# RENEWAL APPLICATION FOR PCB COMMERCIAL STORAGE PERMIT

## PERMA-FIX OF FLORIDA, INC.
## 1940 NW 67TH PLACE
## GAINESVILLE, FLORIDA 32653

## SEPTEMBER 2009

**Submitted to:**

**Regional Administrator**
**USEPA Region 4**
**Sam Nunn Atlanta Federal Center**
**61 Forsyth Street, SW**
**Atlanta, Georgia 30303-8960**

**and**

**Ken Feely, 9T25**
**USEPA Region 4**
**Sam Nunn Atlanta Federal Center**
**61 Forsyth Street, SW**
**Atlanta, Georgia 30303-8960**

Certification Statement

*Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C. 1001 and IS U.S C 2615), I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the identified section (s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate, and complete.*

9/9/2009
Date

Kurt Fogleman
Health & Safety Manager
Perma-Fix of Florida, Inc.

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## 1.0 INTRODUCTION

Perma-Fix of Florida, Inc. (PFF) has prepared this renewal application to operate a 4,125gallon (75 x 55-gallon drum equivalent) poly-chlorinated biphenyl (PCB) commercial storage unit. Original approval was granted by USEPA Region 4 on March 8, 2000 to commercially store PCB wastes at PFF.

PFF is a wholly owned subsidiary of Perma-Fix Environmental Services, Inc. (PESI). PFF operates a commercial waste bulking, storage, transfer, and treatment facility in Gainesville, Florida. Waste managed on-site includes a wide variety of hazardous, industrial, universal, mixed, radioactive only, and non-hazardous wastes. Currently, the facility blends hazardous, non-hazardous, and mixed wastes into fuels for use in off-site incinerators, industrial furnaces, etc. The facility also consolidates, repackages, and sorts waste for shipment off-site for treatment and/or disposal. Current activities at the facility also include the receipt and non-permanent storage of mixed wastes pursuant to a license issued by the Florida Department of Health, Bureau of Radiation Control, and a final Part B RCRA permit issued by the Florida Department of Environmental Protection. PFF also conducts transfer facility operations for used oil and for mercury-containing devices.

The facility has been assigned the EPA ID# FLD 980 711 071.

Figure 1 shows the general layout of the facility and waste management areas.

## 2.0 FACILITY INFORMATION

### 2.1 Owner/Operator

PFF is a wholly-owned subsidiary of PESI. The owner and operator of the facility is Perma-Fix of Florida, Inc.

PESI is a publicly held corporation and is traded on the NASDAQ market under the abbreviation PESI. No individual person owns greater than 5% of the PESI outstanding shares. The institutions owning more than 5% of the outstanding PESI common stock as of March 9, 2009 are listed below.

1. Rutabaga Capital Management, LLC - 9.17%
2. Heartland Advisors, Inc. - 7.13%
3. Capital Bank Grawe Gruppe - 6.97%
4. Conus Partners, Inc. - 6.3%

None of the above-listed shareholders has been previously directly or indirectly involved with any waste management activities. Information regarding the beneficial ownership of more than 5% of any class of PESI voting securities was derived from pages 126, 127, and 128 of the 2008 annual report. These pages are included in Attachment A.

### 2.2 Key Operations Personnel

The persons responsible for overall facility management or operational management of the facility are identified in Table 1. Resumes, which indicate the experience and technical qualifications for these individuals, are included as Attachment B.

**Table 1. Key Operations Personnel**

| Name | Position | Responsibility |
|---|---|---|
| Raymond Whittle | General Manager/ Vice President/ | Overall facility management |
| Dwayne Singleton | Industrial Coordinator | Supervision of workers involved in waste management |
| Kurt Fogleman | Health & Safety Manager | Environmental, health, and safety compliance |
| Randy Self | Nuclear Coordinator | Supervision of workers involved in waste management |

### 2.3 Compliance History

Perma-Fix of Florida, Inc. has not received, in the last 5 years, any citation for environmental violations resulting in a civil penalty or judgment of conviction.

## 3.0 STORAGE FACILITY

### 3.1 Construction

The container storage area is located inside the Treatment and Operations Building and is one of seven separate storage areas within this building, which are permitted under RCRA. Zone 8 is designated for the storage of RCRA hazardous waste or PCB waste. Figure 1 shows the location of the Treatment and Operations Building at the site. Figure 2 shows the location of seven RCRA-permitted storage areas within the Treatment and Operations Building.

No part of the PCB storage area lies within the 100-year floodplain. Figure 3 shows the delineation of the 100-year floodplain and was obtained from the FEMA Flood Insurance Rate Map (Map Number: 12001C0303D; Panel: 303 of 640; revised June 16, 2006).

The PCB storage unit (Zone 8) consists of a curbed area with inside dimensions of approximately 42' x 36.4'. The containment system includes the following features:

- 5.5-inch high and 6-inch wide #4 rebar reinforced concrete curb berming around separated container storage areas.
- 5.75-inch high and 84-inch wide #4 rebar reinforced concrete sloped berming ("rollovers") at forklift entry points to container storage areas.
- 5.75-inch by 6-inch #4 rebar reinforced concrete curb along the storage building perimeters.

- Continuous Neoprene® water stops within the concrete berming.
- Minimum of 20 mils of epoxy sealer at all joints and gaps.
- Polysulfide joint sealant in all floor joints.
- Flexible epoxy sealer on the floor of the Zone 8 storage area within the Treatment and Operations building.

Figure 2 shows the secondary containment construction features.

The floor slab making up the container storage area consists of a concrete base that is free of cracks or gaps and is sufficiently impervious to contain leaks or spills until the collected material is detected and removed. In addition, the surface of the concrete base of Zone 8 is coated with a sealer designed to ensure the impervious nature of the containment base. The product data for the sealer is included as Attachment C.

The capacity of the containment system is sufficient to contain greater than 25% of the volume of the maximum number of containers in the PCB storage area or two times the internal volume of the largest PCB Article or PCB Container stored, whichever is larger. Containment calculations are included as Attachment D.

Engineering reviews have been conducted on the floor slabs in the PCB container storage area. Copies of the engineering reports for the floors are included as Attachment E. The October 13, 1997 Floor Slab Inspection letter addresses the concrete pad in the former Nelson Building; referred to in this permit application as the Treatment and Operations Building.

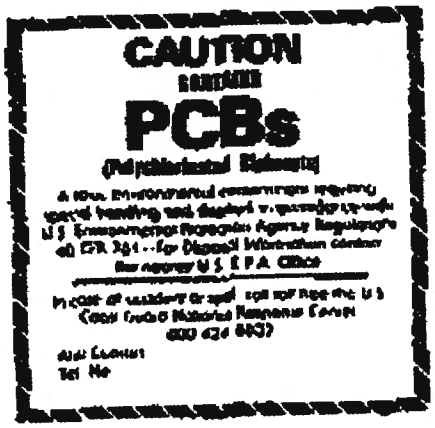
To prevent run-on and accumulation of precipitation, the container storage area in the Treatment and Operations Building is roofed and sufficiently sided to prevent run-on of stormwater. In addition, the perimeters of the building's concrete floor slabs are curbed, and the site grading directs surface water away from the building.

There are no drain valves, floor drains, expansion joints, sewer lines, or other openings in Zone 8 that would permit liquids to flow from the curbed area.

The concrete slab in the Treatment and Operations Building is on a near level gradient. The PCB container storage area will be inspected at least once a month for accumulation of liquids, which will be remediated in as timely a manner as possible but no later than within 24 hours of detection. Depending on the amount involved, absorbents, submersible pumps or a vacuum truck will be used to remove any liquids. Containers stored in the storage area will also be kept off the floor (e.g., on pallets) to keep them from coming into contact with standing liquids. Totes or roll-offs, if stored, will have legs or wheels that will keep the bottom of the tote or roll-off above the containment floor. All material removed from secondary containment areas will be characterized and stored, treated, or disposed of according to applicable regulations.

To meet the minimum 6-inch high curbing requirement of 40 CFR 761.65(b)(1)(ii) for the non-radioactive PCBs, PFF will store non-radioactive PCB Articles or PCB Containers using containment pallets that are at least 6 inches high, or in overpacks.

The PCB storage area and all containers of waste staged in the storage area will be marked as follows:




## 3.2 Condition and Management of Containers

All incoming containers of PCB waste must be accompanied by a USEPA Form 8700-22 (manifest). Upon receipt of a shipment of containers, PFF personnel will review the manifest and other documents accompanying the shipment for completeness and accuracy and will assign each container/article a unique identification number. After verification, the containers will be inspected for defects and/or unacceptable conditions. If a container is found to be leaking, or is of questionable integrity, the container will be overpacked, or its contents transferred into another container in good condition. If, following analysis in accordance with the facility's waste acceptance plan (WAP), the contents of a container are found to be unacceptable, the containerized waste will be rejected and returned to the generator or to an alternate facility designated by the generator.

A representative sample of the incoming waste will be collected and analyzed in accordance with the WAP "finger print" analysis to determine consistency with the waste profile[1]. Containers of PCB waste will remain in the receiving area portions of the storage areas until accepted for storage. Upon acceptance, containers of PCB waste will be moved to Zone 8 (i.e., PCB storage area). Unacceptable or rejected containers will also be stored in Zone 8 until transportation to the generator, or an alternate facility, can be arranged.

All containers will be managed as if they contain free liquids. Containers of PCB waste will be kept closed except during sampling or when PCB waste is added or

[1] All waste streams (shipments) received at the facility are sampled and subjected to the "finger print" analysis. For single waste streams consisting of multiple containers, at least 20% of the containers for that waste stream are sampled (non-composite) and analyzed.

removed. Containers will be palletized upon arrival (except for roll-offs and totes), overpacked, or placed on containment pallets. Palletized 55-gallon or 85-gallon containers will be banded when double-stacked. A minimum aisle space of two (2) feet will be maintained between rows of pallets to allow access for fire fighting, container inspection, and manual extraction of a leaking container from a pallet load.

The types of PCB waste PFF is expected to store are as follows:

- PCB remediation waste;
- PCB bulk product waste;
- PCB article;
- PCB article container;
- PCB container;
- PCB equipment (e.g., fluorescent light ballasts and fixtures); and,
- PCB waste generated in the on-site laboratory (e.g., PCB-contaminated lab equipment, calibration agents, PPE, etc.).

All containers received from off-site must meet US Department of Transportation (DOT) requirements for the material being shipped in the container. Containers that do not meet DOT requirements will be overpacked into suitable containers for storage and/or shipment off-site.

Types of DOT containers typically received at the facility will include:

- 55-gallon steel drums;
- 85-gallon drums (steel or poly)
- 55- and 30-gallon poly drums;
- 30-gallon steel drums;
- 5-gallon steel drums;
- DOT overpacked drums containing: glass vials, plastic vials, 1/2- to 1-gallon glass or plastic containers, and up to 30-gallon plastic carboy containers;
- DOT-specification fiberboard containers;
- DOT-specification tote tanks (typically 450 and 550 gallon capacity);
- DOT-specification roll-off of up to 12 cubic yards; and,
- Other DOT-specification (performance oriented) containers.

It should be noted that the 12 cubic yard roll-off would be the largest container that will be stored in the storage area.

### 3.3 Inspections and Recordkeeping

PFF personnel will inspect areas where containers of PCB waste are stored on at least a monthly basis. The inspections will cover proper placement of containers for ready

access, container conditions, labeling, and inventory control. A detailed inspection log will be created and maintained to document inspections.

Annual record files will be created each calendar year and will contain the following documents:

- All signed manifests generated or received at the facility during that calendar year;
- All Certificates of Disposal that have been generated or received by the facility during the calendar year; and,
- Records of container inspections and records of spills or cleanups.

The annual record files will be kept on site for at least three years after the facility is no longer used for storage of PCBs.

A written annual document log will be created each year and will contain the following information:

- The name, address, and USEPA ID number of PFF;
- For each manifest generated or received by the facility during the calendar year, the unique manifest number and the name and address of the facility that generated the manifest and the following information:
  - For bulk PCB waste (e.g., in a tanker or truck), its weight in kilograms; the first date PCB waste placed in the tanker or truck was removed from service for disposal; the date it was received at the facility; the date it was placed in transport for off-site disposal (if applicable); and the date of disposal, (if known).
  - The serial number or other means of identifying each PCB article, not in a PCB container or PCB article container; the weight in kilograms of the PCB waste in the PCB article; the date it was removed from service for disposal; the date it was received at the facility; the date it was placed in transport for off-site storage or disposal (if applicable); and the date of disposal (if known).
  - The unique number assigned by the generator identifying each PCB container; a description of the contents of each PCB container, such as liquid, soil, cleanup debris, etc., including the total weight of the PCB waste in kilograms in each PCB container; the first date PCB waste placed in each PCB container was removed from service for disposal; the date it was received at the facility; the date it was placed in transport for off-site storage or disposal (as applicable); and the date the PCB container was disposed of (if known).
  - The unique number assigned by the generator identifying each PCB article container; a description of the contents of each PCB article container, such as pipes, capacitors, electric motors, pumps, etc., including the total weight in kilograms of the PCB waste in each PCB article container; the first date a PCB article placed in each PCB article container was removed

from service for disposal; the date it was received at the facility; the date each PCB article container was placed in transport for off-site storage or disposal (as applicable), and the date the PCB article container was disposed of (if known).

The logs will be kept on-site for at least 3 years after the facility no longer stores PCBs.

PFF will submit an annual report to the Regional Administrator, by July 15 of each year, containing the following information:

- The name, address, and USEPA ID number for PFF.
- A list of the unique identification numbers for all signed manifests for PCB waste initiated or received by the facility for that year.
- The total weight in kilograms of bulk PCB waste, PCB waste in PCB transformers, PCB waste in PCB large high or low voltage capacitors, PCB waste in PCB article containers, and PCB waste in PCB containers in storage at the facility at the beginning of the calendar year, received or generated at the facility, transferred to another facility, or disposed of at the facility during the calendar year. The information will be provided for each of these categories, as appropriate.
- The total number of PCB transformers, the total number of PCB large high or low voltage capacitors, the total number of PCB article containers, and the total number of PCB containers in storage at the facility at the beginning of the calendar year, received or generated at the facility, transferred to another facility, or disposed of at the facility during the calendar year. The information will be provided for each of these categories, as appropriate.
- The total weight in kilograms of each of the following PCB categories: bulk PCB waste, PCB waste in PCB transformers, PCB waste in PCB large high or low voltage capacitors, PCB waste in PCB article containers, and PCB waste in PCB containers remaining in storage for disposal at the facility at the end of the calendar year.
- The total number of PCB transformers, the total number of PCB large high or low voltage capacitors, the total number of PCB article containers, and the total number of PCB containers remaining in storage for disposal at the facility at the end of the calendar year.

## 4.0 CLOSURE PLAN

This document contains a discussion of the steps that shall be taken at the time of closure of the PCB storage operations at the PFF facility during the intended operating life.

The Closure Plan has been prepared to meet the requirements of 40 CFR 761.65(e). This written plan for closure of the PCB storage unit will be amended, and a request for a modification to storage approval to authorize the change in the approved Closure Plan will be submitted to the Regional Administrator whenever:

- Changes in ownership, operating plans, or facility design affect the closure plan; or
- In conducting partial or final closure activities, unexpected events require a modification of the approved Closure Plan.

Any modifications to this Closure Plan after the PCB commercial storage approval is issued to the facility will be made in accordance with the requirements of 40 CFR 761.65(e)(4). Copies of the approved Closure Plan for the facility will be maintained at the facility office until the Regional Administrator has notified the facility of satisfactory closure after reviewing the closure certification.

PFF will submit the notification or request for a modification to the approval, including a copy of the amended Closure Plan, for approval by the Regional Administrator prior to any proposed change in facility design or operation, or if an unexpected event has occurred that has affected the Closure Plan.

In accordance with 40 CFR 761.65(e)(6), PFF will notify the Regional Administrator at least 60 days before final facility closure is anticipated to begin. A closure schedule is provided in Section 4.5. PFF will close the PCB storage units in accordance with this Closure Plan unless an alternate Closure Plan has been approved by the Regional Administrator.

All PCB waste will be removed from the facility within 90 days of receiving the final quantity of PCB waste for storage. Closure of the regulated units will be completed within 180 days after receiving the final quantity of PCB waste for storage. In accordance with the requirements of 40 CFR 761.65(e)(8), PFF will submit to the Regional Administrator, by registered mail, a certification that the PCB storage facility has been closed in accordance with the approved Closure Plan. The certification, to be submitted within 60 days of the completion of final closure, will be signed by PFF and by an independent, registered professional engineer.

PFF will close the PCB storage areas in a manner that minimizes the need for further maintenance and controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of PCBs, leachate, contaminated run-off, or decomposition products to the ground, surface waters or to the atmosphere.

Closure procedures for the unit are presented in Section 5.0. Closure of the PCB commercial storage area will be conducted such that no post-closure care should be necessary.

In the event that the clean closure criteria presented in Section 4.8 cannot be achieved, a Closure/Post-Closure Plan will be submitted to the Regional Administrator. The Closure Cost Estimate presented in Attachment E conservatively assumes that PCB will be treated or disposed of off site. Closure activities will be carried out by third-party personnel. This scenario assumes a "worst case" closure situation.

There is no on-site disposal activity of PCB waste at the PFF facility. It is anticipated that the PFF facility will remain in operation at least until the year 2050.

## 4.1 Facility Description

The PFF facility is located in Gainesville, Florida. The street and the mailing address for the operation is:

Perma-Fix of Florida,Inc.
1940 N.W. 67th Place
Gainesville, Florida 32653

A copy of the Closure Plan or the most recent Plan revision is maintained at the facility. It is intended that all closure work will be completed and final with processing and/or removal of all PCB waste, followed by cleaning and decontamination of facilities and equipment used in PCB waste receipt, storage, processing, transfer, and handling; and disposing off wastes generated during closure activities.

## 4.2 Identification of PCB Permitted Units

Closure procedures will be performed on the following PCB units which are/will be utilized for the storage of PCB waste during operation of the facility:

Container Storage Area (Zone 8) and Ancillary Equipment

Ancillary equipment scheduled for closure will consist of the forklift used to move PCBs at the facility.

## 4.3 Operating Records

The operating records associated with the Closure Plan include:

- Closure Plan (A copy of the Closure Plan and current amendments are maintained in the facility operating record);
- Closure Cost Estimate (The closure cost estimate and all amendments or annual adjustments for inflation will be maintained in the facility operating record);
- Documentation for financial assurance for closure; and,
- Inspection records, annual records, and annual document logs.

## 4.4 Maximum Closure Inventory

The required estimate for maximum waste inventory at the time of closure is based on the condition that the PCB storage area is full of material. The maximum capacity of the storage area is 4,125 gallons (75 x 55-gallon drums).

## 4.5 Closure Time Schedules

An outline of the Closure Time Schedule is summarized as follows:

| Closure Activity | Timing Requirements |
|---|---|
| Remove all PCBs from unit being closed | Within 90 days after receipt of the known final volume of waste |
| Complete closure plan activities | Within 180 days after receipt of the known final volume of waste |
| Submit certificate of closure completeness | Within 60 days of completion of facility closure work |

If it is expected that closure activities will take longer than 180 days to complete, PFF will apply for an extension to the closure period from the Regional Administrator. This request will be made at least 30 days prior to the expiration of the allowable 180-day period.

Table 2 below presents a facility closure schedule for the different closure activities. As indicated in Table 2, some of the closure activities will be occurring simultaneously.

**Table 2. PCB Storage Area Closure Schedule**

| Closure Activity | Days Elapsed |
|---|---|
| Notification in writing to the Regional Administrator of intent to begin closure activities. | -60 |
| Receipt of known final volume of PCB waste into container or roll-off storage area or receipt of Regional Administrator's approval of Closure Plan, whichever is later.* | 0 |
| Begin removal of all PCB wastes from container storage area. | 30 |
| Complete removal of all PCB wastes from container area. | 90 |
| Complete decontamination and removal of ancillary equipment that have contacted PCB waste. | 120 |
| Complete decontamination of secondary containment structures. | 135 |
| Conduct sampling activities. | 165 |
| Complete final closure activities. | 180 |
| Submit certification to the Regional Administrator (signed by PFF and an independent, registered professional engineer) that the PCB storage area has been closed in accordance with the specifications of the approved Closure Plan. | 240 |

*If an unexpected event during closure of a PCB waste management unit requires modification of the approved Closure Plan, PFF will request a permit modification within 30 days of the unexpected event.

## 4.6 Amendments to Closure Plan

PFF can foresee possible future needs for modifications to this Closure Plan. These could be associated with changes in facility design or in operating plans. Specific requirements for amending the Closure Plan, if applicable, are contained in 40 CFR §761.65 (e)(4) and will be adhered to.

## 4.7 Closure Performance Objectives

The PCB storage unit will be closed in a manner that will eliminate the need for further postclosure maintenance or remediation and be protective of human health and the environment. The potential for release of PCB waste to groundwater, surface water, soil, or atmosphere after final closure of the unit will be eliminated as a result of successful implementation of this Closure Plan.

During closure, all wastes that exist on-site will be shipped off-site for proper disposal. The contaminated equipment will either be decontaminated as appropriate to provide for future reuse, or disposed of off-site. The decontamination residues generated will be disposed off-site.

## 4.8 Secondary Containment Closure Performance Standards

In order to verify that secondary containment area has been properly decontaminated, the unit shall be considered clean-closed when wipe sampling confirms no PCBs present above the closure performance standards (i.e., 10 $\mu g/100\ cm^2$).

To achieve the clean closure standard, the secondary containment area in Zone 8 will be decontaminated by scrubbing down all surfaces, and subsequently pressure washing the surfaces.

Rinsates generated during decontamination activities will be characterized for proper disposal.

Wipe samples will be collected utilizing the methods described in 40 CFR 761, Subpart P. The wipe samples will be extracted in the lab using SW-846 methods (e.g., 3540C, 3541, 3545A, 3546, 3562) or other appropriate techniques. The extract will be analyzed using SW-846 Method (e.g., 8082A).

If the wipe sample meets the clean closure criteria, no end use restrictions shall be placed on the decontaminated unit, and closure of the unit will be deemed final.

Detailed closure procedures for secondary containment areas are further discussed in Section 5.1.

### 4.9 Ancillary Equipment Closure Performance Standards

In order to verify that ancillary equipment has been properly decontaminated, the equipment shall be considered clean closed when field sampling verifies that the final wipe sample exhibits PCB concentrations below 10 µg/100 $cm^2$, as measured by standard wipe tests.

The equipment (i.e., forklift) will be cleaned and rinsed using the self-implementing decontamination procedures specified in 40 CFR. 761.79(c). The surfaces of the ancillary equipment will be swabbed with an appropriate performance-based organic decontamination fluid (PODF) (i.e., diesel fuel). Afterward, wipe samples will be collected from the surfaces of the ancillary equipment to verify compliance with the performance-based standard (i.e., 10 µg/100 $cm^2$). Rinsates generated , if any, during equipment cleaning will be managed and disposed of properly. Following final equipment rinsing, the following options, dependent upon wipe analysis, may be exercised:

1) If the final wipe sample meets the clean closure standard, no end use restrictions shall be placed on decontaminated equipment and closure of the ancillary equipment unit will be deemed final.
2) Equipment that cannot meet the clean closure standard will be disposed of as PCB waste.

Detailed closure procedures for ancillary equipment are further discussed in Section 5.2.

## 5.0 CLOSURE PROCEDURES

The following subsections outline the procedures for partial and permanent closure of the regulated unit at the PFF facility. Shower facilities, cleaning equipment, and decontamination supplies will be available to workers performing closure activities. All potentially contaminated rinse water, debris, and personal protective equipment (PPE) will be containerized for subsequent characterization and disposal at an off site disposal site.

### 5.1 Container Storage Facility and Secondary Containment Area Closure

Standard cleaning activities associated with container storage facility and secondary containment areas closure shall consist of the following procedures:

- Ship all containers of PCB waste to an off-site PCB storage or disposal facility.
- Decontaminate the unit by scrubbing down all surfaces with a solvent. Solvent used will be from the list of approved solvents in 40 CFR 761.79(c)(iv), or a solvent approved by USEPA in accordance with 40 CFR 761, Subpart T.
- After scrubbing down the containment area, surfaces will be steam-cleaned or pressure-rinsed.

- Collect wipe samples for analysis. The structures will be certified as clean closed when analytical results of the wipe samples indicate that levels of PCBs are below the closure criteria (i.e., 10 µg/100 $cm^2$).

### 5.2 Ancillary Equipment Closure

Standard cleaning activities associated with ancillary equipment replacement or closure include the following procedures:

- Scrub down the surfaces of the equipment that may have come in contact with PCBs with USEPA-approved solvent(s).
- Inspect the equipment for visual cleanliness. Repeat the above step, if necessary.
- Collect a wipe sample. The equipment will be certified as clean closed when analytical results of the wipe sample indicate that the level of PCBs is below the closure criteria (i.e., 10 µg/100 $cm^2$).
- Equipment that meets the clean closure criteria will not have any end use restrictions. Equipment that does not meet the criteria will have the cleaning steps repeated until it meets the requirements or will be disposed at an off-site facility.

Cleaning solutions, rinsate, and other liquids resulting from cleaning activities will be collected and sent off-site for proper storage/disposal. Following cleaning and decontamination, the parts and/or equipment will be available for reuse, recycle for scrap metal recovery, or disposal.

## 6.0 CLOSURE COST ESTIMATE

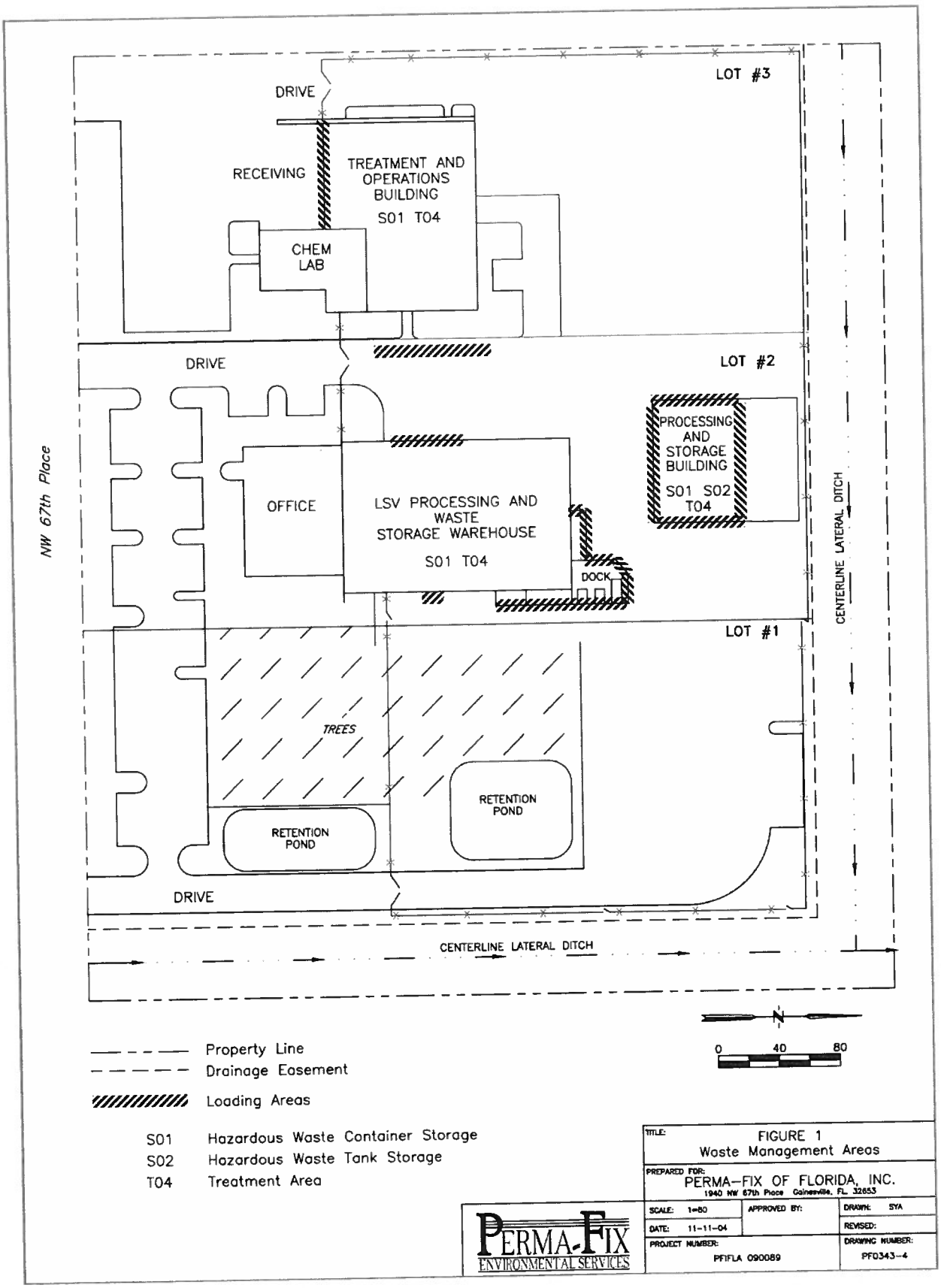
The closure cost estimate is presented as Attachment F to this Closure Plan. USEPA's CostPro© (Revision 6.0) was utilized to obtain the closure cost estimate. The closure cost estimate will be reviewed whenever a change in the Closure Plan increases or decreases the cost of closure. Annual adjustments will be made within 60 days of the establishment of financial assurance anniversary date. Copies of the original closure cost estimate, or a revised cost estimate (if applicable), and the latest annual inflation adjusted estimate required by 40 CFR 761.65(f)(2), will be kept at the facility during its operating life.

## 7.0 FINANCIAL ASSURANCE FOR CLOSURE

To meet the financial assurance for closure requirements of 40 CFR 761.65(g), PFF currently has a surety bond guaranteeing performance of closure from National Union Fire Insurance Company of Pittsburgh, PA in the amount of $131,475. A standby trust fund meting requirements of 40 CFR 761.65(g)(3) and 264.151(c) is set up with U.S. Bank. The original standby trust fund was set up with Southtrust Bank N.A., which was acquired by Wachovia Corporation. On December 30, 2006, Wachovia Corporation sold its corporate trust business to U.S. Bank National Association. The original standby trust remains in full force and effect with U.S. Bank as the successor. Copies of the current surety bond and the standby trust fund are provided in Attachment G.

# FIGURE 1

## WASTE MANAGEMENT AREAS
## PERMA-FIX OF FLORIDA, INC.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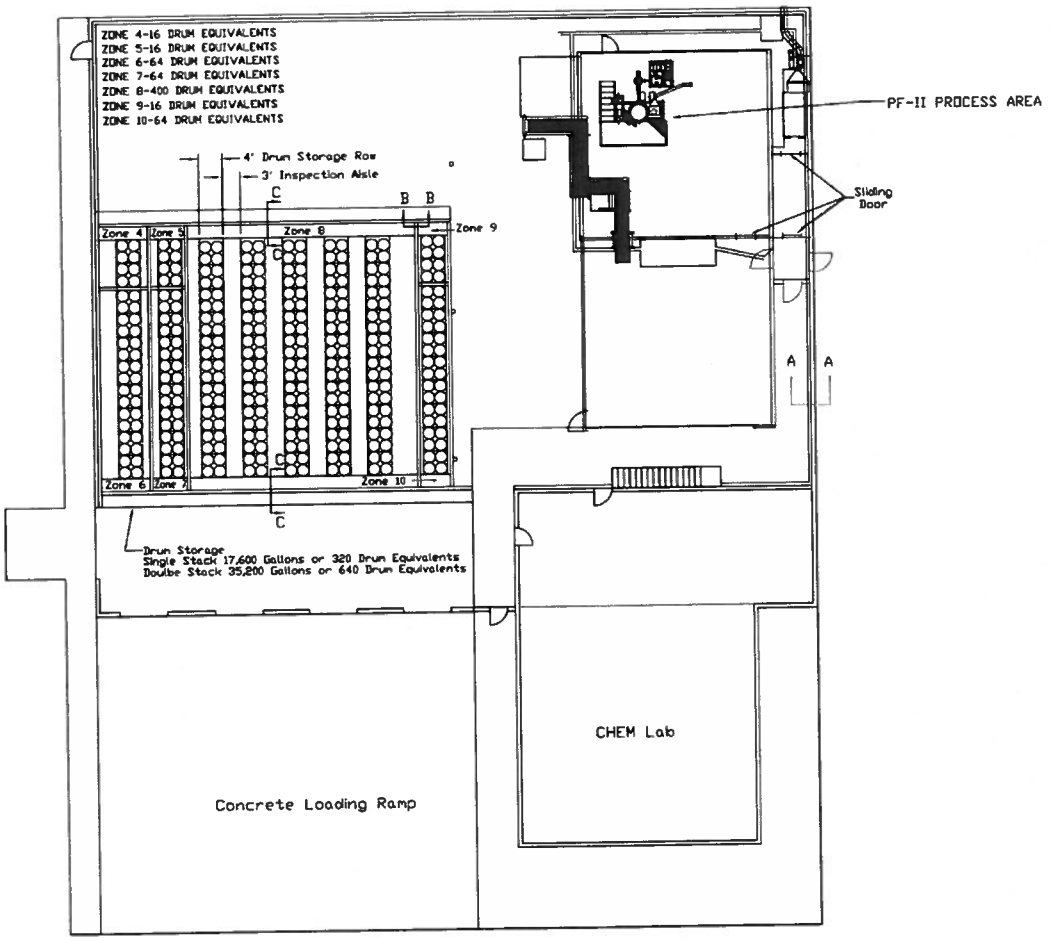
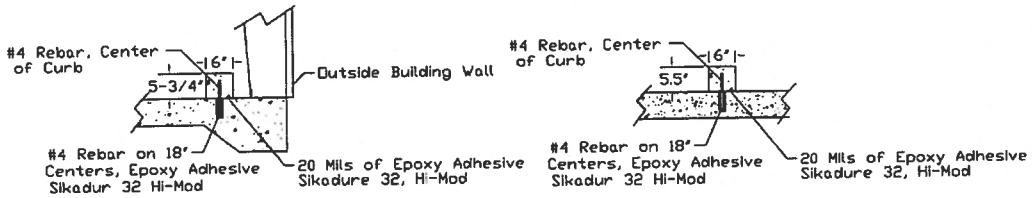
DRIVE
RECEIVING
TREATMENT AND OPERATIONS BUILDING
S01 T04
CHEM LAB
DRIVE
LOT #2
PROCESSING AND STORAGE BUILDING
S01 S02 T04
NW 67th Place
OFFICE
LSV PROCESSING AND WASTE STORAGE WAREHOUSE
S01 T04
DOCK
CENTERLINE LATERAL DITCH
LOT #1
TREES
RETENTION POND
RETENTION POND
DRIVE
CENTERLINE LATERAL DITCH
N
0
40
80
Property Line
Drainage Easement
Loading Areas
S01 Hazardous Waste Container Storage
S02 Hazardous Waste Tank Storage
T04 Treatment Area
TITLE: FIGURE 1
Waste Management Areas
PREPARED FOR:
PERMA-FIX OF FLORIDA, INC.
1940 NW 67th Place Gainesville, FL 32653
SCALE: 1=80
APPROVED BY:
DRAWN: SYA
DATE: 11-11-04
REVISED:
PROJECT NUMBER:
PFIFLA 090089
DRAWING NUMBER:
PF0343-4
PERMA-FIX ENVIRONMENTAL SERVICES

**FIGURE 2**

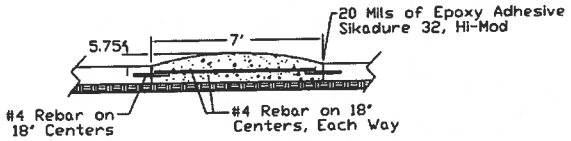
**TREATMENT AND OPERATION BUILDING**
**PERMA-FIX OF FLORIDA, INC.**




Section A-A
(N.T.S.)

Section B-B
(N.T.S.)




Section C-C
(N.T.S.)

| | | |
|---|---|---|
| TITLE: Figure 2 TREATMENT AND OPERATIONS BUILDING | | |
| PREPARED FOR: PERMA-FIX OF FLORIDA, INC. 1940 NW 67th Place Gainesville, FL. 32653 | | |
| SCALE: NTS | APPROVED BY: | DRAWN: SYA |
| DATE: 11-12-04 | | REVISED: 07-09-09 |
| PROJECT NUMBER: PFIFLA 090089 | | DRAWING NUMBER: ID1 |

PERMA-FIX ENVIRONMENTAL SERVICES

**FIGURE 3**

**100-YEAR FLOODPLAIN MAP**
**PERMA-FIX OF FLORIDA, INC.**

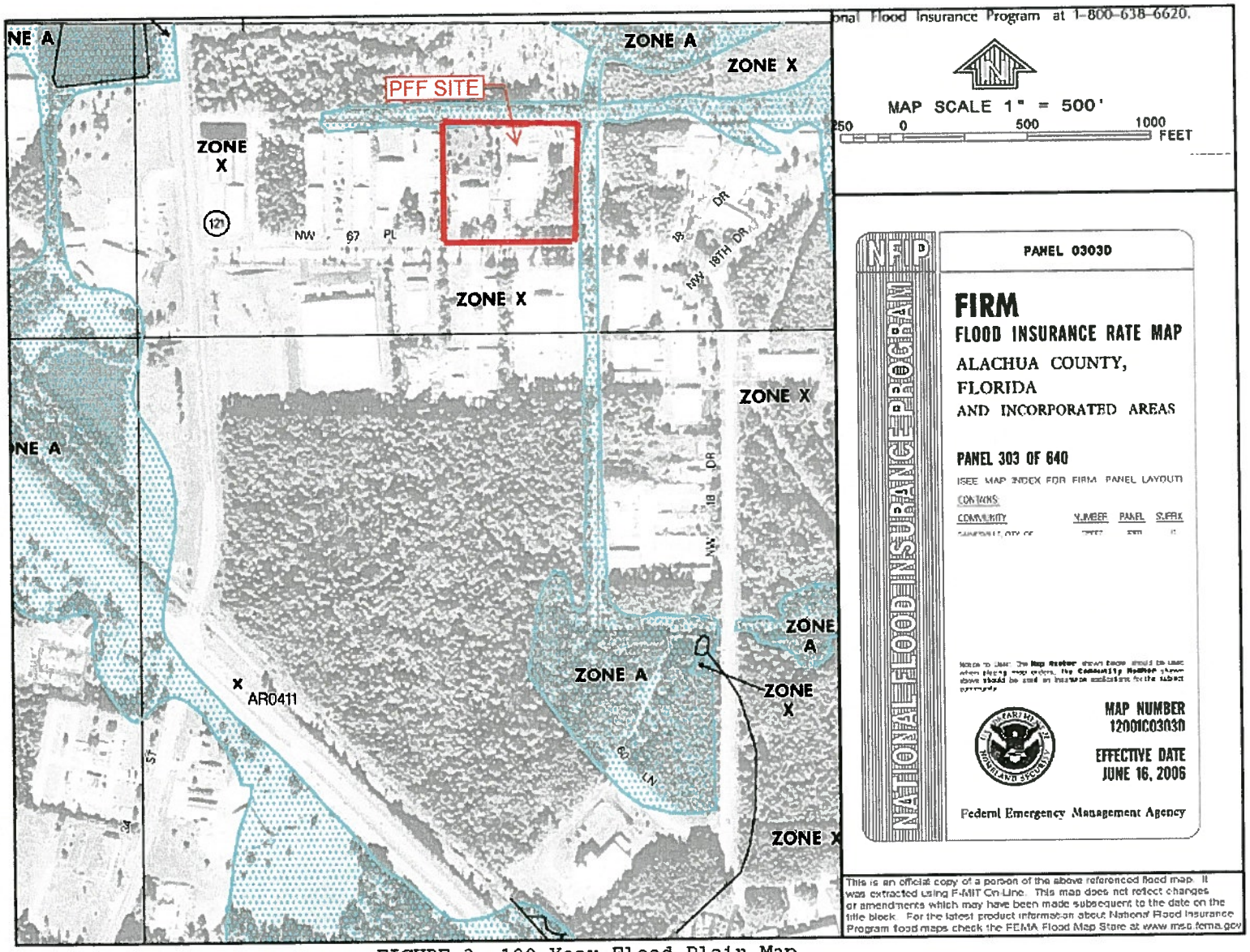



FIGURE 3: 100-Year Flood Plain Map

**Attachment A**

**Selected Pages from Perma-Fix Environmental Services, Inc.**
**2008 Annual Report**

PermaFix environmental services

# Positioned for the Future

preceding the date that the quarterly fee is due. The balance of each director's fee, if any, is payable in cash. In 2008, the fees earned by our outside directors totaled $274,000. Reimbursements of expenses for attending meetings of the Board are paid in cash at the time of the applicable Board meeting. Although Dr. Centofanti is not compensated for his services provided as a director, Dr. Centofanti is compensated for his services rendered as an officer of the Company. See "EXECUTIVE COMPENSATION — Summary Compensation Table."

As of the date of this report, we have issued 581,889 shares of our Common Stock in payment of director fees under the 2003 Directors Plan, covering the period October 1, 2002, through December 31, 2008.

In the event of a change of control (as defined in the 2003 Outside Directors Stock Plan), each outstanding option and award granted under the plans shall immediately become exercisable in full notwithstanding the vesting or exercise provisions contained in the stock option agreement.

**Compensation Committee Interlocks and Insider Participation**
During 2008, the Compensation and Stock Option Committee for our Board of Directors was composed of Jack Lahav, Jon Colin, Joe Reeder, and Dr. Charles E. Young. None of the members of the Compensation and Stock Option Committee has been an officer or employee of the Company or has had any relationship with the Company requiring disclosure under the SEC regulations.

## ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

**Security Ownership of Certain Beneficial Owners**
The table below sets forth information as to the shares of Common Stock beneficially owned as of March 9, 2009, by each person known by us to be the beneficial owners of more than 5% of any class of our voting securities.

| Name of Beneficial Owner | Title Of Class | Amount and Nature of Ownership | Percent Of Class [1] |
|---|---|---|---|
| Rutabaga Capital Management LLC/MA [2] | Common | 4,950,178 | 9.17% |
| Heartland Advisors, Inc. Management [3] | Common | 3,846,758 | 7.13% |
| Conus Partners, Inc. [4] | Common | 3,398,665 | 6.30% |

[1] The number of shares and the percentage of outstanding Common Stock beneficially owned by a person are based upon 53,985,119 shares of Common Stock issued and outstanding on March 9, 2009, and the number of shares of Common Stock which such person has the right to acquire beneficial ownership of within 60 days. Beneficial ownership by our stockholders has been determined in accordance with the rules promulgated under Section 13(d) of the Exchange Act.

[2] This information is based on the Schedule 13G/A, filed with the Securities and Exchange Commission ("SEC") on February 5, 2009, which provides that Rutabaga Capital Management LLC/MA, an investment advisor, has sole voting power over 1,772,000 shares and shared voting power over 3,178,178 shares and sole dispositive power over all of these shares. The address of Rutabaga Capital Management LLC/MA is 64 Broad Street, Boston, MA 02109.

[3] This information is based on the Schedule 13G/A, filed with the SEC on February 11, 2009, which provides that Heartland Advisors, Inc., an investment advisor, shares voting power over 3,646,935 of such shares and share dispositive power over all of the shares, and no sole voting or sole dispositive power over any of the shares. The address of Heartland Advisors, Inc. is 789 North Water Street, Suite 500, Milwaukee, WI 53202.

[4] This information is based on the Schedule 13F-HR/A filed with the SEC on February 18, 2009, which provides that Conus Partner, Inc., a hedge fund management institution, shares voting and dispositive power over such shares. The address of Conus Partner, Inc. is 49 West 38th Street, New York, New York 10018.

Capital Bank represented to us that:

- As of February 25, 2009, Capital Bank holds of record as a nominee for, and as an agent of, certain accredited investors, 3,762,332 shares of our Common Stock.;
- All of the Capital Bank's investors are accredited investors;
- None of Capital Bank's investors beneficially own more than 4.9% of our Common Stock and to its best knowledge, none of Capital Bank's investors act together as a group or otherwise act in concert for the purpose of voting on matters subject to the vote of our stockholders or for purpose of dispositive or investment of such stock;
- Capital Bank's investors maintain full voting and dispositive power over the Common Stock beneficially owned by such investors; and
- Capital Bank has neither voting nor investment power over the shares of Common Stock owned by Capital Bank, as agent for its investors.
- Capital Bank believes that it is not required to file reports under Section 16(a) of the Exchange Act or to file either Schedule 13D or Schedule 13G in connection with the shares of our Common Stock registered in the name of Capital Bank.
- Capital Bank is not the beneficial owner, as such term is defined in Rule 13d-3 of the Exchange Act, of the shares of Common Stock registered in Capital Bank's name because (a) Capital Bank holds the Common Stock as a nominee only and (b) Capital Bank has neither voting nor investment power over such shares.

Notwithstanding the previous paragraph, if Capital Bank's representations to us described above are incorrect or if Capital Bank's investors are acting as a group, then Capital Bank or a group of Capital Bank's investors could be a beneficial owner of more than 5% of our voting securities. If Capital Bank is deemed the beneficial owner of such shares, the following table sets forth information as to the shares of voting securities that Capital Bank may be considered to beneficially own on February 25, 2009.

| Name of Record Owner | Title Of Class | Amount and Nature of Ownership | Percent Of Class [1] |
|---|---|---|---|
| Capital Bank Grawe Gruppe [2] | Common | 3,762,332[2] | 6.97% |

[1] This calculation is based upon 53,985,119 shares of Common Stock issued and outstanding on March 9, 2009 plus the number of shares of Common Stock which Capital Bank, as agent for certain accredited investors has the right to acquire within 60 days, which is none.

[2] This amount is the number of shares that Capital Bank has represented to us that it holds of record as nominee for, and as an agent of, certain of its accredited investors. As of the date of this report, Capital Bank has no warrants or options to acquire, as agent for certain investors, additional shares of our Common Stocks. Although Capital Bank is the record holder of the shares of Common Stock described in this note, Capital Bank has advised us that it does not believe it is a beneficial owner of the Common Stock or that it is required to file reports under Section 16(a) or Section 13(d) of the Exchange Act. Because Capital Bank (a) has advised us that it holds the Common Stock as a nominee only and that it does not exercise voting or investment power over the Common Stock held in its name and that no one investor of Capital Bank for which it holds our Common Stock holds more than 4.9% of our issued and outstanding Common Stock and (b) has not nominated, and has not sought to nominate, and does not intend to nominate in the future, any person to serve as a member of our Board of Directors, we do not believe that Capital Bank is our affiliate. Capital Bank's address is Burgring 16, A-8010 Graz, Austria.

**Security Ownership of Management**

The following table sets forth information as to the shares of voting securities beneficially owned as of March 9, 2009, by each of our Directors and named executive officers and by all of our directors and executive officers as a group. Beneficial ownership has been determined in accordance with the rules promulgated under Section 13(d) of the Exchange Act. A person is deemed to be a beneficial owner of any voting securities for which that person has the right to acquire beneficial ownership within 60 days.

| Name of Beneficial Owner[2] | Number of Shares Of Common Stock | Percentage of Common Stock [1] |
|---|---|---|
| Dr. Louis F. Centofanti [3] | 1,289,934 [3] | 2.37% |
| Jon Colin [4] | 215,663 [4] | * |
| Robert L. Ferguson [5] | 316,450 [5] | * |
| Jack Lahav [6] | 832,699 [6] | 1.54% |
| Joe Reeder [7] | 942,831 [7] | 1.74% |
| Larry M. Shelton [8] | 83,767 [8] | * |
| Dr. Charles E. Young [9] | 128,978 [9] | * |
| Mark A. Zwecker [10] | 385,252 [10] | * |
| Steven Baughman [11] | 366,675 [11] | * |
| Larry McNamara [12] | 520,000 [12] | * |
| Robert Schreiber, Jr. [13] | 244,369 [13] | * |
| Ben Naccarato [14] | 25,000 [14] | * |
| Directors and Executive Officers as a Group (11 persons) | 4,984,943 [15] | 8.97% |

*Indicates beneficial ownership of less than one percent (1%).

[1] See footnote (1) of the table under "Security Ownership of Certain Beneficial Owners".

[2] The business address of each person, for the purposes hereof, is c/o Perma-Fix Environmental Services, Inc., 8302 Dunwoody Place, Suite 250, Atlanta, Georgia 30350.

[3] These shares include (i) 605,934 shares held of record by Dr. Centofanti; (ii) options to purchase 370,000 shares which are immediately exercisable; and 314,000 shares held by Dr. Centofanti's wife. Dr. Centofanti has sole voting and investment power of these shares, except for the shares held by Dr. Centofanti's wife, over which Dr. Centofanti shares voting and investment power.

[4] Mr. Colin has sole voting and investment power over these shares which include: (i) 123,663 shares held of record by Mr. Colin, and (ii) options to purchase 92,000 shares of Common Stock, which are immediately exercisable.

[5] Mr. Ferguson has sole voting and investment power over these shares which include: (i) 223,386 shares of Common Stock held of record by Mr. Ferguson, (ii) 27,046 shares held in Mr. Ferguson's individual retirement account, (iii) 24,018 shares held by Ferguson Financial Group LLC ("FFG LLC"), of which Mr. Ferguson is the manager; and (iv) options to purchase 42,000 shares, which are immediately exercisable.

[6] Mr. Lahav has sole voting and investment power over these shares which include: (i) 740,699 shares of Common Stock held of record by Mr. Lahav; (ii) options to purchase 92,000 shares, which are immediately exercisable.

[7] Mr. Reeder has sole voting and investment power over these shares which include: (i) 855,831shares of Common Stock held of record by Mr. Reeder, and (ii) options to purchase 87,000 shares, which are immediately exercisable.

[8] Mr. Shelton has sole voting and investment power over these shares which include: (i) 29,767 shares of Common Stock held of record by Mr. Shelton, and (ii) options to purchase 54,000 shares, which are immediately exercisable.

**Attachment B**

**Resumes for Key Operations Personnel**

Revision #0

September 8, 2009

# RAYMOND WHITTLE

## PERMA-FIX ENVIRONMENTAL SERVICES

### *GENERAL MANAGER*

### EXPERIENCE HIGHLIGHTS

- Management of TSDF Operation
- Quality Assurance/Quality Control
- Customer Service
- Purchasing
- Inventory Control
- Corporate Health & Safety
- Finance
- Health *Physics*

### PROFESSIONAL EXPERIENCE

**2000 - PRESENT** **PERMA-FIX OF FLORIDA. INC. GAINESVILLE. FLORIDA**

*2000 - Present: General Manager.* Supervise all aspects of waste management operations at the Perma-Fix of Florida facility.

*1995 - 2000: Facility Manager.* Provide overall supervision and guidance of Waste Management Services provided at Perma-Fix of Florida. Assign and delegate tasks not directly performed, to Site Coordinators. Responsible for overall training and compliance. Direct daily functions related to in-house laboratory verification activities. Responsible for documentation and reporting aspects for the operation including development, completion, accuracy and retention of appropriate forms. Provide interface with customers for waste approval activities and subsequent scheduling and shipping.

*1988 - 1994: Manager, Support Services.* Supervised personnel within Waste Management including scheduling, inventory control, finance, purchasing, quality control and quality assurance. Provided support for the Facility Manager in complying with programs regulated by the U.S.EPA (RCRA, TSCA, SARA), OSHA, DOT, State of Florida, DER, and other state and local agencies.

*1986 - 1988: Quality Assurance Supervisor.* Responsible for control of radioactive and RCRA hazardous materials received and shipped off-site. Supervise personnel in LSV Lab. Daily inspection of inventory.

**1980 - 1986** **FLORIDA DEPT. OF CORRECTIONS. UNION CORRECTION INSTITUTE. RAIFORD. FL**
480-Hour Police Standard Certification

### EDUCATION

| | |
|---|---|
| 1976 - 1978 | St. Johns River Community College, Palatka, Florida<br>AA Degree in Business Management |
| 1978 - 1980 | University of Florida |

### SPECIALIZED TRAINING:

- Advanced Radiation Training Course, Quadrex, June 1987
- Management Skills and Techniques for Supervisors, Skill Path, Inc., May 1988
- Standard First Aid and Adult CPR, Red Cross, June 1989
- 40-Hour OSHA Training, University of Florida, Treeo Center, September 1989
- EP A Hazardous Waste Management and Regulations, April 1990
- Department of Transportation HMS-181, Dennis Fleetwood
- Liquid Scintillation Basic Training, Applied Environmental Consulting, December 1996
- Advanced Radiation Training, Applied Environmental Consulting, January 1997
- 8 Hour OSHA Refresher, February 1997
- Inspection Standard for Pesticide Containers, University of Florida, March 1997
- RCRA Compliance for Fiber - Reinforced Plastic Mfg Industry, Florida DEP, July 1997
- Off-site Consequence Analysis Workshop, Florida DEP, July 1997

# KURT FOGLEMAN

2528 NW 106TH WAY GAINESVILLE, FL 32606
(352) 395-1356 / KFOGLEMAN@PERMA-FIX.COM


## EMPLOYMENT

### PERMA-FIX OF FLORIDA

*Environmental, Health and Safety Manager, January 2007-Present*

- Responsible for the four Perma-Fix facilities in the Southeast Region.
- Advise facility management in environmental compliance, worker safety and industrial hygiene.
- Manage compliance and permitting activities with federal, state and local regulatory agencies.
- Provide training to staff and customers on hazardous materials, hazardous waste, transportation and general safety.
- Manage waste acceptance department, including sampling, verification testing, non-conformance tracking and waste profile reviews.
- Maintain OSHA logs, risk assessment logs, workman's compensation logs and pollution prevention logs.

### ENVIROCARE OF UTAH/ENERGYSOLUTIONS

*Technical Services Manager, June 2004-January2007*

- Responsible for project management and technical coordination of remediation services for DOE, USACE, DOD, EPA and commercial utility customers.
- Maintained waste acceptance criteria and waste profile record documents current with regulatory requirements.
- Programmed and maintained waste profile generation and tracking system.

*Laboratory Manager, September 2000 – June 2004*

- Administered gamma spectrometry, radiochemistry and general chemistry laboratories.
- Responsible for weather monitoring, RCRA and radiological sampling programs, incoming shipment screening and acceptance, sample management, limited-quantity shipping, regulatory compliance and waste stream profiling.
- Implemented electronic documentation and bar coding.
- Familiar with EPA SW-846 test methods.
- Programmed a custom Laboratory Information Management System (LIMS).

*Health Physics Specialist, February 2000 – September 2000*

- Performed air monitoring for contamination control.
- Assisted in maintaining health physics instrumentation (dose rate and alpha/beta count rate meters).
- Performed routine radiological surveys.

## EDUCATION

### UNIVERSITY OF UTAH, 2003-2004

- Currently enrolled in Masters of Science program through Physics department.
- Completed coursework in electronics, computational physics and radiation detection and measurement.

### WEBER STATE UNIVERSITY, 1997-1999

- Graduated cum laude with Bachelors of Science in Physics, May 1999
- Physics Department Outstanding Gradate of the Year.
- Recipient of H. Paul Huish and University Scholarships.

### UTAH STATE UNIVERSITY, 1995-1997

- Undergraduate in physics and geosciences.
- Member of Phi Kappa Phi honor society.

### GEORGETOWN UNIVERSITY, 1992-1993

- Undergraduate in physics, National Merit Scholar.
- Participant in U.S. DOE Summer Research Program at Fermi National Accelerator Laboratory.

## Experience

### Laboratory

- Laboratory experience includes advanced work in nuclear physics, optics, spectroscopy, physical chemistry and environmental geology.
- Related skills include experience in instrument design and calibration, as well as computerized data acquisition.

### Customer Service

- Experience with customer service includes sales support as well as technical support and project management.

### Quality Assurance

- Audit experience includes participation in eight DOE audits, several NRC/UDRC audits, EPA inspections and state DEP inspections.
- Additional experience includes preparation of procedures and license/permit modification requests, document control protocol, corrective action tracking and experience as an auditor-in-training.
- Implemented data validation program for Envirocare of Utah.

## Professional Memberships

- American Chemical Society
- International Union of Pure and Applied Chemistry

## Additional Training

- Newex Radioactive Material Packaging and Shipping Training
- American Chemical Society GCMS Training Program
- Canberra Industries Gamma Spectroscopy Training

# RANDY SELF

PERMA-FIX ENVIRONMENTAL SERVICES

**Experience**

*1999–Present* *Perma-Fix of Florida, Inc.* *Gainesville, FL*

**Facility Management- [Coordinator of Nuclear Treatment Operations]**

- Served as project manager for facility enhancement plan overseeing seven engineering firms utilizing a $3 million dollar approved budget.
- Assisted in achieving facilities 2005 RCRA part B permit application and approval process.
- Supervised operational start-up of an advanced mixed waste treatment facility.
- Coordinate waste treatment and processing activities of RCRA characteristic and listed radioactive waste materials from all major D.O.E., D.O.D., nuclear utilities, colleges, pharmaceutical and various other research generating entities.
- Process development and engineering control of eight specific treatment areas with twenty-one subcategories.
- Development and/or direction of all related administrative, personnel, procedures with related specifications of equipment and treatment chemistries.
- Key member in managing production accelerating from a $4 million facility to a $16 million a year facility.
- Instrumental in maintaining radiation license and RCRA Part B permit compliance.
- Represents facility and addresses issues regarding regulatory and customer audits.
- Instrumental in selecting and structuring departmental staffing
- Supervised related transportation scheduling and manifesting activities
- Developed and trained employees to standard procedures for site operations
- Assisted the implementation of data tracking system for nuclear waste functions.
- Implemented and recommended current waste acceptance departmental activities.
- Primary emergency coordinator
- Managed contractual agreements and deliverables.
- Experienced in lab packing and lab pack decommissioning.
- Coordinate TSDF typical relations; Waste acceptance to disposal
- Seasoned waste profiler meeting acceptance criteria at disposal sites and other license or permitted facilities.
- Implemented inventory control practices and procedures.
- Responsible for evaluating and implementing cost controls.
- Managed pilot-scale to full-scale activities to successfully treat entire scope of 40 CFR 268.48 listed UHC's.
- Distinguished annual employment evaluations spanning entire work history at PESI

*1997–1999* *Perma-Fix of Florida, Inc.* *Gainesville, FL*

**Research and Development- [Senior Technician]**

- Performed as project manager for a mixed waste solvent recovery project with revenues in excess of $500 thousand. Accomplished all technical goals ahead of schedule and significantly under budget.
- Acted as lead bench treatment chemist for a successful D.O.E. radioactive beryllium stabilization project.
- Assisted with the processing and bench chemistries relating to a pilot D.O.D. thorium nitrate stabilization study.
- Personally conducted a two-year research study involving the treatment of selenium in wastes. Company filed and obtained a patent for the proprietary process.
- Conducted research in numerous areas of mixed waste treatment that included such technological studies as direct chemical oxidation, thermal desorbtion, heavy-metal stabilization, PCB destruction, mercury (>260ppm) treatment, wastewater treatment and radio isotopic recovery/separation.

- Adapted standard analytical methods and equipment to meet specific R&D needs.
- Provided technical and bench-chemistry support to entire corporate structure (eight TSDF's to include special field-project pursuits).

*1996–1997* ***ABC Research Laboratory*** ***Gainesville, FL***

**Senior Laboratory Technician**

- Responsibilities included the certified analysis of drinking water, determination of cyanides, nitrates, ammonias, metals, and most all other wet chemistry analytical procedures.
- Assisted lead chemists with the adaptation of gas chromatography equipment to successfully investigate various contractual assignments (forensic, food science, etc.
- Assisted sampling team with field projects in accordance with SW-846 sampling methods.
- Offered position as laboratory manager upon recruitment from Perma-Fix as a research assistant.

*1996–1997* ***MFM Environmental Services*** ***Lowell, FL***

**Consultant (Processing & Laboratory Operations)**

- Assisted company with development and control of general laboratory practices and procedures.
- Updated laboratory to meet demands of growing used-oil recycling process.
- Assisted in organization and process flow for tank farm's oil throughput, treatment and outbound loading.
- Updated and educated corporate command structure with regards to regulatory requirements and operational self-assessments (recommended a quality assurance plan).

*1996–1996* ***Farchan Research Laboratories*** ***Gainesville, FL***

**Chemical Technician**

- Responsible for the bench scale synthesis of specialty chemicals (sodium and lithium based).
- Experiences included the full-scale chemical production utilizing 500-gallon reactors, boilers, and associated distillation equipment and processes.
- Assisted chemical engineering staff in obtaining and increasing purity levels from bench top to full-scale production.
- Offered production supervisor position.

*1994–1996* ***Perma-Fix of Florida, Inc.*** ***Gainesville, FL***
***Perma-Fix of Dayton, Inc.*** ***Dayton, OH***
***Quadrex of Dayton, Inc.*** ***Dayton, OH***

**Laboratory Technician/Process Operator**

- Monitored, analytically compiled data and personally operated a pilot-scale "F" listed wastewater treatability program.
- Assisted with the bench chemistries and treatment processing of industrial wastewaters.
- Assisted with the processing, recovery and treatment of used-oil.
- Assisted with the sampling, processing and blending of waste fuels.
- Responsible for the timely and accurate analysis of known and unknown waste streams from five TSD facilities and several outside brokerages.
- Performed QA/QC functions on all analytical work; the maintenance, calibration and troubleshooting of all instrumentation, and the specification and purchasing of all laboratory supplies.
- Familiar with most all-environmental analytical procedures as outlined by EPA SW-846, ASTM, and others.

- Experienced with ICAP, graphite furnace, GC/FID, GC/ECD, GC/ELCD, GC/MS (volatile and semi-volatile), optical spectrometry, scintillation counters, Gross gamma analysis, Gamma spectroscopy, TOX and TOC analyzers and other basic analysis and or equipment.

*1993–1994* *Howard's Foods* *Springfield, OH*
**Assistant Manager**

- Managed 23 personnel involving all store operation functionalities.

*1992–1993* *Wholesale Warehouse Foods* *Atlanta, GA*
**Night Manager**

- Managed 34 personnel that involved complete store operations (inventory control, accounting and customer service)
- Re-organized departmental protocols and personnel to meet corporate economical objectives. Objectives met in three months of employment.

*1987–1992* *United States Marine Corps* *Fleet Marine Force*
**Aviation Maintenance Administration**

- Persian Gulf veteran
- Night crew NCO assigned to maintenance control department; directed the maintenance of several combat aircraft involving 9 departments overseeing scheduling activities of 45 technicians.
- Responsible for daily and monthly maintenance reporting to typical chain-of-command entities (CO, Group HQ, Station HQ & Fleet Command).
- Personally implemented computer database system tracking scheduled maintenance and mission objectives.
- Cross-trained in various maintenance shops in preparation of QA position requirements (e.g. avionics, hydraulics, metal shop, ordinance, etc.)
- Assigned as a QA technician in charge of departmental audits and maintenance of technical publication libraries.
- Provided QA audit reports routinely to typical chain-of-command structure
- Successfully completed NCO leadership school–Iwakuni, Japan 1989
- Assigned as Embarkation NCO successfully assisting with the coordination efforts of troop (unit) movement to include logistical control of entire squadron to and from CONUS and eighteen different countries.
- Served 6-month detachment as Barracks Police-Sergeant responsible for conduct, appearance and oversight of 254 residing Marine aviation students.
- Assigned as Weapons NCO, responsible for maintaining squadron personnel up-to-date with entire scope of infantry related weaponry and tactics.

## Education

| | | |
|---|---|---|
| **Associate of Arts Degree** | **Santa Fe Community College** | **Gainesville, FL** |
| **1993 - 1995** Enrolled part-time | **Clark State Community College** | **Springfield, OH** |

Various Training

| | |
|---|---|
| • 40-hour OSHA Hazwoper | Quadrex |
| • Radiation Safety Training | PESI |
| • Hazardous Material Training 49 CFR 172 | CBT |

- Fundamentals of Occupational Safety Compliance — EOHSI
- Technical Project Management — AMA
- Fundamentals of Finance — AMA
- Various Naval and Marine training schools

**Organizational Membership**

Veterans Groups

- American Legion (former Post Adjunctant; volunteer)
- Veterans of Foreign Wars

Technical related

- Served as part of a Technical Advisory Group (TAG) representing the commercial business sector for the University of Florida's Environmental Engineering School. Responsibilities included oversight and input regarding graduate student research projects.

# DWAYNE SINGLETON
## PERMA-FIX ENVIRONMENTAL SERVICES

## *Industrial Coordinator*

**EXPERIENCE HIGHLIGHTS**

- Coordinator
- County Collections
- Supervisor
- Emergency Response
- Lab Packing
- CDL Driver

**PROFESSIONAL EXPERIENCE**

**1989 - PRESENT PERMA-FIX OF FLORIDA., INC. - GAINESVILLE, FLORIDA**

*1997: Site Coordinator.* Provide on the spot direction and supervision within the work area and coordinate with administrative support to assure correct paperwork for receiving, processing, shipping and billing. Other responsibilities include check in and out of containers to be processed on process log, maintaining vial control sheet, inspecting containers to be run, putting containers on lift, swiping and surveying empty containers coming off lift, handling uncrushable materials (whole containers or contributing containers), informing technicians of label requirements, supervising performance of other technicians to ensure safety and proper protective clothing and equipment, pulling samples for analysis, inspecting equipment to ensure proper operation (chain hoist oil levels, teeth condition, etc.), and tracking rinse fluid change-out.

*1992-1997: Hazardous/Non-hazardous Production Coordinator:* Responsible for all levels of waste management services which includes employees having the proper safety equipment; scheduling drums for treatment, disposal or storage and lab packing; inspection of the work area and labeling drums; pulling samples for customers as needed; schedule county collections to include equipment, setup, transportation and pre-evaluation of collection site and package of materials from collection events to be sent off-site

*1990 - 1992: Assistant Foreman.* Supervisor in the absence of the Foreman; all levels of waste management services; labpacking, treatment, disposal or storage of drums inspection of work areas ensuring that drum labels and safety equipment are being used properly, daily paperwork for drum counts and employee hours.

*1/90 - 9/90: Group Leader.* Responsible for eight employees. All hazardous and non-hazardous processing, scheduling inbound and outbound shipments and on-site lab packing.

*7/89 -1/90: Process Technician II.* Responsibilities included decontamination of radioactive liquid scintillation vials and preparation for disposal of absorbent material.

*1/89 - 6/89: Process Technician I.* Responsibilities included decontamination of radioactive liquid scintillation vials and disposal of absorbent material.

**EDUCATION** 1976 - 80: Buchholz High School
1979 - 81 Santa Fe Community College (certified coal burning power plant operator)

**SPECIALIZED TRAINING:**

- Army training in mechanics, 1982-1988
- Completed Perma-Fix radiation control class for the management of by-products of the LSV process, 1989
- Radiation Control SO-hour Training, May 1990
- Emergency Response Operations, University. of Florida - Treeo Center, February 1993
- Standard First Aid and Adult CPR, Red Cross, June 1992
- CDL Drivers License, March 1992

...

**Attachment C**

**Product Data for the Sealer**

SPEC DATA

**CONCRETE FINISHING 03 35 00**

Curecrete Distribution Inc.

ASHFORD FORMULA
THE FINAL TREATMENT FOR YOUR CONCRETE

**1. Product Name**
Ashford Formula

**2. Manufacturer**
Curecrete Distribution Inc.
1203 W Spring Creek Place
Springville, UT 84663-0551
(800) 998-5664
(801) 489-5663
Fax: (801) 489-3307
www.ashfordformula.com

**3. Product Description**

BASIC USE

Ashford Formula, the leader in concrete densification since 1949, is a transparent, chemically reactive, water-based sealer that penetrates concrete and masonry building materials, protecting, preserving and strengthening them permanently by:

- Curing - Ashford Formula controls hairline checking and temperature cracking on new concrete. When applied to properly placed, structurally sound freshly finished concrete, Ashford Formula will uniformly cure the concrete through a combined chemical/moisture retention reaction so vital to the complete hydration process
- Sealing - Ashford Formula penetrates deep into the concrete forming a chemical reaction that locks the pores from within, providing a deep permanent seal on all types of concrete surfaces
- Hardening - Ashford Formula solidifies the component parts of the concrete into one solid mass, increasing the density, toughness, hardness and substantially increasing the abrasion resistance and durability of the concrete surface. Smooth steel troweled surfaces develop a marble-like finish and sheen. Ashford Formula treated concrete has been compressively tested 38% harder after 30 days than fully cured, untreated concrete
- Dustproofing - Ashford Formula chemically reacts with the salts in the concrete, permanently eliminating the release of concrete dust through the surface pores
- Neutralizing Alkali - As the Ashford Formula progressively penetrates the concrete, it neutralizes the alkalis, forcing them to the surface where they can be washed away during the application. The deep alkalis are locked in, and efflorescence and the leaching of lime and alkalis stop
- Bonding - Ashford Formula prepares the treated surface for paints, caulking compounds, adhesives and floor coverings by eliminating the surface concrete salts that are so detrimental to proper bonding. Ashford Formula contains no silicone and is coatable and compatible with any type of covering when standard surface preparation guidelines are followed

Wal-Mart facility, Guadalajara, Mexico

With one application of Ashford Formula, concrete or other masonry is cured and permanently sealed for its lifetime, and is rendered highly resistant to oils, greases and other surface contaminants. The component parts of the concrete are solidified into a solid mass that toughens, hardens and increases the density. Surface alkalis are neutralized, and efflorescence and the leaching of lime and alkalis are stopped. Treatable materials include concrete, heavyweight concrete block, mortar, plaster, stucco, terrazzo, exposed aggregate and any sand-aggregate-cement combination. Applications include warehouses, distribution facilities, aviation hangars, manufacturing plants, food processing and distribution buildings, pulp and paper mills or other types of facilities with large exposed concrete floors.

COMPOSITION & MATERIALS

Ashford Formula complies with all USDA regulations and is nontoxic, noncombustible and nonflammable. It is not harmful to lungs or hands and contains no volatile organic compounds (VOCs).

SIZES

Ashford Formula is available in 55 gal (208 L) drums and 5 gal (19 L) pails.

COLOR, FINISH

Ashford Formula is clear and will not change the natural appearance of masonry or concrete. Where alkali, lime and other impurities are forced to the surface and the natural appearance is to be preserved, all treated surfaces must be flushed clean with clear water in accordance with manufacturer's instructions.

On smooth steel troweled concrete surfaces, a natural wax-like sheen will appear between 6 - 12 months after treatment. This can be accelerated by burnishing after curing. The sheen is caused by the hardening and sealing effects of the Ashford Formula, as well as by the abrasion from cleaning and use of the floor. A routine cleaning program using a floor scrubber with abrasive-type brushes will accelerate and enhance the sheen. The sheen will last the lifetime of the surface.

BENEFITS

- Controls hairline cracks in new concrete
- Only one application creates a permanent seal that is solid, rather than porous, on all

SPEC DATA

**CONCRETE FINISHING 03 35 00**

Curecrete Distribution Inc.

TABLE 1 PHYSICAL/CHEMICAL PROPERTIES

| | |
|---|---|
| Abrasion resistance (ASTM C779) | At least 32.5% increase at 30 minutes |
| Surface adhesion (ASTM D3359) | At least 22% increase in epoxy adhesion; no change for polyurethane adhesion |
| Curing | At least 93% greater moisture retention during the initial critical 24 hour curing period compared to untreated samples |
| Compressive strength (ASTM C39) | At least 40% increase in compressive strength at 7 days compared to untreated samples<br>At least 38% increase at 28 days compared to untreated samples |
| Impact resistance (ASTM C805) | At least 13.3% increase in impact resistance compared to untreated samples |
| Permeability | 0.00073 oz (0.022 cc)/hour seepage rate using a 7 (2.13 m) head of water and a 4.91 in² (3168 mm²) treated area |
| Coefficient of friction (ASTM C1028) | 0.86 dry, 0.69 wet |
| Weathering (ASTM G23) | Ultraviolet light and water spray exposure had no adverse effect on treated samples |

types of concrete surfaces
- Hardens and strengthens within the concrete mass, protecting against deterioration and producing a floor that is resistant to traffic; rather than eroding, the floor surface actually self-polishes
- Treated surface resists dust, oils, greases and other surface contaminants, such as tire marks
- Effective curing agent when applied immediately after the finishing operation; stabilizes the surface, minimizes crazing and ensures that the concrete will meet or exceed its design strength
- Prepares the treated surface for paints, caulking compounds, adhesives and floor coverings
- Covers approximately 200 ft²/gal (5 m²/L), depending on concrete temperature and porosity
- Compatible with any type of covering when standard surface preparation guidelines are followed
- Thinners not required - Equipment is cleaned using water only

LIMITATIONS
- Ashford Formula is not to be used to seal lightweight block or other extremely porous masonry that contains actual holes and air pockets
- Ashford Formula is not for application over areas previously treated with curing or sealing agents unless these coatings have been removed by chemical or mechanical means
- On concrete that is abnormally porous or soft, additional applications of Ashford Formula may be required. This also applies to surfaces with open finishes, such as broom finished or scarified floors

## 4. Technical Data

APPLICABLE STANDARDS

ASTM International (ASTM)
- ASTM C39 Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
- ASTM C779 Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces
- ASTM C805 Standard Test Method for Rebound Number of Hardened Concrete
- ASTM C1028 Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method
- ASTM D3359 Standard Test Methods for Measuring Adhesion by Tape Test
- ASTM G23 Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials (Withdrawn 2000)

PHYSICAL/CHEMICAL PROPERTIES

See Table 1.

## 5. Installation

PREPARATORY WORK

Deliver products in manufacturer's original, unopened, undamaged containers with identification labels intact. Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer. Storage life is 2 years.

Verify that site conditions are acceptable for installation. Do not proceed with installation until unacceptable conditions are corrected.

On existing concrete remove all surface coatings. To remove dust, dirt and contamination from areas to be treated, sweep surface using a fine bristle broom, or scrub, hose off with water and let dry. Ashford Formula can be applied to damp surfaces as long as all puddled areas are swept away. This prevents the Formula from becoming diluted before it is able to penetrate the surface.

METHODS

Ashford Formula may be applied on new concrete by owners, contractors, or qualified applicators. If owners or their contractors apply the material, Curecrete requires that a field technician be on hand to provide assistance and ensure the application is done correctly. On existing concrete, Curecrete recommends that only qualified applicators prepare the surface and apply the material. Outside of the United States, the Ashford Formula can be applied only by certified applicators.

New Concrete

Apply product immediately following the finishing operation, as soon as the surface is firm enough to walk on and before hairline checking and temperature cracking begin. Curecrete recommends application using a low pressure, high-volume pump that will dispense material at 40 - 70 psi (276 - 483 kPa) and roughly 3 - 5 gal (11 - 19 L) per minute. Keep the entire surface wet with Ashford Formula for 30 minutes, working it into the concrete surface with a soft-bristled broom.

As the Ashford Formula becomes slippery underfoot, lightly mist the surface with water. As it again becomes slippery underfoot, thoroughly flush the entire surface with water and squeegee it completely dry to remove all surface alkali and/or Ashford Formula residue.

On exterior broom-finished surfaces, no flushing is required, but any remaining Ashford Formula must be squeegeed or broom-swept from the surface after 30 - 40 minutes.

Newly placed concrete requires the normal hardening period. Allow 30 days for proper curing before applying paint or covering.

Old Concrete/All Cured Surfaces

Spray with a low pressure sprayer or pour and brush with a soft bristle broom to saturate the entire surface with Ashford Formula. Keep the surface wet with the Formula for 30 minutes.
- Option 1 - If the majority of the Ashford Formula has been absorbed into the surface after 30 - 40 minutes, broom or squeegee

any excess material from all low spots and puddles so that all remaining Ashford Formula is entirely absorbed into the concrete or is totally removed from the surface
- Option 2 - If after 30 - 40 minutes the majority of the Ashford Formula is still on the surface, wait until it becomes slippery underfoot, then thoroughly flush the entire surface with clear water; squeegee completely dry to remove all Ashford Formula residue

The surface can be used as soon as it is again dry to the touch and the application is complete. Allow 3 - 7 days before applying paint or coverings.

Instructions for tilt-wall applications and vertical surface applications are available online at www.ashfordformula.com.

PRECAUTIONS

Performance
- Apply product with low pressure sprayer only. Do not use airless sprayers, as they atomize the material, allowing inhalation
- Diaper all construction equipment components that might drip oil, hydraulic fluid or other liquids
- Apply Ashford Formula to colored concrete only after the slab is fully cured
- Prevent Ashford Formula from getting on glass or other finished surfaces. If this occurs, immediately wipe with a damp cloth or flush the affected surface immediately. When applying near windows, mask the glass
- Do not apply Ashford Formula when the temperature falls to below 35 degrees F (1.7 degrees C)
- Protect new concrete from freezing for a period of 6 days
- If the Ashford Formula becomes frozen, thaw and agitate before using

Safety
- If taken internally, do not induce vomiting. Drink large amounts of milk or water. Consult a physician immediately
- May cause eye and mucous membrane damage. Avoid contact with eyes and mucous membranes. If contact occurs, flush with water for 15 minutes
- Surfaces treated with the Ashford Formula temporarily become slippery during application. Exercise care and caution to avoid falls

BUILDING CODES

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

## 6. Availability & Cost

AVAILABILITY

Curecrete Distribution Inc. has inventory facilities throughout the United States, allowing for next day delivery to more than 95% of all zip codes, as well as same day service in some areas. Contact the manufacturer for local availability information.

COST

Ashford Formula is competitively priced. For specific price information, contact Curecrete Distribution Inc.

## 7. Warranty

Curecrete Distribution Inc. warrants that a properly prepared and structurally sound concrete or masonry surface treated with Ashford Formula according to the manufacturer's directions will remain dustproof, hardened and water repellent for 20 years. If the treated surface does not remain dustproof, hardened and water repellent after the specified sealing period, Curecrete Distribution Inc. will supply, at its own expense, sufficient Ashford Formula to reseal any defective area. This warranty does not apply if the Ashford Formula is improperly applied or if structural faults occur due to faulty workmanship, improper design or failure of materials other than the Ashford Formula. Complete warranty terms and conditions are available from the manufacturer. For details, consult Curecrete Distribution Inc.

## 8. Maintenance

Scrub the floor often. The abrasion polishes the floor and enhances the shine. Ample water used with routine detergent scrubbing will accelerate the sealing process.

Use a neutral to high pH detergent void of sulfates and hydroxides (caustic soda) to clean the floor. Acidic cleaners or sweeping compounds will dull the surface appearance.

Clean spills quickly. Highly concentrated acid may etch the surface if left in contact with the floor. Foods such as mustard and grape juice may leave a residual stain if not removed immediately.

Keep a good oil emulsifier on hand to clean up oil, grease or fats.

Waxing or coating with other products is unnecessary and is not recommended.

## 9. Technical Services

Technical assistance, including more detailed information, product literature, test results, project lists, assistance in preparing project specifications and arrangements for application supervision, is available by contacting Curecrete Distribution Inc.

## 10. Filing Systems
- MANU-SPEC®
- Additional product information is available from the manufacturer upon request.

**Attachment D**

**Containment Calculations**

Revision #0 September 8, 2009

**Treatment and Operations Building**
**PCB Container Storage Area**

*Containment Calculations*

Given:

| | |
|---|---|
| Base Area (a) 42'x36.4' | = 1,529 $ft^2$ |
| Minimum Curb Height (h) | = 5.5 in = 5.5 in/12 in = 0.458 ft |
| Pallet Displacement (pd) | = (12.8 gal) (10 pallets) = 125 gal |
| 100% Volume of Largest Container (LC) | = 12 cy = 2,424 gal |
| 100% Volume of Total Containers (TC) | = 4,125 gal (75 x 55-gallon drums) |
| 25% Volume of Total Container = (25%) (TC) | = 1,031 |
| 25 year/24 Hour Storm Water Volume | = 0 gal (building is totally enclosed) |

Containment Capacity Available (CCA):

CCA = (h x a x 7.48 gal/$ft^3$) - pd = (0.458 ft x 1,529 $ft^2$ x 7.48 gal/$ft^3$) - 125 gal = 5,113 gal

Conclusion

The net available containment volume (5,113 gal) exceeds two times the volume of the largest container (2,424 gal) and is in excess of 25% of the maximum volume (4,125 gal) of containerized PCB waste that will be stored in the PCB storage area. No equipment that may displace containment volume is kept in the container storage area.

**Attachment E**

**Slab Certification**

BODO AND
ASSOCIATES, INC.
Consulting Engineers

13 October 1997

Perma-Fix of Florida, Inc.
Attention: **Mr. George Harder**
1940 NW 67th Place
Gainesville, FL 32653

RE: **Floor Slab Inspection**
**Nelson Building, Perma-Fix Plant**
**Gainesville, Florida**

Gentlemen:

At your request Bodo and Associates, Inc. performed an evaluation of the floor at the Nelson Building located at the Perma-Fix Plant in Gainesville, Florida. This letter presents our findings and opinions.

The purpose of our work was to assess the capacity of the existing floor slab to support the loads due to storage of hazardous and radioactive waste. The materials are stored in drums on pallets with four drums per pallet. Each drum weighs a maximum of 800 lb when full. Two pallets may be stacked on top of each other. The pallets are moved around on a forklift with a rated capacity of 6000 lb.

Five core samples were drilled in order to verify the thickness of the slab. The sampling points were located in the approximate center of the floor area and as near to the four corners as was practical and accessible. The subgrade was also evaluated qualitatively at each of the five locations by measuring the distance that a ¾" diameter steel rod moved through under ten hammer blows.

Visual inspection of the general floor area revealed no significant cracks or other signs of distress. Concrete quality, as seen in the core samples, appeared to be good, with a fairly uniform distribution of coarse aggregate and no large voids or air pockets. The slab has welded wire fabric reinforcement which is generally located near the bottom. Slab thickness varied from 4" to 6½" with the average estimated as 5". The subgrade appeared to be uniform and dense.

726 NW 23rd Avenue ◆ (904) 378-8806 ◆ FAX (904) 378-6488 New Area Code: 352
Mailing Address: P.O. Box 698, Gainesville, Florida 32602

The slab was analyzed for the loads using procedures derived from *Slab Thickness Design for Industrial Concrete Floors on Grade*, a publication of the Portland Cement Association. The modulus of subgrade reaction was conservatively assumed as 250 pci. The modulus of rupture of concrete was taken as 530 psi.

Results of the numerical analysis imply a factor of safety with respect to flexural fatigue failure of about 1.7 which is the recommended value for moderate-to-heavy traffic. A value of 2.0 would permit unlimited repetitions of the design load.

Based on our observations and analysis we conclude that the slab can be expected to continue to perform satisfactorily as described above.

We appreciate the opportunity to provide our services to you. If you have any questions or require additional assistance, please do not hesitate to call.

Sincerely,
**BODO AND ASSOCIATES, INC.**

Attila A. Bodo, P.E. 10-20-97
President

# Attachment F

## Closure Cost Estimate

## Perma-Fix of Florida, Inc.

Address: 1940 NW 67th Place
Gainesville
FLORIDA
32653

Contact: Kurt Fogleman
352-395-1356

Comments: PCB Storage Area(Zone 8) closure

| Activity | Units | Closure Cost |
|---|---|---|
| Container Storage Area | 1 | $56,412.55 |
| | | **$56,412.55** |
| Additional Costs | | $0.00 |
| Total Estimated Cost | | **$56,412.55** |

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

## Container Storage Areas Summary (CS_02-1)

| | | |
|---|---|---|
| Removal of Waste (CS-03) | $268.92 | |
| Demolition and Removal of Pads (CS-04) | $0.00 | |
| Removal of Process Equipment (CS-05) | $0.00 | |
| Removal of Soil (CS-06) | $0.00 | |
| Backfill and Grading (BF-01) | $0.00 | |
| Decontamination (DC-01) | $3,818.01 | |
| Sampling and Analysis (SA-02) | $1,061.76 | |
| Monitoring Well Installation (MW-01) | $0.00 | |
| Transportation (TR-01) | $3,384.00 | |
| Treatment and Disposal (TD-01) | $30,924.66 | |
| User Defined Cost (UD-01) | $0.00 | |
| Subtotal of Closure Costs | $39,457.35 | |
| Percentage of Engineering Expenses | 10.0 | % |
| Engineering Expenses | $3,945.74 | |
| Certification of Closure (CS-07) | $3,607.37 | |
| Subtotal | $47,010.46 | |
| Percentage of Contingency Allowance | 20.0 | % |
| Contingency Allowance | $9,402.09 | |
| Landfill Closure (Cover Installation) (CI-02) | $0.00 | |
| TOTAL COST OF CLOSURE | $56,412.55 | |

Facility: Perma-Fix of Florida, Inc. Unit: Unit1 07/08/2009

## Container Storage Areas Inventory (CS_01-1)

**MAXIMUM PERMITTED CAPACITY**

| | | |
|---|---|---|
| Volume of liquid waste | 4,125.0 | gal |
| Volume of solid waste | 0.0 | yd3 |
| Percent of loose solid debris | 0.0 | % |
| Percent of drummed solid waste | 0.0 | % |
| Percent of baled waste or other monolithic waste | 0.0 | % |
| Volume of loose solid debris | 0.0 | yd3 |
| Volume of solid waste in drums | 0.0 | yd3 |
| Volume of monolithic waste | 0.0 | yd3 |

**SURFACE AREA OF SECONDARY CONTAINMENT SYSTEM PAD**

| | | |
|---|---|---|
| Length (excluding any curbs or berm) | 36.4 | ft |
| Width (excluding any curbs or berm) | 42.0 | ft |
| Surface Area of Containment System Pad | 1,528.8 | ft2 |
| Surface Area of Containment System Pad in yd2 | 169.9 | yd2 |

**VOLUME OF SECONDARY CONTAINMENT SYSTEM PAD**

| | | |
|---|---|---|
| Thickness | 0.0 | ft |
| Volume of Containment System Pad | 0.0 | ft3 |
| Volume of Containment System Pad in yd3 | 0.0 | yd3 |

**SURFACE AREA OF SECONDARY CONTAINMENT SYSTEM BERM**

| | | |
|---|---|---|
| Inside Perimeter | 156.8 | ft |
| Height | 0.5 | ft |
| Surface Area of Containment System Berm | 78.4 | ft2 |
| Surface Area of Containment System Berm in yd2 | 8.7 | yd2 |

**VOLUME OF SECONDARY CONTAINMENT SYSTEM BERM**

| | | |
|---|---|---|
| Thickness | 0.0 | ft |
| Volume of Containment System Berm | 0.0 | ft3 |
| Volume of Containment System Berm in yd3 | 0.0 | yd3 |

**SURFACE AREA OF OTHER STRUCTURES**

| | | |
|---|---|---|
| Surface Area of Other Structures | 0.0 | ft2 |
| Surface Area of Other Structures in yd2 | 0.0 | yd2 |

**VOLUME OF OTHER STRUCTURES**

| | | |
|---|---|---|
| Volume of Other Structures | 0.0 | yd3 |

**VOLUME OF CONTAMINATED SOIL TO BE REMOVED**

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

| | | |
|---|---|---|
| Length | 0.0 | ft |
| Width | 0.0 | ft |
| Depth | 0.0 | ft |
| Volume of Contaminated Soil to be Removed | 0.0 | ft3 |
| Volume of Contaminated Soil to be Removed in yd3 | 0.0 | yd3 |

**AREA OF SITE TO BE GRADED WITHOUT SOIL REMOVAL**

| | | |
|---|---|---|
| Length | 0.0 | ft |
| Width | 0.0 | ft |
| Area of Site to be Graded Without Soil Removal | 0.0 | ft2 |
| Area of Site to be Graded Without Soil Removal in yd2 | 0.0 | yd2 |

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

## Container Storage Areas Removal of Waste (CS_03-1)

**REMOVAL OF LOOSE SOLID DEBRIS**

| | | |
|---|---|---|
| Volume of loose debris waste | 0.0 | yd3 |
| Choose the appropriate level of PPE | Protection Level D | |
| Labor and equipment cost per yd3 | $1.80 | per yd3 |
| Cost to Remove Loose Solid Debris | $0.00 | |

**REMOVAL OF DRUMMED WASTE**

| | | |
|---|---|---|
| Number of Drums | 75 | Drums |
| Choose the appropriate level of PPE | Protection Level D | |
| Labor and equipment cost per drum | $3.13 | |
| Cost to Remove Waste in Drums | $234.75 | |

**REMOVAL OF SOLID MONOLITHIC WASTE**

| | | |
|---|---|---|
| Number of monolithic forms | 0.0 | Forms |
| Choose the appropriate level of PPE | Protection Level D | |
| Labor and equipment cost per form | $12.49 | per Form |
| Cost to Remove Monolithic Waste | $0.00 | |

**DRY SWEEP STORAGE PROCESS, HANDLING AREA**

| | | |
|---|---|---|
| Surface area to dry sweep | 1,528.8 | ft2 |
| Surface area to dry sweep in thousand square feet (MSF) | 1.5 | MSF |
| Labor and equipment cost per ft2 | $22.78 | per MSF |
| Cost to Dry Sweep Area | $34.17 | |
| TOTAL COST OF WASTE REMOVAL | $268.92 | |

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

## Container Storage Areas Certification of Closure (CS_07-1)

| | | |
|---|---|---|
| Number of units requiring certification of closure | 1 | Units |
| Cost of certification of closure per unit | $3,607.37 | |
| TOTAL COST OF CERTIFICATION OF CLOSURE | $3,607.37 | |

Facility: Perma-Fix of Florida, Inc. Unit: Unit1 07/08/2009

## Decontamination Summary (DC_01-1)

| | |
|---|---|
| Decontamination of Unit by Steam Cleaning or Pressure Washing (DC-02) | $3,750.41 |
| Decontamination of Unit by Sandblasting (DC-03) | $0.00 |
| Decontamination of Heavy Equipment (DC-04) | $67.60 |
| TOTAL COST OF DECONTAMINATION | $3,818.01 |

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

## Decontamination by Steam Cleaning or Pressure Wash (DC_02-1)

| | | |
|---|---|---|
| Area of unit to be decontaminated | 1,607.2 | ft2 |
| Choose the appropriate level of PPE | Protection Level D | |
| Labor and equipment cost per hour | $57.61 | per Work Hour |
| Work rate to steam clean or pressure wash one ft2 | 0.0405 | Work hr per ft2 |
| Number of hours required to steam clean or pressure wash the unit | 65.1 | Work hrs |
| Subtotal of labor and equipment costs to decontaminate unit by steam cleaning or pressure washing | $3,750.41 | |
| Ratio of decontamination fluid to area | 1.0 | gals per ft2 |
| Volume of decontamination fluid generated | 1,607.2 | gal |
| Decontamination fluid container type: | Bulk | |
| Number of drums required to contain decontamination fluid for removal | 0 | Drums |
| Cost of one drum | $73.45 | per Drum |
| Cost of drums needed to contain decontamination fluid | $0.00 | |
| TOTAL COST OF DECONTAMINATION OF UNIT BY STEAM CLEANING OR PRESSURE WASHING | $3,750.41 | |

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

## Decontamination of Heavy Equipment (DC_04-1)

| | | |
|---|---|---|
| Number of hours needed to decontaminate all heavy equipment | 1.0 | Work hrs |
| Cost of steam cleaner rental per hour | $7.64 | per Hour |
| Subtotal of steam cleaner rental costs | $7.64 | |
| Choose the appropriate level of PPE | Protection Level D | |
| Labor and equipment cost per hour | $59.96 | per Work Hour |
| Subtotal of labor costs to decontaminate by steam cleaning | $59.96 | |
| Ratio of decontamination fluid to hour | 100.0 | gals per hr |
| Volume of decontamination fluid generated | 100.0 | gal |
| Decontamination fluid container type: | Bulk | |
| Number of drums required to contain decontamination fluid for removal | 0 | Drums |
| Cost of one drum | $73.45 | per Drum |
| Cost of drums needed to contain decontamination fluid | $0.00 | |
| Cost of construction of temporary decontamination area for heavy equipment. | $0.00 | |
| Cost of demolition of temporary decontamination area for heavy equipment. | $0.00 | |
| TOTAL COST OF DECONTAMINATION OF HEAVY EQUIPMENT | $67.60 | |

**Notes:** Construction of temporary decontamination area(& then its demolition) is not necessary as the forklift decontamination will occur in the PCB container storage area.

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

## Sampling and Analysis Inventory (SA_01-1)

| | | |
|---|---|---|
| Number of Drilling and Subsurface Soil Samples (2.5-inch boring) | 0 | Samples |
| Number of Drilling and Subsurface Soil Samples (4-inch boring) | 0 | Samples |
| Number of Concrete Core Samples | 0 | Samples |
| Number of Wipe Sample Locations | 16 | Sample Location |
| Number of Surface Water and Liquid Sample Locations | 0 | Sample Location |
| Number of Soil, Sludge, and Sediment Soil Samples | 0 | Sample Location |
| Number of Groundwater Sample Locations | 0 | Sample Location |
| Number of Lysimeters to be Sampled | 0 | Lysimeters |

**Notes:** 15 wipe samples from the container storage area floor will be collected( i.e. 10% of all one square meter grid per 40CFR 761.302(a)(1)(ii). 1529ft2= 142 m2. 1 wipe sample from the forklift will be collected.

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

## Sampling and Analysis Summary (SA_02-1)

| | |
|---|---|
| Drilling and Subsurface Soil Sample - 2.5-Inch-Diameter-Holes (SA-03) | $0.00 |
| Drilling and Subsurface Soil Sample - 4-Inch-Diameter-Holes (SA-04) | $0.00 |
| Concrete Core Sample (SA-05) | $0.00 |
| Wipe Sample (SA-06) | $1,061.76 |
| Surface Water and Liquid Sample (SA-07) | $0.00 |
| Soil, Sludge, and Sediment Sample (SA-08) | $0.00 |
| Groundwater Sample (SA-09) | $0.00 |
| Soil-Pore Liquid Sample (SA-10) | $0.00 |
| Analysis of Subsurface Soil Sample (SA-11) | $0.00 |
| TOTAL SAMPLING AND ANALYSIS COST | $1,061.76 |

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

## Wipe Samples (SA_06-1)

| | | |
|---|---|---|
| **COLLECTION OF WIPE SAMPLES** | | |
| Number of sampling locations | 16 | Sample Location |
| Choose the appropriate level of PPE | Protection Level D | |
| Labor and equipment cost per work hour | $76.47 | per Work Hour |
| Work rate required to collect samples from one sampling location | 0.5000 | Work hrs per Sample |
| Number of hours required to collect all samples | 8.0 | Work hrs |
| Cost of Collection per Sampling Event | $611.76 | per Event |
| **ANALYSIS OF WIPE SAMPLE** | | |
| Cost of Analysis per Sampling Event | $450.00 | per Event |
| **SAMPLING EVENTS** | | |
| Number of sampling events | 1 | Events |
| TOTAL COST OF SAMPLING AND ANALYSIS OF WIPE SAMPLES | $1,061.76 | |

Notes: PCB wipe analysis cost @75.00 per sample based on quote from Environmental Conservation Laboratories by EPA Method SW8082.

3 adjacent grid wipe samples collected will be composited for analysis of PCB as provided in 40 CFR 761.312(a). Hence total PCB analysis samples will be 6 (i.e. 5 from storage area and one from the forklift).

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

**Wipe Samples (SA_06)**
**Cost of Analysis per Sampling Event**

| Method | | Standard | Qty | Quick | Qty | Total |
|---|---|---|---|---|---|---|
| Pesticides/PCBs (SW 3550/SW 8080) | Solid | $75.00 | 6 | $316.72 | 0 | $450.00 |

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

## Treatment and Disposal Summary (TD_01-1)

| | |
|---|---|
| Treatment and Disposal of Wastes (TD-02) | $30,150.00 |
| Treatment and Disposal of Decontamination Fluids (TD-03) | $774.66 |
| Total Cost of Treatment and Disposal | $30,924.66 |

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

## Treatment and Disposal of Waste (TD_02-1)

| | | |
|---|---|---|
| **SOLID WASTE TREATMENT AND DISPOSAL** | | |
| Solid Waste Type (Optional: Enter Name) | 0 | |
| Volume in yd3 of solid waste to be treated and disposed of | 0.0 | yd3 |
| Treatment and disposal costs per yd3 | $0.00 | per yd3 |
| Cost to Treat and Dispose of Solid Waste | $0.00 | |
| **LIQUID WASTE TREATMENT AND DISPOSAL** | | |
| Liquid Waste Type (Optional: Enter Name) | 0 | |
| Volume in gallons of liquid waste to be treated and disposed of | 0.0 | gal |
| Treatment and disposal costs per gallon | $0.00 | per Gallon |
| Cost to Treat and Dispose of Liquid Waste | $0.00 | |
| **DRUMMED WASTE TREATMENT AND DISPOSAL** | | |
| Drummed Waste Type (Optional: Enter Name) | 0 | |
| Number of drums to be treated and disposed of | 75 | Drums |
| Treatment and disposal costs per drum | $402.00 | per Drum |
| Cost to Treat and Dispose of Drummed Waste | $30,150.00 | |
| TOTAL COST FOR TREATMENT AND DISPOSAL OF WASTE | $30,150.00 | |

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

## Treatment and Disposal of Decon Fluid (TD_03-1)

| | | |
|---|---|---|
| **Volume of decontamination fluid generated from closure activities** | | |
| Volume of decontamination fluid from Primary Unit | 0.0 | gal |
| Volume of decontamination fluid generated by steam cleaning or pressure washing (DC-02) | 1,607.2 | gal |
| Volume of decontamination fluid from heavy equipment (DC-04) | 100.0 | gal |
| Total Volume of Decontamination Fluid | 1,707.2 | gal |
| Choose the appropriate level of PPE | Protection Level D | |
| Labor and equipment cost per hour | $67.81 | per Work Hour |
| Work rate to pump decontamination fluid to a holding tank | 0.0001 | Work hr per gal |
| Number of hours required to pump decontamination fluid to a holding tank | 0.17072 | Work hrs |
| Subtotal of labor and equipment costs to pump decontamination fluid to a holding tank | $11.58 | |
| Number of days required to rent a holding tank | 1 | Days |
| Holding tank rental fee (10,000 gal tank per day) | $165.56 | per Day |
| Number of tanks required | 1 | Tanks |
| Subtotal of tank rental costs | $165.56 | |
| Cost for treatment and disposal | $0.35 | per Gallon |
| Treatment and disposal costs for bulk liquid | $597.52 | |
| TOTAL COST TO TREATMENT AND DISPOSE OF DECONTAMINATION FLUID AS A BULK LIQUID | $774.66 | |

**Facility:** Perma-Fix of Florida, Inc. **Unit:** Unit1 07/08/2009

## Transportation of Waste (TR_01-1)

| | | |
|---|---|---|
| **TRANSPORTATION OF WASTE IN DRUMS** | | |
| Number of drums of waste | 75 | Drums |
| Number of truckloads needed to transport waste in drums | 1 | Truckloads |
| Type of waste | Hazardous | |
| Number of miles | 300.0 | Mi |
| Cost per mile | $5.64 | per Mile |
| Cost to transport one truckload of 55-gallon drums | $1,692.00 | per Truckload |
| Cost to transport Waste in Drums | $1,692.00 | |
| **TRANSPORTATION OF BULK LIQUID** | | |
| Gallons of liquid waste | 1,707.2 | gal |
| Number of truckloads needed to transport bulk free liquid waste | 1 | Truckloads |
| Type of waste | Hazardous | |
| Number of miles | 300.0 | Mi |
| Cost per mile | $5.64 | per Mile |
| Cost to transport one truckload of bulk liquids | $1,692.00 | per Truckload |
| Cost to Transport Bulk Liquid Wastes | $1,692.00 | |
| **TRANSPORATION OF BULK WASTE** | | |
| Number of waste debris boxes | 0 | Containers |
| Number of truckloads needed to transport bulk waste | 0 | Truckloads |
| Type of waste | Hazardous | |
| Number of miles | 300.0 | Mi |
| Cost per mile | $5.64 | per Mile |
| Cost to transport one truckload of bulk waste | $1,692.00 | per Truckload |
| Cost to Transport Bulk Waste | $0.00 | |
| TOTAL COST OF TRANSPORTATION OF WASTE | $3,384.00 | |