UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
J. F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203

January 18, 1984

Dr. James E. Crowley
Ciba-Geigy Corporation
180 Mill St.
Cranston, RI 02905

Ciba Geigy
RID001154323
R-1B

Dear Dr. Crowley:

EPA indicated in its letter of completion to you on November 8, 1983 that you would be contacted for any technical clarification of your Part B application for a hazardous waste storage permit. During the drafting of your permit Table 4 in Appendix B of your Waste Analysis Plan was found to be incorrect and confusing in several ways. The table has been marked to show the basic corrections (See Attachment 1). The table was retyped and recorrected to incorporate and further the corrections and to group similar wastes (See Attachment 2). Each table enclosed cross references the other by waste (line) number.

First, in sixteen instances you designated wastes as toxic solely by your own determination. Pyrazolidinedione and dibenzazepine were listed twice (#'s 1 and 9) and three times (#'s 11, 16 and 17), respectively, based on their LD_{50}'s, but they are not listed toxic hazardous wastes according to EPA[a]. It is unknown in 11 entries (#'s 7, 12, 28, 41, 44, 50, 71, 72, 73, 75 and 76) what the toxic substance is, and whether it is a listed hazardous waste. Please clarify these.

In 29 entries other than the above, LD_{50} is indicated as a parameter. This is not a suitable parameter even for hazardous wastes listed by EPA for toxicity. It is also a costly, involved and time-consuming determination which no facility should want to repeat. The correct parameter for listed hazardous waste constituents is the identity of the compound by GC/MS. LD_{50} was a second selected parameter in 23 entries (#'s 19, 20, 23, 29, 33, 34, 36, 45, 48, 49, 51, 53, 58, 60, 61, 68, 70, 83, 84, 85, 87, 89, and 91) of wastes hazardous by characteristic, usually ignitability. If a waste is listed by EPA due to toxicity, it should be entered in your table with the hazardous constituent as parameter, not according to characteristic with a corresponding physical parameter. Hazardous wastes should be entered by characteristic only when they are not EPA listed wastes. When tabulating wastes by characteristic, the D00_ numbers are appropriate, and the wastes should not be designated as "listed".

The names of many wastes are not distinctive. Similar wastes of varying composition are different streams and have different origins. These wastes would be better named by their origins (even though the origins are parallel units); e.g. methanol still bottoms, reactor 1 residue, reactor 2 residue. The waste source or stream names need not reveal a proprietary process. Some waste names are

---

[a] In two instances (#'s 14 and 15) dibenzazepine was in a listed ignitable solvent and in two or three wastes (#'s 48, 51? and 53) substituted pyrazolidinedione was ignitable. Are waste #'s 1, 9, 11, 16 or 17 also ignitable? If so, entries are inconsistent.

SEMS DocID 667423

also vague in being organic family names; such as aromatic ketone, non-halogenated solvent or aliphatic alcohol. What are these specifically? A non-halogenated solvent and aliphatic alcohol might both be methanol. Also, no aromatic ketone is listed as a waste in Part A of the application. Clarify the waste names by specific hazardous contaminant and/or process source so that they are each unique.

Toluene was correctly related to a flash point of 40° F. for some wastes (#'s 13 and 15). Thereafter a waste flash point of 40° F. was indicated eight times (#'s 18, 38, 40, 42, 43, 64, 65 and 82) without mention of toluene. Since no other ignitable compound in this table (especially in non-specific waste number F005) possessed a flash point of 40° F., it was assumed that these eight wastes were essentially toluene; therefore toluene must be the parameter and EPA listing (F005 and U220) must be the rationale of each. Similar inductive logic was used to specify waste #35 (F.P. 81° F.) as xylene, because waste #10 (F.P. 84° F.) was xylene and both wastes had the same EPA hazardous waste number (F003). Likewise waste #'s 47, 62 and 63 (F.P. -4° F.) were induced to be acetone, because waste #'s 6, 14 and 78 (F.P. -4 to -5° F.) contained acetone and all these wastes had the same EPA hazardous waste number (F003).

However, although methanol (F.P. 52° F.) might have been associated with waste #'s 55, 56 and 57 (F.P. 52° F.), it is not listed under EPA hazardous waste number F005. Waste #'s 20, 24, 25, 36, 39, 45, 58, 68 and 77 (F.P. 53° F.) might contain methanol but no EPA hazardous waste number confirms it. Please verify the specification of toluene, xylene and acetone where the waste flash points implied them. Determine whether the nine ignitable wastes with flash points of 53° F. contain methanol and should be entered for this listed waste rather than by characteristic.

The corrosivity hazardous waste characteristic only applies if the waste is:

(1) aqueous and $2 \geq pH \geq 12.5$, or

(2) corrodes SAE 1020 steel at a rate greater than 0.250 inch/year.

Since liquid wastes which are entirely organic cannot satisfy the first condition, they must satisfy the second to be corrosive hazardous wastes. Do waste #'s 22, 26, 27, 37 and 49 contain water? If not, "pH's ≤ 2" is superfluous. Also, if waste #'s 22, 26, 27 and 37 (containing o-nitroaniline) are corrosive; why isn't waste #69 corrosive?

Ignitability is not a suitable parameter for waste #74. It must be ignitable due to its flash point. Also, "flammability" is not an adequate, technical rationale for classifying waste #86 as ignitable.

The list of wastes in the waste analysis plan must be directly related to the description of hazardous wastes in Part A of the application for a hazardous waste storage permit. Every hazardous waste declared in the Part A as handled by the facility must be included in the waste analysis plan, in the table listing all wastes and their corresponding test parameters. Only 13 of the 51 wastes listed in Ciba-Geigy's Part A (See Attachment 3) were addressed in their waste analysis plan. Nitrobenzene waste (U169) which was included in the waste analysis plan is not listed in the Part A. Please alter one or both of these waste accounts to bring them into agreement.

Please respond to the foregoing discrepancies by February 6. If you have any questions please call the undersigned at (617)-223-1909.

Sincerely yours,

Michael J. O'Brien
Environmental Engineer

Encl.:

FORM APPROVED
OMB No. 158-R0100

DISCHARGE SERIAL NUMBER

002

FOR AGENCY USE

c. **Overflow Duration** Give the average overflow duration in hours.

Wet weather	209c1	– hours Unknown
Dry weather	209c2	0 Hours

d. **Overflow Volume** Give the average volume per overflow incident in thousand gallons.

Wet weather	209d1	– thousand gallons per incident Unknown
Dry weather	209d2	0 thousand gallons per incident

Proceed to Item 11

10. **Seasonal/Periodic Discharges** N/A

a. **Seasonal/Periodic Discharge Frequency** If discharge is intermittent from a holding pond, lagoon, etc., give the actual or approximate number of times this discharge occurs per year. 210a ____ times per year

b. **Seasonal/Periodic Discharge Volume** Give the average volume per discharge occurrence in thousand gallons. 210b ____ thousand gallons per discharge occurrence

c. **Seasonal/Periodic Discharge Duration** Give the average duration of each discharge occurrence in days. 210c ____ days

d. **Seasonal/Periodic Discharge Occurrence—Months** Check the months during the year when the discharge normally occurs. 210d

☐ JAN ☐ FEB ☐ MAR
☐ APR ☐ MAY ☐ JUN
☐ JUL ☐ AUG ☐ SEP
☐ OCT ☐ NOV ☐ DEC

11. **Discharge Treatment**

a. **Discharge Treatment Description** Describe waste abatement practices used on this discharge with a brief narrative. (See Instructions) 211a

None

Number in Part B application

Table A-1 Attachment 2

Parameters and Rationales For Their Selec

#	No.	Hazardous Waste	Parameter	Rationale
2	1	Organic sludge	Toluene	This is a listed waste (F005) and U220.
3	2	Aliphatic ether	Flash point	This waste is ignitable (D001) due to its flash point, 15°F..
4	3	Filter media contaminated with chlorobenzene	Chlorobenzene	This is a listed toxic waste (F002 and U037). It is, also, a RI Type 9 (extremely hazardous) waste because it contains chlorobenzene
5	4	Halogenated solvent (chlorobenzene) I	Chlorobenzene	This is a listed toxic waste (F002 and U037). It is, also, a RI Type 9 (extremely hazardous) waste because it contains chlorobenzene
8	5	Halogenated solvent (chlorobenzene) II	Chlorobenzene	This is a listed toxic waste (F002 and U037). It is, also, a RI Type 9 (extremely hazardous) waste because it contain chloro-benzen
6	6	Acetone I	Acetone ~~or flash point~~	This is a listed ignitable waste (F003 and U002). ~~The flash point of acetone is -4° F.~~
47	7	Acetone II	Acetone ~~or flash point~~	This is a listed ignitable waste (F003 and U002). ~~The flash point is -4° F.~~
62	8	Acetone III	Acetone ~~or flash point~~	This is a listed ignitable waste (F003 and U002). ~~The flash point is -4° F.~~.
63	9	Acetone IV	Acetone ~~or flash point~~	This is a listed ignitable waste (F003 and U002). ~~The flash point is -4° F..~~
10	10	Aromatic hydrocarbon (xylene)	Xylene ~~or flash point~~	This is a listed ignitable waste (F003 and U239). ~~The flash point of the xylene mixture is 84° F.~~.
13	11	Aromatic hydrocarbon (toluene)	Toluene	This is a listed toxic waste (F005 and U220).
14	12	Substituted dibenzazepines in acetone	Acetone ~~or flash point~~	This is a listed ignitable waste (F003 and U002). ~~The flash point of acetone is -4 F.~~.
15	13	Substituted dibenzazepines in toluene	Toluene	This is a listed toxic waste (F005 and U220).
18	14	Non-halogenated solvent (toluene)	Toluene	This is a listed toxic waste (F005 and U220).
19	15	Non-halogenated solvent I	Flash point	This is an ignitable waste (D001). It has a flash point of 80-88° F..
21	16	Aromatic hydrocarbon I	Flash point	This waste is ignitable (D001), having an estimated flash point of 53° F.

Table A-1

Parameters & Rationales For Their Select

#	No.	Hazardous Waste	Parameter	Rationale
32	17	Aromatic hydrocarbon II	Flash point	This waste is ignitable (D001), having a flash point of 53° F..
33	18	Aromatic hydrocarbon III	Flash point	This waste is ignitable (D001), having a flash point of 80-88° F..
34	19	Aromatic hydrocarbon IV	Flash point	This waste is ignitable (D001), having a flash point of 80-88° F..
43	20	Aromatic hydrocarbon V	Toluene	This is a listed toxic waste (F005 and U220).
64	21	Aromatic hydrocarbon VI	Toluene	This is a listed toxic waste (F005 and U220).
65	22	Aromatic hydrocarbon VII	Toluene	This is a listed toxic waste (F005 and U220).
83	23	Aromatic hydrocarbon VIII	Flash point	This waste is ignitable (D001), having a flash point of 81° F..
84	24	Aromatic hydrocarbon IX	Flash point	This waste is ignitable (D001), having a flash point of 81° F..
87	25	Aromatic hydrocarbon X	Flash point	This waste is ignitable (D001), having a flash point of 81° F..
22	26	Filter media contaminated with o-nitroaniline (I)	PH, o-nitroaniline	This waste is corrosive (D002) due to pH (<2) and is, also, toxic.
26	27	Filter media contaminated with o-nitroaniline (II)	PH, o-nitroaniline	This waste is corrosive (D002) due to pH (<2) and is, also, toxic.
27	28	Filter media contaminated with o-nitroaniline (III)	PH, o-nitroaniline	This waste is corrosive (D002) due to pH (<2) and is, also, toxic.
37	29	Filter media contaminated with o-nitroaniline (IV)	PH, o-nitroaniline	This waste is corrosive (D002) due to pH (<2) and is, also, toxic.
42	30	Filter media with solvent (toluene)	Toluene	This is a listed toxic waste (F005 and U220).
86	31	Filter media ~~I~~	Flash point	This waste is ignitable (D001) due to flammability of adsorbed solvent.
30	32	Filter media contaminated with nitrobenzene	Nitrobenzene	This is a listed waste (U169) due to its toxicity and ignitability. It is also, a R.I. Type 9 (extremely hazardous) waste because it contains nitrobenzene.
31	33	Filter media ~~II~~ contaminated with methanol	Methanol ~~Flash point~~	This waste ~~is ignitable (D001) because it contains methanol (flash point: 52° F.).~~ is a listed (F003 and U154).

Table A-1

Parameters d Rationales For Their Selec

#	No.	Hazardous Waste	Parameter	Rationale
24	34	Non-halogenated solvent ~~(methanol)~~ and water (I)	Flash point	This waste is ignitable (D001). It has an estimated flash point of 53°F.
39 48	35	Non-halogenated solvent ~~(methanol)~~ and water (II)	Flash point	This waste is ignitable (D001). It has a flash point of 53° F..
25	36	Non-halogenated solvent II	Flash point	This waste is ignitable (D001). It has a flash point of 53° F..
57	37	Non-halogenated solvent III	Flash point	This waste is ignitable (D001), having a flashpoint of 52° F..
58	38	Non-halogenated solvent IV	Flash point	This waste is ignitable (D001), having a flash point of 52° F..
59	39	Non-halogenated solvent IV	Flash point	This waste is ignitable (D001) due to its flash point, -20° F..
77	40	Non-halogenated solvent VI	Flash point	This waste is ignitable (D001), having a flash point of 53° F..
29	41	Non-halogenated solvent VII	Flash point	This waste is ignitable (D001) due to a flash point of 77° F..
35	42	Non-halogenated solvent (xylene)	Xylene	This is a listed waste (F003 and U239).
38	43	Non-halogenated solvent (toluene) and water (I)	Toluene	This is a listed waste (F005 and U220).
40	44	Non-halogenated solvent (toluene) and water (II)	Toluene	This is a listed waste (F005 and U220).
36	45	Alcohol/aromatic hydrocarbon I	Flash point ~~PH~~	This waste is ignitable (D001), having a flash point of 53° F. ~~, and corrosive (D002) due to its pH (2 to 3)~~.
20	46	Alcohol/aromatic hydrocarbon II	Flash point	This waste is ignitable (D001), having a flash point of 53° F..
91	47	Alcohol/aromatic hydrocarbon III	Flash point	This waste is ignitable (D001) due to its flash point of 53° F..
45	48	Aliphatic alcohol I	Flash point	This waste is ignitable (D001), having a flash point of 53° F..
55	49	Aliphatic alcohol II	Flash point	This waste is ignitable (D001). It has a flash point of 52° F..
56	50	Aliphatic alcohol in water	Flash point	This waste is ignitable (D001), having a flash point of 52° F..

Table A-1

Parameters d Rationales For Their Selec

#	No.	Hazardous Waste	Parameter	Rationale
46	51	Halogenated organic solvent (trichlorotrifluoroethane)	Trichlorotri-fluoroethane	This is a listed waste (F002).
48	52	Substituted pyrazolidine-dione I	Flash point	This waste is ignitable (D001), having a flash point of 68° F..
49	53	Aromatic ketone Aqueous or corrodes steel at ≥ 0.250"/yr.?	PH	This waste is corrosive (D002) due to its pH (approximately 2).
51	54	Halogenated organic	Flash point	This waste is ignitable (D001), with a flash point of 68° F..
53	55	Substituted pyrazolidine-dione II	Flash point	This waste is ignitable (D001), having a flash point of 52° F..
60	56	Amine/alcohol mixture	Flash point	This waste is ignitable (D001) due to its flash point, -35° F..
61	57	Alkylamine	Flash point	This waste is ignitable (D001) due to its flash point (below 0° F.).
66	58	Chlorinated waste solvents (chlorobenzene)	Chlorobenzene	This is a listed waste (F002). and U037 R1
67	59	Chlorinated, mixed solvents	Chlorobenzene	This is a listed waste (F002). R1
68	60	Aliphatic, Aromatic liquied	Flash point	This waste is ignitable (D001) due to its flash point of 52° F..
69	61	Non-halogenated organic (o-nitroaniline)	o-Nitroaniline PH	This waste is toxic because it contains o-nitroaniline. Corrosive? Ans 26 thru 29
70	62	Process samples	Flash point	This waste is ignitable (D001), due to its flash point, ___.
74	63	Solvent wet absorbent	Flash point	This waste is ignitable (D001), due to its flash point, ___.
78	64	Acetone boilouts	Acetone	This is a listed waste (F003). and U002
79	65	Isopropyl alcohol	Flash point	This is an ignitable waste (D001), having a flash point of 53° F..
80	66	Methanol boilouts	Methanol	This is a listed waste (F003). and U154
81	67	Methyl ethyl ketone boilouts	Methyl ethyl ketone	This is a listed waste (F005). and U159
82	68	Toluene boilouts	Toluene	This ia a listed waste (F005 and U220).
85	69	Hydrocarbon/alcohol	Flash point	This waste is ignitable (D001) due to its flash point, 81° F..

Table A-1

Parameter[illegible]d Rationales For Their Selec[illegible]n

#	No.	Hazardous Waste	Parameter	Rationale
88	70	Inorganic hydroxide	PH	This is a corrosive waste (D002), having a pH of 13.
90	71	Waste chloroform	Chloroform	This is a listed waste (U044). It is, also, a RI Type 9 (extremely hazardous) waste because it contains chloroform.
23	72	Substituted triazine	PH	This waste is corrosive due to its pH (<2).

deleted

TABLE 4 Attachment 1

PARAMETERS AND RATIONALE FOR THEIR SELECTION

#	HAZARDOUS WASTE	PARAMETER	RATIONALE
Unlisted toxic ~~1~~	Substituted Pyrazolidinedione Is this waste ignitable as #48?	~~LD_{50}~~	~~This waste is considered slightly toxic due to its LD_{50} (1000 mg/kg).~~
1 ~~2~~	Organic Sludge	Toluene ~~Toxicity, Flashpoint~~	This listed toxic waste (F005) is ignitable. ~~Pure toluene has a flashpoint of 40°F.~~
2 ~~3~~	Aliphatic Ether	Flashpoint	This waste is ignitable due to its flashpoint (15°F). ~~It is listed~~ (D001) and U037.
3 ~~4~~	Filter Media contaminated with chlorobenzene	~~Flashpoint,~~ Chlorobenzene	This waste is ~~ignitable~~ listed toxic (F002). ~~Pure chlorobenzene has a flashpoint of 90°C and is listed D001.~~ R.I. ~~Class~~ Type 9 - (Extremely Hazardous) (chlorobenzene). ~~TLV is 75 ppm (chlorobenzene).~~ and U037
4 ~~5~~	Halogenated Solvent (chlorobenze) I	~~Flashpoint,~~ Chlorobenzene	This waste is ~~ignitable~~ listed toxic (F002). It has a flashpoint of 80°F. This is a listed R.I. (Extremely Hazardous) Waste (chlorobenzene). ~~TLV of chlorobenzene is 75 ppm.~~ This is a listed toxic waste (F002). Type 9
~~6~~	~~Acetone~~ I ~~Aliphatic Ketone~~	Acetone ~~Flashpoint~~	This listed ~~toxic~~ ignitable waste (F003) is ignitable. ~~The flashpoint of acetone is -4°F.~~ and U002
~~7~~	Filter Media[1] What chemical? Listed?	~~LD_{50}~~	~~This waste is considered slightly toxic due to its LD_{50} (4862 mg/kg).~~
5 ~~8~~	Halogenated Solvent (chlorobenzene) II	~~Flashpoint,~~ Chlorobenzene	~~This waste is ignitable. The flashpoint of chlorobenzene is 85°F.~~ This waste contains a listed R.I. Extremely Hazardous Waste (chlorobenzene). ~~TLV of chlorobenzene is 75 ppm. LD_{50} is 2,910 mg/kg.~~ This is a listed toxic waste (F002).
Unlisted toxic ~~9~~	Substituted Pyrazolidinedione Is this waste ignitable as #48?	~~LD_{50}~~	~~This waste is considered slightly toxic due to its LD_{50} (1000 mg/kg).~~
10	Aromatic Hydrocarbon (xylene)	Xylene ~~Flashpoint, LD_{50}~~	This listed waste (F003) is ignitable. ~~The flashpoint of the xylene mixture is 84°F. This waste is considered slightly toxic due to its LD_{50} (5000 mg/kg).~~ & U239

TABLE 4

PARAMETERS AND RATIONALE FOR THEIR SELECTION

#	HAZARDOUS WASTE	PARAMETER	RATIONALE
Unlisted ~~11~~	Substituted Dibenzazepine Is this ignitable, as ~~14~~ 12 below?	~~LD_{50}~~	~~Material is considered slightly toxic due to its LD_{50} (approximately 4000 mg/kg).~~
~~12~~	Filter Media[1] What listed waste contaminant?	~~LD_{50}~~	~~This waste is considered slightly toxic due to its LD_{50} (4862 mg/kg).~~
~~13~~ 11	Aromatic Hydrocarbon (toluene)	Toluene ~~Flashpoint~~, ~~LD_{50}~~	This waste is ignitable. ~~Pure toluene has a flashpoint of 40°C. This waste is considered slightly toxic due to its LD_{50} (approximately 3000 mg/kg) and~~ is a listed toxic waste (~~F003~~, F005) and U220.
~~14~~ 12	Substituted Dibenzazepines	Acetone ~~Flashpoint~~, ~~LD_{50}~~	This waste ~~is ignitable. Pure acetone has a flashpoint of -4°F. This waste is considered slightly toxic due to its LD_{50} (approximately 4300 mg/kg) and~~ is a listed ~~toxic~~ ignitable waste (F003, ~~(F005)~~, U002).
~~15~~ 13	Substituted Dibenzazepines in toluene	~~Flashpoint~~, Toluene	This listed toxic waste (F005) U220 is ~~ignitable. Pure toluene has a flashpoint of 40°F.~~
Unlisted ~~16~~	Substituted Dibenzazepine Is this ignitable, as ~~14~~ 12 above	~~LD_{50}~~	~~This waste is considered slightly toxic due to its LD_{50} (approximately 4000 mg/kg).~~
~~17~~	Substituted Dibenzazepines	~~LD_{50}~~	~~This waste is considered slightly toxic due to its LD_{50} (approximately 3060 mg/kg).~~
~~18~~ 14	Non-halogenated Solvent (toluene)	Toluene ~~Flashpoint~~, ~~LD_{50}~~	This waste is listed toxic waste (~~D001~~ F005 and U220) is ignitable. It has a flashpoint of 40°F. ~~This waste is considered slightly toxic due to its LD_{50} (5000 mg/kg).~~
~~19~~ 15	Non-halogenated Solvent	Flashpoint, ~~LD_{50}~~	This ~~listed toxic~~ is an ignitable waste (D001) ~~is ignitable.~~ It has a flashpoint of 80-88°F. ~~This waste is considered slightly toxic due to its LD_{50} (5000 mg/kg).~~
~~20~~ 46	Alcohol Aromatic Hydrocarbon	Flashpoint, ~~LD_{50}~~	This ~~listed toxic~~ waste (D001) is ignitable. It has a flashpoint of 53°F. ~~This waste is considered slightly toxic due to its LD_{50} (4800 mg/kg).~~

TABLE 4

PARAMETERS AND RATIONALE FOR THEIR SELECTION

#	HAZARDOUS WASTE	PARAMETER	RATIONALE
16 ~~21~~	Aromatic Hydrocarbon I	Flashpoint	This ~~listed toxic~~ waste (D001) is ignitable. It has an estimated flashpoint of 53°F.
26 ~~22~~	Filter Media[2] w/o-nitroaniline (I)	pH, o-nitroaniline	This waste is ~~a listed toxic waste~~ (D002) due to its corrosivity (pH <2) ~~and its toxicity (o-nitroaniline).~~
72 ~~23~~	Substituted Triazine (Unlisted)	~~pH, LD_{50}~~	This waste is ~~a listed toxic waste~~ (D002) due to its corrosivity (pH <2) ~~and its toxicity (LD_{50} < 500 mg/kg).~~
34 ~~24~~	Non-halogenated Solvent and Water (Methanol!?) not effected	Flashpoint	This ~~listed toxic~~ waste (D001) is ignitable. It has an estimated flashpoint of 53°F.
36 ~~25~~	Non-halogenated Solvent[3]	Flashpoint	This ~~listed toxic~~ waste (D001) is ignitable. It has an estimated flashpoint of 53°F.
27 ~~26~~	Filter Media[2] contaminated with o-nitroaniline (II)	pH, o-nitroaniline	This waste is ~~a listed toxic~~ waste (D002) due to its corrosivity (pH <2) and its toxicity ~~(o-nitroaniline).~~
28 ~~27~~	Filter Media[2] contaminated with o-nitroaniline (III)	pH, o-nitroaniline	This waste is ~~a listed toxic~~ waste (D002) due to its corrosivity (pH <2) and its toxicity ~~(o-nitroaniline).~~
~~28~~	Filter Media What listed waste contaminant?	~~LD_{50}~~	~~This waste is considered slightly toxic due to its estimated LD_{50} (5000 mg/kg).~~
41 ~~29~~	Non-halogenated Solvent	Flashpoint, ~~LD_{50}~~	This listed ~~toxic~~ waste (D001) is ignitable. The flashpoint is 77°F.
32 ~~30~~	Filter Media w/nitrobenzene	Nitrobenzene	This waste is a listed ~~considered slightly toxic due to its LD_{50} (4,300 mg/kg).~~ This waste is considered R.I. Type 9 - Extremely Hazardous because it contains nitrobenzene.
33 ~~31~~	Filter Media contaminated with methanol	Methanol ~~Flashpoint~~	This waste is a listed (F003 and U154) ~~contains methanol and is considered ignitable (D001) because of the flashpoint (52°F).~~
17 ~~32~~	Aromatic Hydrocarbon II	Flashpoint	This ~~listed~~ waste (D001) is ignitable. It has a flashpoint of 53°F.

TABLE 4

PARAMETERS AND RATIONALE FOR THEIR SELECTION

#	HAZARDOUS WASTE	PARAMETER	RATIONALE
18 ~~33~~	Aromatic Hydrocarbon[4]	Flashpoint, ~~LD_{50}~~	This ~~listed~~ waste (D001) is ignitable. It has a flashpoint of 80-88°F. ~~This waste is considered slightly toxic due to its LD_{50} (4300 mg/kg)~~.
19 ~~34~~	Aromatic Hyrdocarbon[4]	Flashpoint, ~~LD_{50}~~	This ~~listed~~ waste (D001) is ignitable. It has a flashpoint of 80-88°F. ~~This waste is considered slightly toxic due to its LD_{50} (4300 mg/kg)~~.
42 ~~35~~	Non-halogenated Solvent (xylene) ?	Xylene ~~Flashpoint~~	This ~~listed~~ toxic waste (F003) is ignitable. It has a flashpoint of 81°F. ~~This waste is considered slightly toxic due to its LD_{50} (2600 mg/kg)~~.
45 ~~36~~	Alcohol/Aromatic Hydrocarbon	Flashpoint, ~~LD_{50}~~, ~~pH~~	This ~~listed~~ toxic waste (D001) is ignitable. It has a flashpoint of 53°F. ~~This waste is considered corrosive (pH of 2-3) and slightly toxic due to its LD_{50} (4,800 mg/kg)~~. corrosive wastes must have pH ≥ 2.
29 ~~37~~	Filter Media[2] contaminated with o-nitroaniline (IV)	pH, o-Nitroaniline	This waste is a listed toxic waste (D002) due to its corrosivity (pH < 2) and its toxicity (o-nitroaniline).
43 ~~38~~	Non-Halogenated Solvent (toluene)? and Water	Toluene ~~Flashpoint~~	This listed waste (F005 and U220) ~~(D001)~~ is ignitable. It has a flashpoint of 40°F.
35 ~~39~~	Non-Halogenated Solvent (methanol?) and Water	Methanol? ~~Flashpoint~~	This listed waste (D001) is ignitable. It has a flashpoint of 53°F.
44 ~~40~~	Non-Halogenated Solvent (toluene)	Toluene ~~Flashpoint~~	This listed waste (F005 and U220 ~~D001~~) is ignitable. ~~It has a flashpoint of 40°F~~.
~~41~~	Aromatic Amine[5] What is this? Listed by EPA?	~~LD_{50}~~	~~This waste is considered moderately toxic due to its LD_{50} (448 mg/kg - oral rat)~~.
30 ~~42~~	Filter Media with Solvent (toluene)	Toluene ~~Flashpoint~~	This listed waste (F005 & U220) ~~is ignitable. It has a flashpoint of 40°F~~.

not effected

TABLE 4

PARAMETERS AND RATIONALE FOR THEIR SELECTION

#	HAZARDOUS WASTE	PARAMETER	RATIONALE
20 ~~43~~	Aromatic Hydrocarbon (toluene)	Toluene ~~Flashpoint,~~	This listed waste (F005 & U220) is ignitable. ~~It has a flashpoint of 40°F.~~
		~~LD_{50}~~	~~This waste is considered moderately toxic due to its LD_{50} (448 mg/kg - oral, rat).~~
~~44~~	Aromatic Amine~~s~~ Is this an EPA listed hazardous waste constituent?	~~LD_{50}~~	~~This waste is considered moderately toxic due to its LD_{50} (448 mg/kg - oral, rat).~~
48 ~~45~~	Aliphatic Alcohol (methanol?) change not effected	Flashpoint,	This listed waste (D001) is ignitable. It has a flashpoint of 53°F.
		~~LD_{50}~~	~~This waste is considered moderately toxic due to its LD_{50} (4,239 mg/kg).~~
51 ~~46~~	Halogenated Organic Solvent (trichlorotrifluoroethane)	Trichlorotrifluoroethane	This is a listed waste (F002).
7 ~~47~~	~~Aliphatic Ketone~~ Acetone	~~Flashpoint~~ Acetone	This listed ~~toxic~~ waste (F003 and U002) is ignitable. It has a flashpoint of -4°F.
52 ~~48~~	Substituted Pyrazolidinedione	Flashpoint, ~~LD_{50}~~	This ~~listed~~ ~~toxic~~ No waste (D001) is ignitable. It has a flashpoint of 68°F. ~~This waste is considered moderately toxic because it contains material with an LD_{50} of 271 mg/kg.~~
53 ~~49~~	Aromatic Ketone Aqueous or corrodes steel at ≥ 0.250"/yr.?	~~LD_{50}~~, pH	~~This waste is considered slightly toxic due to its LD_{50} (500-600 mg/kg).~~ This ~~listed~~ waste (D002) is corrosive due to its pH (approximately 2).
~~50~~	~~Aromatic Ketone~~ What? Listed?	~~LD_{50}~~	~~This waste is considered moderately toxic due to its LD_{50} (271 mg/kg).~~
54 ~~51~~	Halogenated Organic (substituted pyrazolidinedione?)	Flashpoint,	This listed toxic waste (D001) is ignitable. It has a flashpoint of 68°F.
		~~LD_{50}~~	~~This waste is considered moderately toxic due to its LD_{50} (271 mg/kg).~~

TABLE 4

PARAMETERS AND RATIONALE FOR THEIR SELECTION

#	HAZARDOUS WASTE	PARAMETER	RATIONALE
~~52~~	Halogenated Organic Solids Is this EPA listed?	~~Composition~~ (Constituent name) hazardous	~~This waste is considered moderately toxic due to the mixture of materials it contains.~~ What? rationale incorrect
55 ~~53~~	Substituted Pyrazolidine-dione	Flashpoint, ~~LD_{50}~~	This listed toxic waste (D001) is ignitable. It has a flashpoint of 52°F. ~~This waste is considered slightly toxic due to its LD_{50} (600 mg/kg).~~
~~54~~	Halogenated Organic Solids Is this listed by EPA.	(Name of hazardous constituent) ~~Composition~~	This listed waste is considered hazardous based on the mixture of materials it contains. What? rationale no good
49 ~~55~~	Aliphatic Alcohol (methanol?)	Flashpoint	This listed waste (F005) is ignitable. It has a flashpoint of 52°F.
50 ~~56~~	Aliphatic Alcohol in Water	Flashpoint	This listed waste (F005) is ignitable. It has a flashpoint of 52°F.
37 ~~57~~	Non-Halogenated Solvent	Flashpoint	This listed waste (F005) is ignitable. It has a flashpoint of 52°F.
38 ~~58~~	Non-Halogenated Solvents	Flashpoint, ~~LD_{50}~~	This listed waste (D001) is ignitable. It has a flashpoint of 53°F. ~~This waste is considered slightly hazardous due to its LD_{50} (4,900 mg/kg).~~
39 ~~59~~	Non-Halogenated Solvent	Flashpoint	This listed waste (F003) is ignitable due to its flashpoint (-20°F).
56 ~~60~~	Amine Alcohol Mixture	Flashpoint, ~~LD_{50}~~	This listed waste (D001) is ignitable due to its flashpoint (-35°F). ~~This waste is considered slightly toxic due to its LD_{50} (1,512 mg/kg).~~
57 ~~61~~	Alkylamine	Flashpoint, ~~LD_{50}~~	This listed waste (D001) is ignitable due to its flashpoint (below 0°F). ~~This waste is considered slightly toxic due to its LD_{50} (approximately 1,500 mg/kg).~~

4 W

TABLE 4

PARAMETERS AND RATIONALE FOR THEIR SELECTION

#	HAZARDOUS WASTE	PARAMETER	RATIONALE
8 ~~62~~	~~Aliphatic Ketone~~[6] Acetone III	Acetone ~~Flashpoint~~	This listed toxic waste (F003) is ignitable due to its flash-point (-4°F).
9 ~~63~~	~~Aliphatic Ketone~~[6] Acetone IV	Acetone ~~Flashpoint~~	This listed toxic waste (F003) is ignitable due to its flash-point (-4°F).
21 ~~64~~	Aromatic Hydrocarbon[7]	Toluene ~~Flashpoint~~	This is a listed toxic waste (F005) and U220 ~~is ignitable due to its flashpoint (40°F)~~.
22 ~~65~~	Aromatic Hydrocarbon[7]	Toluene ~~Flashpoint~~	This is a listed toxic waste (F005) and U220 ~~is ignitable due to its flashpoint (40°F)~~.
58 ~~66~~	Chlorinated Waste Solvents (chlorobenzene)	~~Flashpoint~~, Chlorobenzene	This is a listed waste (~~D001~~) F002 and U037. ~~is ignitable due to its flashpoint (-5°F). This waste is considered extremely hazardous because it contains chlorobenzene.~~
59 ~~67~~	Chlorinated Mixed Solvents	~~Flashpoint~~, Chlorobenzene	This is a listed waste (~~D001~~) F002 and U037. ~~is ignitable due to its flashpoint (-5°F). This waste is considered extremely hazardous because it contains chlorobenzene.~~
60 ~~68~~	Aliphatic, Aromatic Liquid	Flashpoint, ~~LD_{50}~~	This ~~listed~~ waste (D001) is ignitable due to its flashpoint (52°F). ~~This waste is considered slightly toxic due to its LD_{50} (below 5,000 mg/kg).~~
61 ~~69~~	Non-Halogenated Organics (o-nitroaniline)	~~LD_{50}~~, o-Nitroaniline	This material is ~~considered slightly~~ toxic ~~due to its LD_{50} (3,560 mg/kg) and~~ because it contains o-nitroaniline. ~~It is also a dust hazard.~~
62 ~~70~~	Process Samples	PH - - - - - Corrosive? (as 22,26,27 & 37) ~~LD_{50}~~ Flash point	This ~~listed~~ ~~flammable~~ waste is ignitable (D001). ~~is considered slightly toxic due to its LD_{50} (below 5,000 mg/kg).~~ due to its flash point, — .
~~71~~	Process Samples[8]	~~LD_{50}~~	~~LD_{50} of organic intermediates is estimated to be below 500 mg/kg (moderately toxic).~~

TABLE 4

PARAMETERS AND RATIONALE FOR THEIR SELECTION

#	HAZARDOUS WASTE	PARAMETER	RATIONALE
~~72~~	~~Process Samples[8]~~	~~LD_{50}~~	~~LD_{50} of organic intermediates is estimated to be below 500 mg/kg (moderately toxic).~~
~~73~~	~~Process Samples[8]~~	~~LD_{50}~~	~~LD_{50} of organic intermediates is estimated to be below 500 mg/kg (moderately toxic).~~
63 ~~74~~	Solvent Wet Absorbent	Flash point ~~Ignitability~~	This ~~is a listed~~ waste (D001) is ignitable ~~due to flammability of absorbed solvent~~. due to its flash point, .
~~75~~	~~Process Samples[8]~~	~~LD_{50}~~	~~LD_{50} of organic intermediates is estimated to be below 500 mg/kg (moderately toxic).~~
~~76~~	~~Process Samples[8]~~	~~LD_{50}~~	~~LD_{50} of organic intermediates is estimated to be below 500 mg/kg (moderately toxic).~~
40 ~~77~~	Non-Halogenated[3] Solvent	Flashpoint	This ~~listed~~ waste (D001) is ~~considered ignitable~~ due to its flashpoint (53°F). ignitable
64 ~~78~~	Acetone Boilouts	Acetone ~~Flashpoint~~	This is a listed waste (F003 and U002) ~~is considered ignitable due to its flashpoint (-5°F)~~.
65 ~~79~~	Isopropyl Alcohol Boilouts	Flashpoint	This ~~listed~~ waste (D001) is considered ignitable due to its flashpoint (53°F).
66 ~~80~~	Methanol Boilouts	Methanol ~~Flashpoint~~	This is a listed waste (F005 and U154). ~~is considered ignitable due to its flashpoint (52°F).~~
67 ~~81~~	Methyl Ethyl Ketone Boilouts	Methyl ethyl ~~Flashpoint,~~ ketone ~~LD_{50}~~	This is a listed waste (F005 and U159). ~~is considered ignitable due to its flashpoint (16°F).~~ ~~This waste is considered slightly toxic (LD_{50} is 3,400 mg/kg) and it also a skin irritant.~~
68 ~~82~~	Toluene Boilouts	Toluene ~~Flashpoint~~	This is a listed toxic waste (F005 and U159). ~~is considered ignitable due to its flashpoint (40°F).~~
23 ~~83~~	Aromatic Hydrocarbon[9] III	Flashpoint, ~~LD_{50}~~	This ~~listed~~ waste (D001) is ~~considered~~ ignitable due to its flashpoint (81°F) ~~and slightly toxic due to its LD_{50} (4,300 mg/kg).~~

TABLE 4

PARAMETERS AND RATIONALE FOR THEIR SELECTION

#	HAZARDOUS WASTE	PARAMETER	RATIONALE
24 ~~84~~	Aromatic Hydrocarbon~~9~~ IV	Flashpoint, ~~LD_{50}~~	This ~~listed~~ waste (D001) is ~~considered~~ ignitable due to its flashpoint (81°F) ~~and slightly toxic due to its LD_{50} (4,300 mg/kg)~~.
69 ~~85~~	Hydrocarbon/Alcohol	Flashpoint, ~~LD_{50}~~	This listed waste (D001) is ~~considered~~ ignitable due to its flashpoint (81°F) ~~and slightly toxic due to its LD_{50} (4,300 mg/kg)~~.
31 ~~86~~	Filter Media	Flashpoint	This ~~is a listed~~ waste is ignitable (D001) ~~is~~ due to flammability of adsorbed solvent. What is flash point?
25 ~~87~~	Aromatic Hydrocarbon~~9~~	Flashpoint, ~~LD_{50}~~	This listed waste (D001) is ~~considered~~ ignitable due to its flashpoint (81°F) ~~and slightly toxic due to its LD_{50} (4,300 mg/kg)~~.
70 ~~88~~	Inorganic Hydroxide	pH	This listed waste (D002) is ~~considered~~ corrosive due to high pH (13).
~~89~~	~~Organic Acid~~ Corrosive wastes must have pH's ≤2, and be aqueous. Does this waste meet these qualifications?	~~pH,~~ ~~LD_{50}~~	~~This listed waste is considered corrosive due to pH (<3) and slightly toxic due to LD_{50} (1,600 mg/kg). It is also highly irritating.~~
71 ~~90~~	Waste Chloroform	~~LD_{50}~~, Chloroform	This is a listed waste (U044). ~~This waste is considered toxic due to the LD_{50} (800 mg/kg) and~~ It is R.I. (Extremely Hazardous) waste because it contains chloroform. also a Type 9
47 ~~91~~	Alcohol Aromatic Hydrocarbon III	Flashpoint, ~~LD_{50}~~	This listed waste (D001) is ignitable due to its flashpoint (53°F). ~~This waste is considered slightly toxic due to its LD_{50} (4,800 mg/kg).~~

~~1-9: These wastes are listed separately because they differ in composition although they have similar hazard designations.~~

The wastes with similar names are distinguished by Roman numerals.

Continued from page 2.

Attachment 3

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)	FOR OFFICIAL USE ONLY
W R I D 0 0 1 1 9 4 3 2 3 T/A C 1	W DUP T/A C 2 DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1 ✓	D001	3,000,000	P	S02 S01	
2 ✓	D002	5,000,000	P	S02 T04	
3	F001	3,000	P	S02 S01	
4 ✓	F002	70,000	P	S02 S01	
5 ✓	F003	600,000	P	S02 S01 T04	
6 ✓	F004	5,000	P	S02 S01 T04	
7 ✓	F005	2,300,000	P	S02 S01 T04	
8	P005	5,000	P	S02 S01 T04	
9	P053	5,000	P	S02 S01 T04	
10	P054	5,000	P	S02 S01 T04	
11	U013	20,000	P	S01	
12 ✓	U002	20,000	P	S02 S01 T04	
13	U003	5,000	P	S01	
14	U007	5,000	P	S01	
15	U008	5,000	P	S01	
16	U009	5,000	P	S01	
17	U012	5,000	P	S01	
18	U025	1,000	P	S01	
19	U031	5,000	P	S02 S01 T04	
20 ✓	U037	5,000	P	S01	
21	U041	5,000	P	S01	
22 ✓	U044	5,000	P	S01	
23	U052	5,000	P	S01 T04	
24	U056	5,000	P	S01	
25	U070	5,000	P	S01	
26	U092	5,000	P	S01 T04	

CONTINUE ON REVERSE

Continued from page 2.

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)		FOR OFFICIAL USE ON	
W R I D 0 0 1 1 9 4 3 2 3	D/A C 1	W DUP	2 DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)				D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	U103	5,000		S01				
2	U113	5,000		S01				
3	U122	5,000		S01				
4	U123	5,000		T04	S01			
5	U133	5,000		S01				
6	U147	5,000		S01				
7	U151	50		S01				
8 ✓	U154	5,000		S02	S01	T04		
9 ✓	U159	5,000		S02	S01	T04		
10	U160	5		S01				
11	U161	5,000		S01				
12	U162	5,000		S01				
13	U165	5,000		S01				
14	U169 U188	5,000		S01	T04			
15	U194	5,000		S01	T04			
16	U196	5,000		S01				
17	U211	5,000		S01				
18	U219	5,000		S01				
19 ✓	U220	5,000		S02	S01			
20	U226	5,000		S01				
21	U228	5,000		S01				
22 ✓	U239	5,000		S02	S01			
23	D003	5,000		S01				
24	D000	5,000		S01				
25	D011	1,000		S01				