatiles, identify the GC column, intermal diameter, and column length on Form V LCV, as described in Section 3.3.

3.10.2.3 Por each ion listed on the form, enter the percent relative abundance in the right-hand column of the first table. Report relative abundances to the number of significant figures given for each ion in the ion abundance criteria column.

NOTE: For both BFB and DFTPP, one or more of the high mass ions may exceed the abundance of the ion listed on the form as the nominal baae peak, m/z 95 for BFB and m/z 198 for DFTPP. Despite this possibility, all ion abundances shall be normalized to the nominal base peaks listed on Form V (see Exhibits D).

R2-0004710

3.10.2.4 All relative abundances shall be reported as a number. If the relative abundance is zero, enter 0 (zero), not a dash or other non-numeric character. Where parentheses appear, compute the percentage of the ion abundance of the mass given in the appropriate footnote, and enter that value in the parentheses.

3.10.2.5 in the lower table, list all samples, including dilutions, re-analyses, standards, blanks and requested MS/MSD analyzed under that instrument performance check in chronological order, by time of analysis (in military time). Refer to Section 3.3.7 for specific instructions for identifying standards and blanks.

3.10.2.6 Complete the following fields for all standards, samples, including dilutions, re-analyses, and blanks: "EPA Sample No.", "Lab Sample ID", "Lab Pile ID", "Date Analyzed", and "Time Analyzed".

3.10.2.7 Number all pages as described in Section 3.3.

3.11 GC/MS Initial Calibration Data (Form VI LCV-1, LCV-2, LCV-3 and Form VI LCSV-1, LCSV-2, LCSV-3)

3.11.1 Purpose. After a GC/MS system has undergone an initial five-point calibration at the specific concentration levels described in Exhibit D, and after all initial calibration criteria have been met, the Contractor shall complete and submit this form for each volatile or semivolatile target compound initial calibration performed which is relevant to the samples, including dilutions, re-analyses, and blanks in the SDG, regardless of when that calibration was performed.

3.11.2 Instructions. Complete the header information according to the instructions in Section 3.3. Enter the Case number and SDG number for the current data package, regardless of the original Case for which the initial calibration was performed. Complete the remainder of the form using the following instructions.

3.11.2.1 Enter the date(s) of the calibration. If the calendar date changes during the calibration procedure, the inclusive dates shall be recorded. Dates shall be entered as MM/DD/YYYY.

3.11.2.2 Enter the injection times of the first and last of the standards analyzed in the "Calibration Times" field. Times shall be reported in military time.

3.11.2.3 Enter the lab file identifier for each of the five calibration standards injected. Complete the response factor data for the five calibration points, and then calculate and report the average Relative Response Factor (RRF) for all target compounds.

3.11.2.4 For volatiles and semivolatiles, report the RRFs for the deuterated monitoring compounds in the calibration standards. The Contractor shall report the Relative Standard Deviation (%RSD) for <u>all</u> compounds. See Exhibit D for equations.

3.12 GC/EC Initial Calibration Data (Form VI LCP-1, LCP-2, LCP-3)

3.12.1 Purpose. The initial calibration of pesticides/Aroclors involves the determination of retention times, retention time windows, and calibration factors. For single component pesticide target compounds, these data are calculated from the analyses of the Individual Standard Mixtures A and B at three different concentration

R2-0004711

levels. For the multicbmponent target compounds, these data are calculated from a single point calibration.

3.12.2 Instructions. Complete one Form VI for <u>each</u> GC column used for the three analyses of Individual Standard Mixture A (low-point, mid-point, and high-point) and the three analyses of Individual Standard Mixture B during an initial calibration. Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions.

3.12.2.1 In the "Level (x low)" field, enter the concentration of the low-point, mid-point, and high-point calibration standards as a multiplier of the Iow-point. Therefore, for the low-point, enter "1.0." The concentration of the mid-point standard is specified in Exhibit D as four times the low-point; therefore, enter "4.0." The high-point standard shall be at least 16 times the low-point, but may be higher, if that value lies within the linear range of the instrument, as specified in Exhibit D. Therefore, enter the appropriate multiplier to the high-point standard concentration to one decimal place.

3.12.2.2 Identify the GC column and interual diameter (in mm) in the appropriate fields.

3.12.2.3 Enter the dates of analysis of the first and last of the six standards on each form in the "Date(s) Analyzed" field. Dates shall be entered as MM/DD/YYYY.

3.12.2.4 For each standard analyzed, enter the retention time of each applicable analyte in minutes and decimal mlnutes, under the appropriate concentration level in the "RT OF STANDARDS" column on Porm VI LCP-1.

3.12.2.5 Calculate the mean retention time of each analyte from the three individual mixtures, and report it in the "MEAN RT" column on Form VI LCP-1.

3.12.2.6 Calculate the retention time window for each analyte using the specifications in Exhibit D, and enter the lower limit of the window in the "RT WINDOW" column under "FROM," and the upper limit of the window under "TO" on Form VI LCP-1. The retention times of the surrogates are reported from the analyses of Individual Mixture A and the windows are only required to be calculated for Individual Mixture A.

3.12.2.7 Por the six analyses of the Individual Standard Mixtures, the Contractor shall also complete the calibration factor data on Form VI LCP-2. Prepare one form for each instrument and GC column used. Enter the calibration factor for each compound in each of the standards. Calculate and enter a mean calibration factor and a relative standard deviation (%RSD). As with surrogate retention times, the surrogate calibration factors are only required from Individual Mixture A analyses.

3.12.2.8 Por the multicomponent target compounds, the retention times, retention time windows, and calibration factors shall be reported in a similar fashion for each single point calibration standard. For each multicomponent compound, the Coutractor shall seIect at least three peaks from each analyte, according to the specifications in Exhibit D. The retention time and calibration factor data apply to <u>each</u> peak. Complete one version of Form VI

R2-0004712

LCP-3 for each GC column, for each initial calibration that applies to samples in the data package.

3.12.3 Form VI (LCP-4) is also used to report the results of analysis of the Resolution Check Solution that shall begin each pesticide/Aroclor initial calibration sequence. The Contractor shall submit one Form VI LCP-4 for both GC columns.

3.12.3.1 Complete the header information as described in Section 3.3. Using the same assignment of first and second GC columns made for Form IV, enter the GC column identifier, intermal diameter, and date and time of analysis. Enter the EPA sample number for the Resolution Check Standard. If simultaneous injections on a single GC are used, the EPA sample number may be the same for both Resolution Check Standards. If simultaneous injections are not used, use different suffixes to identify the standards. Complete the remainder of the form using the following instrmctions.

3.12.3.2 List each analyte, in retention time order, including both surrogate compounds. Thus, the order of analytes in the two boxes on this form will be different due to the dissimilarity of the stationary phases of the two GC columns used. Enter the name of each target analyte in the Resolution Check Mixture as it appears on Form I LCP. Spell out the names of the surrogates as they appear on Form II LCP-2.

3.12.3.3 Enter the retention time of each analyte from the analysis in the "RT" column.

3.12.3.4 Calculate the resolution between each pair of analytes. Enter the resolution between the first and second peaks on the line for the first analyte listed in the box. Enter the resolution between the second and third peaks on the line for the second analyte, and so on, until the resblutions of all possible pairs of adjacent analytes have been entered.

NOTE: Only eight of the nine resolution fields will be filled.

3.12.4 Form VI (LCP-5, LCP-6 and LCP-7 for each PEM, initial mid-level calibration mixture A, and initial mid-level calibration mixture B, respectively) shall be used to report the percent resolution between each pair of analytes according to the definition in Exhibit D Pesticides and Aroclors.

NOTE: These forms shall also be used to report all percent resolution data for the PEM and midpoint concentration Individual Mixtures A and B analyzed as part of calibration verification (Exhibit D/PEST, Section 9.3).

3.12.4.1 Complete the header information as described in Section 3.3. Using the same assignment of first and second GC columns made for Form IV, enter the GC column identifier, intermal diameter, and date and time of analysis. Enter the EPA sample number for the respective standards. If simultaneous injections are not used, use different suffixes to identify the standards. Complete the remainder of the form using the following instructions.

3.12.4.2 List each analyte, in retention time order, including both surrogate compounds. Thus, the order of analytes in the two boxes on this form will be different due to the dissimilarity of the stationary phases of the two GC columns used. Enter the name of

R2-0004713

each target analyte in the standard as it appears on Form I LCP. Spell out the names of the surrogates as they appear on Form 11 LGP-2.

3.12.4.3 Enter the retention time of each analyte from the analysis in the "RT" column.

3.12.4.4 Calculate the resolution between each pair of analytes. Enter the resolution between the first and second peaks on the line for the first analyte listed in the box. Enter the resolution between the second and third peaks on the line for the second anaiyte, and so on, until the resolutions of all possible pairs of adjacent analytes have been entered.

NOTE: The last resolution field will be left blank in each table.

3.13 GC/MS Continuing Calibration Data (Form VII LCV-1, LCV-2, LCV-3 and Form VII LCSV-1, LCSV-2, LCSV-3)

3.13.1 Purpose. Por volatiles and semivolatiles, this form is used to report the calibration of the GC/MS system by the analysis of specific calibration standards. Form VII is required for each 12-hour time period for both volatile and semivolatile target compound analyses. The Contractor shall analyze calibration standards and meet all criteria outlined in Exhibit D for the minimum Relative Response Factors (RRF) and maximum percent difference between initial and continuing calibrations.

3.13.2 Instructions. Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions.

3.13.2.1 Enter the date and time of the continuing calibration and the dates and times of the initiai calibration (give inclusive dates if the initial calibration is performed over more than one date). Dates shall be entered as MM/DD/YYYY. Times shall be reported in military time.

3.13.2.2 Using the appropriate initial calibiatlon (volatile or semivolatiie), enter the average RRF for each target compound and each deuterated monitoring compound for volatiles and semivolatiles.

3.13.2.3 Report the RRF (RRF5 for Volatiles and RRF20 for Semivolatiles) from the continuing calibration standard analysis.

3.13.2.4 Calculate the percent difference (%D) for all compounds. See Exhibit D for equation. If the %D is greater than 999.9, report as 999.9. If the %D is less than -99.9, report as -99.9.

3.14 GC/ECD Calibration Verification Summary (Porm VII, LCP-1, LCP-2)

3.14.1 Purpose. Form ViI is used to report the results of the Performance Evaluation Mixtures (PEMs) and the mid-point concentrations of Individual Standard Mixtures A and B that, along with the PEM, bracket each 12-hour period of sample analyses. The Contractor shall submit Form VII LCP-1 for each 12-hour sequence analyzed. Form VII LCP-2 shall be compieted each time the Individual Standard Mixtures are analyzed, for each GC column used.

R2-0004714

3.14.2 Instructions. Complete Form VII LCP-1 and LCP-2 for each standard reported on Form VIII LCP. Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions.

FORM VII LCP-1

3.14.2.1 Enter the date(s) of the initial calibration(s). Give inclusive dates if the initial calibration is performed over more than one day. Dates shall be entered as MM/DD/YYYY.

3.14.2.2 Identify the GC column and intermal diameter in the appropriate fields.

3.14.2.3 On Form VII LCP-1, enter the EPA sample number, lab sample identifier and date and time of analysis for the instrument blank that preceded the 12-hour sequence (PIBLK). For the PEM that initiated or terminated the 12-hour sequence (PEM), enter the EPA sample number, lab sample identifier, and date and time of analysis.

3.14.2.4 When reporting data for the PEM at the beginning of the initial calibration sequence, leave the "EPA Sample No.", "Lab Sample ID", "Date Analyzed", and "Time Analyzed" fields blank for the instrument blank (PIBLK), when no instrument blank is analyzed before the PEM. When reporting all other PEM analyses, the instrument blank fields shall be completed.

3.14.2.5 In the table, report the retention time for each analyte in the PEM as well as the retention time windows.

3.14.2.6 For each analyte in the PEM, enter the amount of the analyte found in the PEM, in ng to three decimal places, in the "CALC AMOUNT" column.

3.14.2.7 Enter the nominal amount (amount added) of each analyte in the PEM in ng to three decimal places in the "NOM AMOUNT" column.

3.14.2.8 Calculate the percent difference between the calculated amount and nominal amount for each analyte according to Exhibit D. Report the values in the "%D" column. If the %D is greater than 999.9, report as 999.9. If the %D is less than -99.9, report as -99.9.

3.14.2.9 Calculate the percent breakdown for endrin and 4,4'-DDT and the combined percent breakdown in the PEM according to Exhibit D. Enter the values for the breakdown of endrin and 4,4'-DDT in their respective fields immediately under the table.

FORM VII LCP-2

3.14.2.10 The upper table on Form VII LCP-2 contains the retention time and amount data for Individual Standard Mixture A compounds. The lower table contains the data for Mixture B. Complete the form using the instructions in Sections 3.14.2.1 through 3.14.2.8 for Form VII LCP-1.

3.15 Interual Standard Area and RT Summary (Porm VIII LCV and Porm VIII LCSV-1, LCSV-2)

3.15.1 Purpose. This form is used to summarize the peak areas and retention times of the interual standards added to the initial calibration

R2-0004715

standards, continuing calibration standards and all volatile and semivolatile samples, inoluding dilutions, re-analyses, and blanks. The data are used to determine when changes in internal standard responses will adversely affect quantitation of target compounds. This form shall be completed each time an initial calibration and continuing calibration is performed, or when samples are analyzed under the same GC/MS instrnment performance check as an initial calibration.

3.15.2 Instrnctions. Complete the header information according to Section 3.3. Complete the remainder of the form using the following instrnctions. If samples are analyzed immediately following an initial calibration, before another instrnment performance check and a continuing calibration, Porm VIII shall be completed on the basis of the internal standard areas of the 5 µg/L initial calibration standard for volatiles, and the 20 ng initial calibration standard for semivolatiles. Use the date and time of analysis of this standard and the lab file identifier and areas in place of those of a continuing calibration standard.

3.15.2.1 Enter the date and time of analysis of the continuing calibration standard. The date shall be entered as MM/DD/YYYY. The time shall be reported in military time.

3.15.2.2 For volatiles, enter the GC column identifier, internal diameter, and length as directed in Section 3.3.

3.15.2.3 From the results of the analysis of the continuing calibration standard, enter the area measured for each internal standard and its retention time (in decimal minutes) under the apprdpriate column in the "12 HOUR STD" row.

3.15.2.4 For each internal standard listed in Tables 5 and 6, calculate the upper limit of the area and the lower limit of the area from the internal standard area. For FORM VIII LCV, calculate the upper limit of the area as the area of the particular internal standard plus 40 percent of its area (i.e., 1.4 times the area in the "12 HOUR STD" field), and the lower limit of the area as the area of the internal standard minus 40 percent of its area (i.e., 0.6 times the area in the "12 HOUR STD" field). For FORMS VIII LCSV-1 and VIII LCSV-2, calculate the upper limit of the area as the area of the particular internal standard plus 100 percent of its area (i.e., two times the area in the "12 HOUR STD" field), and the lower limit of the area as the area of the internal standard minus 50 percent of its area (i.e., 0.5 times the area in the "12 HOUR STD" field). Report these values 1n the "UPPER LIMIT" and "LOWER LIMIT" rows, respectively. Calculate the upper limit of the retention time and the lower limit of the retention time. The upper limit of the retention time is calculated by adding 0.33 mlnutes to the retention time of the internal standard and the lower limit of the retention time is the retention time of the internal standard minus 0.33 minutes. Report these values in the "UPPER LIMIT" and "LOWER LIMIT" rows in the applicable RT columns.

3.15.2.5 For each sample, including dilutions, re-analyses, blanks, and requested MS/MSD analyzed under a given continuing calibration, enter the EPA sample number and the area measured for each internal standard and its retention time. If the internal standard area is outside the upper or lower limits calculated in Section 3.15.2.4, flag that area with an asterisk (*). The asterisk shall be placed in the far right-hand space of the box

R2-0004716

for each internal standard area, directly under the "#" symbol. Similarly, flag the retention time of any internal standard that is outside the limits with an asterisk.

3.15.2.6 Number all pages as described in Section 3.3.

Table 5
Volatile Internal Standards

Volatile Internal Standards	CAS Number
IS1: Chlorobenzene-d5 (CBZ)	3114-55-4
IS2: 1,4-Difluorobenzene (DFB)	540-36-3
IS3: 1,4-Dichlorobenzene-d4 (DCB)	3855-82-1

Table 6
Semivolatile Internal Standards

Semivolatile Internal Standards	CAS Number
IS1: 1,4-Dichiorobenzene-d4 (DCB)	3855-82-1
IS2: Naphthalene-d8 (NPT)	1146-65-2
IS3: Acenaphthene-d10 (ANT)	15067-26-2
IS4: Phenanthrene-d10 (PHN)	1517-22-2
IS5: Chrysene-d12 (CRY)	1719-03-5
IS6: Perylene-d12 (PRY)	1520-96-3

3.16 Pesticide Analytical Sequence (Form VIII LCP)

3.16.1 Purpose. This form is used to report the analytical sequence for pesticide analysis. At least one form is required for each GC column used for pesticide/Aroclor analyses.

3.16.2 Instructions. Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions.

3.16.2.1 Enter the date(s) of the initial calibration. Give inclusive dates if the initial calibration is performed over more than one day. Dates shall be entered as MM/DD/YYYY.

3.16.2.2 Identify the GC column and internal diameter in the appropriate fields.

3.16.2.3 At the top of the table, report the mean retention time for tetrachloro-m-xylene (TCX) and decachlorobiphenyl (DCB) calculated from the initial calibration sequence (from INDA).

3.16.2.4 For every analysis associated with a particular analytical sequence starting with the initial calibration, enter the EPA sample number, lab sample identifier, and date and time of analysis. Each sample analyzed as part of the sequence shall be reported on Form VIII LCP even if it is not associated with the SDG. The Contractor shall use ZZZZZ as the EPA sample number to

R2-0004717

distinguish all samples that are not part of the SDG being reported.

3.16.2.5 Report the retention time of the surrogates for each analysis in the "TCX RT" and "DCB RT" columns. All sample analyses shall be bracketed by acceptable analyses of instrument blanks, a PEM, and Individual Standard Mixtures A and B. Given the fact that the initial calibration may remain valid for some time (Exhibit D), it is only necessary to report the data from 12-hour periods when samples, dilutions, re-analyses, Laboratory Control Samples, requested MS/MSD, blanks, or multicomponent standard analytes for the 72-hour confirmation requirement in an SDG were analyzed. The Contractor shall submit Form VIII for the initial calibration sequence and forms that include the PEMs and Individual Standard Mixtures that bracket any and all samples in the SDG. While the data for time periods between the initial calibration and samples in the SDG are not a routine deliverable, the data shall be available as requested (e.g., at on-site evaluations). Non-USEPA samples shall be numbered ZZZZZ.

3.16.2.6 Flag all those values which do not meet the contract requirements by entering an asterisk (*) in the "RT" column, under the "#" symbol. If the retention time cannot be calculated due to interfering peaks, leave the "RT" column blank for that surrogate, enter an asterisk in the last column, and document the problem in the SDG Narrative.

3.16.2.7 If more than a single copy of Form VIII LCP is required, enter the same header information on all subsequent pages for that GC column and instrument, and number each page as described in Section 3.3.

3.17 Pesticide Cleanup Summary (Porm IX, LCP)

3.17.1 Purpose. Form IX LCP is used to report the results of the check of the Florisil cartridges used to process all sample extracts and to associate the lot of cartridges with particular sample results so that problems with a particular cartridge lot may be tracked across all associated samples.

3.17.2 Instructions. Complete the header information according to the instructions in Section 3.3. Enter the Case number and SDG number for the current data package, regardless of the original Case for which the cartridge check was performed. Complete the remainder of the form using the following instructions.

3.17.2.1 Enter the Florisil cartridge lot number.

3.17.2.2 Enter the date the Florisil cartridge check solution was analyzed in the "Date of Analysis" field. The date shall be entered as MM/DD/YYYY.

3.17.2.3 Complete the "GC Column" and "ID" fields for the two GC columns used to analyze the samples, including blanks, re-analyses, Laboratory Control Samples, and requested MS/MSD. Report all results from either GC Column 1 or GC Column 2.

3.17.2.4 In the first table, enter the amount of spike added and spike recovered in ng for each analyte.

3.17.2.5 Calculate the percent recovery to the nearest whole percent, and enter the number in the "% REC" field. Flag each spike recovery

R2-0004718

outside the QC limits (shown on the form) with an asterisk (*). The asterisk shall be placed in the last space in the "% REC" column, under the "#" symbol.

3.17.2.6 In the second table, complete the "EPA Sample No.," the "Lab Sample ID," and "Date Analyzed" fields for each sample and blank that were cleaned up using this lot of Florisil cartridges.

3.17.2.7 Number the pages as described in Section 3.3.

3.18 Pesticide/Aroclor Identification (Form X, LCP-1, LCP-2)

3.18.1 Purpose. This form summarizes the quantitations of all target pesticides/Aroclors detected in a given sample. It reports the retention times of the compound on both columns on which it was analyzed, as well as the retention time windows of the standard for that compound on both of these columns. In addition, it is used to report the concentration determined from each GC column, and the percent difference between the two quantitative results. Separate forms are used for single component analytes and multicomponent analytes.

Form X is required for each sample, including dilutions, re-analyses, blanks, Laboratory Control Samples and requested MS/MSD in which compounds listed in Exhibit C (Pesticides/Aroclors) are reported on Form I. Do not generate a Form X for pesticide instrument blanks.

3.18.2 Instructions. Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions.

3.18.2.1 Enter the date(s) of analysis. Dates shall be entered as MM/DD/YYYY.

3.18.2.2 Enter the GC column and intermal diameter for each of the two columns.

3.18.2.3 For each single component pesticide positively identified, enter the name of the compound in the "ANALYTE" column as it appears on Form I.

3.18.2.4 Enter the retention times on each column of the compounds detected in the sample next to the appropriate column designation (1 or 2).

3.18.2.5 Enter the retention time windows on each column from the initial calibration standard. These data shall correspond with those on Form VI and shall be entered in a similar manner. The lower value is entered under the "FROM" column, the upper value under the "TO" column.

3.18.2.6 Enter the concentration calculated from each GC column under the "CONCENTRATION" column. Although the units are the same as those used on Form I, do <u>not</u> enter any units on Form X.

3.18.2.7 Calculate the percent difference between the concentrations entered on this form, using the equation found in Exhibit D, and report it to a tenth of a percent in the "%D" column. If %D is greater that 999.9, report it as 999.9.

3.18.2.8 The <u>lower</u> of the two concentrations is reported on Form I for each pesticide compound. The lower concentration is used because, if

R2-0004719

present, coeluting interferences are likely to increase the calculated concentration of any target compound. If the percent difference between the calculated concentrations is greater than 25.0 percent, flag the concentration on Form I, as described previously. This will alert the data user to the potential problems in quantitating this analyte.

3.18.2.9 If more pesticide compounds are identified in an individual sample than can be reported on one Fdrm X, complete as many additional copies of Form X as necessary, duplicating all header information and numbering the pages as described in Section 3.3.

3.18.2.10 Report multicomponent analytes detected in samples on Form X LCF-2. Complete the header information and GC column fields as described above. For multicomponent analytes, it is necessary to report the retention time and concentration of each peak chosen for quantitation in the target analyte in a fashion similar to that for single component pesticides. The concentrations of all peaks quantitated (three are required, up to five may be used) are averaged to determine the mean concentration. Report the lower of the two mean concentrations on Form I. Flag this value if the mean concentrations from the two GC columns differ by more than 25 percent, as described previously.

3.18.2.11 If more multicomponent compounds are identified in an individual sample than can be reported on one Form X, complete as many additional copies of Form X as necessary, duplicating all header information and numbering the pages as described in Section 3.3.

3.19 Sample Log-In Sheet (Form DC-1)

3.19.1 Purpose. This form is used to document the receipt and inspection of sample containers and samples. One original of Form DC-1 is required for each sample shipping container (only the hardcopy form is required). If the samples in a single sample shipping container are assigned to more than one SDG, the original Form DC-1 shall be placed with the deliverables for the SDG of the lowest alpha-numeric number, and a copy of Form DC-1 shall be placed with the deliverables for the other SDGs. The copies shall be identified as "copy(ies)", and the location of the original shall be noted on the copies.

3.19.2 Instrmctions

3.19.2.1 Sign and date the airbill. (If an airbill is not received, include a hardcopy receipt requested from the shipping company or a printout of the shipping company's electronic tracking information).

3.19.2.2 Complete the header information on the form, including the log-in date.

3.19.2.3 Examine the shipping container and record the presence/absence of custody seals and their condition (e.g., intact, broken) in item 1.

3.19.2.4 Record the custody seal numbers in item 2.

3.19.2.5 Open the container, remove the enclosed sample ducumentation, and record the presence/absence of chain-of-custody record(s), SMO forms (e.g., TRs, Facking Lists), and airbills or airbill stickers in items 3-5. Specify if there is an airbill present or an

R2-0004720

airbill sticker in item 5. Record the airbill or sticker number in item 6.

3.19.2.6 Remove the samples from the shipping container(s), examine the samples and the sample tags (if present), and record the condition of the sample bottles (e.g., intact, broken, leaking) and presence or absence of sample tags in items 7 and 8.

3.19.2.7 Record the presence of the cooler temperature indicator bottle in item 9 and cooler temperature in item 10.

3.19.2.8 Review the sample shipping documents and compare the information recorded on all the documents and samples and circle the appropriate answer in item 11.

3.19.2.9 Record the date and time of cooler receipt at the laboratory in items 12 and 13.

3.19.2.10 If there are no problems observed during receipt, sign and date (include the time) Form DC-1, the Chain-of-Custody record, and the TR, and write the sample numbers on Form DC-1 in the "EPA Sample #" column.

3.19.2.11 Record the appropriate sample tags and assigned laboratory numbers, if applicable.

3.19.2.12 Any comments should be made in the "Remarks" column.

3.19.2.13 Record the fraction designation (if appropriate) and the specific area designation (e.g., refrigerator number) in the "Sample Transfer" block. Sign and date the "Sample Transfer" block.

3.19.2.14 Cross out unused columns and spaces. Initial and date all cross outs.

3.19.2.15 If there are problems observed during receipt or an answer marked with an asterisk (e.g., "absent*") was circled, contact SMO and document the contact as well as resolution of the problem on a CLP Communication Log. Following resolution, sign and date the forms and note, where appropriate, the resolution of the problem.

3.20 Complete SDG File (CSF) Inventory Sheet (Porm DC-2)

3.20.1 Purpose. Form DC-2 is used to record both the CSF documents and the number of documents in the original Sample Data Package sent to the USEPA Region.

3.20.2 Instructions

3.20.2.1 Organize all USEPA CSF documents as described in Section 2.6. Assemble the documents in the order specified on Form DC-2 and Section 2.5, and stamp each page with a consecutive number; however, do not number Form DC-2. Inventory the CSF by reviewing the document numbers and recording page number ranges in the columns provided on Porm DC-2. The Contractor shall verify and record in the "Comments" section on Form DC-2 all intentional gaps in the page numbering sequence (e.g., "page numbers not used, XXXX - XXXX, YYYY - YYYY. If there are no documents for a specific document type, enter an "NA" in the empty space.

R2-0004721

3.20.2.2 Certain laboratory-specific documents related to the CSF may not fit into a clearly defined category. The Contractor shall review Form DC-2 to determine if it is most appropriate to place them under categories 7, 8, 9, or 10. Category 10 should be used if there is no appropriate previous category. These types of documents should be described or listed in the blanks under each appropriate category on Form DC-2.

3.20.2.3 If it is necessary to insert new or inadvertently omitted documents, the Contractor shall identify the documents with unique accountable numbers and record the unique accountable numbers and the locations of the documents in the CSF (in the "Other Records" section on Form DC-2).

4.0 DATA REPORTING FORMS

The data reporting forms are shown on the following pages.

R2-0004722

ILCA
LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Lab Sample ID: _____ Date Received: _____

Lab File ID: _____ Date Analyzed: _____

Purge Volume: _____(ML) Dilution Factor: _____

GC Column: _____ ID: _____(MM) Length: _____(M)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
75-71-8	Dichlorodifluoromethane		
74-87-3	Chloromethane		
75-01-4	Vinyl Chloride		
74-83-9	Bromomethane		
75-00-3	Chloroethane		
75-69-4	Trichlorofluoromethane		
75-35-4	1,1-Dichloroethene		
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		
67-64-1	Acetone		
75-15-0	Carbon Disulfide		
79-20-9	Methyl Acetate		
75-09-2	Methylene Chloride		
156-60-5	trans-1,2-Dichloroethene		
1634-04-4	Methyl tert-Butyl Ether		
75-34-3	1,1-Dichloroethane		
156-59-2	cis-1,2-Dichloroethene		
78-93-3	2-Butanone		
74-97-5	Bromochloromethane		
67-66-3	Chloroform		
71-55-6	1,1,1-Trichloroethane		
110-82-7	Cyclohexane		
55-23-5	Carbon Tetrachloride		
71-43-2	Benzene		
107-06-2	1,2-Dichloroethane		

ILCB
LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Lab Sample ID: _____ Date Received: _____

Lab Pile ID: _____ Date Analyzed: _____

Purge Volume: _____(ML) Dllution Factor: _____

GC Column: _____ ID: _____(MM) Length: _____(M)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
79-01-6	Trichloroethene		
108-87-2	Methylcyclohexane		
78-87-5	1,2-Dichloropropane		
75-27-4	Bromodichloromethane		
10061-01-5	cis-1,3-Dichloropropene		
108-10-1	4-Methyl-2-pentanone		
108-88-3	Toluene		
10061-02-6	trans-1,3-Dichlbropropene		
79-00-5	1,1,2-Trichloroethane		
127-18-4	Tetrachloroethene		
591-78-6	2-Hexanone		
124-48-1	Dibromochloromethane		
106-93-4	1,2-Dibromoethane		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene		
1330-20-7	Xylene (total)		
100-42-5	Styrene		
75-25-2	Bromoform		
98-82-8	Isopropylbenzene		
79-34-5	1,1,2,2-Tetrachloroethane		
541-73-1	1,3-Dichlorobenzene		
106-46-7	1,4-Dichlorobenzene		
95-50-1	1,2-Dichlorobenzene		
96-12-8	1,2-Dibromo-3-chloropropane		
120-82-1	1,2,4-Trichlorobenzene		
87-61-6	1,2,3-Trichlorobenzene		

R2-0004724

ILCC
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS
ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Lab Sample ID: _____ Date Received: _____

Lab File ID: _____ Date Extracted: _____

Sample Volume: _____ (ML) Date Analyzed: _____

Concentrated Extract Volume: _____ (UL) Dilution Factor: _____

Injection Volume: _____ (UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
100-52-7	Benzaldehyde		
108-95-2	Phenol		
111-44-4	bis(2-Chloroethyl)ether		
95-57-8	2-Chlorophenol		
95-48-7	2-Methylphenol		
108-60-1	2,2'-oxybis(1-Chloropropane)		
98-86-2	Acetophenone		
106-44-5	4-Methylphenol		
621-64-7	N-Nitroso-di-n-propylamine		
67-72-1	Hexachloroethane		
98-95-3	Nitrobenzene		
78-59-1	Isophorone		
88-75-5	2-Nitrophenol		
105-67-9	2,4-Dimethylphenoi		
111-91-1	bis(2-Chloroethoxy)methane		
120-83-2	2,4-Dichiorophenol		
91-20-3	Naphthalene		
106-47-8	4-Chloroaniline		
87-68-3	Hexachlorobutadiene		
105-60-2	Caprolactam		
59-50-7	4-Chloro-3-methylphenol		
91-57-6	2-Methylnaphthalene		
77-47-4	Hexachlorocyclopentadiene		
88-06-2	2,4,6-Trichlorophenol		
95-95-4	2,4,5-Trichlorophenol		
92-52-4	1,1'-Biphenyl		
91-58-7	2-Chloronaphthalene		
88-74-4	2-Nitroaniline		
131-11-3	Dimethylphthalate		
606-20-2	2,6-Dinitrotoluene		
208-96-8	Acenaphthylene		
99-09-2	3-Nitroaniline		
83-32-9	Acenaphthene		

ILCD
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Lab Sample ID: _____ Date Received: _____

Lab Pile ID: _____ Date Extracted: _____

Sample Volume: _____ (ML) Date Analyzed: _____

Concentrated Extract Volume: _____ (UL) Dilution Factor: _____

Injection Volume: _____ (UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
51-28-5	2,4-Dinitrophenol		
100-02-7	4-Nitrophenol		
132-64-9	Dibenzofuran		
121-14-2	2,4-Dinitrotoluene		
84-66-2	Diethylphthalate		
85-73-7	Fluorene		
7005-72-3	4-Chlorophenyl-phenylether		
100-01-5	4-Nitroaniline		
534-52-1	4,6-Dinitro-2-methylphenol		
86-30-5	N-Nitrosodiphenylamine (1)		
95-94-3	1,2,4,5 Tetrachlorobenzene		
101-55-3	4-Bromophenyl-phenylether		
118-74-1	Hexachlorobenzene		
1912-24-9	Atrazine		
87-86-5	Pentachlorophenol		
85-01-8	Phenanthrene		
120-12-7	Anthracene		
84-74-2	Di-n-butylphthalate		
206-44-0	Fluoranthene		
129-00-0	Pyrene		
85-68-7	Butylbenzylphthalate		
91-94-1	3,3'-Dichlorobenzidine		
56-55-3	Benzo(a)anthracene		
218-01-9	Chrysene		
117-81-7	bis(2-Ethylhexyl)phthalate		
117-84-0	Di-n-octylphthalate		
205-99-2	Benzo(b)fluoranthene		
207-08-9	Benzo(k)fluoranthene		
50-32-8	Benzo(a)pyrene		
193-39-5	Indeno(1,2,3-cd)pyrene		
53-70-3	Dibenzo(a,h)anthracene		
191-24-2	Benzo(g,h,i)perylene		

(1) Cannot be separated from Diphenylamine

ILCE
LOW CONCENTRATION WATER PESTICIDE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Lab Sample ID: _____ Date Received: _____

Sample Volume: _____ (ML) Date Extracted: _____

Concentrated Extract Volume: _____ (UL) Date Analyzed: _____

Injection Volume: _____ (UL) Dilution Factor: _____

Sulfur Cleanup: (Y/N) _____ Extraction: (Sepf/Cont) _____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
319-84-5	alpha-BHC		
319-85-7	beta-BHC		
319-86-8	delta-BHC		
58-89-9	gamma-BHC (Lindane)		
75-44-8	Heptachlor		
309-00-2	Aldrin		
1024-57-3	Heptachlor epoxide		
959-98-8	Endosulfan I		
60-57-1	Dieldrin		
72-55-9	4,4'-DDE		
72-20-8	Endrin		
33213-65-9	Endosulfan II		
72-54-8	4,4'-DDD		
1031-07-8	Endosulfan sulfate		
50-29-3	4,4'-DDT		
72-43-5	Methoxychlor		
53494-70-5	Endrin ketone		
7421-93-4	Endrin aldehyde		
5103-71-9	alpha-Chlordane		
5103-74-2	gamma-Chlordane		
8001-35-2	Toxaphene		
12674-11-2	Aroclor-1015		
11104-28-2	Aroclor-1221		
11141-16-5	Aroclor-1232		
53469-21-9	Aroclor-1242		
12672-29-5	Aroclor-1248		
11097-69-1	Aroclor-1254		
11096-82-5	Aroclor-1260		

ILCF

LOW CONCENTRATION WATER VOLATILE ORGANICS ANALYSIS

DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Lab Sample ID: _____ Date Received: _____

Lab File ID: _____ Date Analyzed: _____

Purge Volume: _____ (ML) Dilution Factor: _____

GC Column: _____ ID: _____ (MM) Length: _____(M)

Number TICs found: _____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

ILCG
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Lab Sample ID: _____ Date Received: _____

Lab File ID: _____ Date Extracted: _____

Sample Volume: _____ (ML) Date Analyzed: _____

Concentrated Extract Volume: _____ (UL) Dilution Factor: _____

Injection Volume: _____ (UL)

Number TICs found: _____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

2LCA

LOW CONCENTRATION WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

	EPA SAMPLE NO.	VDMC1 (VCL) #	VDMC2 (CLA) #	VDMC3 (DCE) #	VDMC4 (BUT) #	VDMC5 (CLF) #	VDMC6 (DCA) #	VDMC7 (BEN) #
01								
02								
03								
04								
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

			QC LIMITS
VDMC1	(VCL)	= Vinyl Chloride-d3	(49-138)
VDMC2	(CLA)	= Chloroethane-d5	(60-126)
VDMC3	(DCE)	= 1,1-Dichloroethene-d2	(55-130)
VDMC4	(BUT)	= 2-Butanone-d5	(42-171)
VDMC5	(CLF)	= Chloroform-d	(80-123)
VDMC6	(DCA)	= 1,2-Dichloroethane-d4	(78-129)
VDMC7	(BEN)	= Benzene-d6	(78-121)

\# Column to be used to flag recovery values

* Values outside of contract required QC limits

R2-0004730

2LCB

LOW CONCENTRATION WATER VOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

	EPA SAMPLE NO.	VDMC8 (DPA) #	VDMC9 (TOL) #	VDMC10 (TDP) #	VDMC11 (HEX) #	VDMC12 (BRF) #	VDMC13 (TCA) #	VDMC14 (DCZ) #	TOT OUT
01									
02									
03									
04									
05									
06									
07									
08									
09									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

		QC LIMITS
VDMC8 (DPA)	= 1,2-Dichloropropane-d5	(84-123)
VDMC9 (TOL)	= Toluene-d8	(77-120)
VDMC10 (TDP)	= trans-1,3-Dichloropropene-d4	(80-128)
VDMC11 (HEX)	= 2-Hexanone-d5	(37-169)
VDMC12 (BRF)	= Bromoform-d	(76-135)
VDMC13 (TCA)	= 1,1,2,2-Tetrachloroethane-d2	(75-131)
VDMC14 (DCZ)	= 1,2-Dichlorobenzene-d4	(50-150)

Column to be used to flag recovery values

* Values outside of contract required QC limits

Page ___ of ___

R2-0004731

2LCC

LOW CONCENTRATION WATER SEMIVOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

	EPA SAMPLE NO.	SDMC1 (PHL) #	SDMC2 (BCE) #	SDMC3 (2CP) #	SDMC4 (4MP) #	SDMC5 (NBZ) #	SDMC6 (2NP) #	SDMC7 (DCP) #	SDMC8 (4CA) #
01									
02									
03									
04									
05									
06									
07									
08									
09									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

			QC LIMITS
SDMC1	(PHL)	= Phenol-d5	(10-110)
SDMC2	(BCE)	= bis-(2-Chloroethyl)ether-d8	(41-94)
SDMC3	(2CP)	= 2-Chlorophenol-d4	(33-110)
SDMC4	(4MP)	= 4-Methylphenol-d8	(38-95)
SDMC5	(NBZ)	= Nitrobenzene-d5	(35-1i4)
SDMC6	(2NP)	= 2-Nitrophenol-d4	(40-105)
SDMC7	(DCP)	= 2,4-Dichlorophenol-d3	(42-98)
SDMC8	(4CA)	= 4-Chloroaniline-d4	(8-70)

\# Column to be used to flag recovery values

* Values outside of contract required QC limits

D DMC diluted out

R2-0004732

2LCD

LOW CONCENTRATION WATER SEMIVOLATILE DEUTERATED MONITORING COMPOUND RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

	EPA SAMPLE NO.	SDMC9 (DMP) #	SDMC10 (ACY) #	SDMC11 (4NP) #	SDMC12 (FLR) #	SDMC13 (NMP) #	SDMC14 (ANC) #	SDMC15 (PYR) #	SDMC16 (BAP) #	TOT OUT
01										
02										
03										
04										
05										
06										
07										
08										
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS
SDMC9 (DMP)	= Dimethylphthalate-d6	(62-102)
SDMC10 (ACY)	= Acenaphthylene-d8	(49-98)
SDMC11 (4NP)	= 4-Nitrophenol-d4	(9-181)
SDMC12 (FLR)	= Fluorene-d10	(50-97)
SDMC13 (NMP)	= 4,5-Dinitro-methylphenol-d2	(53-153)
SDMC14 (ANC)	= Anthracene-d10	(55-115)
SDMC15 (PYR)	= Pyrene-d10	(47-114)
SDMC16 (BAP)	= Benzo(a)pyrene-d12	(54-120)

\# Column to be used to flag recovery values

* Values outside of contract required QC limits

D DMC diluted out

2LCE

LOW CONCENTRATION WATER PESTICIDE SURROGATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

GC Column(1): _____ ID: _____(MM) GC Column(2): _____ ID: _____(MM)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01								
02								
03								
04								
05								
05								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
25								
27								
28								
29								
30								

QC LIMITS

TCX = Tetrachloro-m-xylene (30-150)
DCB = Decachlorobiphenyl (30-150)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

R2-0004734

3LCA
LOW CONCENTRATION WATER VOLATILE
MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: _____

COMPOUND	SPIKE ADDED (UG/L)	SAMPLE CONCENTRATION (UG/L)	MS CONCENTRATION (UG/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene					61-145
Benzene					76-127
Trichloroethene					71-120
Toluene					76-125
Chlorobenzene					75-130

COMPOUND	SPIKE ADDED (UG/L)	MSD CONCENTRATION (UG/L)	MSD % REC #	RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene					14	61-145
Benzene					11	75-127
Trichloroethene					14	71-120
Toluene					13	76-125
Chlorobenzene					13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: _____ out of _____ outside limits
Spike Recovery: _____ out of _____ outside limits

COMMENTS: _____

_____

R2-0004735

3LCB

LOW CONCENTRATION WATER SEMIVOLATILE

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: _____

COMPOUND	SPIKE ADDED (UG/L)	SAMPLE CONCENTRATION (UG/L)	MS CONCENTRATION (UG/L)	MS % REC #	QC LIMITS REC.
Phenol					12-110
2-Chlorophenol					27-123
N-Nitroso-di-n-prop.(1)					41-116
4-Chloro-3-methylphenol					23-97
Acenaphthene					46-118
4-Nitrophenol					10-80
2,4-Dinitrotoluene					24-96
Pentachlorophenol					9-103
Pyrene					26-127

COMPOUND	SPIKE ADDED (UG/L)	MSD CONCENTRATION (UG/L)	MSD % REC #	RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol					42	12-110
2-Chlorophenol					40	27-123
M-Nitroso-di-n-prop.(1)					38	41-116
4-Chloro-3-methylphenol					42	23-97
Acenaphthene					31	46-118
4-Nitrophenol					50	10-80
2,4-Dinitrotoluene					38	24-96
Pentachlorophenol					50	9-103
Pyrene					31	26-127

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: _____out of _____ outside limits

Spike Recovery: _____ out of _____ outside limits

COMMENTS: _____

_____

R2-0004736

3LCC

LOW CONCENTRATION WATER PESTICIDE

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: _____

Instrument ID: _____ GC Column: _____ ID: _____(mm)

COMPOUND	SPIKE ADDED (UG/L)	SAMPLE CONCENTRATION (UG/L)	MS CONCENTRATION (UG/L)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)					56-123
Heptachlor					40-131
Aldrin					40-120
Dieldrin					52-125
Endrin					56-121
4,4'-DDT					38-127

COMPOUND	SPIKE ADDED (UG/L)	MSD CONCENTRATION (UG/L)	MSD % REC #	RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)					15	56-123
Heptachlor					20	40-131
Aldrin					22	40-120
Dieldrin					18	52-126
Endrin					21	56-121
4,4'-DDT					27	38-127

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: _____ out of _____ outside limits
Spike Recovery:_____ out of _____ outside limits

COMMENTS: _____

Page __ of __

R2-0004737

3LCD

LOW CONCENTRATION WATER PESTICIDE LAB CONTROL SAMPLE RECOVERY

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Lab Sample ID: _____ LCS Lot No.: _____

LCS Aliquot: _____(UL) Date Extracted: _____

Concentrated Extract Volume: _____(UL) Date Analyzed: _____

Injection Volume: _____(UL) Dilution Factor: _____

Sulfur Cleanup: (Y/N) _____

Instrument ID (1): _____ GC Column (1): _____ ID: _____(MM)

COMPOUND	AMOUNT ADDED (NG)	AMOUNT RECOVERED (NG)	%REC #	QC LIMITS
gamma-BHC (Lindane)				50-120
Heptachlor epoxide				50-150
Dieldrin				30-130
4,4'-DDE				50-150
Endrin				50-120
Endosulfan sulfate				50-120
gamma-Chlordane				30-130

Instrument ID (2): _____ GC Column (2): _____ ID: _____(MM)

COMPOUND	AMOUNT ADDED (NG)	AMOUNT RECOVERED (NG)	%REC #	QC LIMITS
gamma-BHC (Lindane)				50-120
Heptachlor epoxide				50-150
Dieldrin				30-130
4,4'-DDE				50-150
Endrin				50-120
Endosulfan sulfate				50-120
gamma-Chlordane				30-130

Column to be used to flag recovery values with an asterisk

~~* Values outside of QC limits~~

LCS Recovery:_____ outside limits out of _____total.

R2-0004738

4LCA

LOW CONCENTRATION WATER

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Lab Sample ID: _____ Date Analyzed: _____

Lab File ID: _____ Time Analyzed: _____

Instrument ID: _____

GC Column: _____ ID: _____ (MM) Length: _____(M)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLE ANALYSES:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
25				
27				
28				
29				
30				

COMMENTS: _____

_____

Page __ of __

R2-0004739

4LCB

LOW CONCENTRATION WATER

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Lab Sample ID: _____ Date Extracted: _____

Lab File ID: _____ Date Analyzed: _____

Instrument ID: _____ Time Analyzed: _____

THIS METHOD BLANK APPLIES TO THE FOLLOWING ANALYSES:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01				
02				
03				
04				
05				
05				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS: _____

_____

R2-0004740

4LCC

LOW CONCENTRATION WATER

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Date Extracted: _____ Lab Sample ID: _____

Date Analyzed (1): _____ Date Analyzed (2): _____

Time Analyzed (1): _____ Time Analyzed (2): _____

Instrument ID (1): _____ Instrument ID (2): _____

GC Column (1): _____ ID: _____(MM) GC Column (2): _____ ID: _____(MM)

Sulfur Cleanup: (Y/N) _____ Extraction (Sepf/Cont): _____

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLE ANALYSES:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

_____

Page __ of __

R2-0004741

5LCA

LOW CONCENTRATION WATER VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

BROMOFLUOROBENZENE (BFB)

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Lab File ID: _____ BFB Injection Date: _____

Instrument ID: _____ BFB Injection Time: _____

GC Column: _____ ID: _____(MM) Column Length: _____

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	
75	30.0 - 66.0% of mass 95	
95	Base peak, 100% relative abundance	
96	5.0 - 9.0% of mass 95	
173	Less than 2.0% of mass 174	( )1
174	50.0 - 120.0% of mass 95	
175	4.0 - 9.0 % of mass 174	( )1
176	93.0 - 101.0% of mass 174	( )1
177	5.0 - 9.0% of mass 176	( )2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01					
02					
03					
04					
05					
05					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

R2-0004742

5LCB

LOW CONCENTRATION WATER SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.:_____ SDG No.:_____

Lab File ID: _____ DFTPP Injection Date: _____

Instrument ID: _____ DFTPP Injection Time: _____

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0- 80.0% of mass 198	
58	Less than 2.0% of mass 69	( )1
59	Mass 69 relative abundance	
70	Less than 2.0% of mass 69	( )1
127	25.0 - 75.0% of mass 198	
197	Less than 1.0% of mass 198	
198	Base Peak, 100% relative abundance	
199	5.0 to 9.0% of mass 198	
275	10.0- 30.0% of mass 198	
365	Greater than 0.75% of mass 198	
441	Present, but less than mass 443	
442	40.0 - 110.0% of mass 198	
443	15.0 - 24.0% of mass 442	( )2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

5LCA

LOW CONCENTRATION WATER VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date(s): _____ _____

Calibration Times: _____ _____

GC Column: _____ ID: _____(MM) Length: _____ (M)

LAB FILE ID: RRF0.5 = _____ RRF1 = _____

RRF5 = _____ RRF10 = _____ RRF25 = _____

COMPOUND	RRF0.5	RRF1	RRF5	RRF10	RRF25	$\overline{RRF}$	% RSD
Dichlorodifluoromethane							
Chloromethane							
Vinyl Chloride *							*
Bromomethane *							*
Chloroethane							
Trichlorofluoromethane							
1,1-Dichloroethene *							*
1,1,2-Trichloro-1,2,2-trifluoroethane							
Acetone							
Carbon Disulfide							
Methyl Acetate							
Methylene Chloride							
trans-1,2-Dichloroethene							
Methyl tert-Butyl Ether							
1,1-Dichloroethane *							*
cis-1,2-Dichloroethene							
2-Butanone							
Bromochloromethane *							*
Chloroform *							*
1,1,1-Trichloroethane *							*
Cyclohexane							
Carbon Tetrachloride *							*
Benzene *							*
1,2-Dichloroethane *							*
Trichloroethene *							*
Methylcyclohexane							

*Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

R2-0004744

6LCB

LOW CONCENTRATION WATER VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date(s): _____ _____

Calibration Times: _____ _____

GC Column: _____ ID: _____(MM) Length: _____(M)

LAB FILE ID: RRF0.5 = _____ RRF1 = _____

RRFS = _____ RRFI0 = _____ RRF25 = _____

COMPOUND	RRF0.5	RRF1	RRFS	RRFI0	RRF2S	$\overline{RRF}$	% RSD
1,2-Dichloropropane							
Bromodichloromethane *							*
cis-1,3-Dichloropropene *							*
4-Methyl-2-pentanone							
Toluene *							*
trans-1,3-Dichloropropene *							*
1,1,2-Trichloroethane *							*
Tetrachloroethene *							*
2-Hexanone							
Dibromochloromethane *							*
1,2-Dibromoethane *							*
Chlorobenzene *							*
Ethylbenzene *							*
Xylene (total) *							*
Styrene *							*
Bromoform *							*
Isopropylbenzene							
1,1,2,2-Tetrachloroethane *							*
1,3-Dichlorobenzene *							*
1,4-Dichiorobenzene *							*
1,2-Dichiorobenzene *							*
1,2-Dibromo-3-chloropropane							
1,2,4-Triehlorobenzene *							*
1,2,3-Trichlorobenzene *							*

*Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

R2-0004745

6LCC

LOW CONCENTRATION WATER VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date(s): _____ _____

Calibration Times: _____ _____

GC Column: _____ ID: _____(MM) Length: _____(M)

LAB FILE ID: RRF0.5 = _____ RRF1 = _____

RRFS = _____ RRF10 = _____ RRF25 = _____

COMPOUND	RRF0.S	RRF1	RRF5	RRFI0	RRF25	$\overline{RRF}$	% RSD
Vinyl chloride-d3							
Chloroethane-d5							
1,1-Dichloroethene-d2							
2-Butanone-d5							
Chloroform-d							
1,2-Dichloroethane-d4							
Benzene-d6							
1,2-Dichloropropane-d6							
Toluene-d8							
trans-1,3-Dichloropropene-d4							
2-Hexanone-d5							
Bromoform-d							
1,1,2,2-Tetrachloroethane-d2							
1,2-Dichlorobenzene-d4							

*Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

R2-0004746

6LCD

LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date(s): _____ _____

Calibration Times: _____ _____

LAB FILE ID: RRFS = _____ RRFI0 = _____

RRF20 = _____ RRFS0 = _____ RRF80 = _____

COMPOUND	RRFS	RRFI0	RRF20	RRFS0	RRFS0	RRF	% RSD
Benzaldehyde							
Phenol *							*
bis-(2-Chloroethyl)ether *							*
2-Chlorophenol *							*
2-Methylphenol *							*
2,2'-oxybis(1-Chloropropane)							
Acetophenone							
4-Methylphenol *							*
N-Nitroso-di-n-propylamine *							*
Hexachloroethane *							*
Nitrobenzene *							*
Isophorone *							*
2-Nitrophenol *							*
2,4-Dimethylphenoi *							*
bis(2-Chloroethoxy)methane *							*
2,4-Dichlorophenol *							*
Naphthalene *							*
4-Chloroaniline							
Hexachlorobutadiene							
Caprolactam							
4-Chloro-3-methylphenol *							*
2-Methylnaphthalene *							*
Hexachlorocyclopentadiene							
2,4,6-Trichlorophenol *							*
2,4,5-Trichlorophenol *							*
1,1'-Biphenyl							
2-Chloronaphthalene *							*
2-Nitroaniline							
Dimethylphthalate							
2,6-Dinitrotoluene *							*
Acenaphthylene *							*
3-Nitroaniline							
Acenaphthene *							*
2,4-Dinitrophenol							
4-Nitrophenol							
Dibenzofuran *							*

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

6LCE

LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date(s): _____ _____

Calibration Times: _____ _____

LAB FILE ID: RRF5 = _____ RRFI0 = _____

RRF20 = _____ RRFS0 = _____ RRF80 = _____

COMPOUND	RRF5	RRFI0	RRF20	RRF50	RRF80	$\overline{RRF}$	% RSD
2,4-Dinitrotoluene *							*
Diethylphthalate							
Fluorene *							*
4-Chlorophenyl-phenylether *							*
4-Nitroaniline							
4,6-Dinitro-2-methylphenol							
N-Nitrosodiphenylamine (1)							
1,2,4,5 Tetrachlorobenzene							
4-Bromophenyl-phenylether *							*
Hexachlorobenzene *							*
Atrazine							
Pentachlorophenol *							*
Phenanthrene *							*
Anthracene *							*
Di-n-butylphthalate							
Fluoranthene *							*
Pyrene *							*
Butylbenzylphthalate							
3,3'-Dichlorobenzidine							
Benzo(a)anthracene *							*
Chrysene *							*
bis(2-Ethylhexyl)phthalate							
Di-n-octylphthalate							
Benzo(b)fluoranthene *							*
Benzo(k)fluoranthene *							*
Benzo(a)pyrene *							*
Indeno(1,2,3-cd)pyrene *							*
Dibenzo(a,h)anthracene *							*
Benzo(g,h,i)perylene *							*

(1) Cannot be separated from Diphenylamine

* Compounds with required minimum RRF and maximum %RSD values.

All other compounds must meet a minimum RRF of 0.010.

R2-0004748

6LCF

LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date(s): _____ _____

Calibration Times: _____ _____

LAB FILE ID: RRFS = _____ RRFI0 = _____

RRF20 = _____ RRFS0 = _____ RRF80 = _____

COMPOUND	RRFS	RRFI0	RRF20	RRFS0	RRF80	$\overline{RRF}$	% RSD
Phenol-d5							
bis-(2-Chloroethyl) ether-d8							
2-Chlorophenol-d4							
4-Methylphenol-d8							
Nitrobenzene-dS							
2-Nitrophenol-d4							
2,4-Dichiorophenol-d3							
4-Chloroaniline-d4							
Dimethylphthalate-d6							
Acenaphthylene-d8							
4-Nitrophenol-d4							
Fluorene-dl0							
4,6-Dinitro-methyIphenol-d2							
Anthracene-dl0							
Pyrene-dl0							
Benzo(a)pyrene-dl2							

R2-0004749

6LCG

LOW CONCENTRATION WATER PESTICIDE

INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Level (x low): low _____ mid _____ high _____

GC Column: _____ ID: _____(MM) Date(s) Analyzed: _____ _____

COMPOUND	RT OF STANDARDS			MEAN RT	RT WINDOW	
	LOW	MID	HIGH		FROM	TO
alpha-BHC						
beta-BHC						
delta-BHC						
gamma-BHC (Lindane)						
Heptachlor						
Aldrin						
Heptachlor epoxide						
Endosulfan I						
Dieldrin						
4,4'-DDE						
Endrin						
Endosulfan II						
4,4'-DDD						
Endosulfan sulfate						
4,4'-DDT						
Methoxychlor						
Endrin ketone						
Endrin aldehyde						
alpha-Chlordane						
gamma-Chlordane						
Tetrachloro-m-xylene						
Decachlorobiphenyl						

* Surrogate retention times are measured from Standard Mix A analyses.

Retention time windows are ±0.05 minutes for all compounds that elute before Heptachlor expoxide, ±0.07 minutes for all other compounds, except ±0.10 minutes for Decachlorobiphenyl.

R2-0004750

6LCH

LOW CONCENTRATION WATER PESTICIDE
INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Level (x low): low _____ mid _____ high _____

GC Column: _____ ID: _____(MM) Date(s) Analyzed: _____ _____

COMPOUND	CALIBRATION FACTORS LOW	MID	HIGH	MEAN	%RSD
alpha-BHC					
beta-BHC					
delta-BHC					
gamma-BHC (Lindane)					
Heptachlor					
Aldrin					
Heptachlor epoxide					
Endosulfan I					
Dieldrin					
4,4'-DDE					
Endrin					
Endosulfan II					
4,4'-DDD					
Endosulfan sulfate					
4,4'-DDT					
Methoxychlor					
Endrin ketone					
Endrin aldehyde					
alpha-Chlordane					
gamma-Chlordane					
Tetrachloro-m-xylene					
Decachlorobiphenyl					

* Surrogate calibration factors are measured from Standard Mix A analyses.

R2-0004751

6LCI

LOW CONCENTRATION WATER PESTICIDE
INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Date(s) Analyzed: _____ _____

GC Column: _____ ID: _____(MM)

COMPOUND	AMOUNT (NG)	PEAK[1]	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Toxaphene		1				
		2				
		3				
		4				
		5				
Aroclor 1016		1				
		2				
		3				
		4				
		5				
Aroclor 1221		1				
		2				
		3				
		4				
		5				
Aroclor 1232		1				
		2				
		3				
		4				
		5				
Aroclor 1242		1				
		2				
		3				
		4				
		5				
Aroclor 1248		1				
		2				
		3				
		4				
		5				
Aroclor 1254		1				
		2				
		3				
		4				
		5				
Aroclor 1260		1				
		2				
		3				
		4				
		5				

[1]At least 3 peaks for each column are required for identification of multicomponent analytes.

R2-0004752

6LCJ

LOW CONCENTRATION WATER PESTICIDE ANALYTE RESOLUTION SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

GC Column (1): _____ ID: ____(MM) Instrument ID (1): _____

EPA Sample No. (RESC##): _____ Lab Sample ID (1): _____

Date Analyzed (1): _____ Time Analyzed (1): _____

	ANALYTE	RT	RESOLUTION (%)
01			
02			
03			
04			
05			
06			
07			
08			
09			

GC Column (2): _____ ID: ____(MM) Instrument ID (2): _____

EPA Sample No. (RESC##): _____ Lab Sample ID (2): _____

Date Analyzed (2): _____ Time Analyzed (2): _____

	ANALYTE	RT	RESOLUTION (%)
01			
02			
03			
04			
05			
06			
07			
08			
09			

R2-0004753

5LCK

LOW CONCENTRATION WATER PERFORMANCE EVALUATION MIXTURE (PEM)

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

GC Column (1): _____ ID: ____(MM) Instrument ID (1): _____

EPA Sample No. (PEM##): _____ Lab Sample ID (1): _____

Date Analyzed (1): _____ Time Analyzed (1): _____

	ANALYTE	RT	RESOLUTION (%)
01			
02			
03			
04			
05			
06			
07			
08			

GC Column (2): _____ ID: ____(MM) Instrument ID (2): _____

EPA Sample No. (PEM##): _____ Lab Sample TD (2): _____

Date Analyzed (2): _____ Time Analyzed (2): _____

	ANALYTE	RT	RESOLUTION (%)
01			
02			
03			
04			
0S			
06			
07			
08			

6LCL

LOW CONCENTRATION WATER INDIVIDUAL STANDARD MIXTURE A (INDA)

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

GC Column (1): _____ ID: _____(MM) Instrument ID (1): _____

EPA Sample No. (INDAM##): _____ Lab Sample ID (1): _____

Date Analyzed (1): _____ Time Analyzed (1): _____

	ANALYTE	RT	RESOLUTION (%)
01			
02			
03			
04			
0S			
06			
07			
08			
09			
10			
11			

GC Column (2): _____ ID: _____(MM) Instrument ID (2): _____

EPA Sample No. (INDAM##): _____ Lab Sample ID (2): _____

Date Analyzed (2): _____ Time Analyzed (2): _____

	ANALYTE	RT	RESOLUTION (%)
01			
02			
03			
04			
06			
06			
07			
08			
09			
10			
11			

R2-0004755

6LCM

LOW CONCENTRATION WATER INDIVIDUAL STANDARD MIXTURE B (INDB)

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

GC Column (1): _____ ID: ____(MM) Instrument ID (1): _____

EPA Sample No. (INDBM##): _____ Lab Sample ID (1): _____

Date Analyzed (1): _____ Time Analyzed (1): _____

	ANALYTE	RT	RESOLUTION (%)
01			
02			
03			
04			
05			
06			
07			
08			
09			
10			
11			
12			
13			

GC Column (2): _____ ID: ____(MM) Instrument ID (2): _____

EPA Sample No. (INDBM##): _____ Lab Sample ID (2): _____

Date Analyzed (2): _____ Time Analyzed (2): _____

	ANALYTE	RT	RESOLUTION (%)
01			
02			
03			
04			
05			
06			
07			
08			
09			
10			
11			
12			
13			

R2-0004756

7LCA

LOW CONCENTRATION WATER VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.:_____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date: _____ Time: _____

Lab File ID: _____ Init. Calib. Date(s): _____ _____

EPA Sample No.(VSTD005##): _____ Init. Calib. Times: _____ _____

GC Column: _____ ID: _____(MM) Length: _____ (M)

COMPOUND	$\overline{RRF}$	RRFS	MIN RRF	%D	MAX %D
Dichlorodifluoromethane					
Chloromethane					
Vinyl Chloride			0.100		30.0
Bromomethane			0.100		30.0
Chlnroethane					
Trichlorofluoromethane					
1,1-Dichloroethene			0.100		30.0
1,1,2-Trichloro-1,2,2-trifluoroethane					
Acetone					
Carbon Disulfide					
Methyl Acetate					
Methylene Chloride					
trans-1,2-Dichloroethene					
Methyl tert-Butyl Ether					
1,1-Dichloroethane			0.200		30.0
cis-1,2-Dichloroethene					
2-Butanone					
Bromochloromethane			0.050		30.0
Chloroform			0.200		30.0
1,1,1-Trichloroethane			0.i00		30.0
Cyclohexane					
Carbon Tetrachloride			0.100		30.0
Benzene			0.400		30.0
1,2-Dichloroethane			0.100		30.0
Trichloroethene			0.300		30.0
Methylcyclohexane					

All other compounds must meet a minimum RRF of 0.010.

R2-0004757

7LCB

LOW CONCENTRATION WATER VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date: _____ Time: _____

Lab File ID: _____ Init. Calib. Date(s): _____ _____

EPA Sample No. (VSTD00S##): _____ Init. Calib. Times: _____ _____

GC Column: _____ ID: _____ (MM) Length: _____ (M)

COMPOUND	$\overline{RRF}$	RRFS	MIN RRF	%D	MAX %D
1,2-Dichloropropane					
Bromodichloromethane			0.200		30.0
cis-1,3-Dichloropropene			0.200		30.0
4-Methyl-2-pentanone					
Toluene			0.400		30.0
trans-1,3-Dichloropropene			0.100		30.0
1,1,2-Trichloroethane			0.100		30.0
Tetrachloroethene			0.100		30.0
2-Hexanone					
Dibromochloromethane			0.100		30.0
1,2-Dibromoethane			0.100		30.0
Chlorobenzene			0.500		30.0
Ethylbenzene			0.100		30.0
Xylene (total)			0.300		30.0
Styrene			0.300		30.0
Bromoform			0.050		30.0
Isopropylbenzene					
1,1,2,2-Tetrachloroethane			0.100		30.0
1,3-Dichlorobenzene			0.400		30.0
1,4-Dichlorobenzene			0.400		30.0
1,2-Dichlorobenzene			0.400		30.0
1,2-Dibromo-3-chloropropane					
1,2,4-Triehlorobenzene			0.200		30.0
1,2,3-Trichlorobenzene			0.200		30.0

All other compounds must meet a minimum RRF of 0.010.

R2-0004758

7LCC

LOW CONCENTRATION WATER VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date: _____ Time: _____

Lab Pile ID: _____ Init. Calib. Date(s): _____ _____

EPA Sample No.(VSTD005##): _____ Init. Calib. Times: _____ _____

GC Column:_____ID:_____(MM) Length: _____(M)

COMPOUND	$\overline{RRF}$	RRFS	MIN RRF	%D	MAX %D
Vinyl Chloride-d3					
Chloroethane-d5					
1,1-Dichloroethene-d2					
2-Butanone-d5					
Chloroform-d					
1,2-Dichloroethane-d4					
Benzene-d5					
1,2-Dichloropropane-d6					
Toluene-d8					
trans-1,3-Dichloropropene-d4					
2-Hexanone-dS					
Bromoform-d					
1,1,2,2-Tetrachloroethane-d2					
1,2-Dichlorobenzene-d4					

R2-0004759

7LCD

LOW CONCENTRATION WATER SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date: _____ Time: _____

Lab File ID: _____ Init. Calib. Date(s): _____ _____

EPA Sample No.(SSTD020##): _____ Init. Calib. Times: _____ _____

GC Column: _____ ID: _____(MM)

COMPOUND	$\overline{RRF}$	RRF20	MIN RRF	%D	MAX %D
Benzaldehyde					
Phenol			0.800		25.0
bis-(2-Chloroethyl)ether			0.700		25.0
2-Chlorophenol			0.800		25.0
2-Methylphenol			0.700		25.0
2,2'-oxybis(1-Chloropropane)					
Acetophenone					
4-Methylphenol			0.600		25.0
N-Nitroso-di-n-propylamine			0.500		25.0
Hexachloroethane			0.300		25.0
Nitrobenzene			0.200		25.0
Isophorone			0.400		25.0
2-Nitrophenol			0.100		30.0
2,4-Dimethylphenoi			0.200		30.0
bis(2-Chloroethoxy)methane			0.300		25.0
2,4-Dichiorophenol			0.200		25.0
Naphthalene			0.700		25.0
4-Chloroaniline					
Hexachlorobutadiene					
Caprolactam					
4-Chloro-3-methylphenol			0.200		25.0
2-Methylnaphthalene			0.400		25.0
Hexachlorocyclopentadiene					
2,4,6-Trichlorophenol			0.200		25.0
2,4,5-Trichlorophenol			0.200		25.0
1,1'-Biphenyl					
2-Chloronaphthalene			0.800		25.0
2-Nitroaniline					
Dimethylphthalate					
2,6-Dinitrotoluene			0.200		25.0
Acenaphthylene			0.900		25.0
3-Nitroaniline					
Acenaphthene			0.900		25.0
2,4-Dinitrophenol					
4-Nitrophenol					
Dibenzofuran			0.800		25.0

All other compounds must meet a minimum RRP of 0.010.

R2-0004760

7LCE

LOW CONCENTRATION WATER SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date: _____ Time: _____

Lab File ID: _____ Init. Calib. Date(s): _____ _____

EPA Sample No.(SSTD020##): _____ Init. Calib. Times: _____ _____

GC Column: _____ ID: _____(MM)

COMPOUND	$\overline{RRF}$	RRF20	MIN RRF	%D	MAX %D
2,4-Dinitrotoluene			0.200		30.0
Diethylphthalate					
Fluorene			0.900		25.0
4-Chlorophenyl-phenylether			0.400		25.0
4-Nitroaniline					
4,6-Dinitro-2-methylphenol					
N-Nitrosodiphenylamine (1)					
1,2,4,5 Tetrachlorobenzene					
4-Bromophenyl-phenylether			0.100		25.0
Hexachlorobenzene			0.100		25.0
Atrazine					
Pentachlorophenol			0.050		25.0
Phenanthrene			0.700		25.0
Anthracene			0.700		25.0
Di-n-butylphthalate					
Fluoranthene			0.600		25.0
Pyrene			0.600		25.0
Butylbenzylphthalate					
3,3'-Dichlorobenzidine					
Benzo(a)anthracene			0.800		25.0
Chrysene			0.700		25.0
bis(2-Ethylhexyl)phthalate					
Di-n-octylphthalate					
Benzo(b)fluoranthene			0.700		25.0
Benzo(k)fluoranthene			0.700		25.0
Benzo(a)pyrene			0.700		25.0
Indeno(1,2,3-cd)pyrene			0.500		25.0
Dibenzo(a,h)anthracene			0.400		25.0
Benzo(g,h,i)perylene			0.500		25.0

(1) Cannot be separated from Diphenylamine

All other compounds must meet a minimum RRF of 0.010.

7LCP

LOW CONCENTRATION WATER SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date: _____ Time: _____

Lab Pile ID: _____ Init. Calib. Date(s): _____ _____

EPA Sample No.(SSTD020##): _____ Init. Calib. Times: _____ _____

GC Column: _____ ID: _____(MM)

COMPOUND	$\overline{RRF}$	RRF20	MIN RRP	%D	MAX %D
Phenol-d5					
bis-(2-Chloroethyl)ether-d8					
2-Chlorophenol-d4					
4-MethyIphenol-d8					
Nitrobenzene-dS					
2-Nitrophenol-d4					
2,4-Dichlorophenol-d3					
4-Chloroaniline-d4					
Dimethylphthalate-d6					
Acenaphthylene-d8					
4-Nitrophenol-d4					
Fluorene-dl0					
4,6-Dinitro-methyIphenol-d2					
Anthracene-dl0					
Pyrene-dl0					
Benzo(a)pyrene-dl2					

7LCG

LOW CONCENTRATION WATER PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

GC Column: _____ ID: _____ (MM) Init. Calib. Date(s): _____ _____

EPA Sample No. (PIBLK##): _____ Date Analyzed: _____

Lab Sample ID (PIBLK): _____ Time Analyzed: _____

EPA Sample No. (PEM##): _____ Date Analyzed: _____

Lab Sample ID (PEM): _____ Time Analyzed: _____

PEM COMPOUND	RT	RT WINDOW PROM	RT WINDOW TO	CALC AMOUNT (NG)	NOM AMOUNT (NG)	%D
alpha-BHC						
beta-BHC						
gamma-BHC (Lindane)						
Endrin						
4,4'-DDT						
Methoxychlor						

4,4'-DDT % Breakdown (1): _____ Endrin % breakdown (1): _____

Combined % Breakdown (1): _____

R2-0004763

7LCH

LOW CONCENTRATION WATER PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

GC Column: _____ ID: _____ (MM) Init. Calib. Date(s): _____ _____

EPA Sample No. (PIBLK##): _____ Date Analyzed: _____

Lab Sample ID (PIBLK): _____ Time Analyzed: _____

EPA Sample No. (INDAM##): _____ Date Analyzed: _____

Lab Sample ID (INDA): _____ Time Analyzed: _____

INDIVIDUAL MIX A COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (NG)	NOM AMOUNT (NG)	%D
alpha-BHC						
gamma-BHC (Lindane)						
Heptachlor						
Endosulfan I						
Dieldrin						
Endrin						
4,4'-DDD						
4,4'-DDT						
Methoxychlor						
Tetrachloro-m-xylene						
Decachlorobiphenyl						

EPA Sample No. (INDBM##): _____ Date Analyzed: _____

Lab Sample ID (INDB): _____ Time Analyzed: _____

INDIVIDUAL MIX B COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (NG)	NOM AMOUNT (NG)	%D
beta-BHC						
delta-BHC						
Aldrin						
Heptachlor epoxide						
4,4'-DDE						
Endosulfan II						
Endosulfan sulfate						
Endrin ketone						
Endrin aldehyde						
alpha-Chlordane						
gamma-Chlordane						
Tetrachloro-m-xylene						
Decachlorobiphenyl						

R2-0004764

8LCA

LOW CONCENTRATION WATER VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

EPA Sample No.(VSTD00S##): _____ Date Analyzed: _____

Lab File ID (Standard): _____ Time Analyzed: _____

Instrnment ID: _____

GC Column: _____ ID: _____(MM) Length:_____(M)

		IS1 (CBZ) AREA	#	RT	#	IS2 (DFB) AREA	#	RT	#	IS3 (DCB) AREA	#	RT	#
	12 HOUR STD												
	UPPER LIMIT												
	LOWER LIMIT												
	EPA SAMPLE NO.												
01													
02													
03													
04													
0S													
06													
07													
08													
09													
10													
11													
12													
13													
14													
1S													
16													
17													
18													
19													
20													
21													
22													

1S1 (CBZ) = Chlorobenzene-dS
1S2 (DFB) = 1,4-Difluorobenzene
1S3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +40% of internal standard area
AREA LOWER LIMIT = -40% of internal standard area
RT UPPER LIMIT = +0.33 minutes of internal standard RT
RT LOWER LIMIT = -0.33 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

R2-0004765

8LCB

LOW CONCENTRATION WATER SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

EPA Sample No.(SSTD020##): _____ Date Analyzed: _____

Lab File ID (Standard): _____ Time Analyzed: _____

Instrnment ID: _____ GC Column: _____ ID: _____ (MM)

		IS1 (DCB) AREA	#	RT	#	IS2 (NPT) AREA	#	RT	#	IS3 (ANT) AREA	#	RT	#
	12 HOUR STD												
	UPPER LIMIT												
	LOWER LIMIT												
	EPA SAMPLE NO.												
01													
02													
03													
04													
05													
06													
07													
08													
09													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

1S1 (DCB) = 1,4-Dichiorobenzene-d4
1S2 (NPT) = Naphthalene-d8
1S3 (ANT) = Acenaphthene-dl0

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -S0% of internal standard area
RT UPPER LIMIT = +0.33 minutes of internal standard RT
RT LOWER LIMIT = -0.33 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

Page __ of __

8LCC

LOW CONCENTRATION WATER SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

EPA Sample No.(SSTD020##): _____ Date Analyzed: _____

Lab File ID (Standard): _____ Time Analyzed: _____

Instrnment ID: _____ GC Column: _____ID: _____(MM)

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD												
	UPPER LIMIT												
	LOWER LIMIT												
	EPA SAMPLE NO.												
01													
02													
03													
04													
05													
06													
07													
08													
09													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

154 (PHN) = Phenanthrene-d10
155 (CRY) = Chrysene-d12
156 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.33 minutes of internal standard RT
RT LOWER LIMIT = -0.33 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

Page __ of __

R2-0004767

8LCD

LOW CONCENTRATION WATER PESTICIDE ANALYTICAL SEQUENCE

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

GC Column: _____ ID: _____(MM) Init. Calib. Date(s): _____ _____

Instrument ID: _____

THE ANALYTICAL SEQUENCE OF SAMPLES, BLANKS, AND STANDARDS IS GIVEN BELOW:

	MEAN SURROGATE RT FROM INITIAL CALIBRATION TCX:_____ DCB:_____					
	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
25						
27						
28						
29						
30						
31						
32						

QC LIMITS

TCX = Tetrachloro-m-xylene (±0.05 MINUTES)

DCB = Decachlorobiphenyl (±0.10 MINUTES)

Column used to flag retention time values with an asterisk.

* Values outside of QC limits.

R2-0004768

9LCA

LOW CONCENTRATION WATER PESTICIDE FLORISIL CARTRIDGE CHECK

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Florisil Cartridge Lot Number: _____ Date of Analysis: _____

GC Column (1): _____ ID:_____(MM) GC Column(2): _____ ID: ____(MM)

COMPOUND	SPIKE ADDED (NG)	SPIKE RECOVERED (NG)	% REC #	QC LIMITS
alpha-BHC				80-120
gamma-BHC (Lindane)				80-120
Heptachlor				80-120
Endosulfan I				80-120
Dieldrin				80-120
Endrin				80-120
4,4'-DDD				80-120
4,4'-DDT				80-120
Methoxychlor				80-120
Tetrachloro-m-xylene				80-120
Decachlorobiphenyl				80-120
2,4,5-Trichlorophenol				<5

Column to be used to flag recovery with an asterisk.
* Values outside of QC limits.

THIS CARTRIDGE LOT APPLIES TO THE FOLLOWING SAMPLES, LABORATORY CONTROL SAMPLES, AND BLANKS:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01				
02				
03				
04				
0S				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

R2-0004769

10LCA

LOW CONCENTRATION WATER PESTICIDE IDENTIFICATION
SUMMARY FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Lab Sample ID: _____ Date(s) Analyzed: _____ _____

Instrument ID (1): _____ Instrument ID (2): _____

GC Column:(1): _____ ID:_____(MM) GC Column:(2): _____ ID: _____(MM)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

Page __ of __

R2-0004770

10LCB

LOW CONCENTRATION WATER PESTICIDE IDENTIFICATION SUMMARY FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ Client No.: _____ SDG No.: _____

Lab Sample ID: _____ Date(s) Analyzed: _____ _____

Instrument ID (1): _____ Instrument ID (2): _____

GC Column:(1): _____ ID: _____(MM) GC Column:(2): _____ ID: _____(MM)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
_____	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
_____	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
_____	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks for each column are required for identification of multicomponent analytes.

Page __ of __

R2-0004771

SAMPLE LOG-IN SHEET

Lab Name				Page __ of __
Received By (Print Name)				Log-in Date
Received By (Signature)				
Case Number		Sample Delivery Group No.		Client Number

Remarks:		EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks: Condition of Sample Shipment, etc.
1. Custody Seal(s)	Present/Absent* Intact/Broken				
2. Custody Seal Nos.	_____ _____				
3. Chain of Custody Records	Present/Absent*				
4. Traffic Reports or Packing Lists	Present/Absent*				
5. Airbill	Airbill/Sticker Present/Absent*				
6. Airbill No.	_____ _____				
7. Sample Tags	Present/Absent*				
Sample Tag Nos.	Listed/Not Listed on Chain-of-Custody				
8. Sample Condition	Intact/Broken*/ Leaking				
9. Cooler Temperature Indicator Bottle	Present/Absent*				
10. Cooler Temperature	_____				
11. Does information on custody records, traffic reports, and sample tags agree?	Yes/No*				
12. Date Received at Lab	_____				
13. Time Received	_____				
Sample Transfer					
Fraction	Fraction				
Area #	Area #				
By	By				
On	On				

* Contact SMO and attach record of resolution

Reviewed By	Logbook No.
Date	Logbook Page No.

R2-0004772

LOW CONCENTRATION WATER ORGANICS COMPLETE SDG PILE (CSF) INVENTORY SHEET

LABORATORY NAME _____
CITY/STATE _____
CASE NO. _____ SDG NO. _____ SDG NOS. TO FOLLOW _____
_____ _____ CLIENT NO. _____
CONTRACT NO. _____
SOW NO. _____

All documents delivered in the Complete SDG File must be original documents where possible.

	PAGE NOs FROM	PAGE NOs TO	CHECK LAB	CHECK EPA
1. Inventory Sheet (Porm DC-2) (Do Not Number)				
2. SDG Case Narrative				
3. SDG Cover Sheet/Traffic Report				
4. Volatiles Data				
a. QC Summary				
Deuterated Monitoring Compound Recovery (Form II LCV)				
Matrix Spike/Matrix Spike Duplicate Recovery (Form III LCV) (if Region requests)				
Method Blank Summary (Porm IV LCV)				
GC/MS Instrument Performance Check (Form V LCV)				
Intermal Standard Area and RT Summary (Form VIII LCV)				
b. Sample Data				
TCL Results - (Form I LCV-1, LCV-2)				
Tentatively Identified Compounds (Form I LCV-TIC)				
Reconstructed Total Ion Chromatograms (RIC) for each sample				
For each sample:				
Raw Spectra and background-subtracted mass spectra of target compoiinds identified				
Quantitation reports				
Mass Spectra of all reported TICs with three best library matches				
c. Standards Data (All Instruments)				
Initial Calibration Data (Form VI LCV-1, LCV-2, LCV-3)				
RICs and Quantitation Reports for all Standards				
Continuing Calibration Data (Form VII LCV-1, LCV-2, LCV-3)				
RICs and Quantitation Reports for all Standards				
d. Raw QC Data				
BFB				
Blank Data				
Matrix Spike/Matrix Spike Duplicate Data (if Region requests)				

R2-0004773

LOW CONCENTRATION WATER ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Con't)

CASE NO. _____ SDG NO. _____ SDG NOS. TO FOLLOW _____

_____ _____ CLIENT NO. _____

	PAGE NOs FROM	PAGE NOs TO	CHECK LAB	CHECK EPA
5. Semivolatiles Data				
a. QC Summary				
Deuterated Monitoring Compound (Porm II LCSV)	____	____	____	____
MS/MSD Summary (Form III LCSV) (if Region requests)	____	____	____	____
Method Blank Summary (Form IV LCSV)	____	____	____	____
GC/MS Instrument Performance Check (Form V LCSV)	____	____	____	____
Interual Standard Area and RT Summary (Porm VlIl LCSV)	____	____	____	____
b. Sample Data	____	____		
TCL Results - (Porm I LCSV-l, LCSV-2)			____	____
Tentatively Identified Compounds (Form I LCSV-TIC)			____	____
Reconstructed Total Ion Chromatograms (RIC) for each sample			____	____
For each sample:				
Raw Spectra and background-subtracted mass spectra of target compounds			____	____
Quantitation reports			____	____
Mass Spectra of TICs with three best library matches			____	____
c. Standards Data (All Instruments)	____	____		
Initial Calibration Data (Porm VI LCSV-l, LCSV-2, LCSV-3)			____	____
RICs and Quantitation Reports for all Standards			____	____
Continuing Calibration Data (Porm VII LCSV-l, LCSV-2, LCSV-3)			____	____
RICs and Quantitation Reports for all Standards			____	____
d. Raw QC Data				
DFTPP	____	____	____	____
Blank Data	____	____	____	____
Matrix Spike/Matrix Spike Duplicate Data (if Region requssts)	____	____	____	____
6. Pesticides Data				
a. QC Summary				
Surrogate Percent Recovery Summary (Form II LCP)	____	____	____	____
MS/MSD Duplicate Summary (Form III LCP-1) (if Region requests)	____	____	____	____
Laboratory Control Sample Recovery (Form III LCP-2)				
Method Blank Summary (Form IV LCP)	____	____	____	____
b. Sample Data	____	____		
TCL Results - Organic Analysis Data Sheet (Form I LCP)			____	____
Chromatograms (Primary Column)			____	____
Chromatograms from second GC column confirmation			____	____
GC Integration report or data system printout			____	____
Manual work sheets			____	____

R2-0004774

LOW CONCENTRATION WATER ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Con't)

CASE NO. _____ SDG NO. _____ SDG NOS. TO FOLLOW _____

_____ _____ CLIENT NO. _____

	PAGE NOs FROM	TO	CHECK LAB	EPA
6. Pesticides Data (Con't)				
c. Standards Data	____	____		
Initial Calibration of Single Component Analytes (Form VI LCP-1 and LCP-2)			____	____
Initial Calibration of Multicomponent Analytes (Form VI LCP-3)			____	____
Analyte Resolution Summary (Form VI LCP-4)			____	____
Performance Evaluation Mixture (Porm VI LCP-5)			____	____
Individual Standard Mixture A (Form VI LCP-6)			____	____
Individual Standard Mixture B (Form VI LCP-7)			____	____
Calibration Verification Summary (Form VII LCP-1)			____	____
Calibration Verification Summary (Form VII LCP-2)			____	____
Analytical Sequence (Form VIII LCP)			____	____
Florisil Cartridge Check (Form IX LCP)			____	____
Pesticide Identification Summary for Single Component Analytes (Form X LCP-1)			____	____
Pesticide Identification Summary for Multicomponent Analytes (Form X LCP-2)			____	____
Chromatograms and data system printouts				
A printout of retention times and corresponding peak areas or peak heights			____	____
d. Raw QC Data				
Blank Data	____	____	____	____
Matrix Spike/Matrix Spike Duplicate Data (if Region requests)	____	____	____	____
Laboratory Control Sample Data	____	____	____	____
e. Raw Florisil Data	____	____	____	____
7. Mlscellaneous Data				
Original preparation and analysis forms or copies of preparation and analysis logbook pages	____	____	____	____
Internal sample and sample extract transfer chain-of-custody records	____	____	____	____
Screening records	____	____	____	____
All instrument output, including strip charts from screening activities (describe or list)				
_____	____	____	____	____
_____	____	____	____	____

R2-0004775

LOW CONCENTRATION WATER ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Con't)

CASE NO. _____ SDG NO. _____ SDG NOS. TO FOLLOW _____

_____ _____ CLIENT NO. _____

	PAGE NOs FROM	TO	CHECK LAB	EPA
8. EPA Shipping/Recelvina Documents				
Airbills (No. of shipments _____)	____	____	____	____
Chain-of-Custody Records	____	____	____	____
Sample Tags			____	____
Sample Log-in Sheet (Lab & DCI)	____	____	____	____
Miscellaneous Shipping/Receiving Records (describe or list)				
_____	____	____	____	____
_____	____	____	____	____
9. Internal Lab Sample Transfer Records and Tracking Sheets (describe or list)				
_____	____	____	____	____
_____	____	____	____	____
10. Other Records (describe or list)	____	____	____	____
Telephone Communication Log				
_____	____	____	____	____
_____	____	____	____	____

11. Comments: _____

_____

_____

Completed by: (CLP Lab) _____ (Signature) _____ (Printed Name/Title) _____ (Date)

Verified by: (CLP Lab) _____ (Signature) _____ (Printed Name/Title) _____

Audited by: (EPA) _____ (Signature) _____ (Printed Name/Tltle) _____ (Date)

R2-0004776

EXHIBIT C

TARGET COMPOUND LIST AND
CONTRACT REQUIRED QUANTITATION LIMITS

NOTE: Specific quantitation limits are highly matrix-dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

The CRQL values listed on the following pages are based on the analysis of samples according to the specifications given in Exhibit D.

R2-0004777

THIS PAGE INTENTIONALLY LEFT BLANK

R2-0004778

Exhibit C - Target Compound List and Contract Required Quantitation Limits

Table of Contents

Section		Page
1.0	VOLATILES TARGET COMPOUND LIST AND CONTRACT REQUIRED QUANTITATION LIMITS	5
2.0	SEMIVOLATILES TARGET COMPOUND LIST AND CONTRACT REQUIRED QUANTITATION LIMITS	7
3.0	PESTICIDES/AROCLORS TARGET COMPOUND LIST AND CONTRACT REQUIRED QUANTITATION LIMITS	9

R2-0004779

THIS PAGE INTENTIONALLY LEFT BLANK

R2-0004780

1.0 VOLATILES TARGET COMPOUND LIST AND CONTRACT REQUIRED QUANTITATION LIMITS

	Volatiles	CAS Number	Quantitation Limits Water µg/L
1.	Dichlorodifluoromethane	75-71-8	0.50
2.	Chloromethane	74-87-3	0.50
3.	Vinyl Chloride	75-01-4	0.50
4.	Bromomethane	74-83-9	0.50
5.	Chloroethane	75-00-3	0.50
6.	Trichlorofluoromethane	75-59-4	0.50
7.	1,1-Dichloroethene	75-35-4	0.50
8.	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.50
9.	Acetone	67-64-1	5.0
10.	Carbon Disulfide	75-15-0	0.50
11.	Methyl Acetate	79-20-9	0.50
12.	Methylene Chloride	75-09-2	0.50
13.	trans-1,2-Dichloroethene	156-60-5	0.50
14.	Methyl tert-Butyl Ether	1534-04-4	0.50
15.	1,1-Dichloroethane	75-34-3	0.50
16.	cis-1,2-Dichloroethene	156-59-2	0.50
17.	2-Butanone	78-93-3	5.0
18.	Bromochloromethane	74-97-5	0.50
19.	Chloroform	67-56-3	0.50
20.	1,1,1-Trichloroethane	71-55-5	0.50
21.	Cyclohexane	110-82-7	0.50
22.	Carbon Tetrachloride	56-23-S	0.50
23.	Benzene	71-43-2	0.50
24.	1,2-Dichloroethane	107-05-2	0.50
25.	Trichloroethene	79-01-6	0.50
26.	Methylcyclohexane	108-87-2	0.50
27.	1,2-Dichloropropane	78-87-5	0.50
28.	Bromodichloromethane	75-27-4	0.50
29.	cis-1,3-Dichloropropene	10051-01-5	0.50
30.	4-Methyl-2-pentanone	108-10-1	5.0
31.	Toluene	108-88-3	0.50
32.	trans-1,3-Dichloropropene	10051-02-6	0.50
33.	1,1,2-Trichloroethane	79-00-5	0.50
34.	Tetrachloroethene	127-18-4	0.50
35.	2-Hexanone	591-78-6	5.0
36.	Dibromochloromethane	124-48-1	0.50
37.	1,2-Dibromoethane	106-93-4	0.50
38.	Chlorobenzene	108-90-7	0.50

R2-0004781

1.0 VOLATILE TARGET COMPOUND LIST AND CONTRACT REQUIRED QUANTITATION LIMITS (Con't)

	Volatiles	CAS Number	Quantitation Limits Water µg/L
39.	Ethylbenzene	100-41-4	0.50
40.	Xylenes (total)	1330-20-7	0.50
41.	Styrene	100-42-5	0.50
42.	Bromoform	75-25-2	0.50
43.	Isopropylbenzene	98-82-8	0.50
44.	1,1,2,2-Tetrachloroethane	79-34-5	0.50
45.	1,3-Dichlorobenzene	541-73-1	0.50
46.	1,4-Dichlorobenzene	105-46-7	0.50
47.	1,2-Dichlorobenzene	95-50-1	0.50
48.	1,2-Dibromo-3-chloropropane	95-12-8	0.50
49.	1,2,4-Trichlorobenzene	120-82-1	0.50
50.	1,2,3-Trichlorobenzene	87-51-6	0.50

R2-0004782

2.0 SEMIVOLATILES TARGET COMPOUND LIST AND CONTRACT REQUIRED QUANTITATION LIMITS

	Semivolatiles	CAS Number	Quantitation Limits Water µg/L
51.	Benzaldehyde	100-52-7	5.0
52.	Phenol	108-95-2	5.0
53.	bis-(2-Chloroethyl)ether	111-44-4	5.0
54.	2-Chlorophenol	95-57-8	5.0
55.	2-Methylphenol	95-48-7	5.0
56.	2,2'-oxybis(1-Chloropropane)[1]	108-60-1	5.0
57.	Acetophenone	98-86-2	5.0
58.	4-Methylphenol	106-44-5	5.0
59.	N-Nitroso-di-n-propylamine	521-64-7	5.0
60.	Hexachloroethane	67-72-1	5.0
51.	Nitrobenzene	98-95-3	5.0
62.	Isophorone	78-59-1	5.0
53.	2-Nitrophenol	88-7S-5	5.0
64.	2,4-Dimethylphenol	105-67-9	5.0
55.	bis(2-Chloroethoxy)methane	111-91-1	5.0
66.	2,4-Dichlorophenol	120-83-2	5.0
67.	Naphthalene	91-20-3	5.0
68.	4-Chloroaniline	106-47-8	5.0
69.	Hexachlorobutadiene	87-68-3	5.0
70.	Caprolactam	105-60-2	5.0
71.	4-Chloro-3-methylphenol	59-50-7	5.0
72.	2-Methylnaphthalene	91-57-6	5.0
73.	Hexachlorocyclopentadiene	77-47-4	5.0
74.	2,4,6-Trichlorophenol	88-06-2	5.0
75.	2,4,5-Trichlorophenol	95-95-4	20
76.	1,1'-Biphenyl	92-52-4	5.0
77.	2-Chloronaphthalene	91-58-7	5.0
78.	2-Nitroaniline	88-74-4	20
79.	Dimethylphthalate	131-11-3	5.0
80.	2,6-Dinitrotoluene	606-20-2	5.0
81.	Acenaphthylene	208-96-8	5.0
82.	3-Nitroaniline	99-09-2	20
83.	Acenaphthene	83-32-9	5.0
84.	2,4-Dinitrophenol	51-28-5	20

[1]Previously known by the name bis(2-Chloroisopropyl)ether.

R2-0004783

2.0 SEMIVOLATILES TARGET COMPOUND LIST AND CONTRACT REQUIRED QUANTITATION LIMITS (Con't)

	Semivolatiles	CAS Number	Quantitation Limits Water □g/L
85.	4-Nitrophenol	100-02-7	20
86.	Dibenzofuran	132-54-9	5.0
87.	2,4-Dinitrotoluene	121-14-2	5.0
88.	Diethylphthalate	84-66-2	5.0
89.	Fluorene	85-73-7	5.0
90.	4-Chlorophenyl-phenylether	7005-72-3	5.0
91.	4-Nitroaniline	100-01-5	20
92.	4,6-Dinitro-2-methylphenol	534-52-1	20
93.	N-Nitrosodiphenylamine	85-30-6	5.0
94.	1,2,4,5 Tetrachlorobenzene	95-94-3	5.0
95.	4-Bromophenyl-phenylether	101-55-3	5.0
96.	Hexachlorobenzene	118-74-1	5.0
97.	Atrazine	1912-24-9	5.0
98.	Pentachlorophenol	87-86-S	5.0
99.	Phenanthrene	85-01-8	5.0
100.	Anthracene	120-12-7	5.0
101.	Di-n-butylphthalate	84-74-2	5.0
102.	Fluoranthene	206-44-0	5.0
103.	Pyrene	129-00-0	5.0
104.	Butylbenzylphthalate	85-68-7	5.0
105.	3,3'-Dichlorobenzidine	91-94-1	5.0
106.	Benzo(a)anthracene	56-55-3	5.0
107.	Chrysene	218-01-9	5.0
108.	bis(2-Ethylhexyl)phthalate	117-81-7	5.0
109.	Di-n-octylphthalate	117-84-0	5.0
110.	Benzo(b)fluoranthene	205-99-2	5.0
111.	Benzo(k)fluoranthene	207-08-9	5.0
112.	Benzo(a)pyrene	50-32-8	5.0
113.	Indeno(1,2,3-cd)pyrene	193-39-5	5.0
114.	Dibenzo(a,h)anthracene	53-70-3	5.0
115.	Benzo(g,h,i)perylene	191-24-2	5.0

R2-0004784

3.0 PESTICIDES/AROCLORS TARGET COMPOUND LIST AND CONTRACT REQUIRED QUANTITATION LIMITS

	Pesticides/Aroclors	CAS Number	Quantitation Limits Water µg/L
115.	alpha-BHC	319-84-6	0.01
117.	beta-BHC	319-85-7	0.01
118.	delta-BHC	319-86-8	0.01
119.	gamma-BHC (Lindane)	58-89-9	0.01
120.	Heptachlor	76-44-8	0.01
121.	Aldrin	309-00-2	0.01
122.	Heptachlor epoxide[2]	1024-57-3	0.01
123.	Endosulfan I	959-98-8	0.01
124.	Dieldrin	50-57-1	0.02
125.	4,4'-DDE	72-55-9	0.02
126.	Endrin	72-20-8	0.02
127.	Endosulfan II	33213-55-9	0.02
128.	4,4'-DDD	72-54-8	0.02
129.	Endosulfan sulfate	1031-07-8	0.02
130.	4,4'-DDT	50-29-3	0.02
131.	Methoxychlor	72-43-5	0.10
132.	Endrin ketone	53494-70-5	0.02
133.	Endrin aldehyde	7421-93-4	0.02
134.	alpha-Chlordane	5103-71-9	0.01
135.	gamma-Chlordane	5103-74-2	0.01
136.	Toxaphene	8001-35-2	1.0
137.	Aroclor-1016	12674-11-2	0.20
138.	Aroclor-1221	11104-28-2	0.40
139.	Aroclor-1232	11141-16-5	0.20
140.	Aroclor-1242	53469-21-9	0.20
141.	Aroclor-1248	12672-29-6	0.20
142.	Aroclor-1254	11097-69-1	0.20
143.	Aroclor-1250	11096-82-5	0.20

[2]Only the exo-epoxy isomer (isomer B) of heptachlor epoxide is reported on the data reporting forms (Exhibit B).

R2-0004785

REFERENCE 114

WESTON
MANAGERS DESIGNERS CONSULTANTS

M. Capriglione
Originator

PHONE CONVERSATION RECORD

Conversation with:
Name Leonardo Montes
Company PRASA
Address
Phone (787) 744-7795
Subject Well depth of Cidra 4

Date 12,23,03
Time 3:00 AM/PM

☑ Originator Placed Call
☐ Originator Received Call
W.O. No. 20103.001.001.1047.00

Notes:

MC contacted LM of PRASA to confirm that a well depth could not be determined for Cidra 4. He stated that was correct an exact depth can not be given for this well, however the depth of this well is at least 125 feet below ground surface.

☐ File
☐ Tickle File / /
☐ Follow-Up By:
☐ Copy/Route To:

Fpllow-Up-Action: NA

Originator's initials MC

RFW 110-4-83

1423-1823 4/16/93

THIS PAGE

INTENTIONALLY

LEFT BLANK