SUBSTANTIAL MODIFICATION DEMONSTRATION

PERMA-FIX OF FLORIDA, INC.
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Prepared for:

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Project #090169

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TABLE OF CONTENTS

TABLES

FIGURES

TABLE OF CONTENTS (continued)

ATTACHMENTS

APPENDICES

1.0 INTRODUCTION

1.1 Purpose

Perma-Fix of Florida, Inc. (PFF) is submitting a permit modification request in December 2009 to modify and to renew the facility's Resource Conservation and Recovery Act (RCRA) permit. Schreiber, Yonley & Associates (SYA) has prepared this Substantial Modification Demonstration (SMD or demonstration) and conducted associated accidental release modeling on behalf of PFF in order to demonstrate that PFF has not proposed a "substantial modification" as defined in 62-730.182 F.A.C. (the 182 regulations) in this RCRA Permit Application submitted to the Florida Department of Environmental Protection (FDEP).

The modeling demonstration pursuant to 62-730.182(5) F.A.C. is provided in Section 2 of this report. Hazardous waste information and facility information pursuant to 62-730.182(6) F.A.C. and 62-730.182(7) F.A.C. are provided in Section 3 of this report.

1.2 Facility Description

PFF operates a commercial hazardous waste storage and treatment facility in Gainesville, Florida. Wastes currently managed on-site include a wide variety of hazardous, mixed, and non-hazardous wastes. 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. Figure 1 shows the location of the Perma-Fix facility.

The activities currently permitted at the existing facility include storage and segregation of wastes for fuel blending, waste bulking and off-site shipment, hazardous/mixed waste container storage, bulk liquid storage, liquid scintillation vial (LSV) processing, treatment of hazardous waste using inorganic fixation/stabilization (PF-I), thermal desorption (PF-II), non-elementary neutralization, deactivation, mercury amalgamation, and miscellaneous physical treatment processes; non-hazardous waste segregation and storage; household waste collection; and miscellaneous waste storage and transfer. Figure 2 shows the facility site plan, including locations for hazardous waste storage and treatment areas for the facility.

2.0 SUBSTANTIAL MODIFICATION DEMONSTRATION

2.1 Background

The proposed permit modifications do not include an increase in the volume of hazardous waste stored at the facility. The application includes a request for authorization to receive, treat, and store additional waste codes. The proposed additional waste codes are provided in Table 1. The proposed waste codes with their regulatory descriptions are provided in Attachment 1. The waste codes with their associated hazardous constituents are provided in Attachment 2.

The purpose of this SMD is to demonstrate that the addition of the proposed new waste codes will not constitute a "substantial modification" by conducting the demonstration described in 62-730.182(5). This demonstration shows that the addition of the proposed new waste codes is not reasonably expected to lead to a substantial increase in the potential impact, or risk of impact, from an instantaneous release at this facility. The demonstration presented in this report will show that a worst-case scenario involving a release from the facility as operated pursuant to the proposed RCRA permit modifications will not have a greater "radius of impact" than the current facility operations, as long as the quantities of certain key waste constituents in a single container do not exceed the quantities predicted by the modeling.

2.2 Substantial Modification Demonstration Process Overview

The SMD was conducted to demonstrate that the potential off-site risk from this facility will not increase as a result of the proposed permit modification. The SMD examines the effect of instantaneous releases of a worst-case release scenario by a toxic liquid or gas and a worst-case scenario of a flammable liquid or gas based on the proposed modifications.

The worst-case scenarios involve the greatest quantity that can be released in an event at the facility which is the maximum quantity present in the largest storage vessel. The container that could possibly hold the largest amount of a flammable or toxic material containing the proposed new waste codes is a B-25 container that has a volume of 718 gallons. New waste codes will not be stored or processed in a vessel larger than 718 gallons. The B-25 container will be used only for solids without free liquids but the B-25 volume will be used in order to provide a conservative assessment. The additional waste codes to be received will generally be in lab pack sizes or will be a constituent in a remediation waste stream consisting of contaminated soil. Hence, the worst-case scenario considered for this SMD is a release of the entire contents of the largest container stored at the site.

In order to compare the risk from the proposed new waste codes to the risk from the existing operations, the radius of impact from this modeling will be compared to the maximum radius of impact from previous permit applications. The August 1999 Offsite Consequence Analysis (OCA) report prepared by Jones, Edmonds and Associates, Inc. and filed with the FDEP in support of the 1999 application provides the maximum value for radius of impact or "distance to endpoints." These distances are 1,164 yards (3,492 feet) for toxic liquids and gases and 187 yards (561 feet) for flammable liquids and gases.

After the worst-case release scenario was identified, models were selected to characterize the effects of a worst-case scenario release. The ALOHA (Areal Locations of Hazardous Atmospheres) and ARCHIE (Automated Resource for Chemical Hazard Incident Evaluations) models were used in the 1999 baseline OCA. Therefore, the same models were selected for use in the current SMD analysis. The ALOHA model is a dispersion model used to predict how a hazardous cloud might disperse in the atmosphere after an accidental liquid or gaseous chemical release. Since ALOHA does not have the capability of predicting effects of fires or explosions, ARCHIE is used for assessing fire and explosion impacts related to discharges of liquid or gaseous hazardous chemicals.

Neither model can be used for solid materials. Both models calculate the distance to an endpoint (radius of impact) for a chemical constituent for the worst-case scenario. The earlier modeling was conducted in accordance with the USEPA Risk Management Program OCA requirements of 40 CFR 68. Appendix A of the OCA Guidance manual lists both the ALOHA and ARCHIE models as public domain models that are acceptable for use in OCAs.

The modeling parameters were set up in accordance with the requirements of 62-730.182(5). For toxic constituents that are normally liquids at ambient temperature, the operator may assume that the material is spilled instantaneously to form a liquid pool. Hazardous wastes are stored at one of three locations at the Perma-Fix facility. All have sufficient secondary containment which serves as a form of "passive mitigation" to contain a spill and limit the surface area. The largest area, 4,960 square feet, of the LSV building was used for toxic liquids to provide the most conservative result.

The regulations also state "The volatilization rate shall account for the highest daily maximum temperature in the past three years and the temperature of the substance in the vessel." The maximum temperature of 98° F was obtained for Gainesville Airport from May 2006 through November 10, 2009. This time period exceeds the 3 year requirement. The rate of release is calculated by the ALOHA software using this temperature. The average humidity for the previous three years is also required for modeling. The average relative humidity for Gainesville was calculated to be 71 %. See Attachments 3 and 4, respectively, for the individually monthly data. The ALOHA model accounts for gas density.

The following conditions were used:

- Wind speed of 1.5 meters per second (m/s);
- Stability class F (most stable);
- Cloud cover of 50%;
- Ground roughness urban or forest (this is equivalent to urban topography),
- No inversion height, and
- Ground level (0 feet) release.

For flammable liquids, ARCHIE was configured to utilize a yield factor of 10 % of the available energy released in the potential explosion. An overpressure of one pound per square inch (psi) was used as an end point for a vapor cloud explosion. The ARCHIE software utilizes descriptions of "expected damage" to show various levels of overpressure. A description of "Partial demolition of homes; made uninhabitable" is the description consistent with a 1 psi overpressure.

The only "passive mitigation" utilized in the modeling is the secondary containment described in this section.

2.3 Selection of Constituents for Modeling

The proposed new waste codes are provided in Table 1. The proposed waste codes with their regulatory descriptions are provided in Attachment 1.

TABLE 1
PROPOSED WASTE CODES

F010	F020	F026	F034	K001	K051	K086	K159	K171
F011	F021	F027	F035	K048	K052	K156	K161	K172
F012	F022	F028	F037	K049	K061	K157	K169	U395
F019	F023	F032	F038	K050	K062	K158	K170	

The hazardous constituents of the proposed waste codes were obtained from Appendix VII of 40 CFR 261 "Basis for Listing Hazardous Waste." In order to provide a conservative assessment, additional constituents relating to these waste codes were obtained from the "Treatment Standards For Hazardous Wastes" table in 40 CFR 268.40. The constituents include several toxic liquids and gases and several flammable liquids and gases. None of these constituents are gases typically handled as refrigerated liquids and none are known to be shock-sensitive. The waste codes with their associated hazardous constituents are provided in Attachment 2.

The waste codes that currently can be stored and treated at the facility per the existing permit contain some of the same hazardous constituents as the proposed waste codes in Table 1. As these constituents can already be accepted at the PFF facility, there is no need for them to be modeled in order to compare the "existing facility" to the "proposed facility." Attachment 5 provides a list of the constituents that are not considered for modeling and the currently permitted waste code. The currently permitted waste codes are listed in Attachment 8.

With many proposed new waste codes and associated hazardous constituents, a method is needed to select the chemicals with the greatest potential to harm the public in the event of a release. The substance chosen for the worst-case scenario of the consequence analysis was the substance that has the potential to cause the greatest off-site consequences. The following sections describe the methodology used to select constituents for toxics and flammable modeling.

2.3.1 Selection of Constituents for Toxics Modeling (ALOHA)

Inhalation criteria ("toxic endpoints" or "endpoints,") must be identified prior to toxics modeling. The toxic endpoints were obtained from the "Technical Report for the Substantial Modification Rule for 62-730, F.A.C" (technical report), if the constituent was listed in that report.

Butyl benzyl phthalate, CAS # 85-68-7 could not be found in the technical report. For this constituent, the endpoint was obtained from a DOE online database, "Protective Action Criteria (PAC) for Chemicals – Including AEGLs, ERPGs, & Teels." This database, dated August 16, 2009, uses the same hierarchy recommended in the technical report.

Solid constituents were eliminated from consideration as candidates for modeling for a number of reasons. Solids are not expected to be present in the off-gas from an incident. The risk to the public is also expected to be less from an accident scenario involving solid material. None of the solid constituents were identified as shock-sensitive materials. The only toxic materials the 182 regulations consider are liquids, gases and gases handled as refrigerated liquids at ambient pressure. Also, the ALOHA modeling software will only work with liquids and gases. The constituents not selected for ALOHA modeling are provided in Attachment 6. The constituents that were modeled using ALOHA are provided in Table 2 with their respective endpoints.

TABLE 2
CONSTITUENTS SELECTED FOR ALOHA MODELING

Constituent	Waste Code	Endpoint (mg/m^3 except as noted)
ACETONE	K086	7,600
ACETONITRILE	K156	537
ANILINE	K156	45.7
BUTYL BENZYL PHTHALATE	K086	500*
CARBON DISULFIDE (CARBON BISULFIDE)	K049	498
CARBON TETRACHLORIDE	K157	1,190
CHLOROBENZENE (BENZENE CHLORIDE)	K156	3,500
CHLOROFORM	K156	312
CYCLOHEXANONE	K086	200
ETHYL ACETATE	K086	1,500
ETHYL BENZENE	K048	* 500
METHANOL	K086	2,750
METHYL ETHYL KETONE (2-butanone, ethyl methyl keytone)	K086	7,960
METHYL ISOBUTYL KETONE (HEXONE)	K086	2,000
METHYLENE CHLORIDE	K086	1,940
N-BUTYL ALCOHOL	K086	150
NITROBENZENE	K086	100
O-CHLOROPHENOL (2-CHLOROPHENOL)	K001	40
O-DICHLOROBENZENE (1,2-DICHLOROBENZENE)	K086	300
PYRIDINE	K156	600
1,1,1-TRICHLOROETHANE, (METHYL CHLOROFORM)	K086	3,270
TRICHLOROETHYLENE	K086	2,420

* Note: this endpoint was obtained from DOE database.

2.3.2 Selection of Constituents for Flammable Modeling(ARCHIE)

The initial criteria for selection of constituents for ARCHIE were flammability and volatility. Solids were omitted from ARCHIE modeling. The ARCHIE program requires that the user supply the lower heat of combustion for the constituent being modeled. The sources of this property were the RMP Offsite Consequence Analysis Guidebook, the CRC Handbook of Chemistry and Physics, 71st Edition, 1990-91, and available online chemical property data. If a heat of combustion value was available, flammable liquids were used for ARCHIE modeling.

Table 3 lists the constituents that were selected for ARCHIE modeling, along with their waste codes and heat of combustion values. Attachment 6 lists the constituents and waste codes for which ARCHIE modeling was not performed because they had been identified as solid materials.

TABLE 3

CONSTITUENTS SELECTED FOR ARCHIE MODELING

Constituent	Waste Code	Lower Heat of Combustion (Btu/lb)
ACETONE	K086	13,253
ACETONITRILE	K156	32,538
CARBON DISULFIDE	K049	6,271
CHLOROBENZENE	K156	11,874
CYCLOHEXANONE	K086	15,258
ETHYL ACETATE	K086	11,165
ETHYL BENZENE	F037	17,600
METHANOL	K086	9,714
METHYL ETHYL KETONE	K086	14,537
METHYL ISOBUTYL KETONE	K086	15,552
N-BUTYL ALCOHOL	K086	15,503
PYRIDINE	K156	14,229

2.4 Worst-Case Scenario and Modeling Results

The worst-case toxic release is the largest quantity of a regulated substance from a single container that results in the greatest distance from the point of release to a specified toxic endpoint. In the container storage area, the largest single container can hold 718 gallons (i.e., B-25 container), which primarily will contain contaminated soil with some organic contamination. This is an unlikely scenario as PFF has never received such quantities of pure chemical.

2.4.1 ALOHA Model Results

Table 5 lists the constituents considered in the worst-case toxics analysis as well as the predicted distance to the endpoint for each chemical. Table 4 provides data for the baseline scenario (e.g., the "existing facility) and Table 5 provides similar data for the proposed facility operations. The data in Table 4 was obtained from previous reports submitted to the FDEP. The hazardous constituents associated with the new waste codes were modeled using ALOHA Version 5.3.1. Solid constituents were not modeled.

The predicted distances to the endpoints for the proposed operations were compared to the baseline distances. The baseline worst-case toxic release scenario is the instantaneous release of 7,075 pounds of ethanol from the 3,000-gallon storage tank. The distance to the toxic endpoint for this scenario is 1,164

yards, as shown in Table 4. In the event the distance to the endpoint for a proposed constituent exceeded 1,164 yards, the model was re-run with a smaller amount of material released, and a new distance was calculated. The process was repeated until the distance was less than or equal to 1,164 yards. Table 5 provides the maximum quantity of the amount present in a single container that will result in a distance to the endpoint to be 1,164 yards or less. The ALOHA modeling output printouts are provided in Appendix A.

TABLE 4
EXISTING FACILITY WORST-CASE RELEASE SCENARIO
ALOHA MODELING RESULTS

Constituent	Source	Amount Released (lbs)	Maximum Distance (yds)
Ethanol	3,000-gallon tank	7,075	1,164

TABLE 5
PROPOSED FACILITY WORST-CASE TOXIC RELEASE SCENARIOS
ALOHA MODELING SUMMARY

Constituent	Waste Code	Amount Released (lbs)	Distance to Endpoint (yds)	Endpoint (mg/m^3 except as noted)
ACETONE	K086	10,000	103	7,600
ACETONITRILE	K156	10,000	256	537
ANILINE	K156	10,000	65	45.7
BUTYL BENZYL PHTHALATE	K086	2,750	1,161	500
CARBON DISULFIDE (CARBON BISULFIDE)	K049	7,000	628	498
CARBON TETRACHLORIDE	K157	10,000	281	1,190
CHLOROBENZENE (BENZENE CHLORIDE)	K156	10,000	38	3,500
CHLOROFORM	K156	10,000	735	312
CYCLOHEXANONE	K086	10,000	79	200
ETHYL ACETATE	K086	10,000	181	1,500
ETHYL BENZENE	K048	10,000	121	500
METHANOL	K086	10,000	96	2,750
METHYL ETHYL KETONE (2-butanone, ethyl methyl keytone)	K086	5,000	61	7,960
METHYL ISOBUTYL KETONE (HEXONE)	K086	10,000	71	2,000
METHYLENE CHLORIDE	K086	10,000	315	1,940
N-BUTYL ALCOHOL	K086	10,000	155	150
NITROBENZENE	K086	10,000	30	100
O-CHLOROPHENOL (2-CHLOROPHENOL)	K001	10,000	278	40
O-DICHLOROBENZENE (1,2-DICHLOROBENZENE)	K086	10,000	40	300
PYRIDINE	K156	10,000	144	600
1,1,1-TRICHLOROETHANE, (METHYL CHLOROFORM)	K086	10,000	156	3,270
TRICHLOROETHYLENE	K086	10,000	140	2,420

2.4.2 ARCHIE Model Results

The 182 regulations require that the operator shall assume that the entire quantity of flammable substance in the container is spilled instantaneously to form a liquid pool. The size of secondary containment may be used to determine the size of the pool. The model should simulate a vapor cloud explosion using a yield factor of 10 % of the available energy released in the explosion based on the TNT equivalent. For liquids at temperatures below their atmospheric boiling point, the volatilization rate may be calculated at the maximum temperatures for the location as discussed earlier.

For flammable substances that are normally liquids at ambient temperature, the worst-case scenario is a vapor cloud explosion resulting in the greatest distance to

an overpressure endpoint of one psi. Option I of ARCHIE evaluates vapor cloud explosions.

The operator may further assume that the quantity of liquid that vaporizes in the first ten minutes is involved in the vapor cloud explosion. In order to save calculation time and provide a conservative assessment, SYA did not calculate the amount of liquid that would vaporize in ten minutes. The ARCHIE model was used to estimate the effect of an explosion of a vapor cloud with the entire mass of the organic compound present in the waste container. Waste material carrying the proposed new waste codes will not be stored in tanks or containers larger than 718 gallons. The maximum weight of a liquid constituent that a 718-gallon container could hold was calculated and this amount was used as the starting point for the amount released in the ARCHIE (Version 1.0) model.

The ARCHIE program assumes that 1,000 pounds or more of a flammable substance is present. The user will be warned if (s)he attempts to model an amount less than 1,000 pounds since the probability of a completely unconfined vapor cloud explosion (based on historical data) is very low in such cases.

The ARCHIE model provides a table that lists distances from the explosion center and associated degrees of injury and damage to people and property. Table 6 relates these effects to peak overpressure (psia). Tables 7 and 8 list the distances to endpoints for the chemicals considered for the worst-case flammable event and the distance to the endpoint, representing the peak overpressure of 1 psia. The ARCHIE modeling input files are included on the disk with the electronic version of the permit application.

To determine if the proposed permit modification represents a significant modification, the predicted distances to the endpoints were compared to the baseline distances to the endpoint. The worst-case baseline flammable scenario is an explosion of 11,497 pounds of the ethanol, toluene, and xylene mixture (ETX) in the 3,000-gallon storage tank. The predicted distance to the endpoint in that scenario is 187 yards, or 561 feet. All predicted distances for the proposed facility are less than 561 feet, provided the facility does not store in a single container amounts greater than those listed in the column titled "Amount Released" in Table 8.

TABLE 6

EXAMPLE OUTPUT FROM EXPLOSION MODELS

Peak Overpressure (psia)	Expected Damage
0.03	Occasional breakage of large windows under stress
0.30	Some damage to home ceilings; 10% window breakage
1.00 – 0.50	Windows usually shattered; some frame damage
1.00	**Partial demolition of homes; made uninhabitable**
8.00 – 1.00	Range serious/slight injuries from flying glass/objects
2.00	Partial collapse of home walls/roofs
3.00 – 2.00	Non-reinforced concrete/cinder block walls shattered
12.2 – 2.40	Range 90-1% eardrum rupture among exposed population
2.50	50% destruction of home brickwork
4.00 – 3.00	Frameless steel panel buildings ruined
5.00	Wooden utility poles snapped
7.00 – 5.00	Nearly complete destruction of houses
10.0	Probable total building destruction
29.0 – 14.5	Range for 99-1% fatalities among exposed populations due to direct blast effects

TABLE 7

EXISTING FACILITY WORST-CASE FLAMMABLE RELEASE SCENARIO ARCHIE MODELING RESULTS

Chemical	Amount Released (lbs)	Lower Heat of Combustion (Btu/lb)	Yield Factor	Distance to Endpoint (feet)
ETX	11,497	14,161	0.03	561

TABLE 8

PROPOSED FACILITY WORST-CASE FLAMMABLE RELEASE SCENARIOS
ARCHIE MODELING SUMMARY

Constituent	Waste Code	Amount Released (lbs)	Lower Heat of Combustion (Btu/lb)	Yield Factor	Distance to Endpoint (feet)
ACETONE	K086	3,600	13,253	0.1	557
ACETONITRILE	K156	1,475	32,538	0.1	559
CARBON DISULFIDE	K049	7,569	6,271	0.1	557
CHLOROBENZENE	K156	4,000	11,874	0.1	557
CYCLOHEXANONE	K086	3,175	15,258	0.1	560
ETHYL ACETATE	K086	4,300	11,165	0.1	559
ETHYL BENZENE	F037	2,750	17,600	0.1	560
METHANOL	K086	4,861	9,714	0.1	556
METHYL ETHYL KETONE	K086	3,300	14,537	0.1	558
METHYL ISOBUTYL KETONE	K086	3,100	15,552	0.1	559
N-BUTYL ALCOHOL	K086	3,125	15,503	0.1	560
PYRIDINE	K156	3,375	14,229	0.1	559

3.0 HAZARDOUS WASTE AND FACILITY INFORMATION

The facility currently manages on-site a wide variety of hazardous, mixed, and non-hazardous wastes. 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. Mixed waste may contain both hazardous constituents and radioactive materials regulated by the Nuclear Regulatory Commission.

3.1 Hazardous Waste Characteristics and Volumes

The facility is currently permitted to accept over 420 waste codes which cover a wide range of possible chemical constituents. These waste codes are listed in Attachment 7. The 35 proposed waste codes include wastes from the wood preservation, ink formulation, iron and steel, organic chemical and petroleum refining industries as well as wastes from non-specific sources. The currently permitted and proposed wastes are considered reactive, toxic and acute hazardous wastes. As discussed in more detail below, the facility already accepts reactive, toxic and acute hazardous wastes and has years of experience in safely handling these materials. The wastes that are received are generally either lab pack sizes or large containers of remediation waste consisting of contaminated soil which would be solids without free liquids. Many of the wastes carry "pass-through" waste codes from a conservative generator and contain little or none of the associated hazardous constituents. Any wastes that would be received carrying the new waste codes are not expected to contain significant quantities of free liquids.

The facility is permitted to store up to 161,370 gallons of hazardous waste in containers in one of three permitted storage areas. These areas are known as the Treatment and Operations Building (TOB), the Processing and Storage Building (PSB) and the Storage Warehouse. Wastes carrying the proposed waste codes could be stored in any of these storage areas.

3.2 Facility Information

The following information provides qualitative risk mitigation factors. Since 1998 (the effective year of Florida Statute 403.7211), PFF has improved its management practices, facility design and operations, and installed equipment upgrades which mitigate the potential risk to human health and the environment.

Perma-Fix of Florida Quality Assurance (QA) Plan

PFF's QA Program has been developed to meet the intent of the basic requirements of The American Society of Mechanical Engineers (ASME) NQA-1, "Quality Assurance Program Requirements for Nuclear Facilities." The QA Program and its implementing procedures provide the controls and identify the responsible positions to assure that the operations of the PFF facility are in compliance with applicable permits and licenses governing the receipt, handling, processing, and monitoring of hazardous and non-hazardous, low-level radioactive, and mixed wastes. The objective of the QA Program is to consistently and reliably treat and process waste in a prescribed way to ensure the safety of the public, PFF employees, and the environment. Highlights of the QA Plan are summarized below:

- Management Responsibilities
- Personnel Qualifications
- Management Assessments
- Design Controls
- Procurement Document Control
- Instructions, Procedures and Drawing Management
- Document Control
- Control of Purchased Material, Equipment and Services
- Identification and Control of Waste and Process Related Consumables
- Control of Processes
- Inspections
- Test Controls
- Control of Measuring and Test Equipment (M&TE)
- Handling, Storage and Shipment
- Inspection, Test and Operating Status
- Control of Non-Conforming Waste and Items
- Corrective Action
- Quality Assurance Records
- Audits and Surveillance
    - Employee and Customer Feedback

Facility Information

The following describes facility equipment, operations, and upgrades.

- Interior emergency egress lighting meets the NFPA 101 code.

- The loading/unloading and transporter vehicle parking areas are provided with sufficient exterior lighting. However, these areas are operated only during daylight hours.

- The receiving dock at the TOB is provided with a secondary containment system with a containment capacity exceeding the volume of the largest container or 10% of the total volume of maximum number of containers managed, plus capacity to contain precipitation from a 25-year/24-hour storm event.

- The tank for the storage of hazardous waste liquid storage and its ancillary equipment is provided with secondary containment. The piping between the tank and the LSV processing area is contained in a sealed concrete pipe valley. The pipe valley is overlaid with a steel grid making the piping available for inspection by facility personnel.

- Transportation vehicles in which hazardous waste is stored and incidental to transportation at the facility are parked on a concrete or asphalt surface.

- Storage and treatment areas as well as loading/unloading areas meet the security requirements of 40 CFR 264.14.

- The facility's fire/smoke alarm system is designed to automatically transmit a signal to the City of Gainesville fire department and the local emergency response agency without delay if fire/smoke is detected.

- Hazardous waste management areas are constructed of concrete floors, to which a sealer/hardener is applied to make the concrete surface impermeable to wastes managed.

- All hazardous waste storage and treatment operations are conducted inside three buildings. The structural elements in these three buildings are made of incombustible materials.

- The firewall in the TOB exceeds two-hour rating. The firewall around the LSV Storage Warehouse exceeds a four-hour rating.

- An automatic fire sprinkler/suppression system is provided at the hazardous waste management areas.

Operating Practices

The following operating practices are conducted at PFF:

- Intrinsically safe processing equipment is utilized in the TOB, PSB, and the LSV Building. In addition, spark-proof hand tools are used near flammable storage/treatment areas.

- The facility's automatic fire suppression system is augmented by providing dry chemical and CO_2 fire extinguishers.

Facility Upgrades and Operational Enhancements

The following details several facility upgrades.

- Construction of and enhancement to the facility's fire-suppression system. The fire-suppression system is supported by a diesel fire pump that feeds an array of wet and dry pipe systems and can distribute an AFFF foam/water mixture in the facility's waste storage and processing areas. The system is monitored 24 hours a day and also has backup power to maintain all functionality in the event of AC power failure, in accordance with local and NFPA guidelines.

- Construction of a firewall separating the laboratory and administrative areas from the treatment area in the Treatment and Operations Building (TOB).

- Construction of a four-hour firewall separating the administrative areas from the Storage Warehouse area.

- Installation of an opacity meter at the Regenerative Thermal Oxidizer (RTO) stack and several radiation air monitors inside the TOB and LSV Building and at the RTO stack as additional protective measures.

- Multiple procedural additions and training to support more advanced operations to include a continuously revised and improved upon comprehensive RCRA Facility Inspection Plan. In addition, facility inspections (e.g., operational work orders) are executed through a computer management software system that schedules, notifies, and documents activities in support of PFF's commitment to the conditions of its licenses and permits.

- Adaptation to and agreement of strict and challenging government commercial contracts, which require annual comprehensive facility audits, and demand strict waste tracking and reporting requirements.

- PFF's staff ratio of approximately one (1) administrative person to one (1) processor in 2000 was increased to four (4) administrative positions to one (1) processor. Administrative positions include such personnel as safety staff, supervisors, managers and the like.

- Various departments (i.e. transportation, waste acceptance, radiation safety) have a separate reporting structure from processing operations to maintain unbiased mission focus and support accountability.

- A Transportation Safety Plan was implemented as required post-9/11.

- All incoming waste profiles are reviewed by the General Manager, Radiation Safety Officer (RSO), EHS/Compliance Manager, and the Operations Managers, and a path-forward is determined (cradle-to-grave) prior to waste profile approval.

- A floor level safety support staff (typically referred to as health physicists or HPs) was deployed to monitor operations in real-time and have a separate reporting structure than processing staff. The safety support staff report to the RSO and indirectly to the EHS/Compliance Manager. PFF safety staff have the authority to stop or shut down any operation deemed unsafe or that poses a potential threat to human heath and the environment. Processing can restart only after approval is obtained from an Operations Manager and one member of the site safety/compliance staff (i.e. EHS Manager, RSO, or QA Manager).

Maintenance Department

- Staff and equipment to support maintenance at the facility has increased.

Chemical Laboratory Upgrades

- Increased the number of analytical staff personnel.
- Increased the number of R&D/Process Support staff.
- Two additional GC/MS instruments with auto samplers for analysis of volatile and semi-volatile organic compounds.
- New ICP/AES (inductively coupled plasma/atomic emission spectrometry) instrument for analysis of metals.
- Added cold vapor atomic absorption (CVAA) with auto prep station for analysis of mercury.
- Added new flash point testers.
- Added ion selective electrode for analysis of chloride in the reactor feed to prevent equipment corrosion.
- Upgraded analytical instrument control software to minimize potential human error in analytical calculations.
- Expanded the radiological controlled areas within the chemistry lab to support increased mixed waste analytical work load by adding radiation air monitors in the laboratory.
- Updated analytical procedures to incorporate current QC requirements.

- Used 3rd-party, state-certified lab to confirm compliant status of treated waste prior to off-site shipment for land disposal.

Radiological Laboratory Upgrades

- Added radiological survey and counting equipment to support treatment capabilities.
- Increased site inspection criteria in support of radiological heath & safety.
- Increased number of air-monitoring stations.

Other Mitigating Factors

- The proposed new listed waste codes may also have the characteristics of ignitability (D001), corrosivity (D002), reactivity (D003), or toxicity (D004 through D043). The facility is currently permitted to receive all characteristic hazardous wastes (i.e. D001 through D043), and has been sucessfully handling these characteristic hazardous wastes for several years.

- The nearest residential area is in the north-northeast direction from the facility. Per the wind rose included in the RCRA renewal application, wind from the south-southeast direction occurred less than 4% of the time for the years 1988 through 1992.

- No reportable release has occurred at the facility since hazardous waste operations began in 1983.

- Residential areas near the facility are served by at least one arterial road or urban minor arterial road, which provides safe and direct egress by land in case of emergency.

4.0 CONCLUSION

The current facility worst-case toxic release scenario is the instantaneous release of 7,075 pounds of ethanol from the 3,000-gallon storage tank. ALOHA modeling predicted a distance to the toxic endpoint of 1,164 yards. The constituents in Table 5 representing the proposed facility were modeled using ALOHA. None of the predicted distances for the constituents in Table 5 exceeded the endpoint of 1,164 yards for the quantities listed in Table 5.

The baseline worst-case flammable scenario is an explosion of 11,497 pounds of the ETX mixture in the 3,000-gallon storage tank. The predicted distance to the endpoint in that scenario is 187 yards or 561 feet. This is greater than the worst-case scenario associated with proposed operations as shown in Table 8. Therefore, this scenario demonstrates that the off-site impact of the proposed changes due to flammable materials does not result in a substantial modification.

For containers holding the proposed new waste codes, PFF will limit the maximum amount of associated toxic liquid chemicals listed in Table 5 in a single container to the quantity in the

"amount released" column in that table. PFF also will limit the maximum amount of associated flammable liquid chemicals listed in Table 8 in a single container to the quantity in the "amount released" column in that table. In the event the same chemical is listed in both Table 5 and Table 8, the maximum amount stored in a single container will be the smaller of the two values. For example, the waste code K086, acetone, has a toxic limit of 10,000 pounds in Table 5 and a flammable limit of 3,600 pounds in Table 8. In this case, the smaller limit of 3,600 pounds will apply. PFF already has a procedure in place to track hazardous constituents in incoming waste shipments. Upon approval of the proposed waste codes, PFF will revise this procedure to include the new waste codes.

A comparison of the 1999 baseline OCA results (and the 2006 OCA rusults) with the SMD results addressing the proposed operations indicates that the modification does not constitute a "substantial modification" under 62-730.182 F.A.C., as long as the facility does not store in a single container the amount greater than that represented in the column titled "Amount Released" in Table 5 or Table 8.

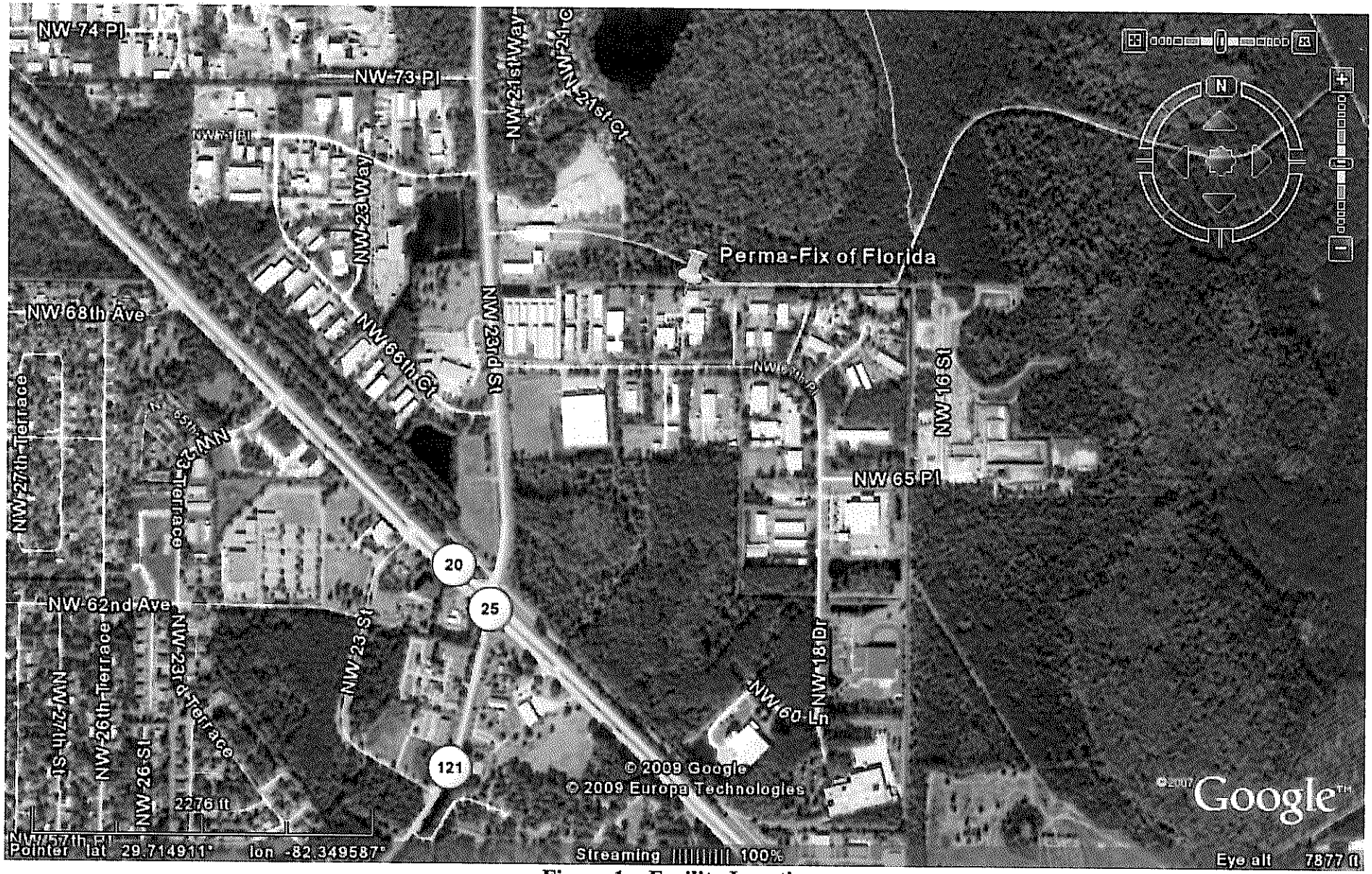
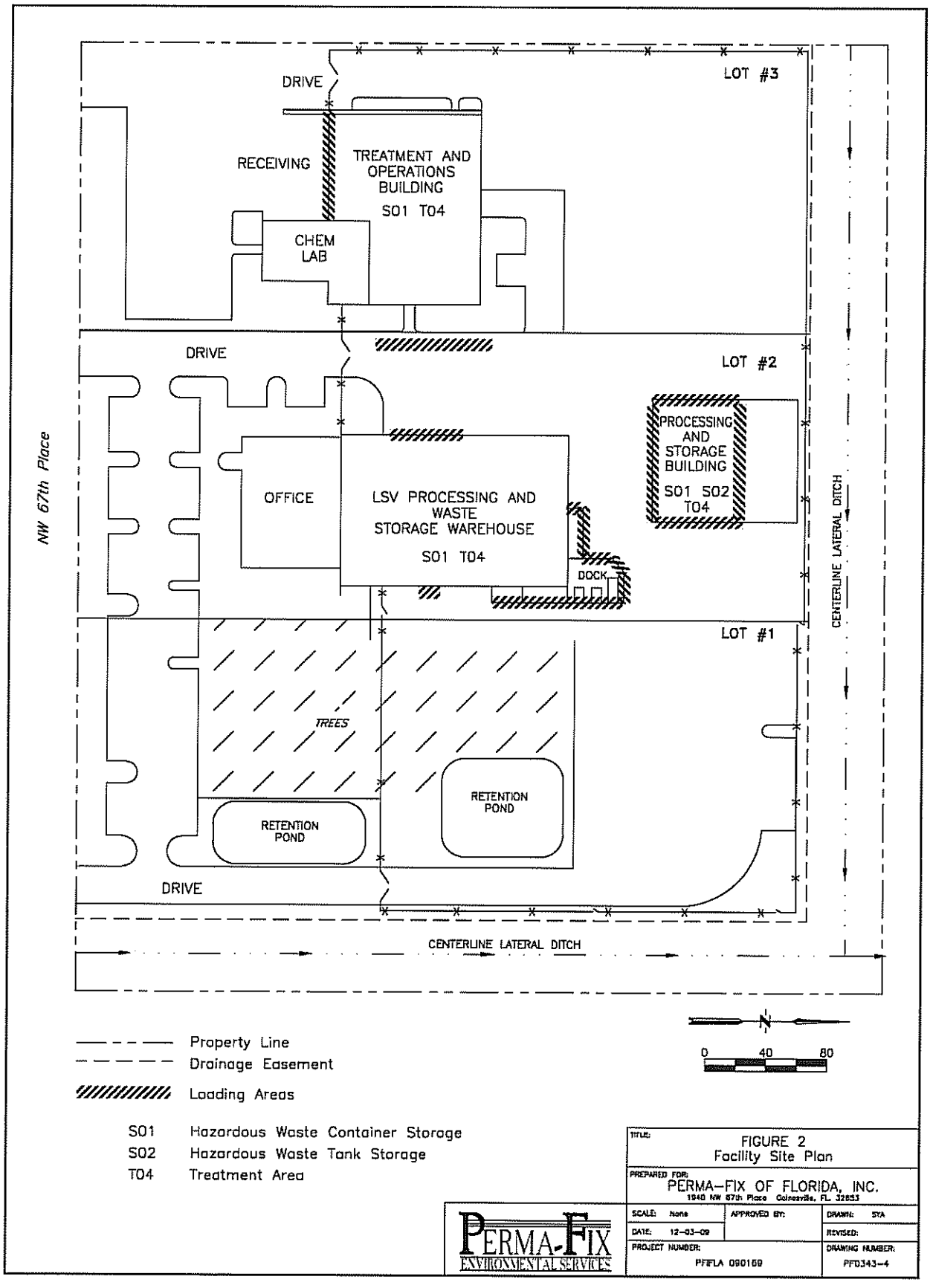


Figure 1 – Facility Location


DRIVE
LOT #3
RECEIVING
TREATMENT AND OPERATIONS BUILDING
S01 T04
CHEM LAB
DRIVE
LOT #2
NW 67th Place
PROCESSING AND STORAGE BUILDING
S01 S02 T04
OFFICE
LSV PROCESSING AND WASTE STORAGE WAREHOUSE
S01 T04
DOCK
CENTERLINE LATERAL DITCH
LOT #1
TREES
RETENTION POND
RETENTION POND
DRIVE
CENTERLINE LATERAL DITCH
Property Line
Drainage Easement
Loading Areas
S01 Hazardous Waste Container Storage
S02 Hazardous Waste Tank Storage
T04 Treatment Area
0 40 80
TITLE: FIGURE 2 Facility Site Plan
PREPARED FOR: PERMA-FIX OF FLORIDA, INC.
1940 NW 67th Place Gainesville, FL 32653
SCALE: None
APPROVED BY:
DRAWN: SYA
DATE: 12-03-09
REVISED:
PROJECT NUMBER: PFIFLA 090169
DRAWING NUMBER: PFD343-4
PERMA-FIX ENVIRONMENTAL SERVICES

ATTACHMENT 1

PROPOSED WASTE CODES AND DESCRIPTIONS

Waste Code	Description
	F-Codes
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process. Wastewater treatment sludges from the manufacturing of motor vehicles using a zinc phosphating process will not be subject to this listing at the point of generation if the wastes are not placed outside on the land prior to shipment to a landfill for disposal and are either: disposed in a Subtitle D municipal or industrial landfill unit that is equipped with a single clay liner and is permitted, licensed or otherwise authorized by the state; or disposed in a landfill unit subject to, or otherwise meeting, the landfill requirements in §258.40, §264.301 or §265.301. For the purposes of this listing, motor vehicle manufacturing is defined in paragraph (b)(4)(i) of this section and (b)(4)(ii) of this section describes the recordkeeping requirements for motor vehicle manufacturing facilities.
F020	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol.)
F021	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives
F022	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions
F023	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of Hexachlorophene from highly purified 2,4,5-trichlorophenol.)
F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions

Waste Code	Description
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing Hexachlorophene sythesized from prepurified 2,4,5-trichlorophenol as the sole component.)
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027
F032	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with §261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol
F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.
F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.
F037	Petroleum refinery primary oil/water/solids separation sludge-Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oil cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under §261.4(a)(12)(i), if those residuals are to be disposed of.

Waste Code	Description
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge-Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing.
K-Codes	
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol
K048	Dissolved air flotation (DAF) float from the petroleum refining industry
K049	Slop oil emulsion solids from the petroleum refining industry
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry
K051	API separator sludge from the petroleum refining industry
K052	Tank bottoms (leaded) from the petroleum refining industry
K061	Emission control dust/sludge from the primary production of steel in electric furnaces
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332)
K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)
K159	Organics from the treatment of thiocarbamate wastes
K161	Purification solids (including filtration, evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.)
K169	Crude oil storage tank sediment from petroleum refining operations
K170	Clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations

Waste Code	Description
K171	Spent Hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media)
K172	Spent Hydrorefining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media)
U395	Diethylene glycol, dicarbamate; Ethanol, 2,2'-oxybis-, dicarbamate

ATTACHMENT 2

HAZARDOUS WASTE CONSTITUENTS OF PROPOSED WASTE CODES

ATTACHMENT 2
HAZARDOUS WASTE CONSTITUENTS OF PROPOSED WASTE CODES

CODE	CONSTITUENT
F010	CYANIDE
F011	CADMIUM, LEAD, NICKEL, SILVER
F011	CYANIDE
F012	CADMIUM, LEAD, NICKEL, SILVER
F012	CYANIDE
F019	CHROMIUM
F019	CYANIDE
F020	TETRA- AND PENTACHLORODIBENZO- *P* -DIOXINS; TETRA AND PENTACHLORODI-BENZOFURANS; TRI- AND TETRACHLOROPHENOLS AND THEIR CHLOROPHENOXY DERIVATIVE ACIDS, ESTERS, ETHERS, AMINE AND OTHER SALTS.
F021	PENTA- AND HEXACHLORODIBENZO- *P*- DIOXINS; PENTA- AND HEXACHLORODIBENZOFURANS; PENTACHLOROPHENOL AND ITS DERIVATIVES.
F022	TETRA-, PENTA-, AND HEXACHLORODIBENZO- *P* -DIOXINS; TETRA-, PENTA-, AND HEXACHLORODIBENZOFURANS.
F023	TETRA-, AND PENTACHLORODIBENZO- *P* -DIOXINS; TETRA- AND PENTACHLORODIBENZOFURANS; TRI- AND TETRACHLOROPHENOLS AND THEIR CHLOROPHENOXY DERIVATIVE ACIDS, ESTERS, ETHERS, AMINE AND OTHER SALTS.
F026	TETRA-, PENTA-, AND HEXACHLORODIBENZO- *P* -DIOXINS; TETRA-, PENTA-, AND HEXACHLORODIBENZOFURANS.
F027	TETRA-, PENTA-, AND HEXACHLORODIBENZO- *P*- DIOXINS; TETRA-, PENTA-, AND HEXACHLORODIBENZOFURANS; TRI-, TETRA-, AND PENTACHLOROPHENOLS AND THEIR CHLOROPHENOXY DERIVATIVE ACIDS, ESTERS, ETHERS, AMINE AND OTHER SALTS.
F028	TETRA-, PENTA-, AND HEXACHLORODIBENZO- *P*- DIOXINS; TETRA-, PENTA-, AND HEXACHLORODIBENZOFURANS; TRI-, TETRA-, AND PENTACHLOROPHENOLS AND THEIR CHLOROPHENOXY DERIVATIVE ACIDS, ESTERS, ETHERS, AMINE AND OTHER SALTS.
F032	ACENAPTHTHENE
F032	ANTHRACENE
F032	BENZ(A)ANTHRACENE
F032	BENZO(B)FLUORANTHENE
F032	BENZO(K)FLUORANTHENE
F032	BENZO(A)PYRENE
F032	CHRYSENE
F032	DIBENZ(A, H)ANTHRACENE
F032	2,4-DIMETHYLPHENOL
F032	FLUORENE
F032	INDENO(1,2,3-CD)PYRENE
F032	NAPHTHALENE
F032	PENTACHLOROPHENOL
F032	PHENANTHRENE
F032	PHENOL
F032	PYRENE
F032	2,3,4,6-TETRACHLOROPHENOL
F032	2,4,6-TRICHLOROPHENOL
F032	ARSENIC, CHROMIUM
F034	ACENAPTHTHENE
F034	ANTHRACENE
F034	BENZ(A)ANTHRACENE
F034	BENZO(B)FLUORANTHENE
F034	BENZO(K)FLUORANTHENE
F034	BENZO(A)PYRENE
F034	CHRYSENE

CODE	CONSTITUENT
F034	DIBENZ(A,H)ANTHRACENE
F034	FLUORENE
F034	INDENO(1,2,3-CD)PYRENE
F034	NAPHTHALENE
F034	PHENANTHRENE
F034	PYRENE
F034	ARSENIC, CHROMIUM
F035	ARSENIC, CHROMIUM, LEAD
F037	BENZENE
F037	BENZO(A)PYRENE
F037	CHRYSENE
F037	ACENAPTHTHENE
F037	ANTHRACENE
F037	BENZ(A)ANTHRACENE
F037	BIS(2-ETHYLHEXYL) PHTHALATE
F037	DI-N-BUTYL PHTHALATE
F037	ETHYL BENZENE
F037	FLUORENE
F037	NAPHTHALENE
F037	PHENANTHRENE
F037	PHENOL
F037	PYRENE
F037	TOLUENE
F037	XYLENE(S)
F037	CHROMIUM, LEAD, NICKEL
F037	CYANIDE
F038	BENZENE
F038	BENZO(A)PYRENE
F038	CHRYSENE
F038	BIS(2-ETHYLHEXYL) PHTHALATE
F038	DI-N-BUTYL PHTHALATE
F038	ETHYL BENZENE
F038	FLUORENE
F038	NAPHTHALENE
F038	PHENANTHRENE
F038	PHENOL
F038	PYRENE
F038	TOLUENE
F038	XYLENE(S)
F038	CHROMIUM, LEAD, NICKEL
F038	CYANIDES
K001	ACENAPHTHALENE, ACENAPHTHYLENE
K001	BENZ(A)ANTHRACENE
K001	BENZO(A)PYRENE
K001	BENZO(B)FLUORANTHENE
K001	O-CHLOROPHENOL (2-CHLOROPHENOL)
K001	CHRYSENE
K001	CREOSOTE
K001	DIBENZ(A)ANTHRACENE
K001	2,4-DIMETHYLPHENOL
K001	2,4-DINITROPHENOL
K001	FLUORANTHENE
K001	INDENO(1,2,3-CD)PYRENE
K001	NAPHTHALENE

CODE	CONSTITUENT
K001	P-CHLORO-M-CRESOL
K001	PENTACHLOROPHENOL
K001	PHENANTHRENE
K001	PHENOL
K001	PYRENE
K001	2,3,4,6-TETRACHLOROPHENOL
K001	2,4,5-TRICHLOROPHENOL
K001	2,4,6-TRICHLOROPHENOL
K001	TOLUENE
K001	XYLENE(S)
K001	LEAD
K048	BENZENE
K048	BENZO(A)PYRENE
K048	CHROMIUM
K048	CHRYSENE
K048	CYANIDES
K048	DI-N-BUTYL PHTHALATE
K048	ETHYL BENZENE
K048	FLUORENE
K048	LEAD
K048	NAPHTHALENE
K048	NICKEL
K048	PHENANTHRENE
K048	PHENOL
K048	BIS(2-ETHYLHEXYL) PHTHALATE
K048	PYRENE
K048	TOLUENE
K048	XYLENE(S)
K049	ANTHRACENE
K049	BENZENE
K049	BENZO(A)PYRENE
K049	CARBON DISULFIDE
K049	CHRYSENE
K049	2,4-DIMETHYLPHENOL
K049	ETHYL BENZENE
K049	NAPHTHALENE
K049	PHENANTHRENE
K049	PHENOL
K049	BIS(2-ETHYLHEXYL) PHTHALATE
K049	PYRENE
K049	TOLUENE
K049	XYLENE(S)
K049	CHROMIUM, LEAD, NICKEL
K049	CYANIDE
K050	BENZO(A)PYRENE
K050	PHENOL
K050	CHROMIUM, NICKEL
K050	CYANIDES
K051	ACENAPTHTHENE
K051	ANTHRACENE
K051	BENZ(A)ANTHRACENE
K051	BENZENE
K051	BENZO(A)PYRENE
K051	CHRYSENE

CODE	CONSTITUENT
K051	DI-N-BUTYL PHTHALATE
K051	ETHYL BENZENE
K051	FLUORENE
K051	NAPHTHALENE
K051	PHENANTHRENE
K051	PHENOL
K051	BIS(2-ETHYLHEXYL) PHTHALATE
K051	PYRENE
K051	TOLUENE
K051	XYLENE(S)
K051	CHROMIUM, LEAD, NICKEL
K051	CYANIDES
K052	BENZENE
K052	BENZO(A)PYRENE
K052	O-CRESOL
K052	M-CRESOL
K052	P-CRESOL
K052	2,4-DIMETHYLPHENOL
K052	ETHYL BENZENE
K052	NAPHTHALENE
K052	PHENANTHRENE
K052	PHENOL
K052	TOLUENE
K052	XYLENE(S)
K052	CHROMIUM, LEAD, NICKEL
K052	CYANIDES
K061	ANTIMONY, ARSENIC, BARIUM, BERYLIUM,CADMIUM, CHROMIUM, LEAD, NICKEL, SELENIUM, SILVER, THALIUM, ZINC
K062	CHROMIUM, LEAD, NICKEL,
K086	ACETONE
K086	ACETOPHENONE
K086	N-BUTYL ALCOHOL
K086	BUTYL BENZYL PHTHALATE
K086	CYCLOHEXANONE
K086	DI-N-BUTYL PHTHALATE
K086	O-DICHLOROBENZENE (1,2-DICHLOROBENZENE)
K086	DIETHYL PHTHALATE
K086	DIMETHYL PHTHALATE
K086	DI-N-OCTYL PHTHALATE
K086	ETHYL ACETATE
K086	ETHYL BENZENE
K086	METHANOL
K086	METHYL ETHYL KETONE
K086	METHYL ISOBUTYL KETONE
K086	METHYLENE CHLORIDE
K086	NAPHTHALENE
K086	NITROBENZENE
K086	BIS(2-ETHYLHEXYL) PHTHALATE
K086	TOLUENE
K086	1,1,1-TRICHLOROETHANE, (METHYL CHLOROFORM)
K086	TRICHLOROETHYLENE
K086	XYLENE(S)
K086	CHROMIUM, LEAD
K086	CYANIDES

CODE	CONSTITUENT
K156	ACETONITRILE
K156	ACETOPHENONE
K156	ANILINE
K156	BENZENE
K156	BENOMYL
K156	CARBARYL (SEVIN)
K156	CARBENDAZIM
K156	CARBOFURAN
K156	CARBOSULFAN
K156	CHLOROBENZENE
K156	CHLOROFORM
K156	FORMALDEHYDE
K156	METHYLENE CHLORIDE
K156	METHYL ETHYL KETONE
K156	NAPHTHALENE
K156	O-DICHLOROBENZENE (1,2-DICHLOROBENZENE)
K156	METHOMYL
K156	PHENOL
K156	PYRIDINE
K156	TOLUENE
K156	TRIETHYLAMINE
K157	CARBON TETRACHLORIDE
K157	CHLOROFORM
K157	METHYL CHLORIDE, (CHLORO-METHANE)
K157	FORMALDEHYDE
K157	METHOMYL
K157	METHYL CHLORIDE, (CHLORO-METHANE)
K157	METHYLENE CHLORIDE
K157	PYRIDINE
K157	TRIETHYLAMINE
K158	BENOMYL
K158	BENZENE
K158	CARBENDAZIM
K158	CARBOFURAN
K158	CARBOSULFAN
K158	CHLOROFORM
K158	METHYLENE CHLORIDE
K158	PHENOL
K159	BENZENE
K159	BUTYLATE
K159	EPTC (EPTAM)
K159	MOLINATE
K159	PEBULATE
K159	VERNOLATE
K161	ANTIMONY
K161	ARSENIC
K161	CARBON DISULFIDE
K161	DITHIOCARBOMATES
K161	METAM-SODIUM
K161	ZIRAM
K161	LEAD, NICKEL, SELENIUM
K169	BENZ(A)ANTHRACENE
K169	BENZENE
K169	BENZO(G,H,I)PERYLENE

CODE	CONSTITUENT
K169	CHRYSENE
K169	ETHYL BENZENE
K169	FLUORENE
K169	NAPHTHALENE
K169	PHENANTHRENE
K169	PYRENE
K169	TOLUENE
K169	XYLENE(S)
K170	BENZ(A)ANTHRACENE
K170	BENZENE
K170	BENZO (A) ANTHRACENE
K170	BENZO(A)PYRENE
K170	BENZO (B)FLUORANTHENE
K170	BENZO(K)FLUORANTHENE
K170	BENZO(G,H,I)PERYLENE
K170	CHRYSENE
K170	DIBENZ(A,H)ANTHRACENE
K170	7, 12-DIMETHYLBENZ(A)ANTHRACENE
K170	ETHYL BENZENE
K170	FLUORENE
K170	INDENO(1,2,3-CD)PYRENE
K170	3-METHYLCHOLANTHRENE
K170	NAPHTHALENE
K170	PHENANTHRENE
K170	PYRENE
K170	TOLUENE
K170	XYLENE(S)
K171	BENZ(A)ANTHRACENE
K171	BENZENE
K171	CHRYSENE
K171	ETHYL BENZENE
K171	NAPHTHALENE
K171	PHENANTHRENE
K171	PYRENE
K171	TOLUENE
K171	XYLENE(S)
K171	ARSENIC
K171	NICKEL
K171	VANADIUM
K171	REACTIVE SULFIDES
K172	BENZENE
K172	ETHYL BENZENE
K172	TOLUENE
K172	XYLENE(S)
K172	ANTIMONY, ARSENIC, NICKEL, VANADIUM
K172	REACTIVE SULFIDES
U395	ETHANOL, 2,2'-OXYBIS-, DICARBAMATE

ATTACHMENT 3

MONTHLY TEMPERATURE DATA

Gainesville, FL maximum temperature history from May 2006 through October 2009

YR	MONTH	MAX. TEMP., DEG. F
2006	May	98
2006	Jun	97
2006	Jul	97
2006	Aug	96
2006	Sep	93
2006	Oct.	91
2006	Nov.	84
2006	Dec.	80
2007	Jan	82
2007	Feb	82
2007	Mar	85
2007	Apr	90
2007	May	92
2007	Jun	97
2007	Jul	95
2007	Aug	96
2007	Sep	92
2007	Oct	90
2007	Nov	82
2007	Dec	83
2008	Jan	79
2008	Feb	84
2008	Mar	86
2008	Apr	86
2008	May	95
2008	Jun	97
2008	Jul	94
2008	Aug	95
2008	Sep	93
2008	Oct	89
2008	Nov	85
2008	Dec	82
2009	Jan	80
2009	Feb	82
2009	Mar	87
2009	Apr	89
2009	May	92
2009	Jun	97
2009	Jul	94
2009	Aug	93
2009	Sep	92
2009	Oct	93
2009	Partial Nov	83
	MAXIMUM VALUE	98

Data obtained for Gainesville Airport (KGNV) from "WeatherUnderground.com." through Nov. 10, 2009

ATTACHMENT 4

MONTHLY HUMIDITY DATA

Gainesville, FL average relative humidity history from May 2006 through October 2009

YR	MONTH	REL. HUM., %
2006	May	64.0
2006	Jun	70.0
2006	Jul	70.9
2006	Aug	71.7
2006	Sep	70.6
2006	Oct.	64.8
2006	Nov.	71.4
2006	Dec.	76.5
2007	Jan	72.4
2007	Feb	64.0
2007	Mar	66.0
2007	Apr	60.8
2007	May	63.6
2007	Jun	71.2
2007	Jul	73.3
2007	Aug	72.9
2007	Sep	75.2
2007	Oct	76.5
2007	Nov	70.6
2007	Dec	74.2
2008	Jan	71.3
2008	Feb	67.1
2008	Mar	67.4
2008	Apr	66.5
2008	May	64.2
2008	Jun	70.7
2008	Jul	74.0
2008	Aug	76.1
2008	Sep	72.0
2008	Oct	69.7
2008	Nov	68.0
2008	Dec	69.1
2009	Jan	67.9
2009	Feb	62.0
2009	Mar	64.8
2009	Apr	67.1
2009	May	76.1
2009	Jun	75.8
2009	Jul	78.6
2009	Aug	79.7
2009	Sep	77.8
2009	Oct	77.3
2009	Partial Nov	71.5
	AVERAGE VALUE	71

Data obtained for Gainesville Airport (KGNV) from "WeatherUnderground.com" through Nov. 10, 2009

ATTACHMENT 5

CONSTITUENTS NOT CONSIDERED FOR MODELING

ATTACHMENT 5
CONSTITUENTS NOT CONSIDERED FOR MODELING

Waste Code	Description	Physical State	Currently Permitted Equivalent Waste Code
K086, K156	ACETOPHENONE	liquid	U004
K156, K158	BENOMYL	solid	U271
F032, F034, F037, K001, K051, K169, K170, K171	BENZ(A)ANTHRACENE	solid	U018
F037, F038, K048, K049, K051, K052, K156, K158, K159, K169, K170, K171, K172	BENZENE	liquid	D018
F032, F034, F037, F038, K001, K048, K049, K050, K051, K052, K170	BENZO(A)PYRENE	solid	U022
F037, F038, K048, K049, K051, K086	BIS(2-ETHYLHEXYL) PHTHALATE	Oily liquid	U028
K156	CARBARYL (SEVIN)	solid	U279
K156, K158	CARBENDAZIM	solid	U372
K156, K158	CARBOFURAN	solid	P127
K001	CRESOTE	liquid	U051
K156, K158	CARBOSULFAN	liquid	P189
K001	CRESOTE	Liquid	U051
F032, F034, F037, F038, K001, K048, K049, K051, K169, K170, K171	CHRYSENE	solid	U050
F010, F011, F012, F019, F037, F038, K048, K049, K050, K051, K052, K086	CYANIDE	solid	D003
F032, F034, K170	DIBENZ(A, H)ANTHRACENE	solid	U063
K086	DIETHYL PHTHALATE	liquid	U088
K170	7, 12-DIMETHYLBENZ(A)ANTHRACENE	solid	U094
F032, K001, K049, K052	2,4-DIMETHYLPHENOL	solid	U101
K086	DIMETHYL PHTHALATE	Oily liquid	U102
F037, F038, K048, K051, K086	DI-N-BUTYL PHTHALATE	liquid	U069
K086	DI-N-OCTYL PHTHALATE	liquid	U107
K001	FLUORANTHENE	solid	U120
K156, K157	FORMALDEHYDE	liquid	U122
F032, F034, K001, K170	INDENO(1,2,3-CD)PYRENE	solid	U137
K052	M-CRESOL	Viscous liquid	U052
K156, K157	METHOMYL	solid	P066
K157	METHYL CHLORIDE, (CHLORO-METHANE)	gas	U045

Waste Code	Description	Physical State	Currently Permitted Equivalent Waste Code
K170	3-METHYLCHOLANTHRENE	solid	U157
F032, F034, F037, F038, K001, K048, K049, K051, K052, K086, K156, K169, K170, K171	NAPHTHALENE	solid	U165
F032, F037, F038, K001, K048, K049, K050, K051, K052, K156, K158	PHENOL	solid	U188
F037, F038, K001, K048, K049, K051, K052, K086, K156, K169, K170, K171, K172	TOLUENE	liquid	U220
K156, K157	TRIETHYLAMINE	liquid	U404
F037, F038, K001, K048, K049, K051, K052, K086, K169, K170, K171, K172	XYLENE(S)	liquid	U239
K161	ZIRAM	solid	P204

ATTACHMENT 6

CONSTITUENTS NOT SELECTED FOR ALOHA MODELING

Attachment 6
Constituents Not Selected for ALOHA Modeling

CODE	CONSTITUENT	REASON NOT SELECTED
F011	CADMIUM, LEAD, NICKEL, SILVER	solid
F012	CADMIUM, LEAD, NICKEL, SILVER	solid
F019	CHROMIUM	solid
F020	TETRA- AND PENTACHLORODIBENZO- *P* -DIOXINS; TETRA AND PENTACHLORODI-BENZOFURANS; TRI- AND TETRACHLOROPHENOLS AND THEIR CHLOROPHENOXY DERIVATIVE ACIDS, ESTERS, ETHERS, AMINE AND OTHER SALTS.	solid
F021	PENTA- AND HEXACHLORODIBENZO- *P*- DIOXINS; PENTA- AND HEXACHLORODIBENZOFURANS; PENTACHLOROPHENOL AND ITS DERIVATIVES.	solid
F022	TETRA-, PENTA-, AND HEXACHLORODIBENZO- *P* - DIOXINS; TETRA-, PENTA-, AND HEXACHLORODIBENZOFURANS.	solid
F023	TETRA-, AND PENTACHLORODIBENZO- *P* -DIOXINS; TETRA- AND PENTACHLORODIBENZOFURANS; TRI- AND TETRACHLOROPHENOLS AND THEIR CHLOROPHENOXY DERIVATIVE ACIDS, ESTERS, ETHERS, AMINE AND OTHER SALTS.	solid
F026	TETRA-, PENTA-, AND HEXACHLORODIBENZO- *P* - DIOXINS; TETRA-, PENTA-, AND HEXACHLORODIBENZOFURANS.	solid
F027	TETRA-, PENTA-, AND HEXACHLORODIBENZO- *P*- DIOXINS; TETRA-, PENTA-, AND HEXACHLORODIBENZOFURANS; TRI-, TETRA-, AND PENTACHLOROPHENOLS AND THEIR CHLOROPHENOXY DERIVATIVE ACIDS, ESTERS, ETHERS, AMINE AND OTHER SALTS.	solid
F028	TETRA-, PENTA-, AND HEXACHLORODIBENZO- *P*- DIOXINS; TETRA-, PENTA-, AND HEXACHLORODIBENZOFURANS; TRI-, TETRA-, AND PENTACHLOROPHENOLS AND THEIR CHLOROPHENOXY DERIVATIVE ACIDS, ESTERS, ETHERS, AMINE AND OTHER SALTS.	solid
F032	2,3,4,6-TETRACHLOROPHENOL	solid
F032	2,4,6-TRICHLOROPHENOL	solid
F032	ACENAPTHTHENE	solid
F032	ANTHRACENE	solid
F032	ARSENIC, CHROMIUM	solid
F032	BENZO(B)FLUORANTHENE	solid
F032	BENZO(K)FLUORANTHENE	solid
F032	FLUORENE	solid
F032	PENTACHLOROPHENOL	solid
F032	PHENANTHRENE	solid
F032	PYRENE	solid
F034	ACENAPTHTHENE	solid
F034	ANTHRACENE	solid
F034	ARSENIC, CHROMIUM	solid
F034	BENZO(B)FLUORANTHENE	solid

CODE	CONSTITUENT	REASON NOT SELECTED
F034	BENZO(K)FLUORANTHENE	solid
F034	FLUORENE	solid
F034	PHENANTHRENE	solid
F034	PYRENE	solid
F035	ARSENIC, CHROMIUM, LEAD	solid
F037	ACENAPTHTHENE	solid
F037	ANTHRACENE	solid
F037	CHROMIUM, LEAD, NICKEL	solid
F037	FLUORENE	solid
F037	PHENANTHRENE	solid
F037	PYRENE	solid
F038	CHROMIUM, LEAD, NICKEL	solid
F038	FLUORENE	solid
F038	PHENANTHRENE	solid
F038	PYRENE	solid
K001	2,3,4,6-TETRACHLOROPHENOL	solid
K001	2,4,5-TRICHLOROPHENOL	solid
K001	2,4,6-TRICHLOROPHENOL	solid
K001	2,4-DINITROPHENOL	solid
K001	ACENAPHTHALENE, ACENAPHTHYLENE	solid
K001	BENZO(B)FLUORANTHENE	solid
K001	DIBENZ(A)ANTHRACENE	Insufficient data
K001	LEAD	solid
K001	P-CHLORO-M-CRESOL	solid
K001	PENTACHLOROPHENOL	solid
K001	PHENANTHRENE	solid
K001	PYRENE	solid
K048	CHROMIUM	solid
K048	FLUORENE	solid
K048	LEAD	solid
K048	NICKEL	solid
K048	PHENANTHRENE	solid
K048	PYRENE	solid
K049	ANTHRACENE	solid
K049	CHROMIUM, LEAD, NICKEL	solid
K049	PHENANTHRENE	solid
K049	PYRENE	solid
K050	CHROMIUM, NICKEL	solid
K051	ACENAPTHTHENE	solid
K051	ANTHRACENE	solid
K051	CHROMIUM, LEAD, NICKEL	solid
K051	FLUORENE	solid
K051	PHENANTHRENE	solid
K051	PYRENE	solid
K052	CHROMIUM, LEAD, NICKEL	solid
K052	O-CRESOL	solid
K052	P-CRESOL	solid
K052	PHENANTHRENE	solid
K061	ANTIMONY, ARSENIC, BARIUM, BERYLIUM,CADMIUM, CHROMIUM, LEAD, NICKEL, SELENIUM, SILVER, THALIUM, ZINC	solid

CODE	CONSTITUENT	REASON NOT SELECTED
K062	CHROMIUM, LEAD, NICKEL,	solid
K086	CHROMIUM, LEAD	solid
K156	BENOMYL	solid
K158	BENOMYL	solid
K159	BUTYLATE	Insufficient data
K159	EPTC (EPTAM)	Insufficient data
K159	MOLINATE	solid
K159	PEBULATE	Insufficient data
K159	VERNOLATE	solid
K161	ANTIMONY	solid
K161	ARSENIC	solid
K161	DITHIOCARBOMATES	Insufficient data
K161	LEAD, NICKEL, SELENIUM	solid
K161	METAM-SODIUM	solid
K169	BENZO(g,h,i)PERYLENE	solid
K169	FLUORENE	solid
K169	PHENANTHRENE	solid
K169	PYRENE	solid
K170	BENZO (A) ANTHRACENE	solid
K170	BENZO (B)FLUORANTHENE	solid
K170	BENZO(g,h,i)PERYLENE	solid
K170	BENZO(K)FLUORANTHENE	solid
K170	FLUORENE	solid
K170	PHENANTHRENE	solid
K170	PYRENE	solid
K171	ARSENIC	solid
K171	NICKEL	solid
K171	PHENANTHRENE	solid
K171	PYRENE	solid
K171	REACTIVE SULFIDES	solid
K171	VANADIUM	solid
K172	ANTIMONY, ARSENIC, NICKEL, VANADIUM	solid
K172	REACTIVE SULFIDES	solid
U395	ETHANOL, 2,2'-OXYBIS-, DICARBAMATE	Insufficient data

ATTACHMENT 7

CONSTITUENTS NOT SELECTED FOR ARCHIE MODELING

Attachment 7

Constituents Not Selected For ARCHIE Modeling

CODE	CONSTITUENT	REASON NOT SELECTED
F011	CADMIUM, LEAD, NICKEL, SILVER	solid
F012	CADMIUM, LEAD, NICKEL, SILVER	solid
F019	CHROME	solid
F020	TETRA- AND PENTACHLORODIBENZO- *P* -DIOXINS; TETRA AND PENTACHLORODI-BENZOFURANS; TRI- AND TETRACHLOROPHENOLS AND THEIR CHLOROPHENOXY DERIVATIVE ACIDS, ESTERS, ETHERS, AMINE AND OTHER SALTS.	solid
F021	PENTA- AND HEXACHLORODIBENZO- *P*- DIOXINS; PENTA- AND HEXACHLORODIBENZOFURANS; PENTACHLOROPHENOL AND ITS DERIVATIVES.	solid
F022	TETRA-, PENTA-, AND HEXACHLORODIBENZO- *P* - DIOXINS; TETRA-, PENTA-, AND HEXACHLORODIBENZOFURANS.	solid
F023	TETRA-, AND PENTACHLORODIBENZO- *P* -DIOXINS; TETRA- AND PENTACHLORODIBENZOFURANS; TRI- AND TETRACHLOROPHENOLS AND THEIR CHLOROPHENOXY DERIVATIVE ACIDS, ESTERS, ETHERS, AMINE AND OTHER SALTS.	solid
F026	TETRA-, PENTA-, AND HEXACHLORODIBENZO- *P* - DIOXINS; TETRA-, PENTA-, AND HEXACHLORODIBENZOFURANS.	solid
F027	TETRA-, PENTA-, AND HEXACHLORODIBENZO- *P*- DIOXINS; TETRA-, PENTA-, AND HEXACHLORODIBENZOFURANS; TRI-, TETRA-, AND PENTACHLOROPHENOLS AND THEIR CHLOROPHENOXY DERIVATIVE ACIDS, ESTERS, ETHERS, AMINE AND OTHER SALTS.	solid
F028	TETRA-, PENTA-, AND HEXACHLORODIBENZO- *P*- DIOXINS; TETRA-, PENTA-, AND HEXACHLORODIBENZOFURANS; TRI-, TETRA-, AND PENTACHLOROPHENOLS AND THEIR CHLOROPHENOXY DERIVATIVE ACIDS, ESTERS, ETHERS, AMINE AND OTHER SALTS.	solid
F032	2,3,4,6-TETRACHLOROPHENOL	solid
F032	2,4,6-TRICHLOROPHENOL	solid
F032	ACENAPTHTHENE	solid
F032	ANTHRACENE	solid
F032	ARSENIC, CHROMIUM	solid
F032	BENZO(B)FLUORANTHENE	solid
F032	BENZO(K)FLUORANTHENE	solid
F032	FLUORENE	solid
F032	PENTACHLOROPHENOL	solid
F032	PHENANTHRENE	solid
F032	PYRENE	solid
F034	ACENAPTHTHENE	solid
F034	ANTHRACENE	solid
F034	ARSENIC, CHROMIUM	solid

CODE	CONSTITUENT	REASON NOT SELECTED
F034	BENZO(B)FLUORANTHENE	solid
F034	BENZO(K)FLUORANTHENE	solid
F034	FLUORENE	solid
F034	PHENANTHRENE	solid
F034	PYRENE	solid
F035	ARSENIC, CHROMIUM, LEAD	solid
F037	ACENAPTHTHENE	solid
F037	ANTHRACENE	solid
F037	CHROMIUM, LEAD, NICKEL	solid
F037	FLUORENE	solid
F037	PHENANTHRENE	solid
F037	PYRENE	solid
F038	CHROMIUM, LEAD, NICKEL	solid
F038	FLUORENE	solid
F038	PHENANTHRENE	solid
F038	PYRENE	solid
K001	2,3,4,6-TETRACHLOROPHENOL	solid
K001	2,4,5-TRICHLOROPHENOL	solid
K001	2,4,6-TRICHLOROPHENOL	solid
K001	2,4-DINITROPHENOL	solid
K001	ACENAPHTHALENE, ACENAPHTHYLENE	solid
K001	BENZO(B)FLUORANTHENE	solid
K001	DIBENZ(A)ANTHRACENE	Insufficient data
K001	LEAD	solid
K001	O-CHLOROPHENOL (2-CHLOROPHENOL)	Not flammable liquid
K001	P-CHLORO-M-CRESOL	solid
K001	PENTACHLOROPHENOL	solid
K001	PHENANTHRENE	solid
K001	PYRENE	solid
K048	CHROMIUM	solid
K048	FLUORENE	solid
K048	LEAD	solid
K048	NICKEL	solid
K048	PHENANTHRENE	solid
K048	PYRENE	solid
K049	ANTHRACENE	solid
K049	CHROMIUM, LEAD, NICKEL	solid
K049	PHENANTHRENE	solid
K049	PYRENE	solid
K050	CHROMIUM, NICKEL	solid
K051	ACENAPTHTHENE	solid
K051	ANTHRACENE	solid
K051	CHROMIUM, LEAD, NICKEL	solid
K051	FLUORENE	solid
K051	PHENANTHRENE	solid
K051	PYRENE	solid
K052	CHROMIUM, LEAD, NICKEL	solid
K052	O-CRESOL	solid
K052	P-CRESOL	solid
K052	PHENANTHRENE	solid
K061	ANTIMONY, ARSENIC, BARIUM, BERYLIUM,CADMIUM,	solid

CODE	CONSTITUENT	REASON NOT SELECTED
	CHROMIUM, LEAD, NICKEL, SELENIUM, SILVER, THALIUM, ZINC	
K062	CHROMIUM, LEAD, NICKEL,	solid
K086	1,1,1-TRICHLOROETHANE, (METHYL CHLOROFORM)	Not flammable liquid, No flashpoint
K086	BUTYL BENZYL PHTHALATE	Not flammable liquid
K086	CHROMIUM, LEAD	solid
K086	METHYLENE CHLORIDE	Not flammable liquid
K086	NITROBENZENE	Not flammable liquid
K086	O-DICHLOROBENZENE (1,2-DICHLOROBENZENE)	Not flammable liquid
K086	TRICHLOROETHYLENE	Not flammable liquid
K156	ANILINE	Not flammable liquid
K156	BENOMYL	solid
K156	CHLOROFORM	Not flammable liquid, No flashpoint
K156	METHYLENE CHLORIDE	Not flammable liquid
K156	O-DICHLOROBENZENE (1,2-DICHLOROBENZENE)	Not flammable liquid
K157	CARBON TETRACHLORIDE	Not combustible or flammable
K157	CHLOROFORM	Not flammable liquid, No flashpoint
K157	METHYLENE CHLORIDE	Not flammable liquid
K158	BENOMYL	solid
K158	CHLOROFORM	Not flammable liquid, No flashpoint
K158	METHYLENE CHLORIDE	Not flammable liquid
K159	BUTYLATE	Insufficient data
K159	EPTC (EPTAM)	Not flammable liquid
K159	MOLINATE	solid
K159	PEBULATE	Insufficient data
K159	VERNOLATE	solid
K161	ANTIMONY	solid
K161	ARSENIC	solid
K161	DITHIOCARBOMATES	Insufficient data
K161	LEAD, NICKEL, SELENIUM	solid
K161	METAM-SODIUM	solid
K169	BENZO(g,h,i)PERYLENE	solid
K169	FLUORENE	solid
K169	PHENANTHRENE	solid
K169	PYRENE	solid
K170	BENZO (A) ANTHRACENE	solid
K170	BENZO (B)FLUORANTHENE	solid
K170	BENZO(g,h,i)PERYLENE	solid
K170	BENZO(K)FLUORANTHENE	solid
K170	FLUORENE	solid
K170	PHENANTHRENE	solid
K170	PYRENE	solid
K171	ARSENIC	solid
K171	NICKEL	solid
K171	PHENANTHRENE	solid
K171	PYRENE	solid

CODE	CONSTITUENT	REASON NOT SELECTED
K171	REACTIVE SULFIDES	solid
K171	VANADIUM	solid
K172	ANTIMONY, ARSENIC, NICKEL, VANADIUM	solid
K172	REACTIVE SULFIDES	solid
U395	ETHANOL, 2,2'-OXYBIS-, DICARBAMATE	Insufficient data

ATTACHMENT 8

CURRENTLY APPROVED WASTE CODES PER EXISTING PERMIT

Currently Approved Waste Codes per Existing Permit

EPA Hazardous Waste Number

D001	D037	P021	P063	P106	U002	U038	U076	U113	U149	U185	U225
D002	D038	P022	P064	P108	U003	U039	U077	U114	U150	U186	U226
D003	D039	P023	P065	P109	U004	U041	U078	U115	U151	U187	U227
D004	D040	P024	P066	P110	U005	U042	U079	U116	U152	U188	U228
D005	D041	P026	P067	P111	U006	U043	U080	U117	U153	U189	U234
D006	D042	P027	P068	P112	U007	U044	U081	U118	U154	U190	U235
D007	D043	P028	P069	P113	U008	U045	U082	U119	U155	U191	U236
D008	F001	P029	P070	P114	U009	U046	U083	U120	U156	U192	U237
D009	F002	P030	P071	P115	U010	U047	U084	U121	U157	U193	U238
D010	F003	P031	P072	P116	U011	U048	U085	U122	U158	U194	U239
D011	F004	P033	P073	P118	U012	U049	U086	U123	U159	U196	U240
D012	F005	P034	P074	P119	U014	U050	U087	U124	U160	U197	U243
D013	F006	P036	P075	P120	U015	U051	U088	U125	U161	U200	U244
D014	F007	P037	P077	P121	U016	U052	U089	U126	U162	U201	U246
D015	F008	P038	P078	P122	U017	U053	U090	U127	U163	U202	U247
D016	F009	P039	P081	P123	U018	U055	U091	U128	U164	U203	U248
D017	F039	P040	P082	P127	U019	U056	U092	U129	U165	U204	U249
D018	P001	P041	P084	P128	U020	U057	U093	U130	U166	U205	U271
D019	P002	P042	P085	P185	U021	U058	U094	U131	U167	U206	U278
D020	P003	P043	P087	P188	U022	U059	U095	U132	U168	U207	U279
D021	P004	P044	P088	P189	U023	U060	U096	U133	U169	U208	U280
D022	P005	P045	P089	P190	U024	U061	U097	U134	U170	U209	U328
D023	P006	P046	P092	P191	U025	U062	U098	U135	U171	U210	U353
D024	P007	P047	P093	P192	U026	U063	U099	U136	U172	U211	U359
D025	P008	P048	P094	P194	U027	U064	U101	U137	U173	U213	U364
D026	P009	P049	P095	P196	U028	U066	U102	U138	U174	U214	U367
D027	P010	P050	P096	P197	U029	U067	U103	U140	U176	U215	U372
D028	P011	P051	P097	P198	U030	U068	U105	U141	U177	U216	U373
D029	P012	P054	P098	P199	U031	U069	U106	U142	U178	U217	U387
D030	P013	P056	P099	P201	U032	U070	U107	U143	U179	U218	U389
D031	P014	P057	P101	P202	U033	U071	U108	U144	U180	U219	U394
D032	P015	P058	P102	P203	U034	U072	U109	U145	U181	U220	U404
D033	P016	P059	P103	P204	U035	U073	U110	U146	U182	U221	U409
D034	P017	P060	P104	P205	U036	U074	U111	U147	U183	U222	U410
D035	P018	P062	P105	U001	U037	U075	U112	U148	U184	U223	U411
D036	P020										

APPENDIX A

ALOHA MODELING RESULTS

SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: ACETONE Molecular Weight: 58.08 g/mol
TEEL-3: 8500 ppm TEEL-2: 8500 ppm TEEL-1: 1000 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: 133.3° F Ambient Boiling Point: 133.3° F
Vapor Pressure at Ambient Temperature: 0.49 atm
Ambient Saturation Concentration: 492,550 ppm or 49.3%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 299 pounds/min
(averaged over a minute or more)
Total Amount Released: 9,883 pounds

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (7600 mg/(cu m)) Max Threat Zone: 103 yards
Note: Footprint was not drawn because effects of
near-field patchiness make dispersion predictions
unreliable for short distances.

SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: ACETONITRILE Molecular Weight: 41.05 g/mol
TEEL-3: 500 ppm TEEL-2: 60 ppm TEEL-1: 60 ppm
IDLH: 500 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: 178.9° F Ambient Boiling Point: 178.9° F
Vapor Pressure at Ambient Temperature: 0.20 atm
Ambient Saturation Concentration: 200,157 ppm or 20.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 70.8 pounds/min
(averaged over a minute or more)
Total Amount Released: 3,522 pounds

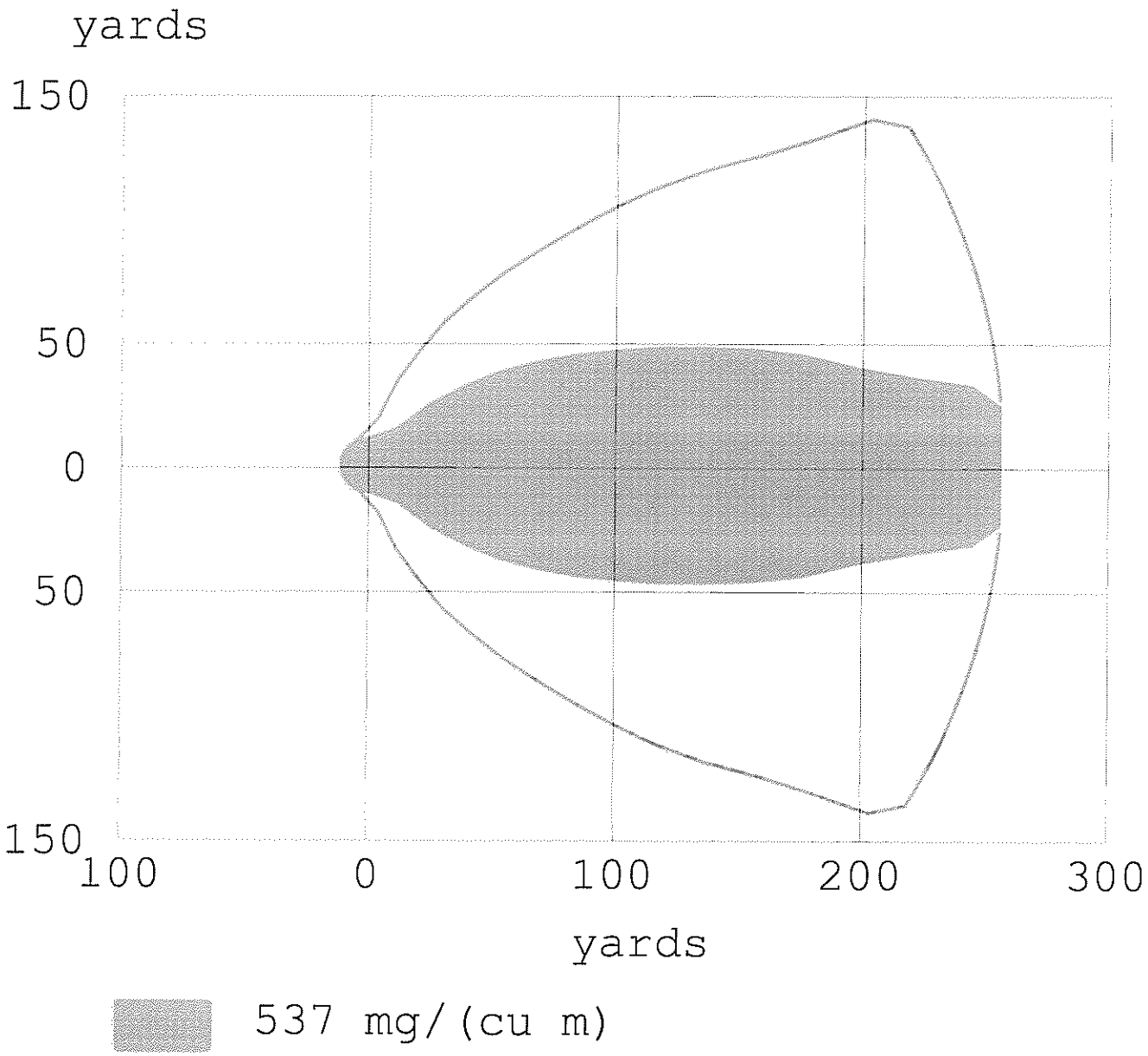
FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (537 mg/(cu m)) Max Threat Zone: 256 yards

Time: October 7, 2009 2232 hours EDT (user specified)

Chemical Name: ACETONITRILE
Carcinogenic risk - see CAMEO

Wind: 1.5 meters/sec from N at 3 meters

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (537 mg/(cu m)) Max Threat Zone: 256 yards



SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: ANILINE Molecular Weight: 93.13 g/mol
AEGL-3: 120 ppm AEGL-2: 72 ppm AEGL-1: 48 ppm
TEEL-3: 100 ppm TEEL-2: 10 ppm TEEL-1: 6 ppm
IDLH: 100 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: 363.2° F Ambient Boiling Point: 362.3° F
Vapor Pressure at Ambient Temperature: 0.0020 atm
Ambient Saturation Concentration: 2,003 ppm or 0.20%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 1.44 pounds/min
(averaged over a minute or more)
Total Amount Released: 85.6 pounds

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (45.7 mg/(cu m)) Max Threat Zone: 65 yards
Note: Footprint was not drawn because
effects of near-field patchiness make dispersion
predictions unreliable for short distances.

SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: BUTYL BENZYL PHTHALATE 85-68-7
Molecular Weight: 312.47 g/mol
Normal Boiling Point: 698.0° F
Note: Not enough chemical data to use Heavy Gas option

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Direct Source: 2750 pounds Source Height: 0
Release Duration: 1 minute
Release Rate: 45.8 pounds/sec
Total Amount Released: 2,750 pounds

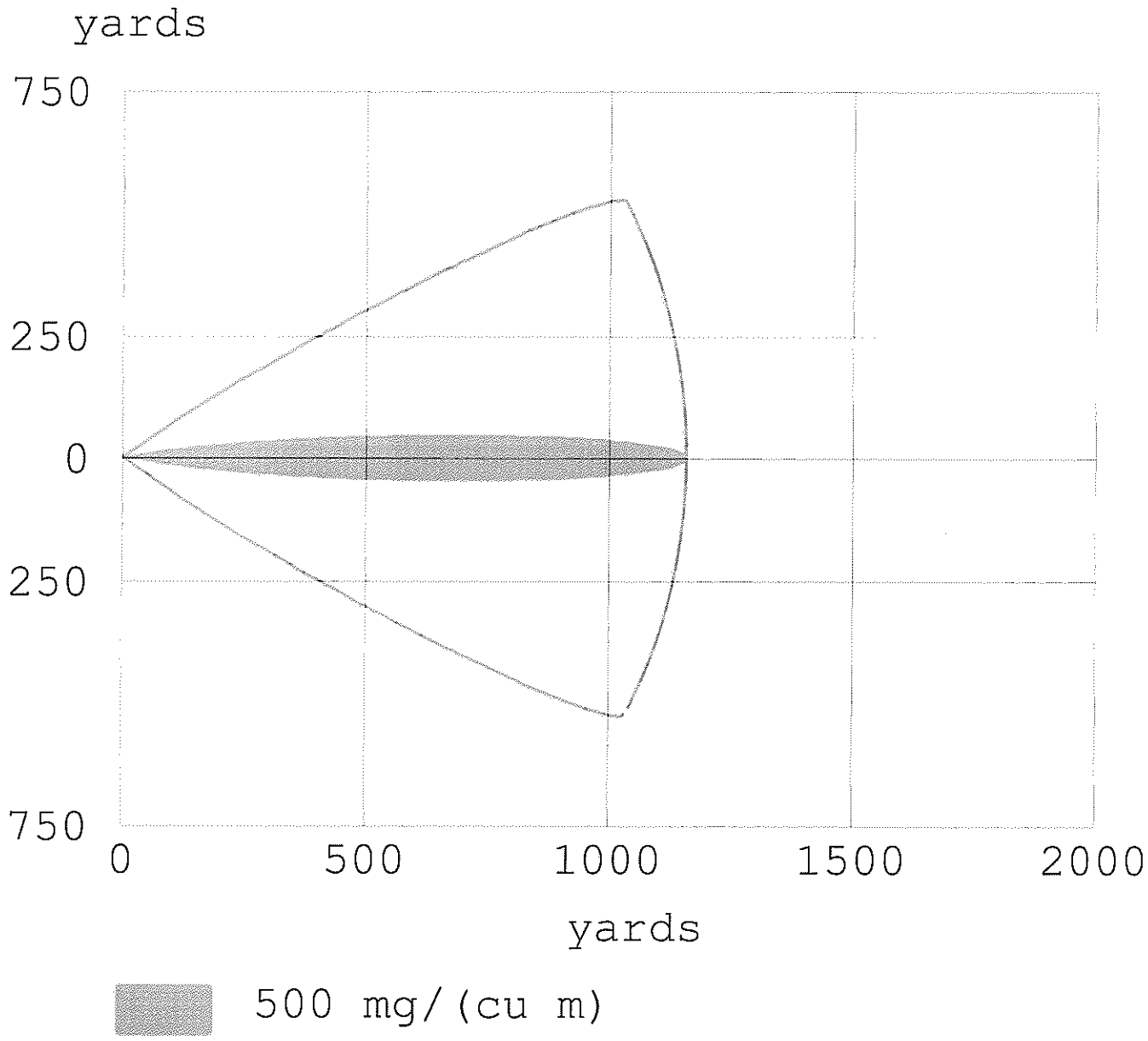
FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (500 mg/(cu m)) Max Threat Zone: 1161 yards

Time: October 7, 2009 2232 hours EDT (user specified)

Chemical Name: BUTYL BENZYL PHTHALATE 85-68-7

Wind: 1.5 meters/sec from N at 3 meters

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (500 mg/(cu m)) Max Threat Zone: 1161 yards



SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: CARBON BISULFIDE Molecular Weight: 76.14 g/mol
ERPG-3: 500 ppm ERPG-2: 50 ppm ERPG-1: 1 ppm
IDLH: 500 ppm
Normal Boiling Point: 115.2° F Ambient Boiling Point: 114.9° F
Vapor Pressure at Ambient Temperature: 0.72 atm
Ambient Saturation Concentration: 727,278 ppm or 72.7%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 7000 pounds
Soil Type: Default Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: 19 minutes
Max Average Sustained Release Rate: 589 pounds/min
(averaged over a minute or more)
Total Amount Released: 7,000 pounds

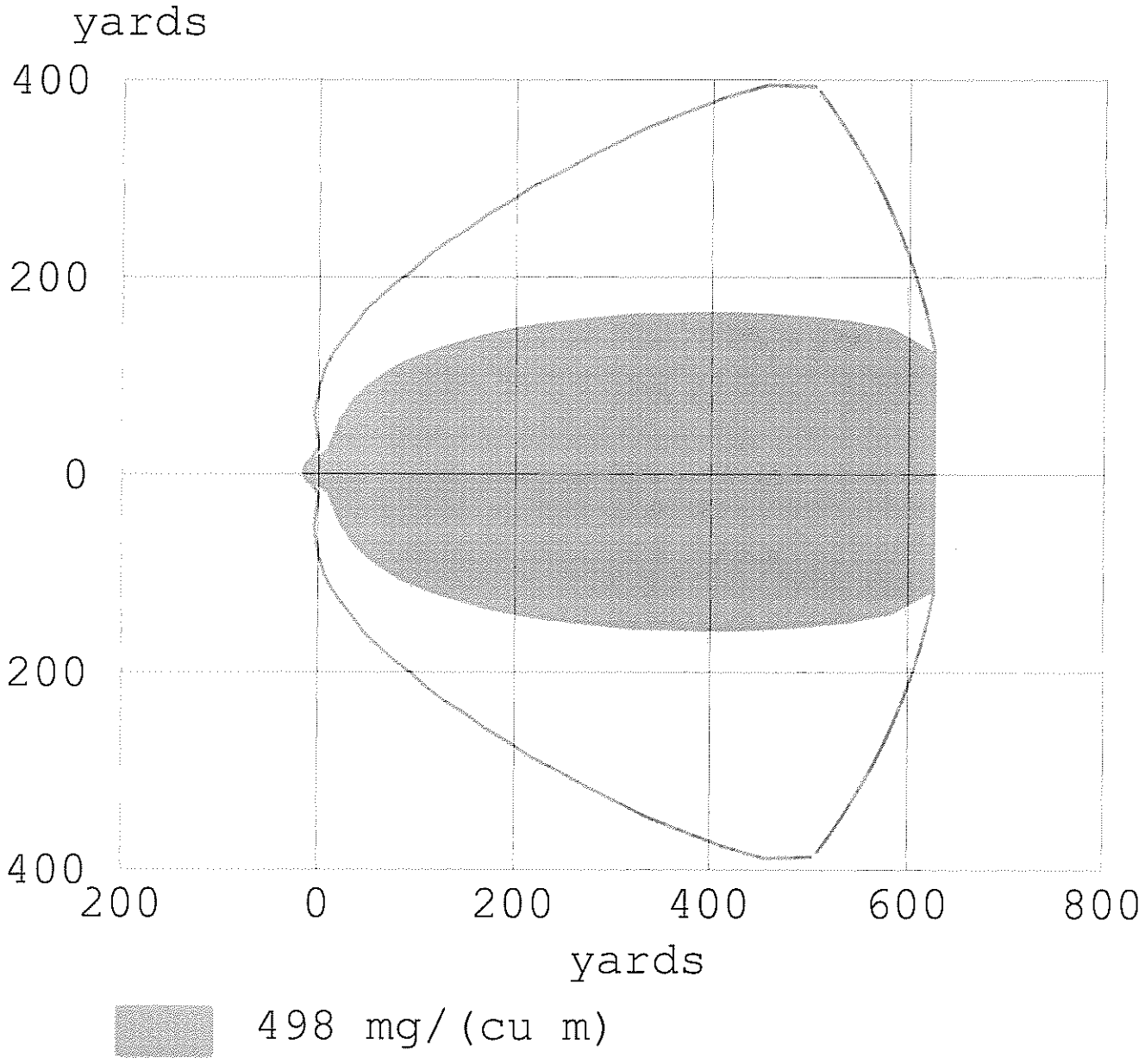
FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (498 mg/(cu m)) Max Threat Zone: 628 yards

Time: October 7, 2009 2232 hours EDT (user specified)

Chemical Name: CARBON BISULFIDE

Wind: 1.5 meters/sec from N at 3 meters

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (498 mg/(cu m)) Max Threat Zone: 628 yards



SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: CARBON TETRACHLORIDE Molecular Weight: 153.82 g/mol
ERPG-3: 750 ppm ERPG-2: 100 ppm ERPG-1: 20 ppm
IDLH: 200 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: 170.0° F Ambient Boiling Point: 169.7° F
Vapor Pressure at Ambient Temperature: 0.25 atm
Ambient Saturation Concentration: 247,195 ppm or 24.7%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: 44 minutes
Max Average Sustained Release Rate: 264 pounds/min
(averaged over a minute or more)
Total Amount Released: 10,000 pounds

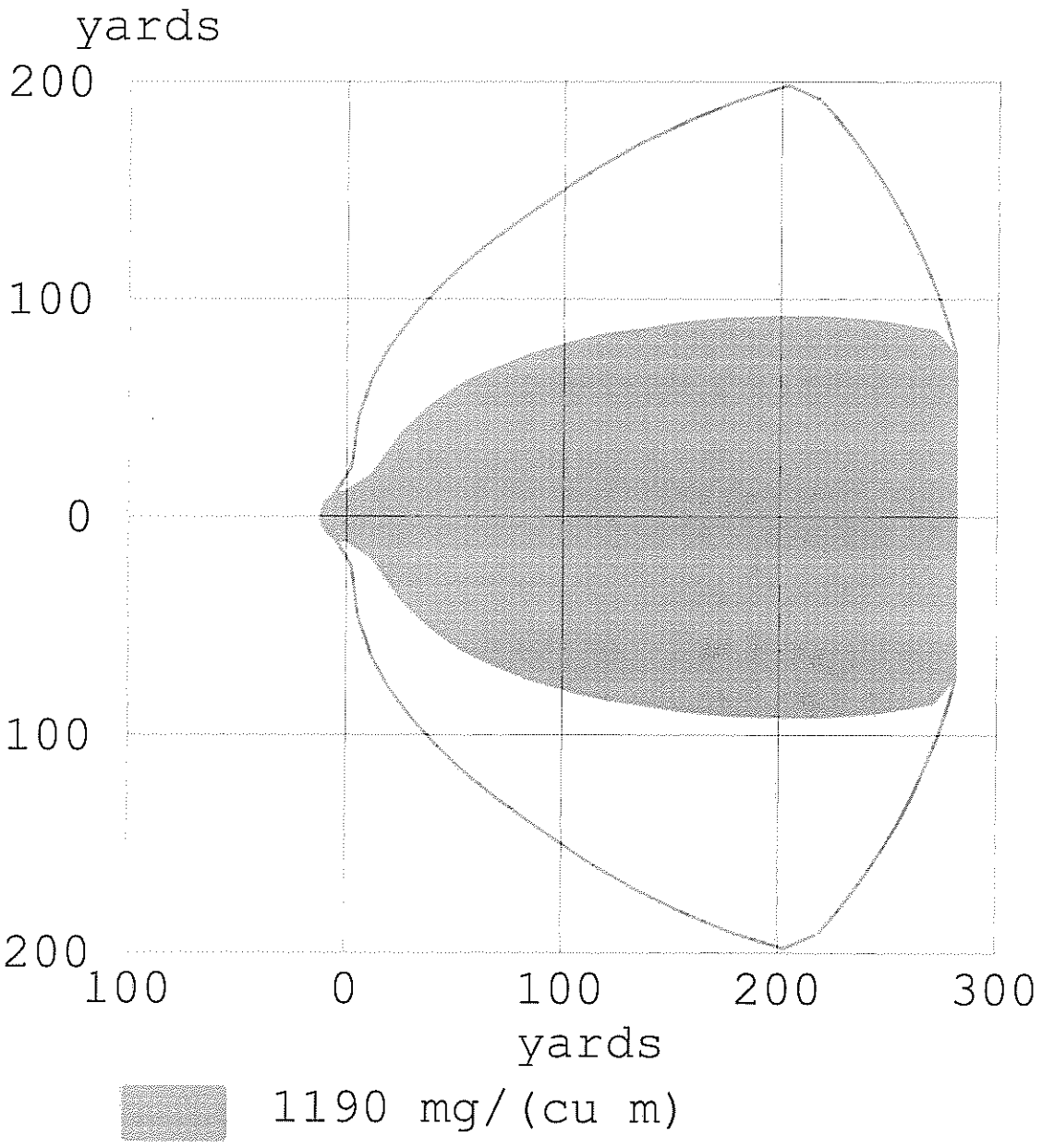
FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (1190 mg/(cu m)) Max Threat Zone: 281 yards

Time: October 7, 2009 2232 hours EDT (user specified)

Chemical Name: CARBON TETRACHLORIDE
Carcinogenic risk - see CAMEO

Wind: 1.5 meters/sec from N at 3 meters

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (1190 mg/(cu m)) Max Threat Zone: 281 yards



SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: CHLOROBENZENE Molecular Weight: 112.56 g/mol
TEEL-3: 1000 ppm TEEL-2: 500 ppm TEEL-1: 30 ppm
IDLH: 1000 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: 269.1° F Ambient Boiling Point: 268.9° F
Vapor Pressure at Ambient Temperature: 0.029 atm
Ambient Saturation Concentration: 29,118 ppm or 2.91%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 24.1 pounds/min
(averaged over a minute or more)
Total Amount Released: 1,392 pounds

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Orange LOC (3500 mg/(cu m)) Max Threat Zone: 38 yards
Note: Footprint was not drawn because effects of
near-field patchiness make dispersion predictions
unreliable for short distances.

SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: CHLOROFORM Molecular Weight: 119.38 g/mol
ERPG-3: 5000 ppm ERPG-2: 50 ppm TEEL-1: 2 ppm
IDLH: 500 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: 142.1° F Ambient Boiling Point: 141.5° F
Vapor Pressure at Ambient Temperature: 0.42 atm
Ambient Saturation Concentration: 419,395 ppm or 41.9%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: 33 minutes
Max Average Sustained Release Rate: 427 pounds/min
(averaged over a minute or more)
Total Amount Released: 10,000 pounds

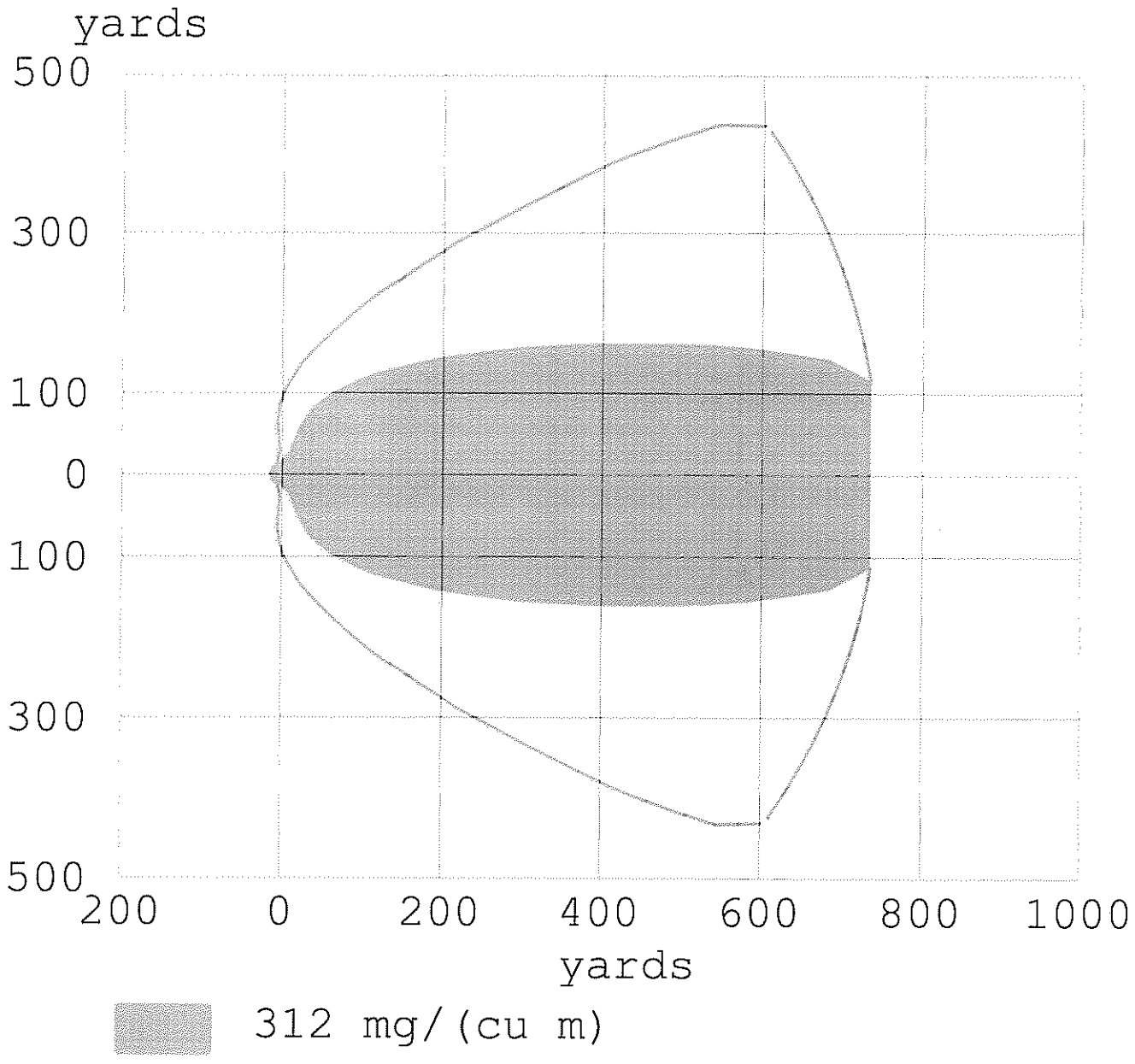
FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (312 mg/(cu m)) Max Threat Zone: 735 yards

Time: October 7, 2009 2232 hours EDT (user specified)

Chemical Name: CHLOROFORM
Carcinogenic risk - see CAMEO

Wind: 1.5 meters/sec from N at 3 meters

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (312 mg/(cu m)) Max Threat Zone: 735 yards



SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: CYCLOHEXANONE Molecular Weight: 98.14 g/mol
TEEL-3: 700 ppm TEEL-2: 50 ppm TEEL-1: 50 ppm
IDLH: 700 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: 311.8° F Ambient Boiling Point: 311.4° F
Vapor Pressure at Ambient Temperature: 0.011 atm
Ambient Saturation Concentration: 10,835 ppm or 1.08%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 8.08 pounds/min
(averaged over a minute or more)
Total Amount Released: 476 pounds

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (200 mg/(cu m)) Max Threat Zone: 79 yards
Note: Footprint was not drawn because
effects of near-field patchiness make dispersion
predictions unreliable for short distances.

SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: ETHYL ACETATE Molecular Weight: 88.11 g/mol
TEEL-3: 2000 ppm TEEL-2: 400 ppm TEEL-1: 400 ppm
IDLH: 2000 ppm
Normal Boiling Point: 170.7° F Ambient Boiling Point: 170.6° F
Vapor Pressure at Ambient Temperature: 0.21 atm
Ambient Saturation Concentration: 212,356 ppm or 21.2%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 140 pounds/min
(averaged over a minute or more)
Total Amount Released: 6,994 pounds

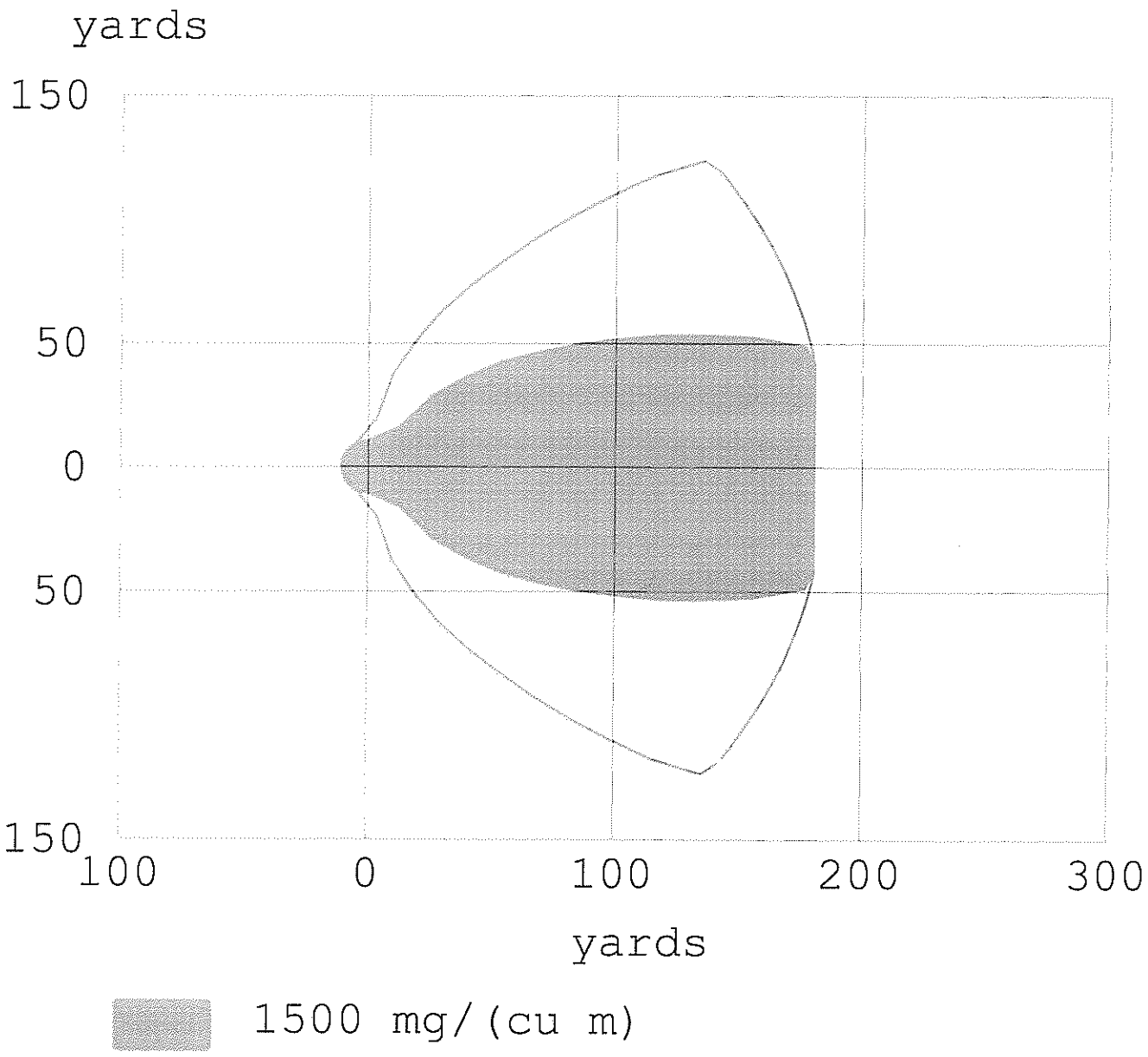
FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (1500 mg/(cu m)) Max Threat Zone: 181 yards

Time: October 7, 2009 2232 hours EDT (user specified)

Chemical Name: ETHYL ACETATE

Wind: 1.5 meters/sec from N at 3 meters

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (1500 mg/(cu m)) Max Threat Zone: 181 yards



SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: ETHYLBENZENE Molecular Weight: 106.17 g/mol
TEEL-3: 800 ppm TEEL-2: 125 ppm TEEL-1: 125 ppm
IDLH: 800 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: 277.2° F Ambient Boiling Point: 276.7° F
Vapor Pressure at Ambient Temperature: 0.024 atm
Ambient Saturation Concentration: 24,014 ppm or 2.40%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 19 pounds/min
(averaged over a minute or more)
Total Amount Released: 1,101 pounds

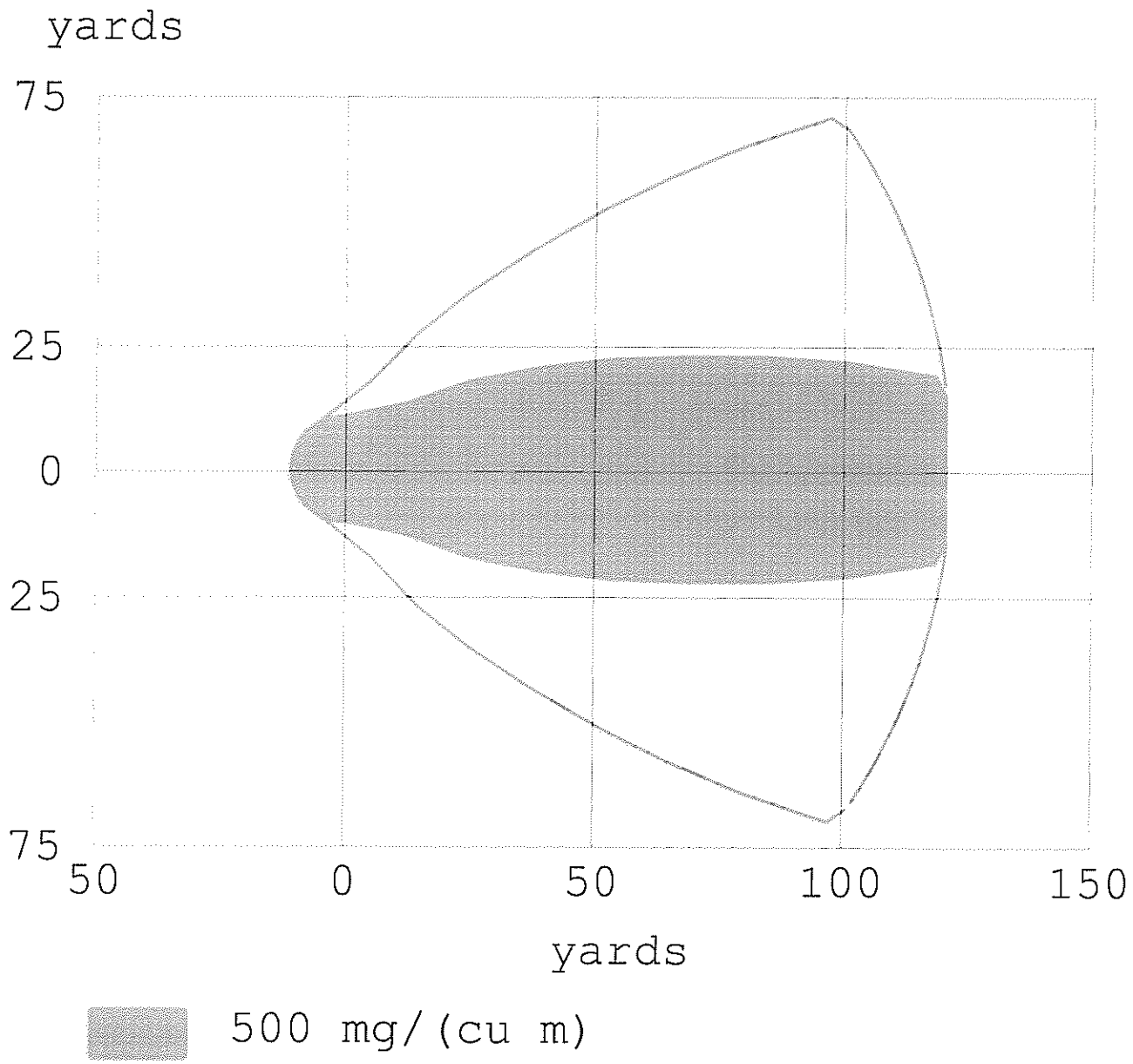
FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (500 mg/(cu m)) Max Threat Zone: 121 yards

Time: October 7, 2009 2232 hours EDT (user specified)

Chemical Name: ETHYLBENZENE
Carcinogenic risk - see CAMEO

Wind: 1.5 meters/sec from N at 3 meters

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (500 mg/(cu m)) Max Threat Zone: 121 yards



SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: METHANOL Molecular Weight: 32.04 g/mol
ERPG-3: 5000 ppm ERPG-2: 1000 ppm ERPG-1: 200 ppm
IDLH: 6000 ppm
Normal Boiling Point: 148.5° F Ambient Boiling Point: 148.5° F
Vapor Pressure at Ambient Temperature: 0.30 atm
Ambient Saturation Concentration: 299,612 ppm or 30.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 80.3 pounds/min
(averaged over a minute or more)
Total Amount Released: 3,493 pounds

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (2750 mg/(cu m)) Max Threat Zone: 96 yards
Note: Footprint was not drawn because effects of
near-field patchiness make dispersion predictions
unreliable for short distances.

SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: ETHYL METHYL KETONE Molecular Weight: 72.11 g/mol
TEEL-3: 3000 ppm TEEL-2: 300 ppm TEEL-1: 300 ppm
IDLH: 3000 ppm
Normal Boiling Point: 175.4° F Ambient Boiling Point: 175.4° F
Vapor Pressure at Ambient Temperature: 0.21 atm
Ambient Saturation Concentration: 206,560 ppm or 20.7%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 5000 pounds
Soil Type: Default Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: 51 minutes
Max Average Sustained Release Rate: 116 pounds/min
(averaged over a minute or more)
Total Amount Released: 5,000 pounds

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (7960 mg/(cu m)) Max Threat Zone: 61 yards
Note: Footprint was not drawn because effects of
near-field patchiness make dispersion predictions
unreliable for short distances.

SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: METHYL ISOBUTYL KETONE
Molecular Weight: 100.16 g/mol
TEEL-3: 500 ppm TEEL-2: 250 ppm TEEL-1: 75 ppm
IDLH: 500 ppm
Normal Boiling Point: 240.8° F Ambient Boiling Point: 240.6° F
Vapor Pressure at Ambient Temperature: 0.049 atm
Ambient Saturation Concentration: 48,850 ppm or 4.89%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 36.6 pounds/min
(averaged over a minute or more)
Total Amount Released: 2,070 pounds

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (2000 mg/(cu m)) Max Threat Zone: 71 yards
Note: Footprint was not drawn because effects of
near-field patchiness make dispersion predictions
unreliable for short distances.

SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: DICHLOROMETHANE Molecular Weight: 84.93 g/mol
ERPG-3: 4000 ppm ERPG-2: 750 ppm ERPG-1: 200 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: 103.5° F Ambient Boiling Point: 102.9° F
Vapor Pressure at Ambient Temperature: 0.90 atm
Ambient Saturation Concentration: 902,972 ppm or 90.3%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: 21 minutes
Max Average Sustained Release Rate: 906 pounds/min
(averaged over a minute or more)
Total Amount Released: 10,000 pounds

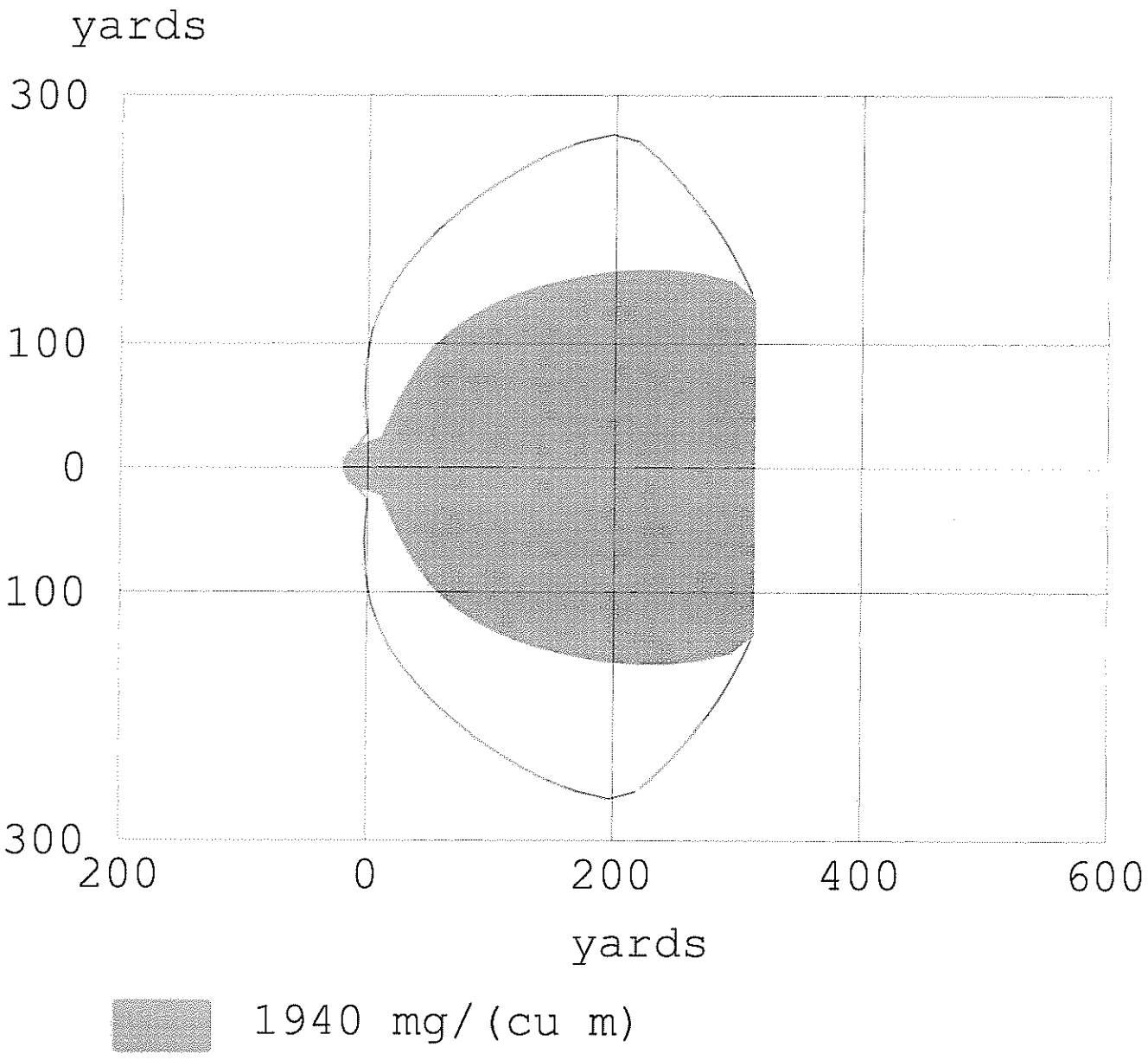
FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (1940 mg/(cu m)) Max Threat Zone: 315 yards

Time: October 7, 2009 2232 hours EDT (user specified)

Chemical Name: DICHLOROMETHANE
Carcinogenic risk - see CAMEO

Wind: 1.5 meters/sec from N at 3 meters

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (1940 mg/(cu m)) Max Threat Zone: 315 yards



SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: N-BUTYL ALCOHOL Molecular Weight: 74.12 g/mol
TEEL-3: 1400 ppm TEEL-2: 50 ppm TEEL-1: 50 ppm
IDLH: 1400 ppm
Normal Boiling Point: 243.8° F Ambient Boiling Point: 243.6° F
Vapor Pressure at Ambient Temperature: 0.020 atm
Ambient Saturation Concentration: 19,763 ppm or 1.98%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 11.6 pounds/min
(averaged over a minute or more)
Total Amount Released: 669 pounds

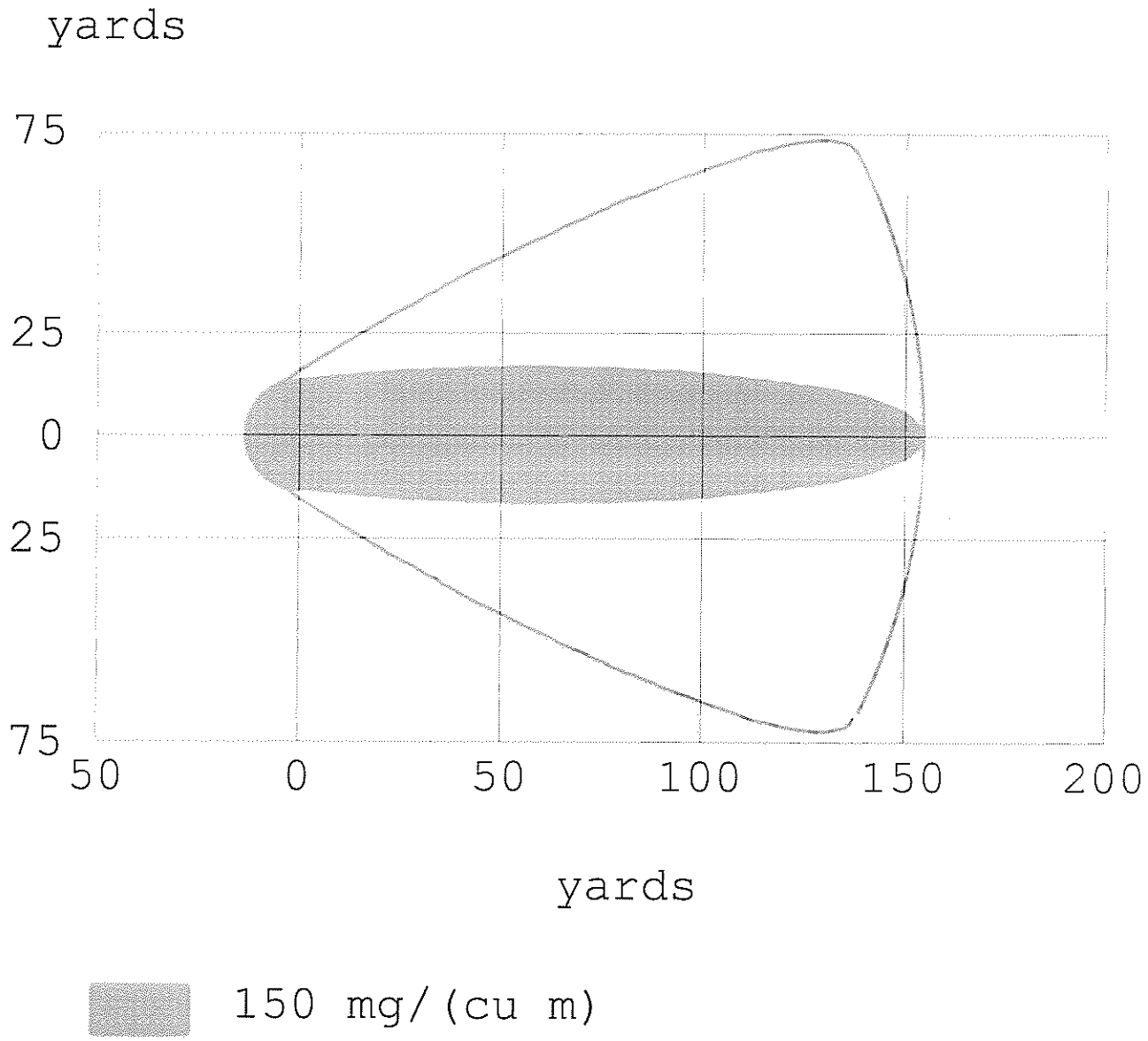
FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (150 mg/(cu m)) Max Threat Zone: 155 yards

Time: October 7, 2009 2232 hours EDT (user specified)

Chemical Name: N-BUTYL ALCOHOL

Wind: 1.5 meters/sec from N at 3 meters

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (150 mg/(cu m)) Max Threat Zone: 155 yards



SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: NITROBENZENE Molecular Weight: 123.11 g/mol
TEEL-3: 200 ppm TEEL-2: 20 ppm TEEL-1: 3 ppm
IDLH: 200 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: 411.4° F Ambient Boiling Point: 411.4° F
Vapor Pressure at Ambient Temperature: 7.82e-004 atm
Ambient Saturation Concentration: 787 ppm or 0.079%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 0.706 pounds/min
(averaged over a minute or more)
Total Amount Released: 42.1 pounds

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (100 mg/(cu m)) Max Threat Zone: 30 yards
Note: Footprint was not drawn because
effects of near-field patchiness make dispersion
predictions unreliable for short distances.

SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: 2-CHLOROPHENOL Molecular Weight: 128.56 g/mol
TEEL-3: 50 ppm TEEL-2: 7.5 ppm TEEL-1: 1 ppm
Normal Boiling Point: 345.9° F Ambient Boiling Point: 345.7° F
Vapor Pressure at Ambient Temperature: 0.0064 atm
Ambient Saturation Concentration: 6,431 ppm or 0.64%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 5.96 pounds/min
(averaged over a minute or more)
Total Amount Released: 353 pounds

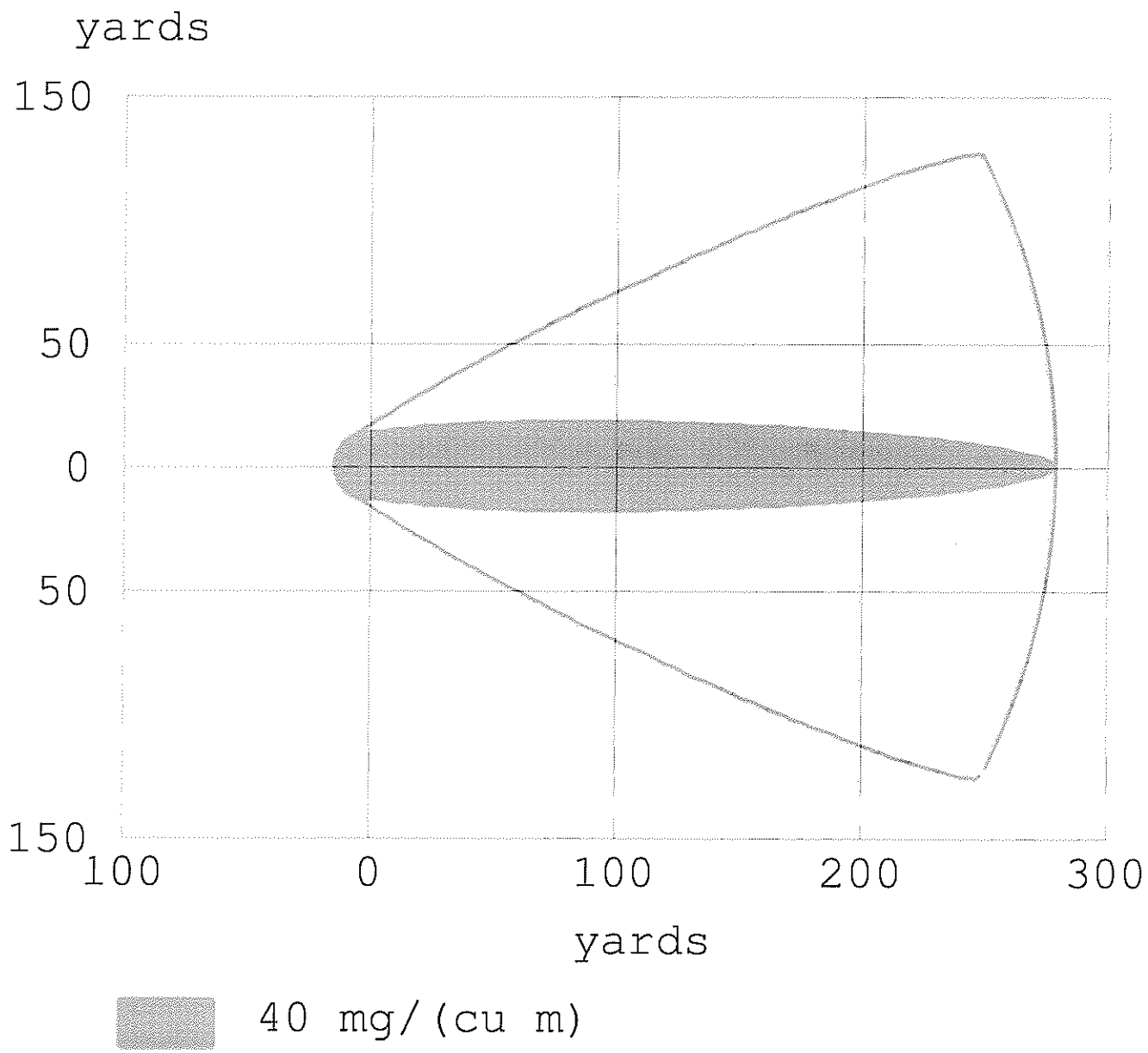
FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (40 mg/(cu m)) Max Threat Zone: 278 yards

Time: October 7, 2009 2232 hours EDT (user specified)

Chemical Name: 2-CHLOROPHENOL

Wind: 1.5 meters/sec from N at 3 meters

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (40 mg/(cu m)) Max Threat Zone: 278 yards



SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: O-DICHLOROBENZENE Molecular Weight: 147.00 g/mol
TEEL-3: 200 ppm TEEL-2: 50 ppm TEEL-1: 50 ppm
IDLH: 200 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: 356.8° F Ambient Boiling Point: 356.2° F
Vapor Pressure at Ambient Temperature: 0.0037 atm
Ambient Saturation Concentration: 3,760 ppm or 0.38%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 3.88 pounds/min
(averaged over a minute or more)
Total Amount Released: 230 pounds

FOOTPRINT INFORMATION:
Dispersion Module: Gaussian
Red LOC (300 mg/(cu m)) Max Threat Zone: 40 yards
Note: Footprint was not drawn because
effects of near-field patchiness make dispersion
predictions unreliable for short distances.

SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: PYRIDINE Molecular Weight: 79.10 g/mol
TEEL-3: 1000 ppm TEEL-2: 25 ppm TEEL-1: 15 ppm
IDLH: 1000 ppm
Normal Boiling Point: 239.5° F Ambient Boiling Point: 238.8° F
Vapor Pressure at Ambient Temperature: 0.050 atm
Ambient Saturation Concentration: 50,500 ppm or 5.05%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 31.2 pounds/min
(averaged over a minute or more)
Total Amount Released: 1,761 pounds

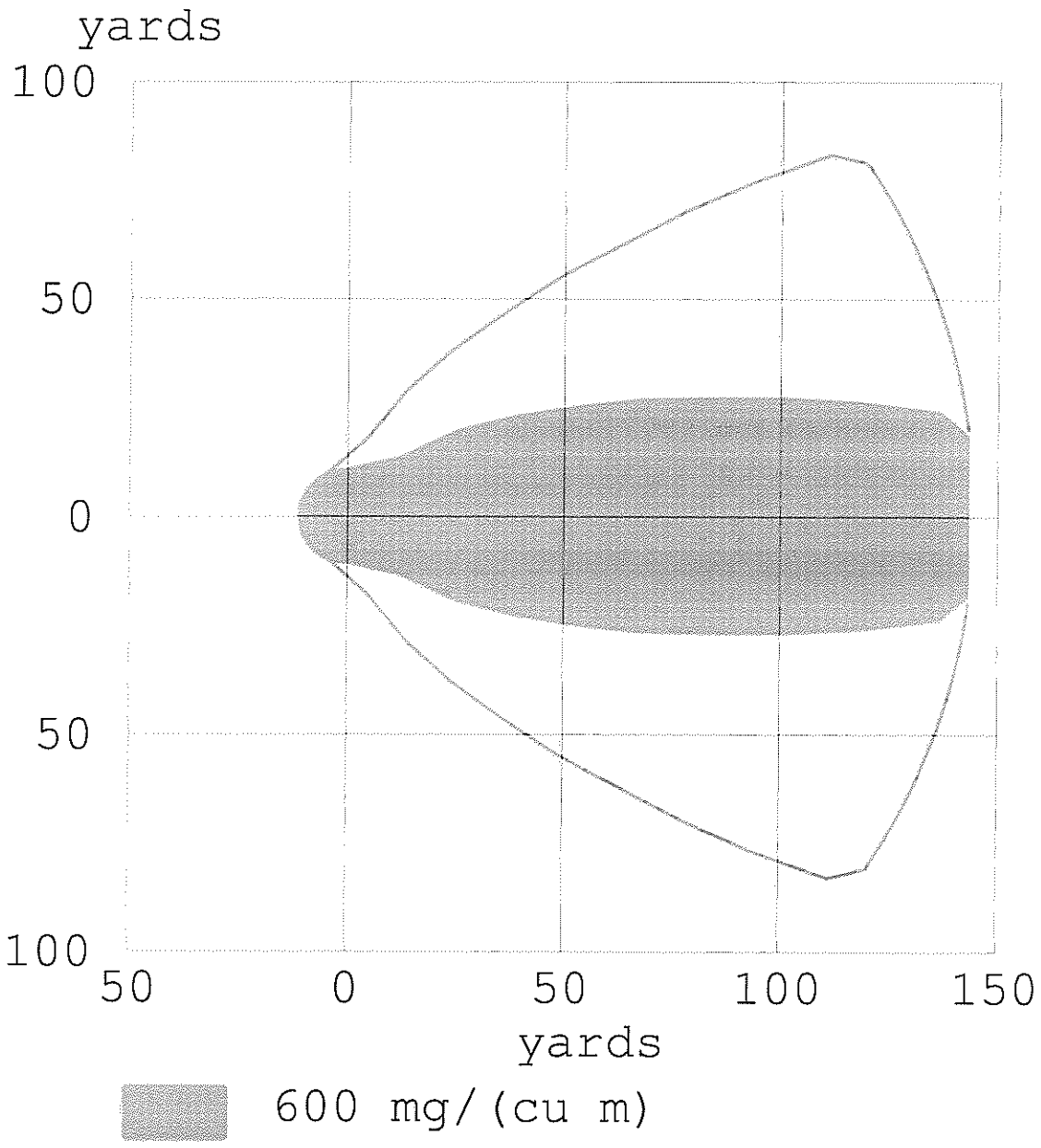
FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (600 mg/(cu m)) Max Threat Zone: 144 yards

Time: October 7, 2009 2232 hours EDT (user specified)

Chemical Name: PYRIDINE

Wind: 1.5 meters/sec from N at 3 meters

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (600 mg/(cu m)) Max Threat Zone: 144 yards



SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: 1,1,1-TRICHLOROETHANE
Molecular Weight: 133.40 g/mol
ERPG-3: 3500 ppm ERPG-2: 700 ppm ERPG-1: 350 ppm
IDLH: 700 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: 165.3° F Ambient Boiling Point: 165.1° F
Vapor Pressure at Ambient Temperature: 0.27 atm
Ambient Saturation Concentration: 269,672 ppm or 27.0%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: 46 minutes
Max Average Sustained Release Rate: 256 pounds/min
(averaged over a minute or more)
Total Amount Released: 10,000 pounds

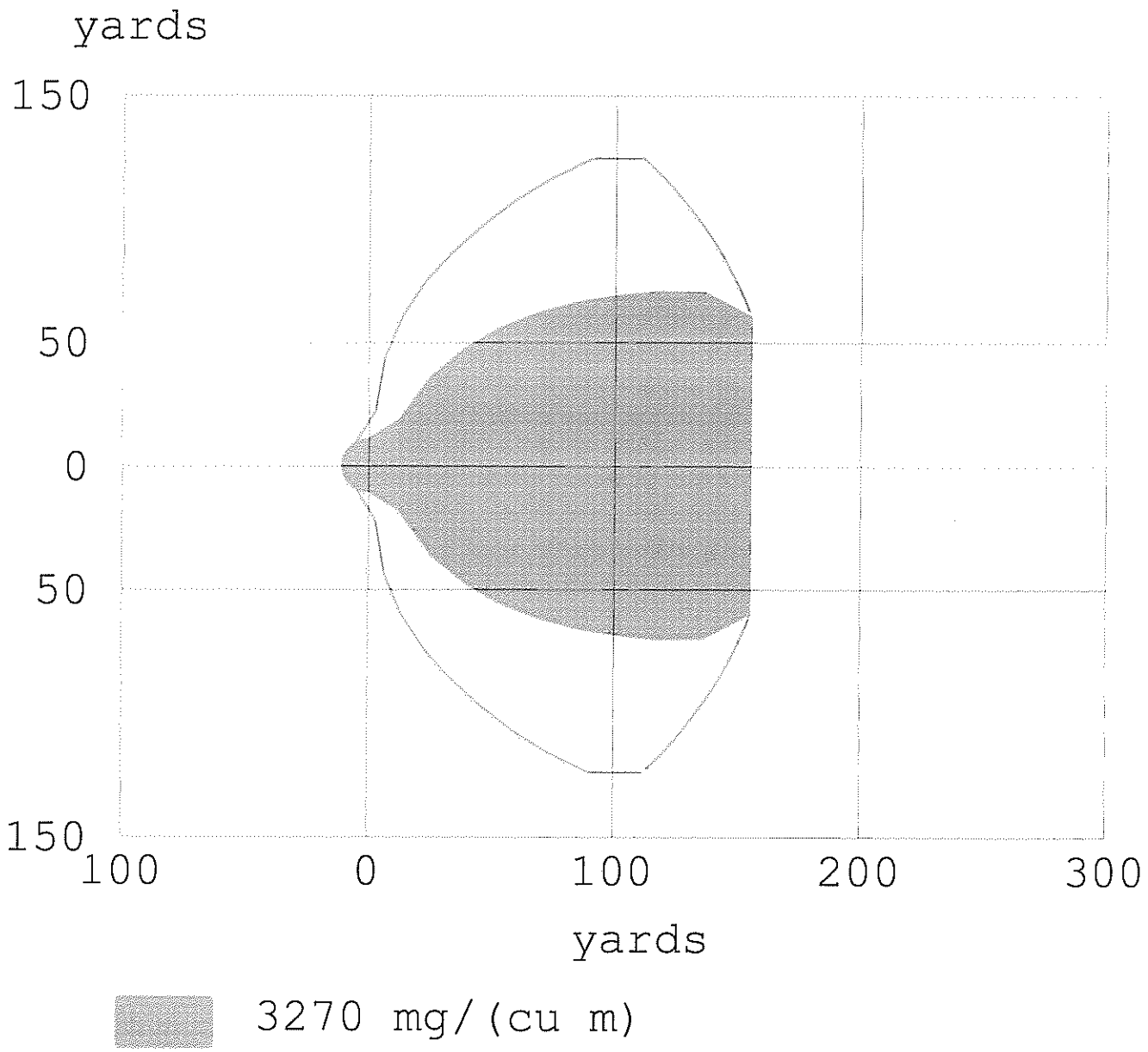
FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (3270 mg/(cu m)) Max Threat Zone: 156 yards

Time: October 7, 2009 2232 hours EDT (user specified)

Chemical Name: 1,1,1-TRICHLOROETHANE
Carcinogenic risk - see CAMEO

Wind: 1.5 meters/sec from N at 3 meters

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (3270 mg/(cu m)) Max Threat Zone: 156 yards



SITE DATA INFORMATION:
Location: GAINESVILLE, FLORIDA
Building Air Exchanges Per Hour: 0.37 (unsheltered double storied)
Time: October 7, 2009 2232 hours EDT (user specified)

CHEMICAL INFORMATION:
Chemical Name: TRICHLOROETHYLENE Molecular Weight: 131.39 g/mol
ERPG-3: 5000 ppm ERPG-2: 500 ppm ERPG-1: 100 ppm
IDLH: 1000 ppm
Carcinogenic risk - see CAMEO
Normal Boiling Point: 188.5° F Ambient Boiling Point: 188.5° F
Vapor Pressure at Ambient Temperature: 0.16 atm
Ambient Saturation Concentration: 164,022 ppm or 16.4%

ATMOSPHERIC INFORMATION: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/sec from N at 3 meters
No Inversion Height
Stability Class: F (user override) Air Temperature: 98° F
Relative Humidity: 71% Ground Roughness: urban or forest
Cloud Cover: 5 tenths

SOURCE STRENGTH INFORMATION:
Puddle Area: 4960 square feet Puddle Mass: 10000 pounds
Soil Type: Concrete Ground Temperature: 98° F
Initial Puddle Temperature: Ground temperature
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 150 pounds/min
(averaged over a minute or more)
Total Amount Released: 7,975 pounds

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (2420 mg/(cu m)) Max Threat Zone: 140 yards

Time: October 7, 2009 2232 hours EDT (user specified)

Chemical Name: TRICHLOROETHYLENE
Carcinogenic risk - see CAMEO

Wind: 1.5 meters/sec from N at 3 meters

FOOTPRINT INFORMATION:
Model Run: Heavy Gas
Red LOC (2420 mg/(cu m)) Max Threat Zone: 140 yards