Unvalidated Analytical Data Sheets

200 Area Treated Effluent Disposal Facility

CROSS REFERENCE

STREAM AND SAMPLE NUMBER

STREAM - End of Pipe	Primary Sample Number
PFP - Manhole #9	B08QB0, B08QB3, B08LG8, B083R2, B083R2, B083R2
222-S - 207 Retention Basin	B08KS3, B08KS6
T-PLANT WASTE WATER - 216-T-4-2 Ditch	B08Q54, B08Q57, B08Q62, B08Q63
284-W POWER PLANT - Manhole above discharge to 284-WB pond	B098S0, B098S1, B098S2, B098S3, B098J7, B098M7
PUREX CHEMICAL SEWER - 295-AC	B08QG1, B08QG4
B-PLANT CHEMICAL SEWER - 211-BA	B087C5, B087C6, B08QF2, B08QF3
B-PLANT COOLING WATER - 207-BA Retention Basin	B08795, B08796, B087F1, B087F2, B08QB9, B08QC0, B08QC3, B08QC4
242-A-81 COOLING WATER - Raw Water	B08Q81, B08Q84, B08779, B08784

PLUTONIUM FINISHING PLANT

STREAM 1a

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000122

EPA SAMPLE NO.

B08QB0

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07078 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A307078-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30803M10

Level: (low/med) LOW Date Received: 07/29/93

% Moisture: not dec. Date Analyzed: 08/03/93

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
67-66-3	Chloroform	5	
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	2	J
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (Total)	5	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000175

EPA SAMPLE NO.

B08QB3

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07078 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A307078-04A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30803M05

Level: (low/med) LOW Date Received: 07/29/93

% Moisture: not dec. Date Analyzed: 08/03/93

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
67-66-3	Chloroform	5	
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	2	J
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	1	J
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (Total)	5	U

222-S LABORATORY COMPLEX

STREAM 1b

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000468

B08KS3

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07020 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A307020-04B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30727I06

Level: (low/med) LOW Date Received: 07/09/93

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/12/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/27/93

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	20	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
117-81-7	Bis(2-ethylhexyl)phthalate	4	J
218-01-9	Chrysene	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000492

EPA SAMPLE NO.

B08KS6

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07020 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A307020-07B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 30727I07

Level: (low/med) LOW Date Received: 07/09/93

% Moisture: not dec. ____ dec. ____ Date Extracted: 07/12/93

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 07/27/93

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	20	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
117-81-7	Bis(2-ethylhexyl)phthalate	62	
218-01-9	Chrysene	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

T PLANT WASTEWATER

STREAM 1c

000124

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B08Q54

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 07025 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A307025-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30715B12

Level: (low/med) LOW Date Received: 07/12/93

% Moisture: not dec. Date Analyzed: 07/15/93

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
67-66-3	Chloroform	2	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (Total)	5	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000167
EPA SAMPLE NO.

B08Q57

ab Name: TMA/ARLI Contract: WHC

ab Code: TMALA Case No.: 07025 SAS No.: NA SDG No.: NA

atrix: (soil/water) WATER Lab Sample ID: A307025-04A

ample wt/vol: 5.0 (g/mL) ML Lab File ID: 30715B17

evel: (low/med) LOW Date Received: 07/12/93

: Moisture: not dec. Date Analyzed: 07/15/93

olumn: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
67-66-3	Chloroform	2	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (Total)	5	U

284-W POWER PLANT WASTE WATER

STREAM 1d

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
B098M7

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 09065 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A309065-07A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 31004M17

Level: (low/med) LOW Date Received: 09/24/93

% Moisture: not dec. Date Analyzed: 10/04/93

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
67-66-3	Chloroform	9	
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (Total)	5	U

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 8098M7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-02-0039

Lab Code: SKINER Case No.: N3-09-116SAS No.: SDG No.: 8098M0

Matrix (soil/water): WATER Lab Sample ID: 3312095-07 S

Level (low/med): LOW Date Received 09/28/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	11.5			F
7440-47-3	Chromium				NR
7439-92-1	Lead	4.3		*	F
7782-49-2	Selenium	2.4	U	WN	F
7440-28-0	Thallium	3.8	U		F

Color Before COLORLESS Clarity Before: CLOUDY Texture:

Color After COLORLESS Clarity After CLOUDY Artifacts:

Comments:

008

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: 809BJ7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-09-090SAS No.: SDG No.: 809BJ0

Matrix (soil/water): WATER Lab Sample ID: S309198-07 S

Level (low/med): LOW Date Received: 09/23/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	10.8			P
7440-39-3	Barium	37.8	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-47-3	Chromium	10.0	B		P
7440-48-4	Cobalt	7.6	B		P
7440-50-8	Copper	33.6			P
7439-92-1	Lead	6.3			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.7	B		P
7782-49-2	Selenium	3.2	B		P
7440-22-4	Silver	2.6	U		P
7440-28-0	Thallium	3.2	B		P
7440-62-2	Vanadium	5.5	U		P
7440-66-6	Zinc	42.6			P
	Cyanide	10.0	U		CA
7440-31-5	Tin	5.5	U		P

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:

008

WESTINGHOUSE/HANFORD
1

INORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER: B098M7

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D0-0108

Lab Code: SKINER Case No.: N3-09-116SAS No.: SDG No.: B098M0

Matrix (soil/water): WATER Lab Sample ID: S309238-07 S

Level (low/med): LOW Date Received: 09/28/93

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	13.4			P
7440-39-3	Barium	42.8	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	1.3	U		P
7440-47-3	Chromium	13.2			P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	27.7			P
7439-92-1	Lead	5.1			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.4	U		P
7782-49-2	Selenium	2.8	U		P
7440-22-4	Silver	2.6	U		P
7440-28-0	Thallium	1.6	U		P
7440-62-2	Vanadium	7.2	B		P
7440-66-6	Zinc	41.7			P
	Cyanide	10.0	U		CA
7440-31-5	Tin	10.9	B		P

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLOUDY Artifacts:

Comments:
Amenable CN (10 ug/L

PLUTONIUM URANIUM EXTRACTION PLANT

STREAM 1e

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

000017 EPA SAMPLE NO.

B08QG1

) Name: TMA/ARLI Contract: WHC

) Code: TMALA Case No.: 08029 SAS No.: NA SDG No.: NA

:rix: (soil/water) WATER Lab Sample ID: A308029-01A

ıple wt/vol: 5.0 (g/mL) ML Lab File ID: 30816M05

/el: (low/med) LOW Date Received: 08/12/93

Moisture: not dec. Date Analyzed: 08/16/93

Lumn: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
67-66-3	Chloroform	50	
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	1	J
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	2	J
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (Total)	5	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
B08QG4

b Name: TMA/ARLI Contract: WHC

b Code: TMALA Case No.: 08029 SAS No.: NA SDG No.: NA

trix: (soil/water) WATER Lab Sample ID: A308029-04A

mple wt/vol: 5.0 (g/mL) ML Lab File ID: 30816M10

vel: (low/med) LOW Date Received: 08/12/93

Moisture: not dec. Date Analyzed: 08/16/93

lumn: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
67-66-3	Chloroform	49	
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	2	J
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (Total)	5	U

B PLANT CHEMICAL SEWER

STREAM 1f

000167

EPA SAMPLE NO.

B087C5

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TMA/ARLI Contract: WHC

Lab Code: TMALA Case No.: 04073 SAS No.: NA SDG No.: NA

Matrix: (soil/water) WATER Lab Sample ID: A304073-01A

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 30504B04

Level: (low/med) LOW Date Received: 04/23/93

% Moisture: not dec. Date Analyzed: 05/04/93

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
67-66-3	Chloroform	2	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (Total)	5	U

DOE/RL-94-29
Revision 0
UC-630,721

State Waste Discharge Permit Application

200 Area Treated Effluent Disposal Facility (Project W-049H)

Date Published
August 1994

DISCLAIMER

United States
Department of Energy
P.O. Box 550
Richland, Washington 99352

FOREWORD

As part of the original *Hanford Federal Facility Agreement and Consent Order* negotiations (Ecology et al. 1992), the U.S. Department of Energy, Richland Operations Office (DOE-RL), the U.S. Environmental Protection Agency (EPA), and the Washington State Department of Ecology (Ecology) agreed that liquid effluent discharges to the ground on the Hanford Site are subject to permitting pursuant to Chapter 173-216 (or 173-218 where applicable) of the *Washington Administrative Code* (WAC), the State Waste Discharge Permit (SWDP) Program. As a result of this decision, Ecology and DOE-RL entered into *Consent Order No. DE 91NM-177* known hereafter as the 216 Consent Order (Ecology and DOE-RL 1991).

The 216 Consent Order requires a series of permitting activities for liquid effluent discharges. Liquid effluents at the Hanford Site have been classified as Phase I, Phase II, and Miscellaneous Streams according to compositional and flow rate characteristics. The 216 Consent Order establishes milestones for SWDP application submittals for all Phase I, Phase II, and miscellaneous streams. The 200 Area Treated Effluent Disposal Facility (200 Area TEDF) will provide collection, transfer, and disposal for the streams identified in Table 2 of the 216 Consent Order which will not have been eliminated by June 1995 when the 200 Area TEDF is scheduled to be operational. The following streams taken from Table 2 of the 216 Consent Order are anticipated to be discharged to the 200 Area TEDF.

- Plutonium Finishing Plant waste water
- 222-S Laboratory Complex waste water
- T Plant waste water (including T Plant Laboratory waste water)
- 284-W Power Plant waste water
- PUREX Chemical Sewer
- B Plant Chemical Sewer
- B Plant Process Condensate
- B Plant Steam Condensate
- 242-A-81 Water Services waste water

Through waste minimization efforts, the following effluent streams taken from Table 2 of the 216 Consent Order, have been eliminated and will not be discussed further in this application:

- 242-S Evaporator Steam Condensate
- 2101-M Laboratory Waste Water
- UO_3 Waste Water
- UO_3 Process Condensate
- 200 E Laundry (new)
- PUREX Facility Cooling Water
- PUREX Facility Steam Condensate

The Hanford Waste Vitrification Plant (HWVP) also will not be discussed in this permit application. The effluent stream from the HWVP, which is anticipated to be discharged to the 200 Area TEDF after 2000, will be addressed at a future date.

In February 1992, DOE-RL submitted an Engineering Report pursuant to Washington Administrative Code 173-240, "Submission of Plans and Reports for Construction of Wastewater Facilities." The Engineering Report described the 200 Area TEDF, and the best available technology/all known, available, and reasonable methods of prevention, control and treatment evaluation for each effluent stream anticipated to be discharged to the 200 Area TEDF. Subsequently, a site characterization report was submitted to Ecology in October 1993, completing all of the requirements under WAC 173-240-130.

This document constitutes the SWDP application for the 200 Area TEDF stream. The 200 Area TEDF will discharge to two adjacent 5-acre disposal basins, east of the 200 East Area on the Hanford Site. The SWDP application for the 200 Area Treated Effluent Disposal Facility (Project W-049H) contains information current as of September 30, 1994.

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D WATER CONSUMPTION AND WATER LOSS . . . . . APP D-i

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GLOSSARY

BAT/AKART	best available technology/all known and reasonable treatment
BCE	B Plant Chemical Sewer
BCP	B Plant Process Condensate
BCS	B Plant Steam Condensate
Btu	British Thermal Unit
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOE/RL	U.S. Department of Energy Richland Operations Office
EPA	U.S. Environmental Protection Agency
ETF	Effluent Treatment Facility
gpm	gallons per minute
HVAC	heating, ventilation, and air conditioning
LLW	low level waste
M	million
N/A	not applicable
NPDES	National Pollutant Discharge Elimination System
ppb	parts per billion
PUREX	plutonium-uranium extraction (Plant)
RCRA	Resource Conservation and Recovery Act of 1986
SAP	sampling and analysis plan
SEPA	State Environmental Policy Act of 1971
SIC	Standard industrial classification
SWDP	state waste discharge permit
TEDF	Treated Efffluent Disposal Facility
USGS	United States Geological Survey
WAC	Washington Administrative Code
WHC	Westinghouse Hanford Company

METRIC CONVERSION CHART

INTO METRIC		
If you know	Multiply by	To get
Length		
inches	2.54	centimeters
feet	30.48	centimeters
Volume		
gallons	3.786	liters
cubic feet	0.02832	cubic meters
Temperature		
Fahrenheit	Subtract 32 then multiply by 5/9ths	Celsius
Pressure		
inches water	1.87	mm Hg
inches water	249	pascal (Pa)
OUT OF METRIC		
Length		
centimeters	0.3937	inches
meters	3.28	feet
Volume		
milliliters	1.247×10^{-3}	cubic feet
liters	0.264	gallons
cubic meters	35.31	cubic feet
Temperature		
Celsius	Multiply by 9/5ths, then add 32	Fahrenheit
Pressure		
mm Hg	0.5353	inches water
pascal (Pa)	4.02×10^{-3}	inches water

PERMIT APPLICATION ORGANIZATION

The Washington Administrative Code (WAC) 173-216 State Waste Discharge Permit application form for the 200 Area Treated Effluent Disposal Facility is presented in this section. Information required by the State Waste Discharge Permit application form is provided on the form when adequate space is available. Otherwise, information is provided in the appendices as noted on the completed form. The appendices follow precisely the format of the State Waste Discharge Permit application and are designed to supplement the permit application form. Appendix A contains site location information referenced in Section A of the permit application form. Appendices B through H correspond to Section B through H in the permit application form. Within each appendix, those questions which require additional space more than is available in the form have been restated and the answer directly follows the question. The questions in the appendices are worded precisely as they are in the application form and are highlighted in capitals, bolded, and underline.

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STATE WASTE DISCHARGE PERMIT APPLICATION FOR INDUSTRIAL DISCHARGES TO LAND

WASHINGTON STATE DEPARTMENT OF ECOLOGY

FOR STATE USE ONLY

Date Application Received		Date Fee Paid	Application/ Permit No.
Date Application Accepted			Facility No.
Temporary Permit Effective Date			Temporary Permit Expiration Date

This application is for a waste discharge permit as required in accordance with provisions of Chapter 90.48 RCW and Chapter 173-216 WAC. Additional information may be required. Information previously submitted and applicable to this application should be referenced in the appropriate section.

SECTION A. GENERAL INFORMATION

1. Company Name: U.S. Department of Energy, Richland Operations Office

2. Unified Business Identification Number (UBI#): 91-0565159 (Tax Exempt Number)

3. Mailing Address: P.O. Box 550
   Street
   Richland, Washington 99352
   City/State Zip

4. Facility Location: 200 East, 200 West and Adjacent 600 Areas - Hanford Site
   Street or Other Description
   Refer to drawings in Appendix A
   City/State Zip

5. Person to contact who is familiar with the information contained in this application:
   James E. Rasmussen U.S. DOE, Regulatory Permits, Acting Program Manager (509) 376-2247
   Name Title Telephone

6. Check One: ☐ Permit Renewal ☐ Existing Unpermitted Discharge
   ☒ Proposed Discharge
   Anticipated date of discharge: April 30, 1995

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and/or imprisonment for knowing violations.

James E Rasmussen 9/30/94
Signature* Date

Acting Program Manager, Office of Environmental Assurance, Permits and Policy
Title

James E. Rasmussen
Printed Name

*Applications must be signed as follows: Corporation, by a principal executive officer of at least the level of vice-president; partnership, by a general partner; sole proprietorship, by the proprietor.

SECTION B. PRODUCT INFORMATION

1. Briefly describe all manufacturing processes and products, and/or commercial activities. Provide the applicable Standard Industrial Classification (SIC) Code(s) for each activity. (See *Standard Industrial Classification Manual*, 1987 ed.)

   SIC No(s): **9999**

   Description: **Refer to Appendix B, Section B.1.0**

2. Include a production schematic flow diagram of the process and service activities described above on a separate sheet.

   Refer to flowchart in Appendix B, Section B.2.0.

3. List raw materials and products:

Type	RAW MATERIALS	Quantity
Refer to Appendix B, Section B.3.0		
Type	**PRODUCTS**	**Quantity**

SECTION C. PLANT OPERATIONAL CHARACTERISTICS

1. Identify the waste stream for each of the production processes or activities described in Section B.1. Assign each waste stream an identification number--use this number in subsequent questions.

Process	Waste Stream Name	Batch or Continuous Process	Waste Stream ID #
Refer to Appendix C, Section C.1.0			

2. On a separate sheet, describe in detail the treatment and disposal of all waste waters as described above. Include a schematic flow diagram for all waste water treatment and disposal systems.
Refer to Appendix C, Section C.2.0.

3. Indicate treatment provided to each waste stream identified in C.1. above.
Refer to Appendix C, Section C.3.0.

Waste Stream(s) ID #	Treatment	Waste Stream(s) ID #	Treatment
	Air flotation		pH correction
	Centrifuge		Ozonation
	Chemical precipitation		Reverse osmosis
	Chlorination		Screen
	Cyclone		Sedimentation
	Filtration		Septic tank
	Flow equalization		Solvent separation
	Grease or oil separation		Biological treatment, type:
	Grease trap		Rainwater diversion or storage
	Grit removal		Other chemical treatment type:
	Ion exchange		Other physical treatment type:

4. Describe any planned waste water treatment improvements or changes in waste water disposal methods and when they will occur *(use additional sheets, if necessary)*.

Refer to Appendix C, Section C.4.0.

5. If production processes are subject to seasonal variations, provide the following information. List discharge for each waste stream in gallons per day (GPD). The combined value for each month should equal the estimated total monthly flow.

Waste Stream ID #	MONTHS											
	J	F	M	A	M	J	J	A	S	O	N	D
Refer to Appendix C, Section C.5.0												

6. Shift Information: **Refer to Appendix C, Section C.6.0**

a. Number of shifts per work day: _____

b. Number of work days per week: _____

c. Average number of work days per year: _____

d. Maximum number of work days per year: _____

e. Number of employees per shift:

		Shift start times	
1st	_____	1st	_____
2nd	_____	2nd	_____
3rd	_____	3rd	_____

7. List all incidental materials like oil, paint, grease, solvents, soaps, cleaners, that are used or stored on-site. (Use additional sheets, if necessary.)

Refer to Appendix C, Section C.7.0

Material/Quantity Stored

Refer to Appendix C, Section C.7.0

8. Describe any water recycling or material reclaiming processes:

Refer to Appendix C, Section C.8.0

9. Does this facility have: **Refer to Appendix C, Section C.9.0**
   a. Spill Prevention, Control, and Countermeasure Plan (per 40 CFR 112)? ☐ Yes ☐ No
   b. Emergency Response Plan (per WAC 173-303-350)? ☐ Yes ☐ No
   c. Runoff, spillage, or leak control plan (per WAC 173-216-110(f))? ☐ Yes ☐ No
   d. Does your current waste discharge permit require a spill plan? ☐ Yes ☐ No
      If yes, submit an update with your application. **Not Applicable.**
   e. Solid Waste Management Plan? ☐ Yes ☐ No

SECTION D. WATER CONSUMPTION AND WATER LOSS

1. Water Source(s): **Refer to Appendix D, Section D.1.0**
   ☐ Public System (Specify) _____
   ☐ Private Well ☐ Surface Water
   a. Water Right Permit Number: NA
   b. Legal Description: Refer to Appendix D, Item 1b.
      _____ 1/4S, _____ 1/4S, _____ Section, _____ TWN, _____ R

2. a. Indicate total water use: Gallons per day (average) _____
      Refer to Appendix D, Section D.2.0
      Gallons per day (Maximum) _____
   b. Is water metered? ☐ Yes ☐ No

3. Attach a line drawing showing the water flow through the facility. Indicate source of intake water, operations contributing waste water to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item C. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (*e.g., for certain mining activities*), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.
   Refer to Appendix D, Section D.3.0

SECTION E. WASTEWATER INFORMATION

1. Provide measurements for treated waste water prior to land application for the parameters listed below, unless waived by the permitting authority. All analytical methods used to meet these requirements shall, unless approved otherwise in writing by Ecology, conform to the Guidelines Establishing Test Procedures for the Analysis of Pollutants Contained in 40 CFR Part 136.

Parameter	Concentrations Measured	Analytical Method	Detection Limit
pH			
Conductivity			
Total Dissolved Solids	Refer to Appendix E, Section E.1.0		
Total Suspended Solids			
BOD (5 day)			
COD			
Ammonia-N			
TKN-N			
Nitrate-N			
Ortho-phosphate-P			
Total-phosphate-P			
Total Oil & Grease			
Calcium			
Magnesium			
Sodium			
Potassium			
Chloride			
Sulfate			
Fluoride			
Cadmium (total)			
Chromium (total)			
Lead (total)			
Mercury			
Selenium (total)			
Silver (total)			
Copper (total)			
Iron (total)			
Manganese (total)			
Zinc (total)			
Barium (total)			
Total Coliform			

2. Waste water characteristics for toxic pollutants.

The intent of this question is to determine which chemicals are or might be present in the process water or waste water. For each chemical listed below: Refer to Appendix E, Section E.2.0

a. Use the letter **A** in the **Absent** column if the chemical is not likely to be present because it is not used in the production process or used on site.

b. Use the letter **S** in the **Absent** column if the chemical may be present because it is used on site, but the chemical is not used in the production process.

c. Use the letter **P** in the **Present** column if the chemical is likely to be present because it is used in the production process, but the effluent has not been tested.

d. Use the letter **K** in the **Present** column if the effluent has been tested and the chemical was found to be present. Attach the analytical results.

Attach the analytical results

Analytical Results
Waste water Characterization for Toxic Pollutants

Absent	Present	Constituent/CAS No.	Absent	Present	Constituent/CAS No.
		Acrylamide/79-06-1			1,2 Dichloropropane/78-87-5
		Acrylonitrile/107-13-1			1,3 Dichloropropene/542-75-6
		Aldrin/309-00-2			Dichlorvos/62-73-7
		Aniline/62-53-3			Dieldrin/60-57-1
		Aramite/140-57-8			3,3' Dimethoxybenzidine/119-90-4
		Arsenic/7440-38-2			3,3 Dimethylbenzidine/119-93-7
		Azobenzene/103-33-3			1,2 Dimethylhydrazine/540-73-8
		Benzene/71-43-2			2,4 Dinitrotoluene/121-14-2
		Benzidine/92-87-5			2,6 Dinitrotoluene/606-20-2
		Benzo(a)pyrene/50-32-8			1,4 Dioxane/123-91-1
		Benzotrichloride/98-07-7			1,2 Diphenylhydrazine/122-66-7
		Benzyl chloride/100-44-7			Endrin/72-20-8
		Bis(chloroethyl)ether/111-44-4			Epichlorohydrin/106-89-8
		Bis(chloromethyl)ether/542-88-1			Ethyl acrylate/140-88-5
		Bis(2-ethylhexyl)phthalate/ 117-81-7			Ethylene dibromide/106-93-4
		Bromodichloromethane/75-27-4			Ethylene thioureae/96-45-7
		Bromoform/75-25-2			Folpet/133-07-3
		Carbazole/86-74-8			Furmecyclox/60568-05-0
		Carbon tetrachloride/56-23-5			Heptachlor/76-44-8
		Chlordane/57-74-9			Heptachlor epoxide/1024-57-3
		Chlorodibromomethane/124-48-1			Hexachlorobenzene/118-74-1

Absent	Present	Constituent/CAS No.	Absent	Present	Constituent/CAS No.
		Chloroform/67-66-3			Hexachlorocyclohexane (alpha)/ 319-84-6
		Chlorthalonil/1897-45-6			Hexachlorocyclohexane (tech.)/ 608-73-1
		2,4-D/94-75-7			Hexachlorodibenzo-p-dioxin, mix/ 19408-74-3
		DDT/50-29-3			Hydrazine/hydrazine sulfate/ 302-01-2
		Diallate/2303-16-4			Lindane/58-89-9
		1,2 Dibromoethane/106-93-4			2 Methylaniline/100-61-8
		1,4 Dichlorobenzene/106-46-7			2 Methylaniline hydrochloride/ 636-21-5
		3,3' Dichlorobenzidine/91-94-1			4,4' Methylene bis(N,N-dimethyl)aniline/101-61-1
		1,1 Dichloroethane/75-34-3			Methylene chloride (dichloromethane)/75-09-2
		1,2 Dichloroethane/107-06-2			Mirex/2385-85-5
		Nitrofurazone/59-87-0			O-phenylenediamine/106-50-3
		N-nitrosodiethanolamine/ 1116-54-7			Propylene oxide/75-56-9
		N-nitrosodiethylamine/55-18-5			2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1746-01-6
		N-nitrosodimethylamine/62-75-9			Tetrachloroethylene/127-18-4
		N-nitrosodiphenylamine/86-30-6			2,4 Toluenediamine/95-80-7
		N-nitroso-di-n-propylamine/ 621-64-7			o-Toluidine/95-53-4
		N-nitrosopyrrolidine/930-55-2			Toxaphene/8001-35-2
		N-nitroso-di-n-butylamine/ 924-16-3			Trichloroethylene/79-01-6
		N-nitroso-n-methylethylamine/ 10595-95-6			2,4,6-Trichlorophenol/88-06-2
		PAH/NA			Trimethyl phosphate/512-56-1
		PBBs/NA			Vinyl chloride/75-01-4
		PCBs/1336-36-3			

SECTION F. STORMWATER

1. Do you have a Washington State Storm Water Baseline General Permit? ☐ Yes ☐ No

Note: Refer to Appendix F for explanation of items 1-4

If yes, please list the permit number here _____

2. Have you applied for a Washington State Storm Water Baseline General Permit ☐ Yes ☐ No

3. Do you have any storm water quality or quantity data? ☐ Yes ☐ No

Note: If you answered "yes" to questions 1 or 2 above, skip questions 4 through 8.

4. Describe the size of the storm water collection area. Refer to

   a. Unpaved Area _____ sq. ft.

   b. Paved Area _____ sq. ft.

   c. Other Collection Areas (Roofs) _____ sq. ft.

Note: Refer to Appendix F for explanation of items 5-7

5. Does your facility's storm water discharge to: *(check all that apply)*

   ☐ Storm sewer systems; name of storm sewer system *(operator)*:

   ☐ Directly to surface waters or Washington State *(e.g., river, lake, creek, estuary, ocean)*.

   ☐ Indirectly to surface waters of Washington State *(i.e., flows over adjacent properties first)*.

   ☐ Directly to ground waters of Washington State: ☐ dry well ☐ drainfield ☐ Other

6. Areas with industrial activities at facility: *(check all that apply)*

   ☐ Manufacturing Building

   ☐ Material Handling

   ☐ Material Storage

   ☐ Hazardous Waste Treatment, Storage, or Disposal *(Refers to RCRA, Subtitle C Facilities Only)*

   ☐ Waste Treatment, Storage, or Disposal

   ☐ Application or Disposal of Waste Waters

   ☐ Storage and Maintenance of Material Handling Equipment

   ☐ Vehicle Maintenance

   ☐ Areas Where Significant Materials Remain

   ☐ Access Roads and Rail Lines for Shipping and Receiving

   ☐ Other _____

7. Material handling/management practices.

a. Types of materials handled and/or stored outdoors: *(check all that apply)*

- ☐ Solvents
- ☒ Scrap Metal
- ☐ Petroleum or Petrochemical Products
- ☐ Plating Products
- ☐ Pesticides
- ☐ Hazardous Wastes
- ☒ Acids or Alkalies
- ☐ Paints/Coatings
- ☐ Woodtreating Products
- ☐ Other (Please list) _____

b. Identify existing management practices employed to reduce pollutants in industrial storm water discharges: *(check all that apply)*

- ☐ Oil/Water Separator
- ☐ Containment
- ☐ Spill Prevention
- ☒ Surface Leachate Collection
- ☒ Overhead Coverage
- ☐ Detention Facilities
- ☒ Infiltration Basins
- ☐ Operational BMPs
- ☒ Vegetation Management
- ☐ Other (Please list) _____

8. Attach a map showing storm water drainage/collection areas, disposal areas and discharge points. **Refer to Appendix F, Section F.8.0.**

SECTION G. OTHER INFORMATION

1. Describe liquid wastes or sludges being generated that are not disposed of in the waste stream(s) and how they are disposed of. For each type of waste, provide type of waste, name, address, and phone number of hauler.
Refer to Appendix G, Sections G.1.0, G.2.0, and G.3.0 for Items 1, 2, and 3.

2. Describe storage areas for raw materials, products, and wastes.

3. Have you designated your wastes according to the procedures of Dangerous Waste Regulations, Chapter 173-303-WAC? ☐ Yes ☐ No

SECTION H. SITE ASSESSMENT

1. Give the legal description of the land treatment site(s). Give the acreage of each land treatment site(s). Attach a copy of the contract(s) authorizing use of land for treatment.
Refer to Appendix H, Section H.1.0.

2. List all environmental control permits or approvals needed for this project; for example, septic tank permits, sludge application permits, or air emissions permits.
Refer to Appendix H, Section H.2.0.

3. Attach a United States Geological Survey (USGS) a topographic map. Show the following on this map:
Refer to Appendix H, Section H.3.0.
   a. Location and name of internal and adjacent streets
   b. Surface water drainage systems within 1/4 mile of the site
   c. All wells within 1 mile of the site
   d. Chemical and product handling and storage facilities
   e. Infiltration sources, such as drainfields and lagoons within 1/4 mile of the site
   f. Waste water and cooling water discharge points wit waste stream ID numbers (See Section C.1)
   g. Other activities and land uses within 1/4 mile of the site

4. Attach well logs and well I.D.# when available for all wells within 500 feet and any available water quality data.
Refer to Appendix H, Section H.4.0.

5. Describe soils on the site using information from local soil survey reports. (Submit on separate sheet.)
Refer to Appendix H, Section H.5.0.

6. Describe the regional geology and hydrogeology within one mile of the site. (Submit on separate sheet.)
Refer to Appendix H, Section H.6.0.

7. List the names and addresses of contractors or consultants who provided information and cite sources of information by title and author.
Refer to Appendix H, Section H.7.0

2.0 REFERENCES

DOE, 1992, *Environmental Assessment: Hanford Environmental Compliance Project*, DOE/EA-0383, U.S. Department of Energy, Washington, D.C.

DOE Order 5400.5, "Radiation Protection of the Public and the Environment".

Ecology and DOE-RL, 1991, *Consent Order No. DE 91NM-177*, Washington State Department of Ecology, Olympia Washington and U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986).

WAC 173-216, *State Waste Discharge Permit Program*.

WHC, 1993a, *200 Area Treated Effluent Disposal Facility, (Project W-049H) Wastewater Engineering Report, WHC-SD-W049H-ER-003, Rev. 0 (1992), Rev. 0-A (1992), Rev. 0-B (1993), Rev. 0-C (1993)*, Westinghouse Hanford Company, Richland, Washington.

WHC, 1993b, *Site Characterization Report: Results of Detailed Evaluation of the Suitability of the Site Proposed for Disposal of 200 Areas Treated Effluent*, WHC-SD-EN-SE-004, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

WHC, 1993c, *Hanford Site Stormwater Pollution Prevention Plan*, WHC-SD-EN-EV-021, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

WHC, 1993d, *State Environmental Policy Act Checklist for Project W-049H, 200 Area Treated Effluent Disposal Facility, Rev. 0*, DOE-RL 94-RPS-032, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

WHC, 1994, *Information from the Hazardous Material Inventory Database No. 2, for 200 Area Treated Effluent Disposal Facility Generating Units*, WHC-SD-W049H-DP-001, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

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B	PRODUCT OR SERVICE INFORMATION
C	PLANT OPERATIONAL CHARACTERISTICS
D	WATER CONSUMPTION AND WATER LOSS
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LOCATION MAPS

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APP A-2 200 AREA TREATED EFFLUENT DISPOSAL FACILITY MAP

1

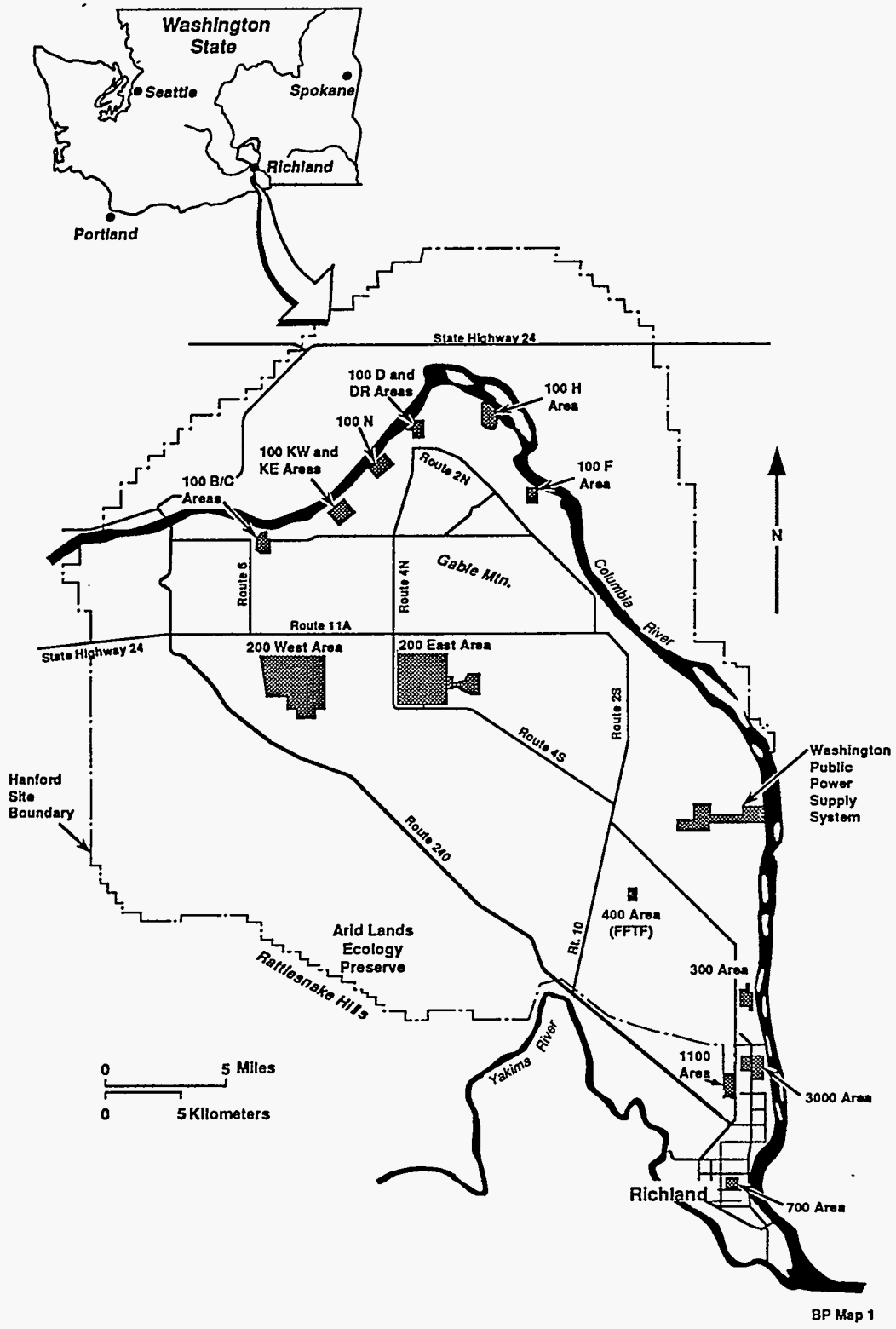

Figure A-1. Hanford Site Map

200 Area Effluent Treatment Facility, Collection and Disposal Network

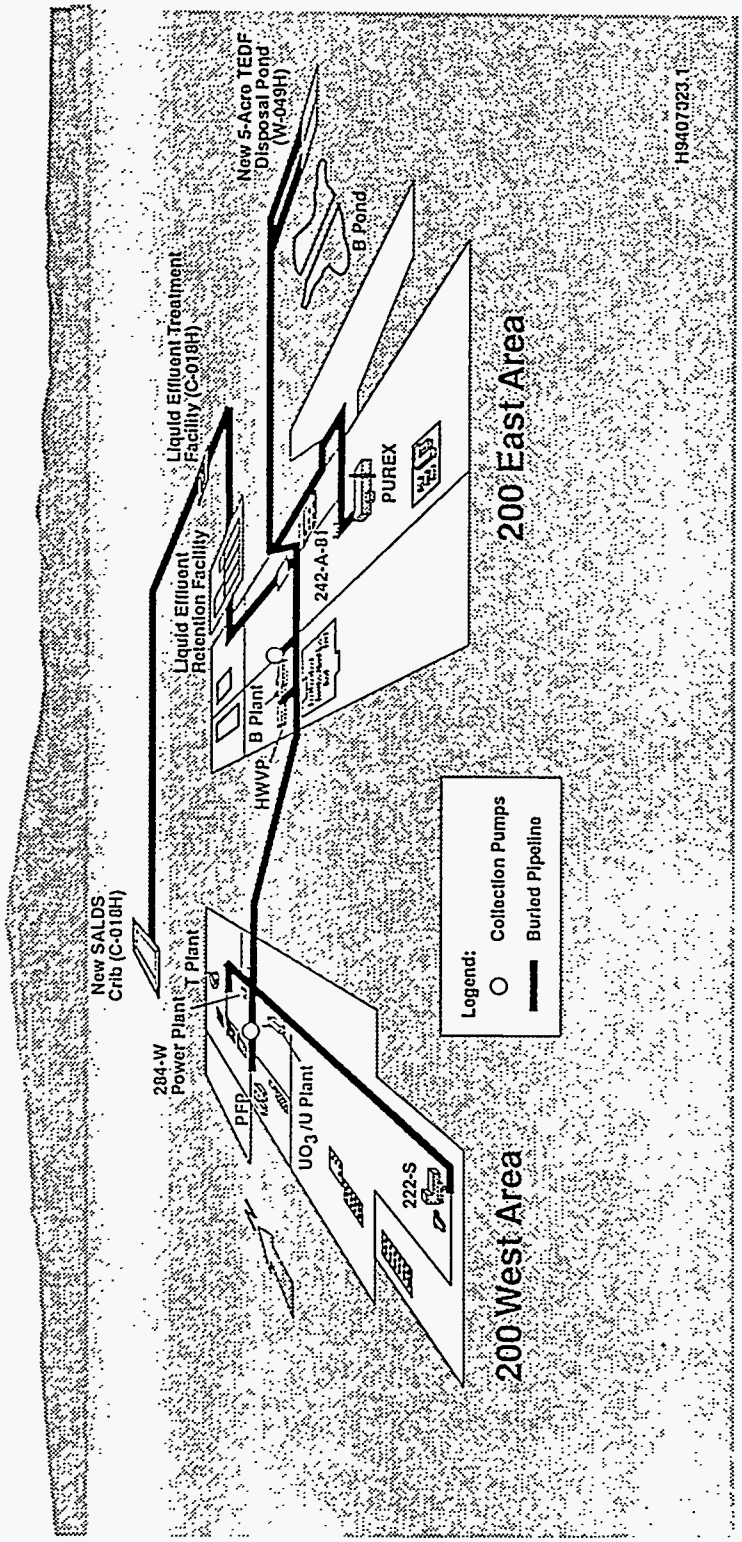

Figure A-2. 200 Area Treated Effluent Disposal Facility Map

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APPENDIX B

PRODUCT OR SERVICE INFORMATION

B.1.0 BRIEFLY DESCRIBE ALL MANUFACTURING PROCESSES AND PRODUCTS, AND/OR COMMERCIAL ACTIVITIES. PROVIDE THE APPLICABLE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE(S) FOR EACH ACTIVITY.

B.1.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY SIC Code: 9999

The 200 Area Treated Effluent Disposal Facility (200 Area TEDF) consists of a piping network that connects nine active streams to a new permitted waste water discharge site. A description of each of the active streams was submitted to the Washington State Department of Ecology in February 1992 in the "200 Area Treated Effluent Disposal Facility," (Project W-049H) Wastewater Engineering Report (Engineering Report) (WHC 1993a). No manufacturing processes or products are associated with the 200 Area TEDF. Section B.1.2, provides a brief description of the manufacturing processes, products, and/or commercial activities for each of the sources generating the active streams. Section B.1.2, also refers to the Engineering Report (WHC 1993a) for each of the sources.

B.1.2 SUPPLEMENTARY INFORMATION ON FACILITIES DISCHARGING EFFLUENT STREAMS TO THE 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

This section describes briefly the manufacturing processes and products, and/or service activities of each of the facilities discharging effluent streams to the 200 Area TEDF.

The information was taken from the Engineering Report (WHC 1993a) submitted to the Washington State Department of Ecology. Where appropriate, reference to the Engineering Report is made by appendix and page number for detailed information.

B.1.2.1 Plutonium Finishing Plant Waste Water

The Plutonium Finishing Plant is used to purify and convert plutonium solids and plutonium nitrate solutions to other usable plutonium forms. Liquid waste produced by the plutonium reprocessing activities are concentrated and transferred to double-shell tanks for storage. The primary reprocessing activities are described in Appendix B of the Engineering Report.

Figure B.2-1 is a process flow diagram of the Plutonium Finishing Plant, illustrating the relationship to the various influent and effluent sources. The waste effluents, shown in shaded boxes will be discharged to the 200 Area TEDF.

B.1.2.2 222-S Laboratory Waste Water

The 222-S Laboratory is located in the 200 West Area. The primary function of the 222-S Laboratory is to provide chemical and radiological analyses of samples associated with ongoing Hanford Site operations and research programs. A more detailed description of the 222-S Laboratory and associated facilities is located in Appendix C of the Engineering Report. The process flow diagram shown in Figure B.2-2 illustrates the influent and effluent water sources. The effluents depicted in the shaded boxes on the right-hand side of the figure will be discharged to the 200 Area TEDF.

B.1.2.3 T Plant Waste Water

The T Plant is located in the 200 West Area. The T Plant waste water includes the T Plant Laboratory waste water which will be combined prior to discharge to the 200 Area TEDF. The T Plant provides decontamination activities for the Hanford Site. More detailed descriptions of the T Plant and the T Plant Laboratory waste water and the associated processes are located in Appendix F and Appendix G, of the Engineering Report. Figure B.2-3 is a process flow diagram of T Plant that depicts the influent and effluent water sources. The shaded boxes are those effluents that will be combined and discharged to the 200 Area TEDF.

B.1.2.4 284-W Power Plant Waste Water

The 284-W Power Plant is located in the 200 West Area. A common process sewer is shared by the 282-W Reservoir, the 283-W Water Treatment Facility, and the 277-W Fabrication Shop.

Steam produced at the 284-W Power Plant is distributed to all facilities in the 200 West Area. Additionally, a 24-inch steam line connects the 200 West Area steam distribution system with that of the 200 East Area. The 200 West Area Power Plant has a rated capacity of 260,000 pounds of steam per hour from four boilers, which has an equivalent electrical capacity of 26 megawatts electrical, assuming a 38 percent thermal conversion.

The waste water discharged from the 284-W Power Plant and associated facilities to the 200 Area TEDF includes boiler discharges, miscellaneous clean and contaminated effluents, and once-through cooling water[1]. A more detailed description of the 284-W Power Plant and surrounding facilities is located in Appendix J of the Engineering Report.

The process flow diagram for the 284-W Power Plant is shown in Figure B.2-4 and illustrates the influents and effluents of the 284-W Power Plant. The shaded boxes are those effluents that will be combined and discharged to the 200 Area TEDF.

---

[1] These liquid effluents are described in greater detail in Appendix U, Section U.2.2.1, "Source Categories," of the *200 Area Treated Effluent Disposal Facility, (Project W-049H) Wastewater Engineering Report*, (WHC 1993a)

B.1.2.5 PUREX Facility Chemical Sewer

The PUREX Facility is located in the 200 East Area. The primary PUREX Facility processing equipment is housed in the 202-A Building. The PUREX Facility is not operating. In December 1992, the U.S. Department of Energy decided to transition from standby to shutdown followed by decontamination and decommissioning (when funding becomes available). This transition to shutdown is estimated to be completed by September 1998.

Appendix K of the Engineering Report provides more detail on the manufacturing processes and effluent streams for the PUREX Facility chemical sewer.

Progress in the transition to standby mode has resulted in reducing the flow rate of most of the sources that contributed to the PUREX Facility cooling water stream. Final transition to standby mode was completed in June 1992 and resulted in reducing both the cooling water and steam condensate streams flow rate to zero and rerouted the remaining active sources to the PUREX Plant chemical sewer, as described in Appendix K of the Engineering Report.

Figure B.2-5 is a process flow diagram of the PUREX Facility influents and effluents. The shaded boxes depict those effluents that will be discharged to the 200 Area TEDF.

B.1.2.6 B Plant Chemical Sewer

The B Plant, located in the 200 East Area, was constructed in the mid 1940's as a fuel reprocessing facility. Currently, the B Plant Complex, including the Waste Encapsulation Storage Facility (WESF), ensures safe storage and management of radiological and mixed waste inventories.

The B Plant consists of three adjoining buildings: 271-B, 221-B, and 225-B. In addition, several adjacent buildings have been constructed to support the waste processing operations.

The B Plant receives and stores various chemicals from commercial manufacturers for use in the operation of the low-level waste handling systems, generation of demineralized water, and conditioning of water used in heating, ventilation, and air conditioning units. The effluents include steam condensate, domestic waste water, evaporative cooling effluents, and miscellaneous effluents. Appendix N of the Engineering Report describes in detail the B Plant chemical sewer water sources and flow path.

Figure B.2-6 is a process flow diagram of the B Plant influents and effluents. The shaded boxes represent those effluents that will be discharged to the 200 Area TEDF.

B.1.2.7 B Plant Process Condensate

The description of the manufacturing processes and products, and/or service activities is the same as for the B Plant chemical sewer described in Section B.1.2.6. The following is a description of how the B Plant process condensate is generated. The B Plant process condensate evolves from the operation of the cell 23 concentrator, where the liquid low-level waste is concentrated to minimize the waste stream that requires low-level disposal to double-shell tanks. Currently, the cell 23 concentrator is not operating and the B Plant process condensate is not discharging. Appendix O of the Engineering Reports describes in detail, the B Plant process condensate water sources and flow path.

Figure B.2-7 is a process flow diagram of the B Plant influents and effluents. The shaded boxes represent those effluents that will be discharged to the 200 Area TEDF.

B.1.2.8 B Plant Steam Condensate

The description of the manufacturing processes and products, and/or service activities is the same as for the B Plant chemical sewer described in Section B.1.2.6. The following is a description of how the B Plant steam condensate is generated when the cell 23 concentrator is operating. Currently, the cell 23 concentrator is not operating and the B Plant steam condensate is not discharging. The B Plant steam condensate evolves from the operation of the cell 23 concentrator, where the liquid low-level waste is concentrated to minimize the waste stream that requires disposal in double-shell tanks. Appendix P of the Engineering Report provides more detailed information on B Plant steam condensate sources and flowpath.

Figure B.2-8 is a process flow diagram of the B Plant influents and effluents. The shaded boxes represent those effluents that will be discharged to the 200 Area TEDF.

B.1.2.9 242-A-81 Water Services Waste Water

The 242-A-81 Building houses equipment that strains coarse, suspended solids from a stream of raw water. This straining reduces the loading on downstream filtration units for the stream of raw water supplied to the 242-A Evaporator. The 242-A Evaporator receives waste feed from the double-shell tanks.

The two effluent sources that make up the waste water stream are the strainer backwash and the backflow preventer drain. The strainer backwash consists of raw water plus suspended solids either present in raw water obtained from the Columbia River or added to the raw water supply by normal scaling and corrosion in piping upstream of the strainers. The other source results from the two raw-water supply-line branches. Each of the two raw-water supply-line branches contains a backflow preventer located

downstream of the strainer to ensure that, if supply pressure is lost, the water will not drain back into the supply header.

Figure B.2-9 is a process flow diagram of the 242-A-81 Water Services Building influents and effluents. The shaded boxes represent those effluents that will be discharged to the 200 Area TEDF.

Appendix T of the Engineering Report provides detailed information on the 242-A Evaporator and the 242-A-81 Water Services Waste Water sources and flow paths.

B.1.2.10 Future Waste Streams to be discharged to the 200 Area TEDF

Appendix I is a place holder for future streams anticipated to be discharged to the 200 Area TEDF. See Appendix I for waste stream acceptance criteria.

B.2.0 INCLUDE A PRODUCTION SCHEMATIC FLOW DIAGRAM OF THE PROCESS AND SERVICE ACTIVITIES DESCRIBED ABOVE ON A SEPARATE SHEET.

B.2.1 200 Area Treated Effluent Disposal Facility

The schematic flow diagram for the 200 Area TEDF is presented as Figure B.2-0.

B.2.2 Supplementary information on facilities discharging effluents streams to the 200 Area Treated Effluent Disposal Facility.

Schematic flow diagrams for each of the waste streams discharging to the 200 Area TEDF are presented as Figures B.2-1 through B.2-9.

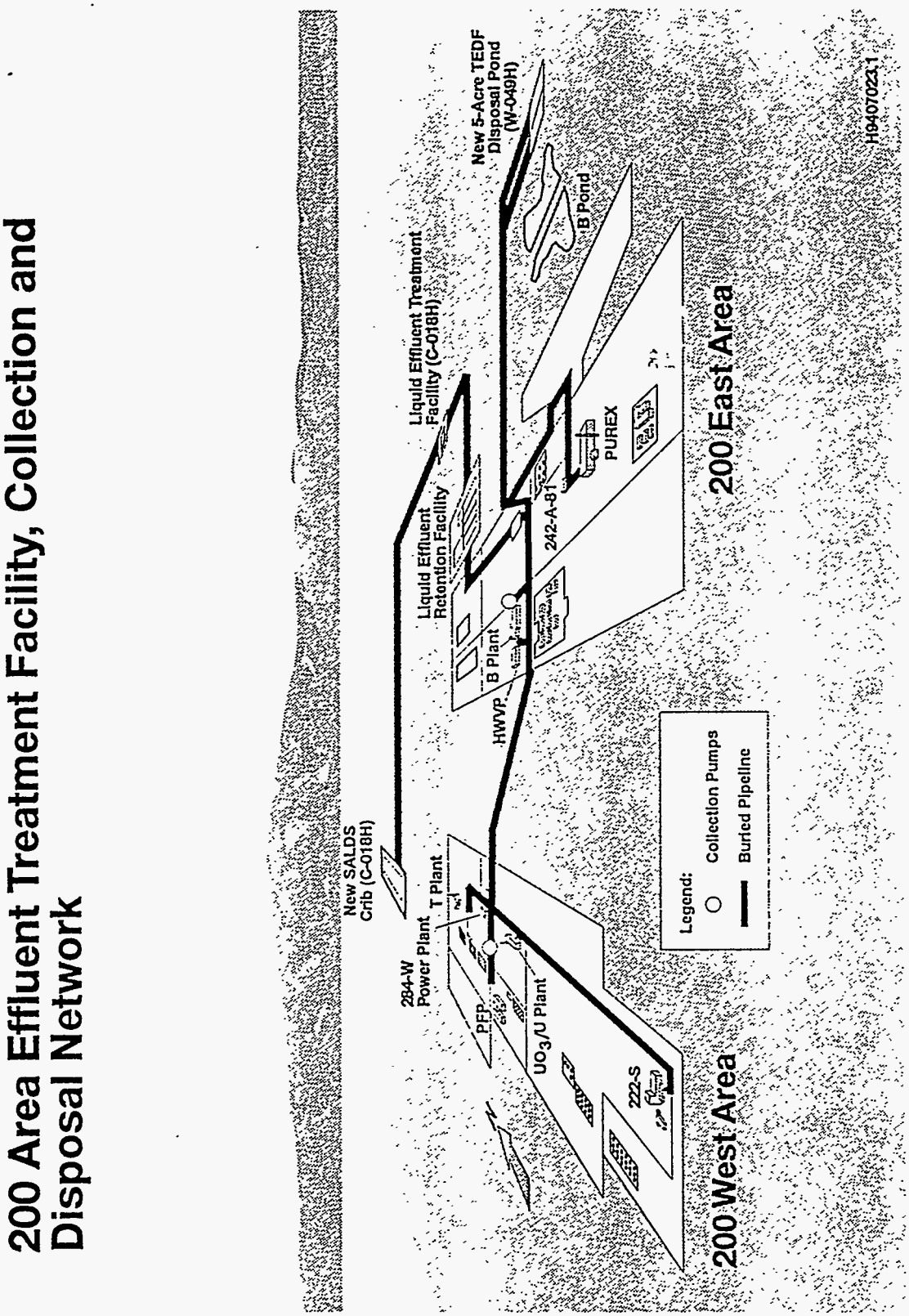

Figure B.2-0. Schematic Flow Diagram for the 200 Area Treated Effluent Disposal Facility

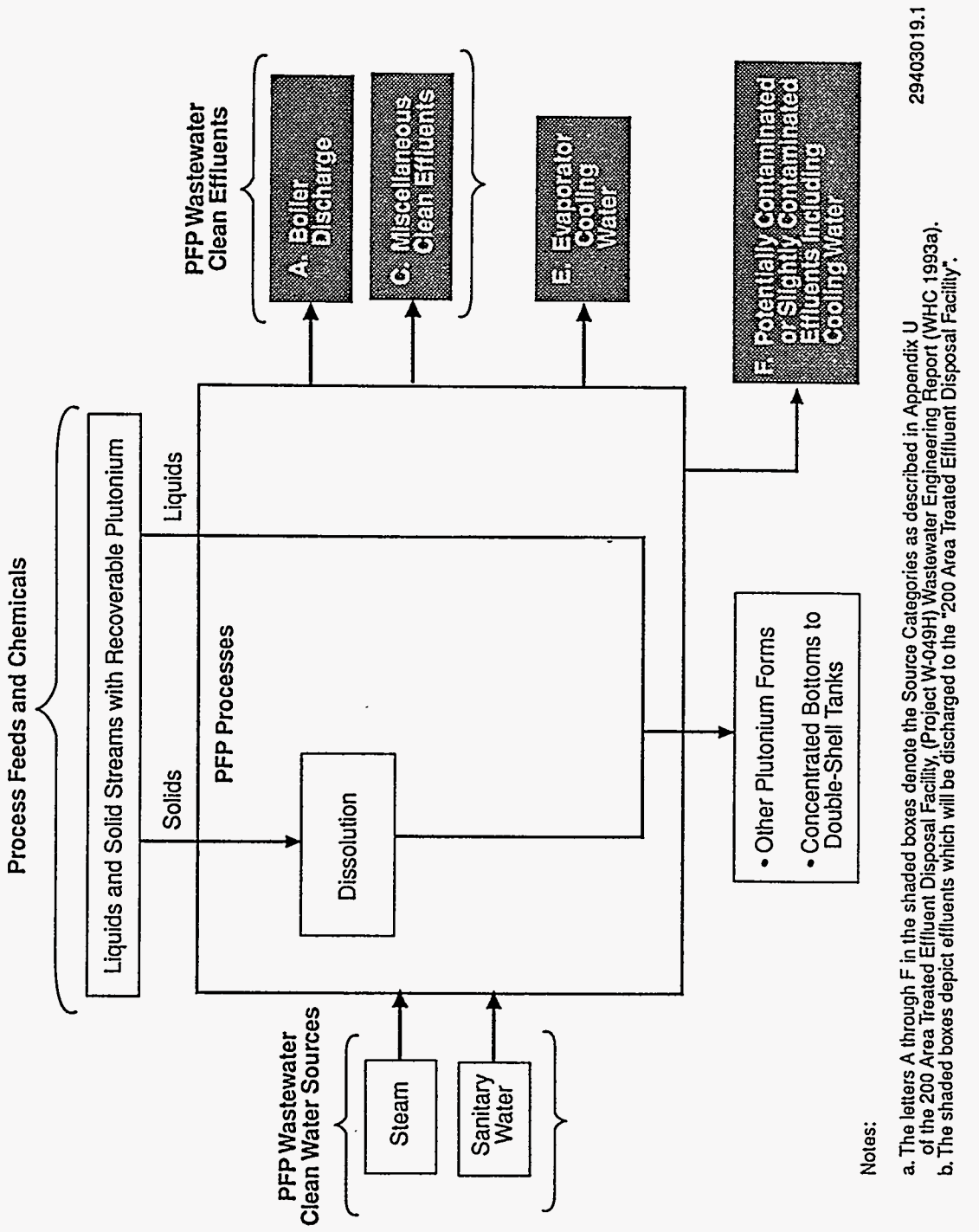

Figure B.2-1. Schematic Flow Diagram for the Plutonium Finishing Plant.

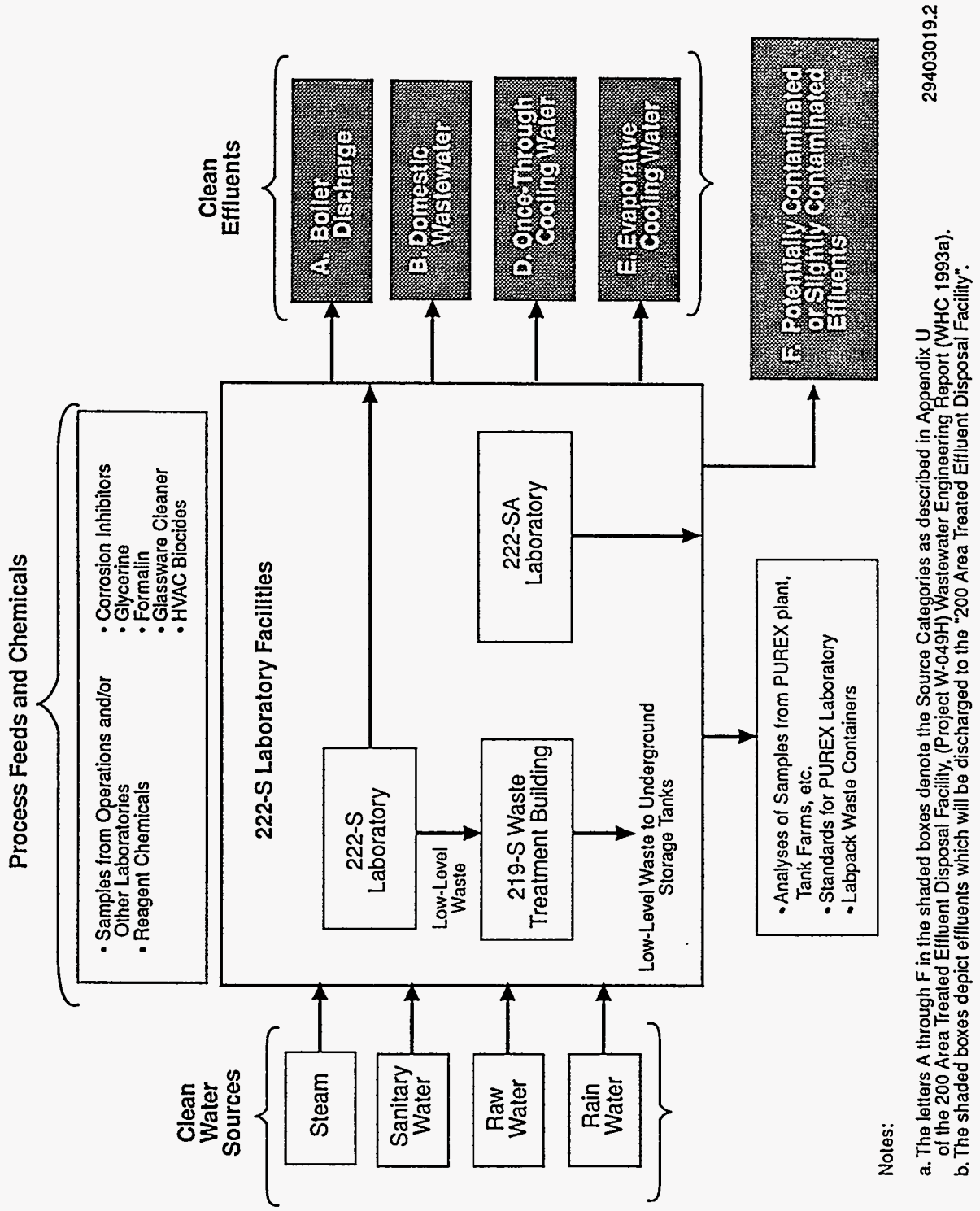

Figure B.2-2. Schematic Flow Diagram for 222-S Laboratory.

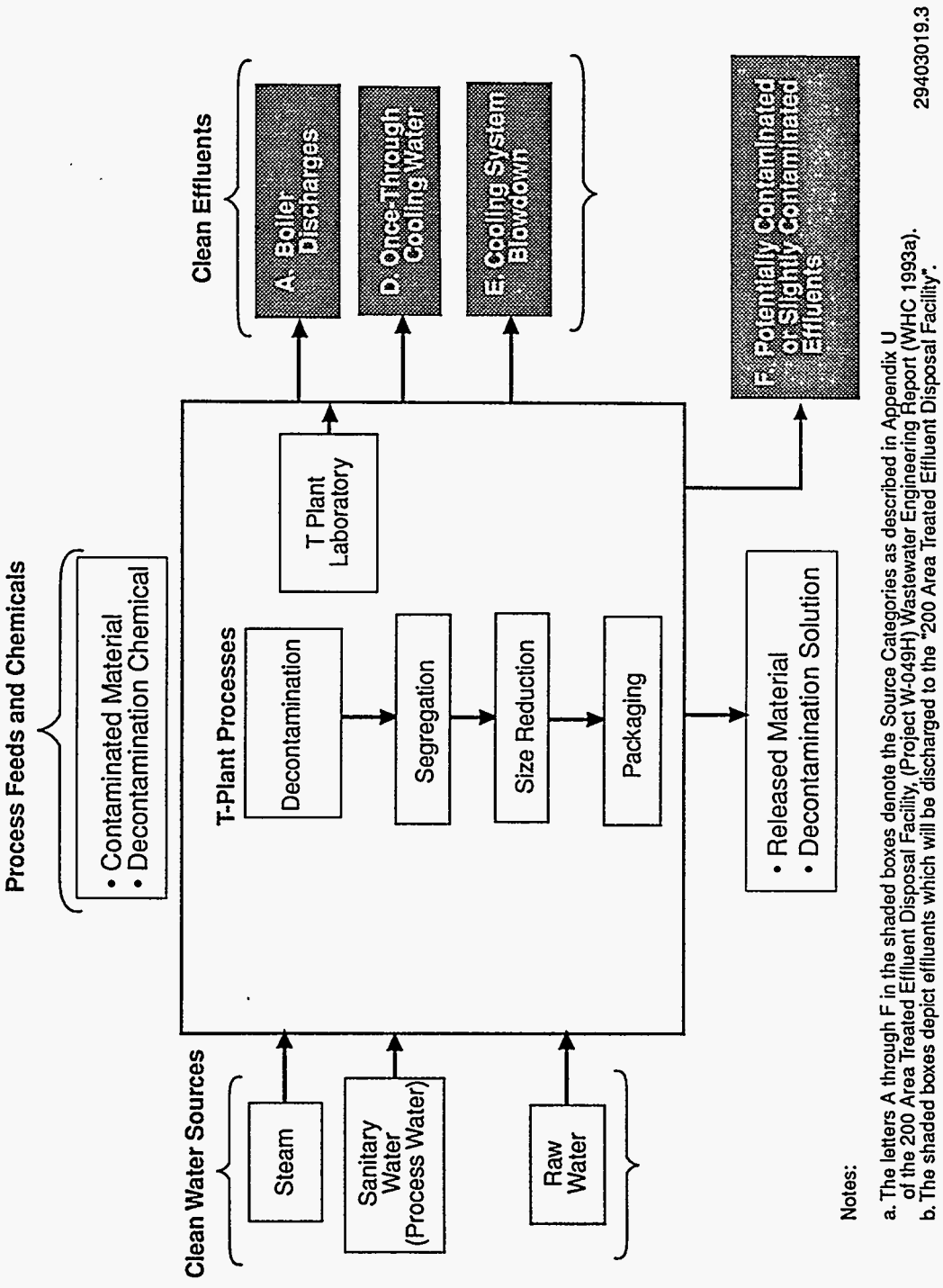

Figure B.2-3. Schematic Flow Diagram for T Plant.

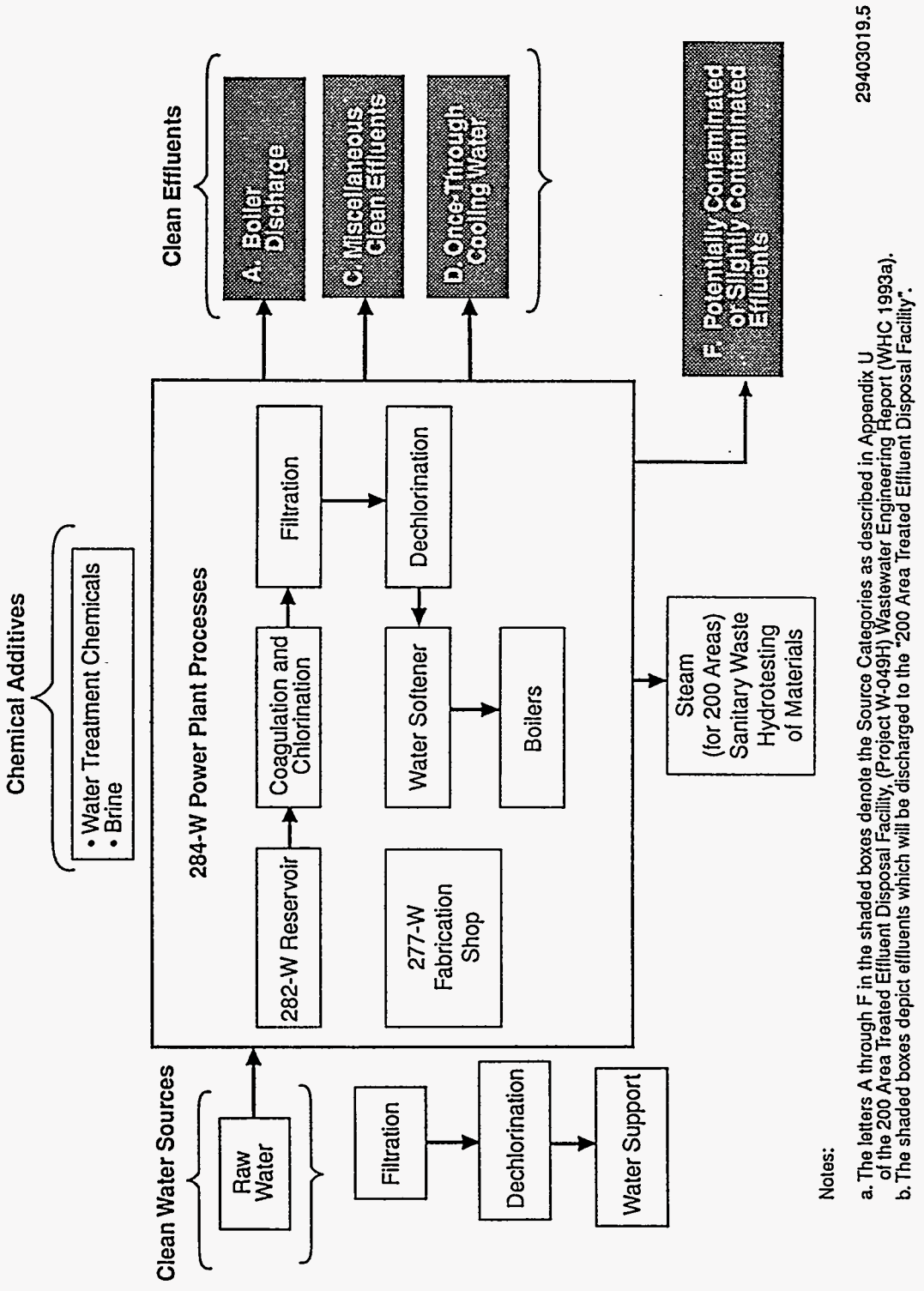

Figure B.2-4. Schematic Flow Diagram for 284-W Power Plant.

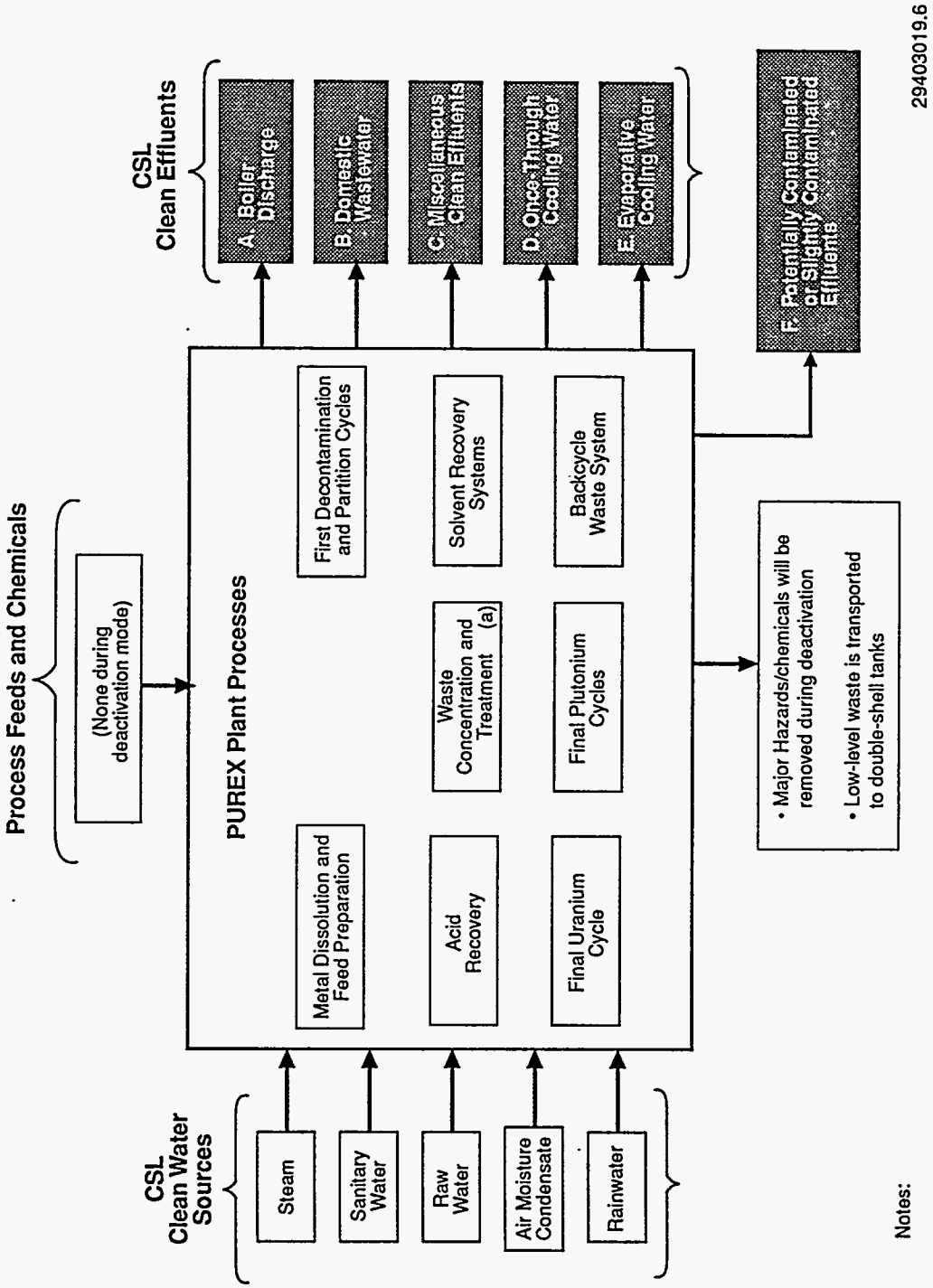

Figure B.2-5. Schematic Flow Diagram for PUREX Plant.

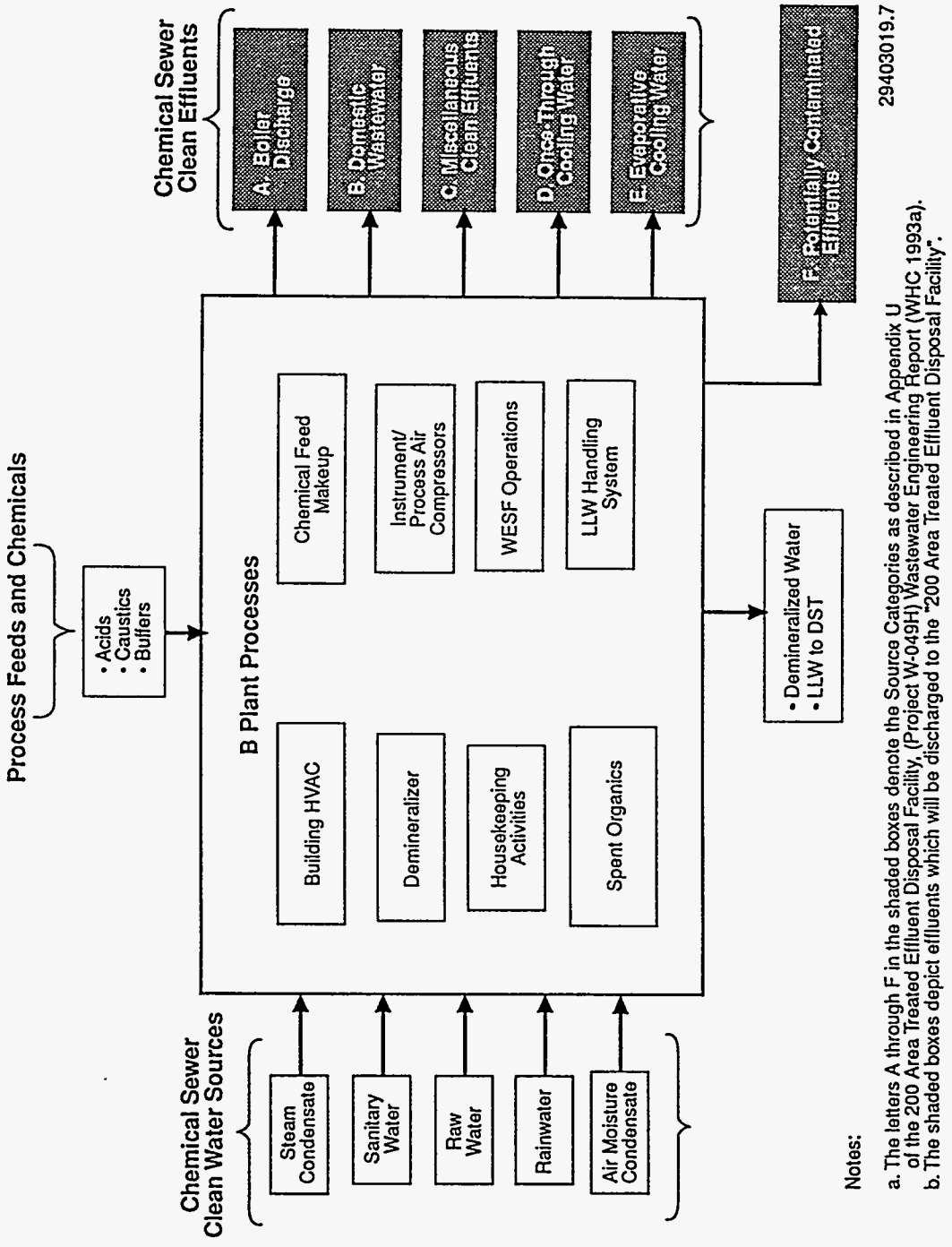

Figure B.2-6. Schematic Flow Diagram for B Plant Chemical Sewer.

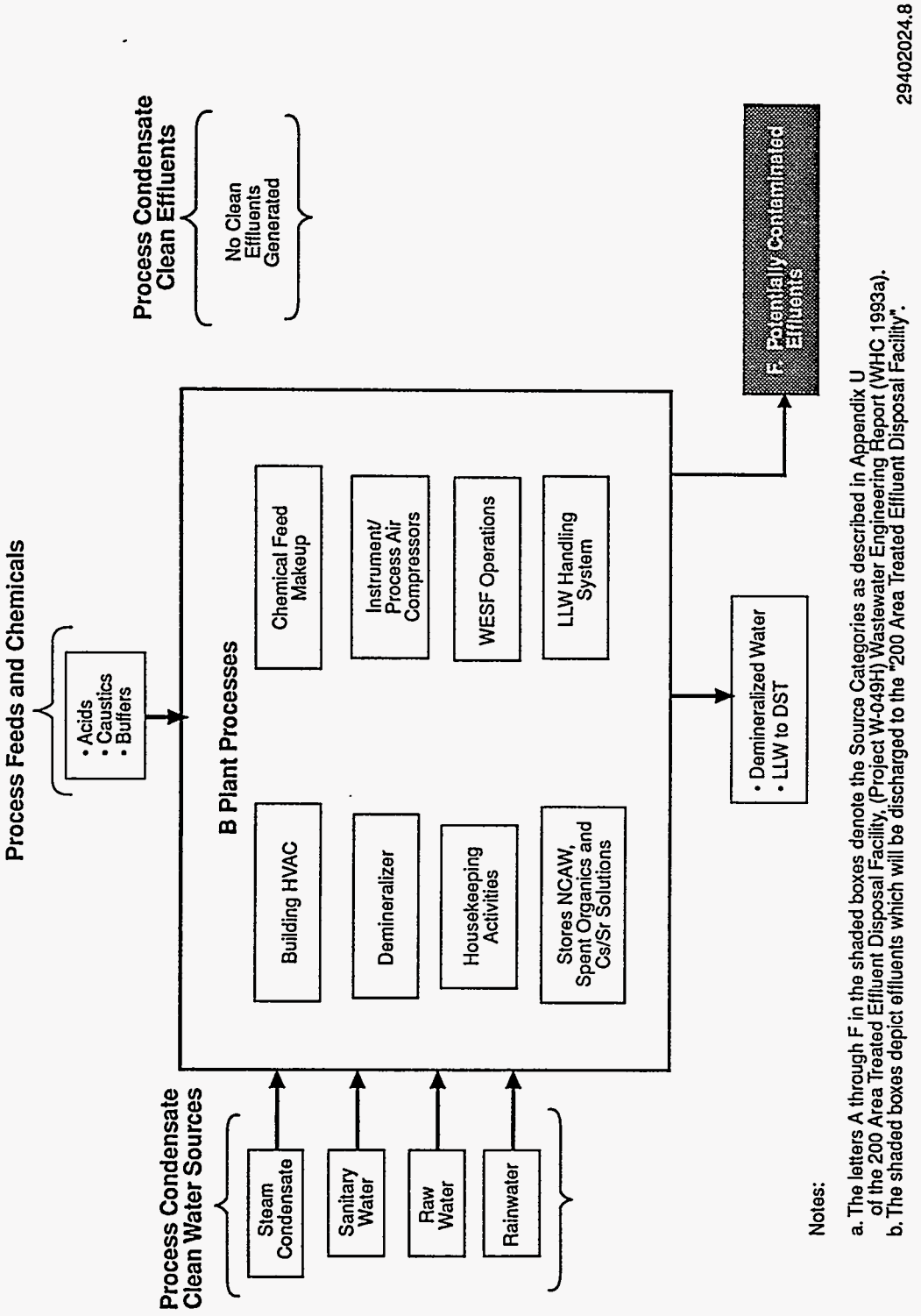

Figure B.2-7. Schematic Flow Diagram for B Plant Process Condensate.

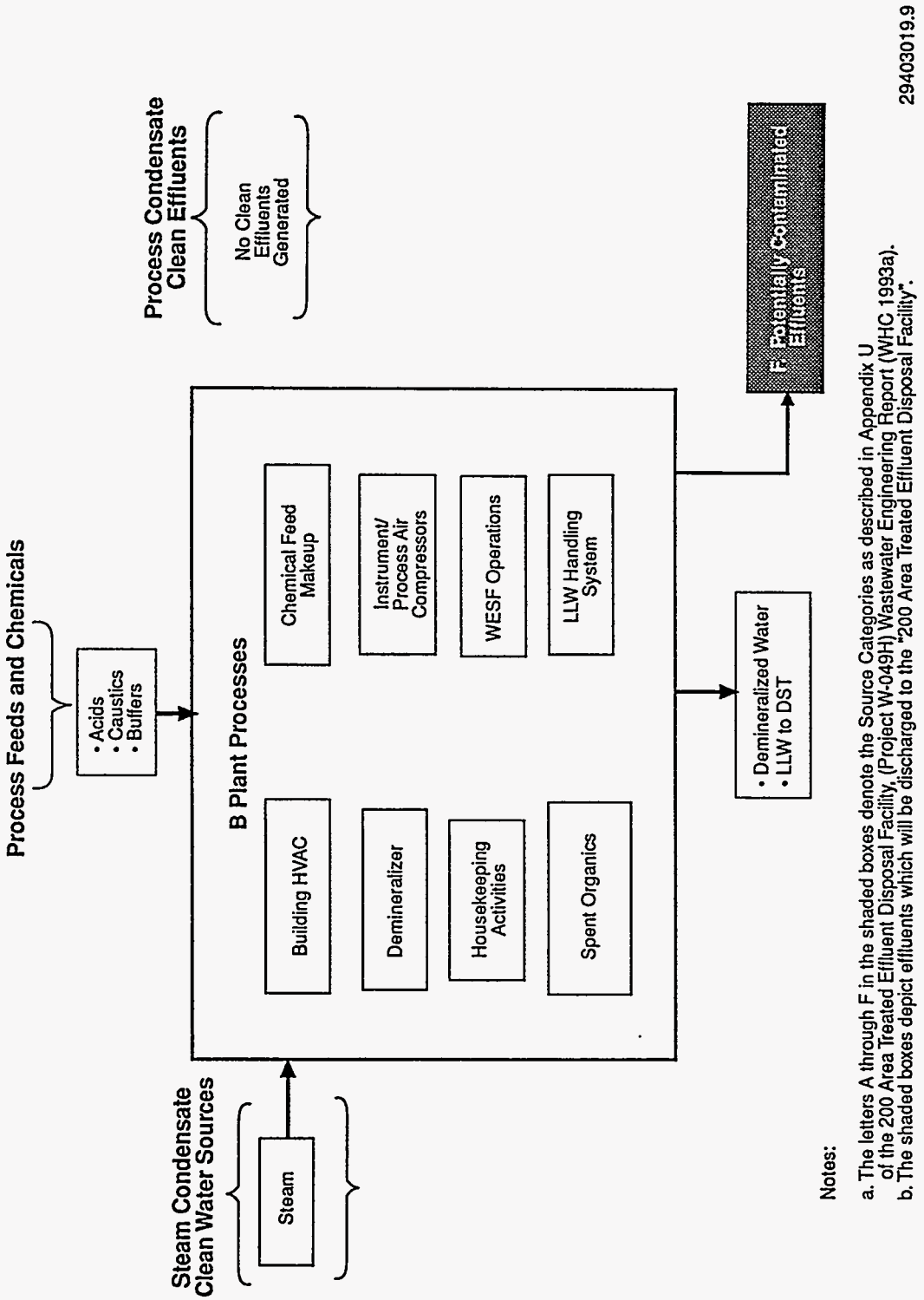

Figure B.2-8. Schematic Flow Diagram for B Plant Steam Condensate.

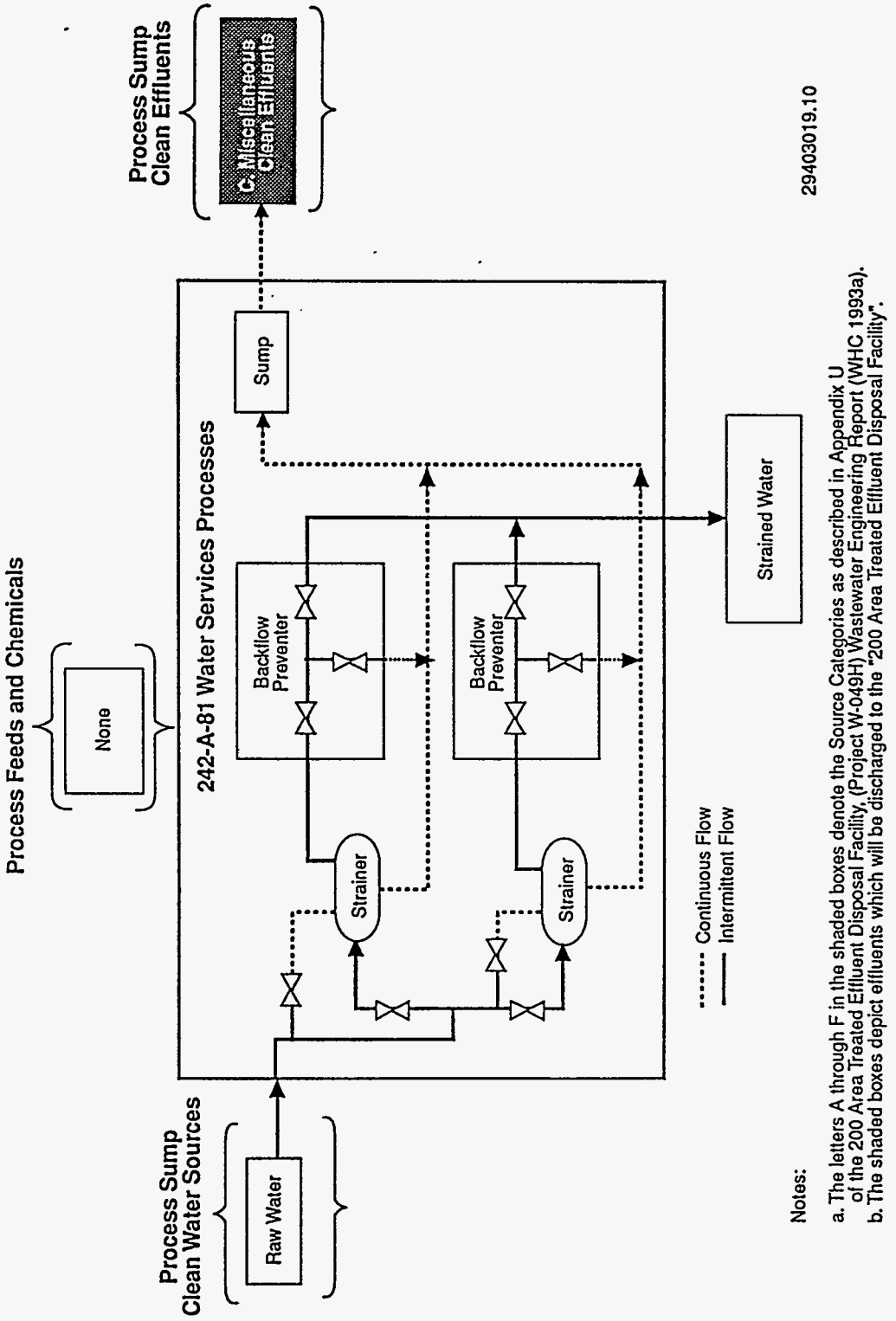

Figure B.2-9. Schematic Flow Diagram for 242-A-81 Water Services Building.

B.3.0 LIST RAW MATERIALS AND PRODUCTS

B.3.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

The 200 Area TEDF is a collection, transfer, and disposal facility. No raw materials or products are associated with the 200 Area TEDF.

Most of the facilities discharging to the 200 Area TEDF are in standby or shutdown mode, or are in preparation for decommissioning and decontamination. With the change of the mission of the Hanford Site from weapons fuel production to waste management and restoration and remediation, the facilities discharging to the 200 Area TEDF are not in production. However, T Plant, 222-S and WESF (located at the B Plant Complex), continue to provide waste management support for the Hanford Site.

The information on materials at each facility is available from the information collected by the U.S. Department of Energy pursuant to the *Emergency Planning and Community Right-to-know Act* (Title III of the Superfund ammendments and Reauthorization Act of 1986). The information on each facility has been compiled and can be located in WHC 1994.

APPENDIX C

PLANT OPERATIONAL CHARACTERISTICS

APPENDIX C

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APPENDIX C

PLANT OPERATIONAL CHARACTERISTICS

C.1.0 IDENTIFY THE WASTE STREAM FOR EACH OF THE PRODUCTION PROCESSES OR ACTIVITIES DESCRIBED IN SECTION B.1. ASSIGN AN IDENTIFICATION NUMBER--USE THIS NUMBER IN SUBSEQUENT QUESTIONS.

C.1.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

The 200 Area TEDF is a pipeline that receives, transports, and disposes of nine waste streams from seven generating units to two 5-acre disposal ponds. The process information is provided in Table C.1-1.

C.1.2 SUPPLEMENTARY INFORMATION ON 200 AREA TREATED EFFLUENT DISPOSAL FACILITY GENERATING UNITS

Process/activity information on the nine streams from the seven generating units is offered in Table C.1-1 for completeness. A place holder has been added for future streams that may be discharged to the 200 Area TEDF.

Table C.4.2.0. 200 Area Treated Effluent Disposal Facility Waste Stream Process/Activity Information.

Process	Waste stream name	Batch or continuous process	Waste stream ID No.
Receive, transport, and dispose of generator waste stream	200 Area TEDF	Continuous	1
SOURCE STREAMS TO 200 AREA TEDF			
Ventilation heating/cooling, steam condensate, cooling water, compressed air production, process water	Plutonium Finishing Plant waste water	Continuous	1a
Steam condensate, sanitary water, rainwater	222-S Laboratory Complex waste water	Batch	1b
Steam condensate, miscellaneous effluents, cooling water, heating coil water, floor drainage	T Plant waste water (including T Plant Laboratory waste water)	Continuous	1c
Boiler discharges, miscellaneous effluents, cooling water	284-W Power Plant waste water	Continuous	1d
Steam condensates, floor drains, ventilation heating/ cooling, overflows, cooling water	PUREX Chemical Sewer	Continuous	1e
Steam condensate, boiler discharge, miscellaneous effluents, cooling water	B Plant Chemical Sewer	Continuous	1f
Steam condensate, sanitary water, raw water, rainwater	B Plant Process Condensate	Batch	1g
Steam condensate	B Plant Steam Condensate	Batch	1h
Raw water	242-A-81 Water Services waste water	Continuous	1i
TBD	Future streams to be discharged to the 200 Area TEDF	TBD	TBD

TBD = to be determined

C.2.0 ON A SEPARATE SHEET, DESCRIBE IN DETAIL THE TREATMENT AND DISPOSAL OF ALL WASTE WATERS AS DESCRIBED ABOVE. INCLUDE A SCHEMATIC FLOW DIAGRAM FOR ALL WASTE WATER TREATMENT AND DISPOSAL SYSTEMS.

C.2.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY (WASTE STREAM NO. 1)

The 200 Area TEDF is a pipeline that conveys effluent from seven generating units to disposal ponds and does not have any treatment. A detailed description of the disposal ponds is contained in a site characterization report (WHC 1993b). The schematic flow diagram for the 200 Area TEDF is presented as Figure B.2-0.

C.2.2 SUPPLEMENTARY INFORMATION ON 200 AREA TREATED EFFLUENT DISPOSAL FACILITY GENERATORS

The following sections provide a summary of the BAT/AKART that will be implemented at each generating unit before June 1995. For more detail on BAT/AKART or pre-BAT/AKART treatment, refer to the Engineering Report (WHC 1993a). Treatment is defined broadly and includes such activity as source controls. Schematic flow diagrams for each of the waste streams discharging to the 200 Area TEDF are presented as Figures B.2-1 through B.2-9.

C.2.2.1 Plutonium Finishing Plant Waste Water (Waste Stream No. 1a)

Implementing planned source control with planned end-of-pipe treatment was selected as BAT/AKART for the Plutonium Finishing Plant Waste Water (WHC 1993a, Appendix B). This alternative includes a planned source control using closed-loop cooling for 234-5Z, 236-Z, and 291-Z buildings and replacing vacuum pumps with waterless pumps. The end-of-pipe treatment includes an equalization tank to hold the incoming waste water flow of the potentially contaminated boiler blowdown microfiltration to remove suspended solids, carbon adsorption to remove organics, bone-char adsorption to remove radionuclides, ion exchange to remove cations and anions, and a system for monitoring and sampling effluent water quality before discharge to the TEDF. (See page App C-11 for schematic flow diagram of the waste water treatment system.) Some additional treatment changes not contained in Appendix B of the Engineering Report are described in Section C.4.2.1 of this permit application.

C.2.2.2 222-S Laboratory Waste Water (Waste Stream No. 1b)

Planned source control was selected as BAT/AKART. This alternative includes adding corrosion inhibitors to the steam supply to reduce metal concentration; piping and equipment changes to reduce potential for contamination; installing additional retention basin capacity; eliminating steam cell heaters to avoid condensate generation; replacing heating, ventilation, and air conditioning air washers with electric chillers to eliminate blowdown; and identifying alternative demineralizer columns to

reduce constituent concentrations associated with initial backwash. Some additional treatment changes that are not contained in Appendix C of the Engineering Report are described in Section C.4.2.2 of this permit application.

C.2.2.3 T Plant Waste Water (Waste Stream No. 1c)

Additional source controls with retention/diversion capability were selected as BAT/AKART for T Plant waste water. This alternative includes replacing the water-cooled air compressor with an air-cooled unit and replacing the water-cooled pressurized water reactor chiller with an air-cooled, refrigerant cooling system. All remaining sources will be discharged to the 200 Area TEDF or trucked out for treatment. This waste stream also contains the old T Plant Laboratory waste water effluent (Appendix G of the Engineering Report). The BAT/AKART evaluation also included replacing or removing stored chemicals and decontaminate rooms containing sumps and drains. Some additional treatment changes that are not contained in Appendix F and G of the Engineering Report are described in Section C.4.2.3 of this permit application.

C.2.2.4 284-W Power Plant Waste Water (Waste Stream No. 1d)

Additional source controls plus in-plant treatment were selected as BAT/AKART. This alternative includes installing flow and turbidity meters in conjunction with an automatic backwash valve to optimize filter backwash frequency and installing new flocculation/sedimentation units to treat filter backwash in the 283-W Water Treatment Facility. Clarified water will be recycled. Automated level control for the 282-W Reservoir will be installed to eliminate raw water overflow. This alternative also includes replacing the 277-W compressor with an air-cooled unit and installing a closed-loop refrigeration cooling unit on the 277-W welding machines. Some additional treatment changes that are not contained in Appendix L of the Engineering Report are described in Section C.4.2.4 of this permit application.

C.2.2.5 PUREX Plant Chemical Sewer (Waste Stream No. 1e)

Planned source control was selected as BAT/AKART. This alternative includes blanking off the sump of the tank car unloading station and reactivating an existing PUREX concentrator to reprocess any waste that might be diverted from the normal discharge path as a result of standby and shutdown activities. The PUREX Facility is presently transitioning to a surveillance and maintenance phase prior to final dispositioning. The remaining stream will be discharged to the 200 Area TEDF. Some additional treatment changes that are not contained in Appendix K of the Engineering Report are described in Section C.4.2.5 of this permit application.

C.2.2.6 B Plant Chemical Sewer (Waste Stream No. 1f)

Planned source control was selected as BAT/AKART. Source control includes rerouting and replacing piping downstream of the 211-BA neutralization area, replacing the deteriorated floor spill containment around the aqueous makeup unit tanks, providing neutralization for acidic and alkaline liquids, providing secondary containment for tanks in the 211-B area, capping selected drains to the B Plant chemical sewer, and replacing the demineralizer with a continuous electrode de-ionizer. All potentially contaminated sources at the 221-B and 271-B buildings will be connected to the B Plant low-level waste handling system for storage in the double-shell tanks or some other suitable storage. Some additional treatment changes that are not contained in Appendix N of the Engineering Report are described in Section C.4.2.6 of this permit application.

C.2.2.7 B Plant Process Condensate (Waste Stream No. 1g)

Planned source control and in-plant treatment were selected as BAT/AKART. This alternative includes optimizing the deentrainer currently installed on the cell 23 concentrator. All related piping and tanks will be cleaned and piping that cannot be cleaned will be replaced. The entire effluent will be retained and sampled in the 221-BF retention tanks. An in-line flow monitor will be installed in 221-BF. Some additional treatment changes that are not contained in Appendix O of the Engineering Report are described in Section C.4.2.7 of this permit application.

C.2.2.8 B Plant Steam Condensate (Waste Stream No. 1h)

Additional source control was selected as BAT/AKART. This alternative includes cleaning the steam condensate piping and the holding tank in 221-BB, calibrating the online radiation monitor to resume operation, installing a pH monitor, replacing piping that cannot be cleaned, rerouting the cleaned steam condensate 114 header from the B Plant process condensate to upstream of the online monitor, and either diverting the combined effluent to the B Plant process condensate through the low level waste handling system or discharging the combined effluent through a flow monitor and flow proportional composite sampler to the 200 Area TEDF. Some additional treatment changes that are not contained in Appendix P of the Engineering Report are described in Section C.4.2.8 of this permit application.

C.2.2.9 242-81 Water Services Building Waste Water (Waste Stream No. 1i)

No change was selected as BAT/AKART. The present condition is that water strainers and backflow preventers are installed in the 242-A-81 Building to remove coarse suspended solids from a portion of the raw water supply. Periodic strainer backwash and any water that drains from the backflow preventers as a result of valve failure currently discharge to ponds through piping shared with the PUREX Facility chemical sewer. The stream will be redirected to the 200 Area TEDF.

C.2.2.10 Future Waste Streams to be discharged to the 200 Area Treated Effluent Disposal Facility

This section is a place holder for future streams anticipated to be discharged to the 200 Area TEDF. See Appendix I for stream acceptance criteria.

C.3.0 INDICATE TREATMENT PROVIDED TO EACH WASTE STREAM IDENTIFIED IN SECTION C.1.0 ABOVE.

Waste Stream(s) ID Nos.	[a]Treatment	Waste Stream(s) ID Nos.	Treatment
	Air flotation		pH correction
	Centrifuge		Ozonation
	Chemical precipitation		Reverse osmosis
	Chlorination		Screen
	Cyclone	1d	Sedimentation
1a	Filtration		Septic tank
	Flow equalization		Solvent separation
	Grease or oil separation		Biological treatment, type:
	Grease trap		Rainwater diversion or storage
	Grit removal		Other chemical treatment type:
1a	Ion exchange		Other physical treatment type:
1a, 1d,	Closed-loop cooling system	1a	Bone-char adsorption
1a, 1b, 1c, 1d, 1e, 1f,	[b]Planned source controls	1a	Carbon adsorption

[a] Closed-loop cooling system, planned source controls, bone-char adsorption, carbon adsorption were added to the list of treatment types.

[b] Planned source controls are described in Section C.2.2 for each stream identified.

C.4.0 DESCRIBE ANY PLANNED WASTE WATER TREATMENT IMPROVEMENTS OR CHANGES IN WASTE WATER DISPOSAL METHODS AND WHEN THEY WILL OCCUR.

C.4.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY (WASTE STREAM NO. 1)

There are no planned waste water treatment improvements or changes in waste water disposal methods for the 200 Area TEDF other than those described in the Engineering Report (1993a) and the Site Characterization Report (1993b).

C.4.2 SUPPLEMENTARY INFORMATION ON 200 AREA TREATED EFFLUENT DISPOSAL FACILITY GENERATING UNITS

The following sections describe any planned waste water treatment improvements that are not described in the Engineering Report but will be completed before June 1995. Treatment is defined broadly and includes such activity as source controls. These planned changes will be implemented at each generating unit before June 1995. Because these streams from the generating units do not have disposal, disposal changes are not applicable.

C.4.2.1 Plutonium Finishing Plant Waste Water (Waste Stream No. 1a)

The following waste water treatment improvements (i.e., additions and deletions to the Engineering Report) are planned to be implemented before June 1995:

- Add the sources currently discharged to the Z-21 Seepage Basin stream to the 200 Area TEDF. The Z-21 Seepage Basin will be eliminated and the stream redirected to the 200 Area TEDF. These additions are reflected in Table C.4.2.1. This table updates Table B.5-1 and the sources in Figure B.5-1 in the Engineering Report. Figure C.4.2.1. updates Figure B.2-2 in the Engineering Report.

- Delete sources from the 231-Z Building. These deletions change Table B.5-1, and Figure B.2-2 in the Engineering Report.

- Delete effluent monitoring because the 231-Z Building stream source for gamma and beta radiation has been eliminated and was the only source of radiation. The alpha radiation is not needed because the instrumentation detection limits are not sufficient to make any decisions about this stream. This change will affect page B-58 in the Engineering Report.

Table C.4.2.1. Additional Plutonium Finishing Plant Waste Water Sources at June 1995.

Source	Building	Water type	Flow type	Status	Changes
Dry air cooling water	234-5Z	Sanitary	I/C	Inactive	[1]
HVAC steam condensate	234-5Z	Condensate	C	Active	[1]
Ventilation spray pan	234-5Z	Raw/Sanitary	C	Active	[1]
North storm drain	234-5Z	Rain	I	Active	[1]
High tank overflow	234-5Z	Sanitary	C	Active	[1]
Room 221-A air conditioning	234-5Z	Sanitary	C	Active	[1]

Notes: I = Intermittent; C = Continuous; HVAC = heating, ventilation, and air conditioning.
[1] New source flow redirecting 216-Z-21 Seepage Basin stream to the 200 Area TEDF.

- Change the liquid sources connection listed in Table C.4.2.2 from Closed-Loop Cooling within PFP to Low Level Waste Treatment Facility. This change is motivated by long term shutdown considerations. Sources # 68, 76, 78, 120, 121, 138, 139, and 141 are currently inactive and not expected to be active again. Source # 143 is active and will continue to send its effluents to the LLWTF for treatment prior to TEDF discharge.

Table C.4.2.2 Redirection of Effluent from Closed-loop Cooling to Low Level Waste Treatment Facility (LLWTF)

SOURCE NUMBER	DESCRIPTION	PLANNED SOURCE CONTROL	ESTIMATED RESULTING FLOWRATE (gal/min)
68	Rm 235 RMA Line Hoods Cooling Water (CW) drains	Treat/discharge to TEDF	0.0
76	Tk-10 Jacket J-11 CW discharge	Treat/discharge to TEDF	0.0
78	Tk-12 Jacket J-13 CW discharge	Treat/discharge to TEDF	0.0
120	Rm-41 Glovebox H-4 Still Cond. CW drain	Treat/discharge to TEDF	0.0
121	Rm-41 Glovebox H-4 Furnace Cond. CW drain	Treat/discharge to TEDF	0.0
138	Rm 169 HA-40F Glovebox Furnaces/ Cond. CW	Treat/discharge to TEDF	0.0
139	Rm 170 HC-46F Cond. CW	Treat/discharge to TEDF	0.0
141	Rm 179 Thermal Analyzer CW	Treat/discharge to TEDF	0.0
143	Rm 262 HVAC CW drains	Treat/discharge to TEDF	4.8E-03

[1] Sources are described in Engineering Report Tables B.2-1 & B.5-1.

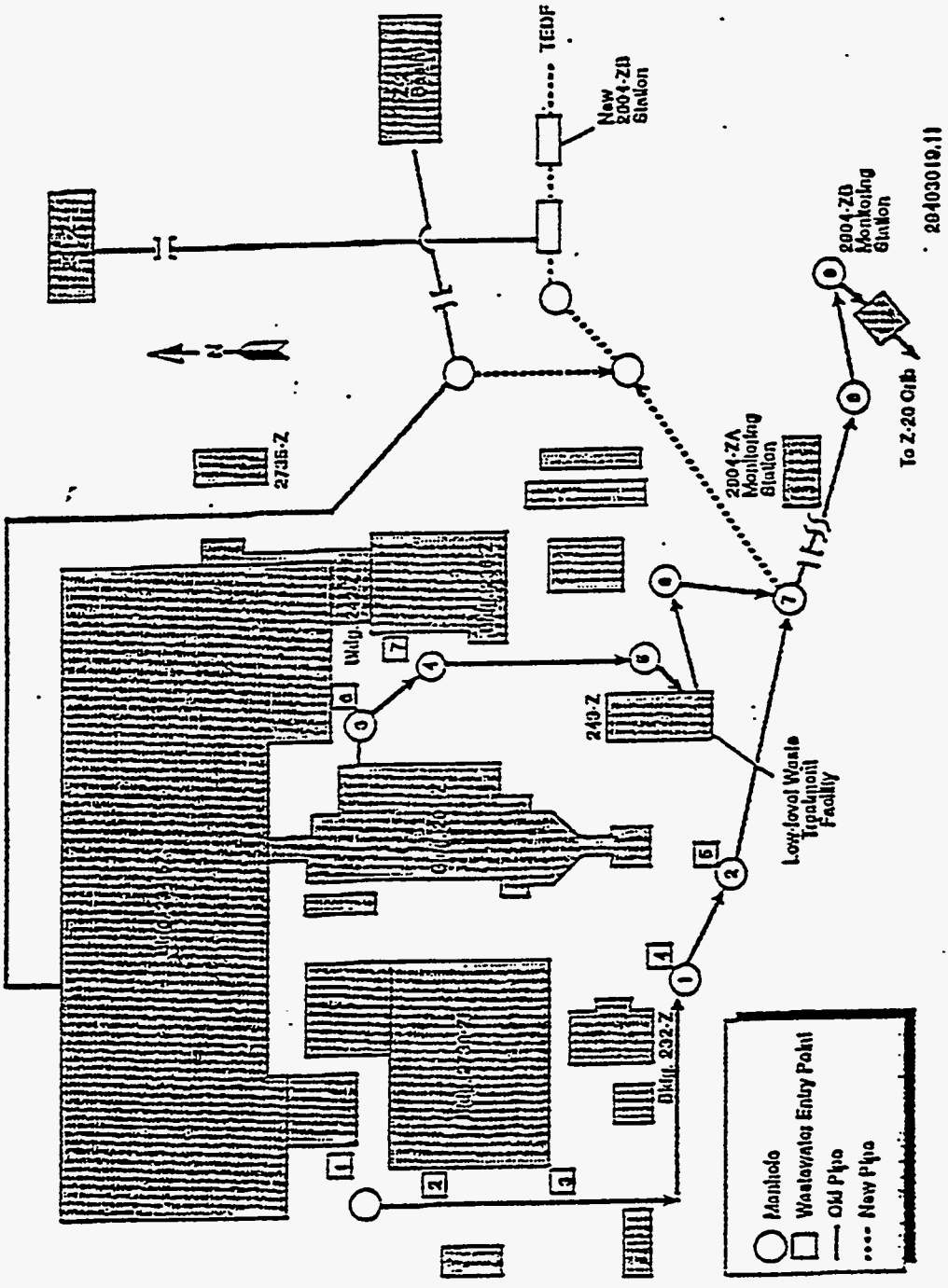

Figure C.4.2.1. Plutonium Finishing Plant Waste Water Building Schematic as of June 1995.

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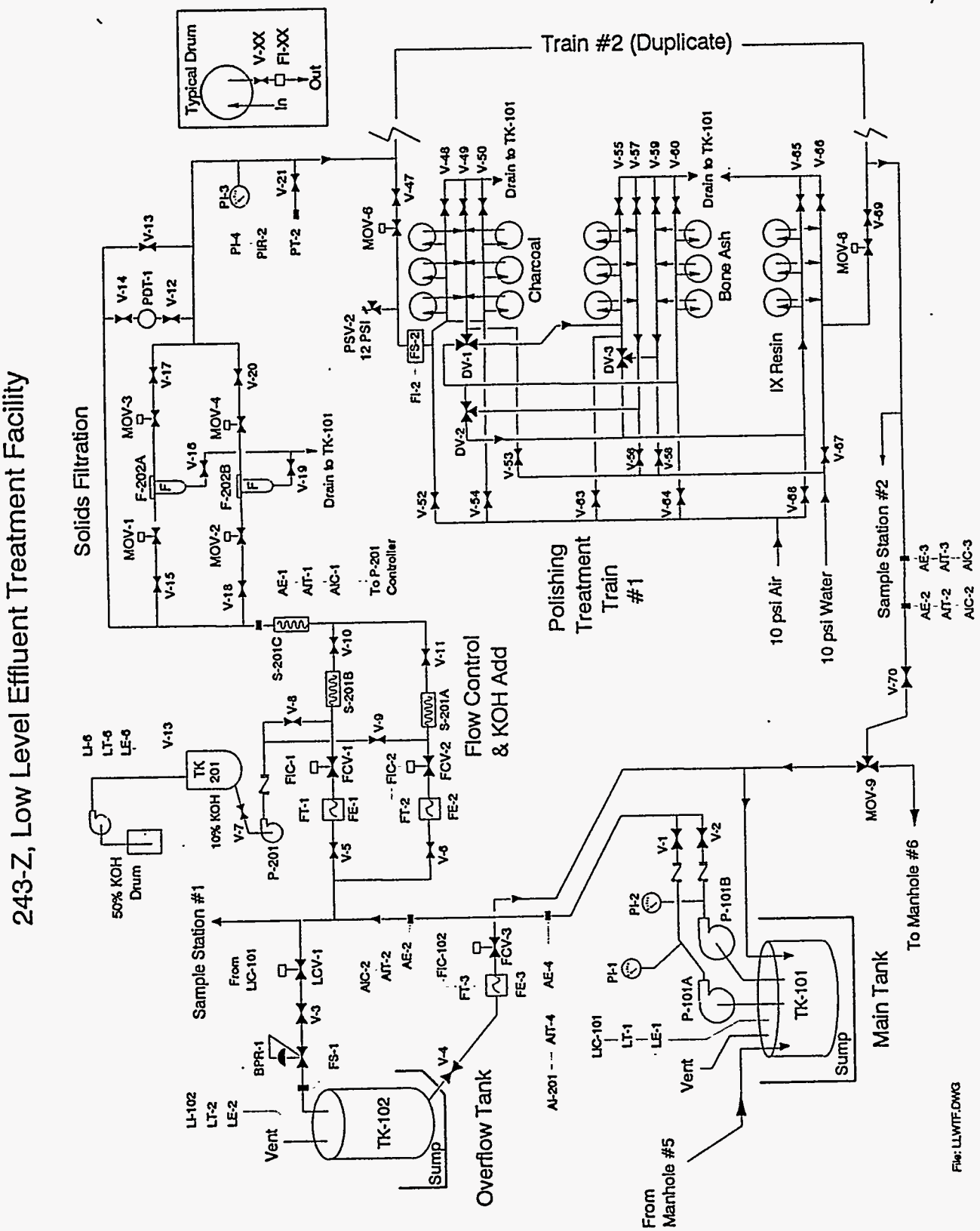

Figure C.4.2.2. Schematic Flow Diagram for the Waste Water Treatment System.

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C.4.2.2 222-S Laboratory Waste Water (Waste Stream No. 1b)

The following waste water treatment improvements (i.e., deletions) to the Engineering Report are planned to be implemented before June 1995:

- Delete gamma radiation and pH monitoring because the effluent will be sampled and results known before batch release to the 200 Area TEDF[1]. This change updates page C-40 of the Engineering Report.

C.4.2.3 T Plant Waste Water (Waste Stream No. 1c)

The following waste water treatment improvements (deletions) to the Engineering Report are planned to be implemented before June 1995:

- Delete chemical neutralization treatment because T Plant no longer dispenses acids/caustics as a service to other facilities. This change updates Figure F.4-2 of the Engineering Report.

- Rooms containing sumps and drains in the head-end of T Plant were to be decontaminated. However, in order to be more proactive, T Plant will seal the sumps and drains instead of decontaminating the rooms. This change will provide an equal or greater level of control.

C.4.2.4 284-W Power Plant Waste Water (Waste Stream No. 1d)

The following waste water treatment improvements (i.e., additions, and deletions) to the Engineering Report are planned to be implemented before June 1995:

- Delete 284-W Powerplant waste water sources.

- Add package Oil-fired Boiler Plant Sources.

- Add two new sources (283-W sample drain line and 283-W sample sink line)

These deletions/additions are reflected in Table C.4.2.2 -- 284-W Power Plant Waste Water Sources at June 1995 (updates Table J.5-1 and the sources in Figure J.5-1 in the Engineering Report) and in Figure C.4.2.3 - 284-W Power Plant Waste Water Building Schematic at June 1995 (updates Figure J.2-2 in the Engineering Report).

---

[1] Criteria for batch release will be documented in the facility operation specification document. The criteria will be established following issuance of the State Waste Discharge Permit. In no event would the criteria exceed the permit limits.

Table C.4.2.2. 284-W Power Plant Waste Water Sources at June 1995[1]

Sources		Building	Water type	Flow type	Status	Rational for change
1	Reservoir overflow	282-W	Raw	I	Active	
2	Filter Backwash	283-W	Sanitary	I	Active	[3]
3	Cooling Water	284-W	Sanitary	C	Active	[2a]
4	Boiler blowdown	284-W	6X Sanitary	C	Active	[2a]
5	Water Softener Regenerate	284-W	36X Sanitary	I	Active	[2a]
6	Floor drains	277-W	Raw	I	Active	
7	Welding Cooling Water	277-W	Raw	I/C	Active	[3]
8	Steam jet condensate	277-W	Sanitary	I	Active	
9	Fire water blowdown	277-W	Raw	I	Active	
10	Compressor Cooling Water	277-W	Raw	I/C	Active	[3]
11	283-W sample drain line	283-W	Sanitary	C	Active	[4]
12	283-W sample sink line	283-W	Sanitary	C	Active	[4]
13	Pump pit drain	282-W	Sanitary	I	Active	[2b]
14	Cooling water	282-W	Sanitary	I	Active	[2b]
15	Boiler blowdown	282-W	Sanitary	I/C	Active	[2b]
16	Water softener regenerate	282-W	Sanitary	I	Active	[2b]

Notes:

I = Intermittent, C = Continuous
[1] This Table updates Table J. 5-1 and the sources in Figure J.5-1 in the Engineering Report.
[2a] Source eliminated per replacement of the 284-W Power Plant with new Package Oil-Fired Boiler.
[2b] Sources added per replacement of the 284-W Power Plant with new Package Oil-Fired Boiler.
[3] Source reduced or eliminated per BAT/AKART (WHC 1993c).
[4] New sources identified.

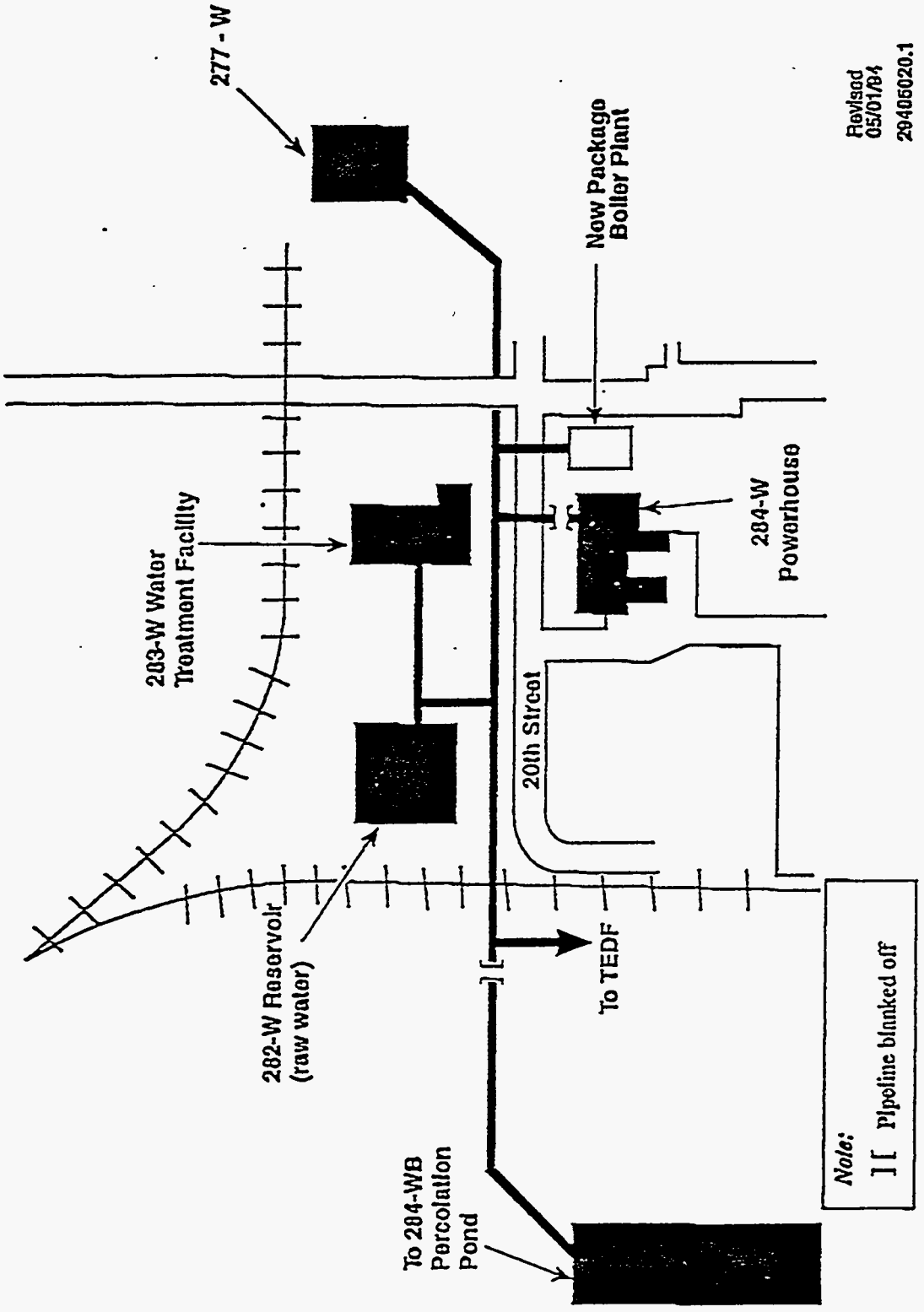

Figure C.4.2.3. 284-W Power Plant Waste Water Building Schematic at June 1995.

C.4.2.5 PUREX Facility Chemical Sewer (Waste Stream No. 1e)

The following waste water treatment improvements (i.e., additions) to the Engineering Report are planned to be implemented before June 1995:

- Increase flow from waste water concentrator steam condensate from negligible to 3 gallons per minute annualized flow rate. This slightly radioactive waste water is planned to be boiled off between 1994 and 1998. This change updates Figure K.5-1 (source no. 35) of the Engineering Report.

C.4.2.6 B Plant Chemical Sewer (Waste Stream No. 1f)

The following waste water treatment improvement (i.e., addition) to the Engineering Report is planned to be implemented before June 1995:

- Add continuous pH monitoring to effluent. pH monitoring was missed. This change will update Figure N.5-1 of the Engineering Report.

C.4.2.7 B Plant Process Condensate (Waste Stream No. 1g)

This effluent is presently not active and a management decision may be made to change BAT/AKART in the Engineering Report before June 1995 to permanently eliminate this effluent.

C.4.2.8 B Plant Steam Condensate (Waste Stream No. 1h)

This effluent is presently not active and a management decision may be made to change BAT/AKART in the Engineering Report before June 1995 to permanently eliminate this effluent.

C.4.2.9 242-81 Water Services Building Waste Water (Waste Stream No. 1i)

No changes from the Engineering Report are anticipated before June 1995 for this effluent.

C.5.0 IF PRODUCTION PROCESSES ARE SUBJECT TO SEASONAL VARIATIONS, PROVIDE THE FOLLOWING INFORMATION. LIST DISCHARGE FOR EACH WASTE STREAM IN GALLONS PER DAY (GPD). THE COMBINED VALUE FOR EACH MONTH SHOULD EQUAL THE ESTIMATED TOTAL MONTHLY FLOW.

C.5.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

The 200 Area TEDF does not have any production processes subject to seasonal variations. The effect of the seasonal variations on the discharge to the disposal site from the 200 Area TEDF is not available. However, following 1 to 2 years of operations of the 200 Area TEDF, this information will be available.

C.5.2 SUPPLEMENTARY INFORMATION ON 200 AREA TREATED EFFLUENT DISPOSAL FACILITY GENERATING UNITS

All the generating unit streams that have space heating by steam will have a reduced flow in the summer when the need to heat is reduced. Consequently, stream flows, except B Plant process condensate, B Plant steam condensate, and 242-81 Water Services Building waste water, will be reduced slightly from May through September.

Presently, information on seasonal variations at the facilities generating the effluent streams discharging to the 200 Area TEDF and the effect of the seasonal variations on the discharge to the disposal site from the 200 Area TEDF is not available. However, following 1 to 2 years of operation of the 200 Area TEDF, this information will be available.

C.6.0 SHIFT INFORMATION

C.6.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

Operators for the 200 Area TEDF will be supplied by the 200 Area Effluent Treatment Facility (Project C-018H). The control room for the 200 Area TEDF is housed in the same building as the 200 Area Effluent Treatment Facility. The shift information is provided to indicate the operating schedule of the 200 Area TEDF.

a. Number of shifts per work day: 3
b. Number of work days per week: 7
c. Average number of work days per year: 365
d. Maximum number of work days per year: 365
e. Number of employees per shift:

		Shift start times	
1st	2	1st	7:30 am
2nd	2	2nd	3:30 pm
3rd	2	3rd	11:30 pm

C.6.2 SUPPLEMENTARY INFORMATION ON 200 AREA TREATED EFFLUENT DISPOSAL FACILITY GENERATING UNITS

No additional staff for the 200 Area TEDF will be required by generating units.

C.7.0 LIST ALL INCIDENTAL MATERIALS LIKE OIL, PAINT, GREASE, SOLVENTS, SOAPS, CLEANERS, THAT ARE USED OR STORED ON-SITE. (USE ADDITIONAL SHEETS IF NECESSARY)

C.7.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

No incidental materials will be stored or used at the 200 Area TEDF except for what oil, grease, etc., used to maintain the pump at the two pumping stations.

C.7.2 SUPPLEMENTARY INFORMATION ON 200 AREA TREATED EFFLUENT DISPOSAL FACILITY GENERATING UNITS

Data for incidental materials for each generating unit is compiled from those items listed on the hazardous material inventory database. WHC 1994 contains materials stored at each facility.

C.8.0 DESCRIBE ANY WATER RECYCLING OR MATERIAL RECLAIMING PROCESSES.

C.8.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

No water recycling or material reclaiming process will be done at the 200 Area TEDF.

C.8.2 SUPPLEMENTARY INFORMATION ON 200 AREA TREATED EFFLUENT DISPOSAL FACILITY GENERATING UNITS

Water recycling systems have been installed at the facilities discharging to the 200 Area TEDF. These systems are described below.

C.8.2.1 Plutonium Finishing Plant (Waste Stream No. 1a)

The installation of a cooling tower and piping to convert many of the once-through cooling applications at the Plutonium Finishing Plant to closed-loop cooling systems. Waste water flow will be reduced by the elimination of the once-through cooling water sources that entered the waste water stream. The cooling tower will have a continuous blowdown (described as potentially contaminated fraction in Section C.2.2.1), that will discharge approximately 7 gallons per minute to the Plutonium Finishing Plant waste water stream. The cooling tower blowdown will receive end-of-pipe treatment to remove constituents before discharge to the Project W-049H.

C.8.2.2 284-W Power Plant Waste Water (Waste Stream No. 1d)

The 277-W compressor will be replaced with an air-cooled unit and a closed-loop refrigeration cooling unit will be installed on 277-W welding machines. The 283 Water Filtration Plant will treat and recycle filter backwash.

C.9.0 DOES THIS FACILITY HAVE:

C.9.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

a.	Spill Prevention, Control and Countermeasure Plan (per 40 CFR 112)	_Yes XNo
b.	Emergency Response Plan (per WAC 173-303-350)	_Yes XNo
c.	Runoff, spillage, or leak control plan (per WAC 173-216-110(f)	XYes _No
d.	Does your current waste discharge permit require a spill plan?	_Yes _No
	Not applicable	
e.	Solid Waste Management Plan?	XYes _No

C.9.2 SUPPLEMENTARY INFORMATION ON 200 AREA TREATED EFFLUENT DISPOSAL FACILITY GENERATING UNITS

a.	Spill Prevention, Control and Countermeasure Plan (per 40 CFR 112)	_Yes XNo
b.	Emergency Response Plan (per WAC 173-303-350)	XYes _No
c.	Runoff, spillage, or leak control plan (per WAC 173-216-110(f)	XYes _No
d.	Does your current waste discharge permit require a spill plan?	_Yes _No
	Not applicable	
e.	Solid Waste Management Plan?	XYes _No

Note: This response applies to all streams except where noted.

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APPENDIX D

WATER CONSUMPTION AND WATER LOSS

APPENDIX D

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APPENDIX D

WATER CONSUMPTION AND WATER LOSS

D.1.0 WATER SOURCE(S)

D.1.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY (WASTE STREAM NO. 1)

The 200 Area TEDF is a pipeline that conveys effluent from seven generators to two five-acre disposal ponds. The only water source to the 200 Area TEDF originates from the nine effluent streams discharged to the 200 Area TEDF for disposal. The water sources for the seven generating facilities are described in Section D.1.2.

D.1.2 SUPPLEMENTARY INFORMATION ON 200 AREA TREATED EFFLUENT DISPOSAL FACILITY GENERATING UNITS

The following water source information on the nine streams from seven generators is offered for completeness.[1]

D.1.2.1 Plutonium Finishing Plant (Waste Stream No. 1a)

___ Public System (Specify) _____

___ Private Well _X_ Surface Water

a. Water Right Permit Number:

None

b. Legal description:

_SW_ 1/4S, _SW_ 1/4S, _2_ Section, _13N_ TWN, _25E_ R

D.1.2.2 222-S Laboratory (Waste Stream No. 1b)

___ Public System (Specify)_____

___ Private Well _X_ Surface Water

[1] Surface water on the Hanford Site is distributed through two systems, a) as raw water supply, and b) as potable water which is treated by water filtration plants. The water filtration plants are permitted pursuant to WAC 246-290.

a. Water Right Permit Number:

None

b. Legal description:

SW 1/4S, SW 1/4S, 2 Section, 13N TWN, 25E R

D.1.2.3 T Plant (Waste Stream No. 1c)

___ Public System (Specify)_____

___ Private Well X Surface Water

a. Water Right Permit Number:

None

b. Legal description:

SW 1/4S, SW 1/4S, 2 Section, 13N TWN, 25E R

D.1.2.4 284-W Power Plant (Waste Stream No. 1d)

___ Public System (Specify)_____

___ Private Well X Surface Water

a. Water Right Permit Number:

None

b. Legal description:

SW 1/4S, SW 1/4S, 2 Section, 13N TWN, 25E R

D.1.2.5 PUREX Facility (Waste Stream No. 1e)

___ Public System (Specify)_____

___ Private Well X Surface Water

a. Water Right Permit Number:

None

b. Legal description:

SW 1/4S, SW 1/4S, 2 Section, 13N TWN, 25E R

D.1.2.6 B Plant (Waste Stream No. 1f, No. 1g, No. 1h)

___ Public System (Specify)_____

_X_ Private Well _X_ Surface Water

a. Water Right Permit Number:

None

b. Legal description: Surface Water

SW 1/4S, SW 1/4S, 2 Section, 13N TWN, 25E R

Legal description: Private Well
SE 1/4S, NE 1/4S, 3 Section, 12N TWN, 26E R

D.1.2.7 242-A-81 Water Services Waste Water (Waste Stream No. 1i)

___ Public System (Specify)_____

___ Private Well _X_ Surface Water

a. Water Right Permit Number:

None

b. Legal description:

SW 1/4S, SW 1/4S, 2 Section, 13N TWN, 25E R

D.2.0 WATER USE:

D.2.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY (WASTE STREAM NO. 1)

The 200 Area TEDF is a pipeline that conveys effluent from seven generators to the disposal ponds. The only water use by the 200 Area TEDF originates from the nine effluent streams discharged to the 200 Area TEDF for disposal. The maximum water use by the 200 Area TEDF is based on the maximum design capacity of the pipeline and the SALDS. The average water use by the 200 Area TEDF is based on the combined average of the nine effluent streams.

a. Indicate total water use: Gallons per day (average): 771,100
Gallons per day (maximum): 3.5 Million

b. Is water metered? X Yes ___ No

D.2.2 SUPPLEMENTARY INFORMATION ON 200 AREA TREATED EFFLUENT DISPOSAL FACILITY GENERATING UNITS

The following water use information on the nine streams from seven generators is offered for completeness. The water use calculations are based on data extracted from the Engineering Report using estimated flows after BAT/AKART have been implemented. Average flows were calculated using the flow data presented in the BAT/AKART evaluation in the Engineering Report for each of the selected alternatives. Maximum water usage was calculated by summing all of the flows described in the BAT/AKART evaluations (Engineering Report "Process Description"). All water usage quantities are rounded to the nearest 100 gallons per day.

D.2.2.1 Plutonium Finishing Plant (Waste Stream No. 1a)

a. Indicate total water use: Gallons per day (average): 90,700
Gallons per day (maximum): 720,000

b. Is water metered? X Yes ___ No

Notes: Water is metered on outflow waste stream not inflow of raw water.
Gallons per day (maximum), assumes a 100 year rain at Hanford for 24 hours.

D.2.2.2 222-S Laboratory (Waste Stream No. 1b)

a. Indicate total water use: Gallons per day (average): 6,700
Gallons per day (maximum): 72,000

b. Is water metered? X Yes ___ No

Note: Water is metered on outflow waste stream not inflow of raw water.

D.2.2.3 T Plant (Waste Stream No. 1c)

a. Indicate total water use: Gallons per day (average): 5,000
Gallons per day (maximum): 158,000

b. Is water metered? X Yes ___ No

Note: Water is metered on outflow waste stream not inflow of raw water.

D.2.2.4 284-W Power Plant (Waste Stream No. 1d)

a. Indicate total water use: Gallons per day (average): 118,000
Gallons per day (maximum): 490,000

b. Is water metered? ___ Yes X No

D.2.2.5 PUREX Facility Chemical Sewer (Waste Stream No. 1e)

a. Indicate total water use: Gallons per day (average): 360,000
Gallons per day (maximum): 864,000

b. Is water metered? X Yes ___ No

Note: Water is metered on outflow waste stream not inflow of raw water.

D.2.2.6 B Plant (Waste Streams No. 1f, No. 1g, No. 1h)

a. Indicate total water use: Gallons per day (average): 188,700
Gallons per day (maximum): 460,800

b. Is water metered? X Yes ___ No

Note: Water is metered on outflow waste stream not inflow of raw water.

D.2.2.7 242-A-81 Water Services Waste Water (Waste Stream No. 1i)

a. Indicate total water use: Gallons per day (average): 2,000
Gallons per day (maximum): 720,000

b. Is water metered? X Yes ___ No

Note: Water is metered on outflow waste stream not inflow of raw water.

D.3.0 ATTACH A LINE DRAWING SHOWING THE WATER FLOW THROUGH THE FACILITY. INDICATE SOURCE OF INTAKE WATER, OPERATIONS CONTRIBUTING WASTE WATER TO THE EFFLUENT, AND TREATMENT UNITS LABELED TO CORRESPOND TO THE MORE DETAILED DESCRIPTIONS IN ITEM C. CONSTRUCT A WATER BALANCE ON THE LINE DRAWING SHOWING AVERAGE FLOWS BETWEEN INTAKES, OPERATIONS, TREATMENT UNITS, AND OUTFALLS. IF A WATER BALANCE CANNOT BE DETERMINED (E.G., FOR CERTAIN MINING ACTIVITIES), PROVIDE A PICTORIAL DESCRIPTION OF THE NATURE AND AMOUNT OF ANY SOURCES OF WATER AND ANY COLLECTION OR TREATMENT MEASURES.

D.3.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY (WASTE STREAM NO. 1)

The line drawing for the 200 Area TEDF is presented in Figure D.3-1.

D.3.2 SUPPLEMENTARY INFORMATION ON 200 AREA TREATED EFFLUENT DISPOSAL FACILITY GENERATING UNITS

Schematic flow diagrams from the Engineering Report for each of the nine waste streams are presented in Appendix B, Section B.2.0 of this document. Because inflow water to the generating facilities is not metered, a complete water balance for the facilities cannot be determined. Outflow rates for each component of the waste streams after BAT/AKART are presented in the Engineering Report (WHC 1993a). The schematic flow diagrams, with corresponding page numbers, that relate to each waste stream are listed as follows:

WASTE STREAM	SCHEMATIC FLOW DIAGRAM
1a	Figure B.2-1, page B-7
1b	Figure B.2-2, page B-8
1c	Figure B.2-3, page B-9
1d	Figure B.2-4, page B-10
1e	Figure B.2-5, page B-11
1f	Figure B.2-6, page B-12
1g	Figure B.2-7, page B-13
1h	Figure B.2-8, page B-14
1i	Figure B.2-9, page B-15

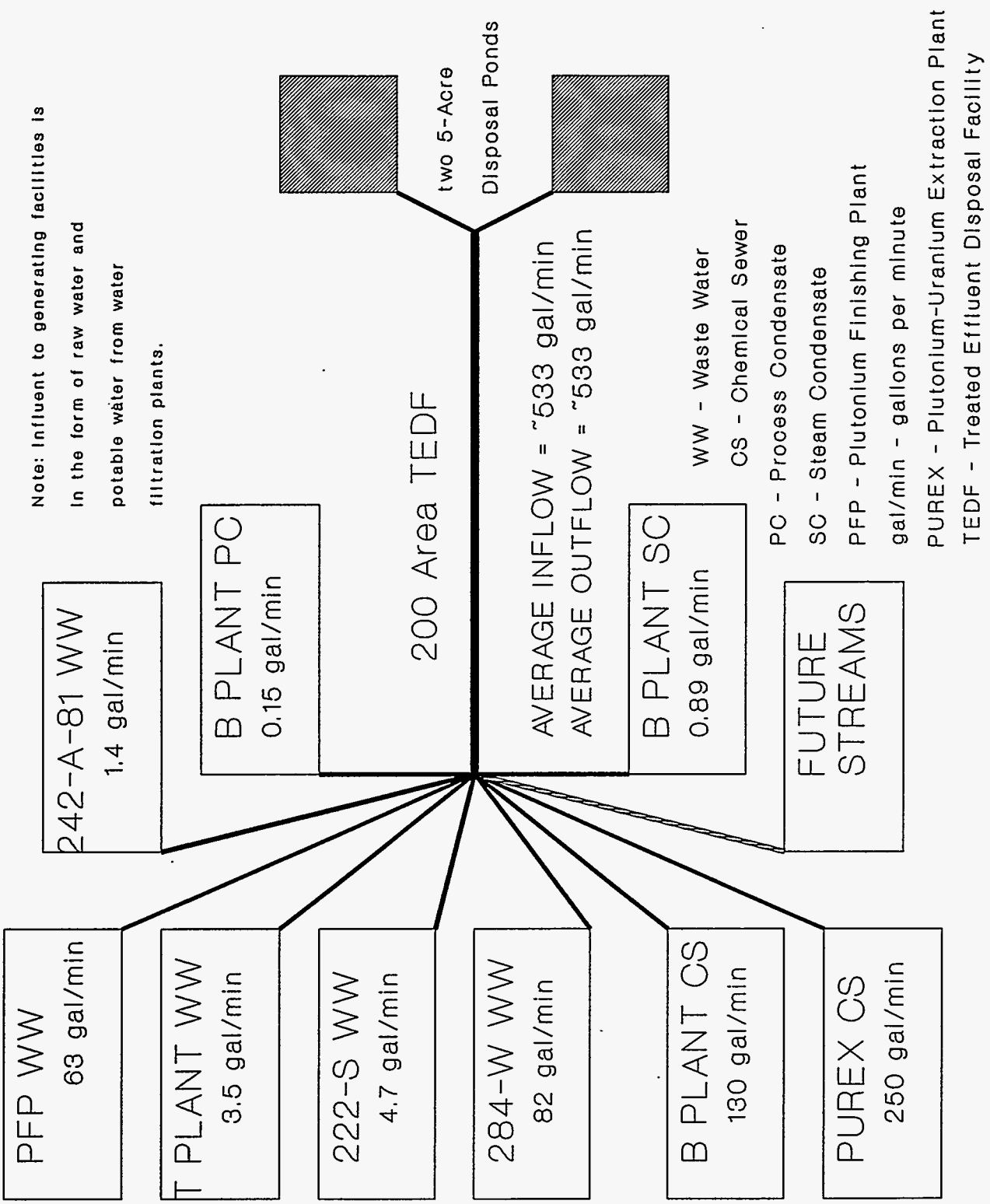

Figure D.3-1. Line Drawing for the 200 Area Treated Effluent Disposal Facility.

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APPENDIX E

WASTE WATER INFORMATION

APPENDIX E

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APPENDIX E

WASTE WATER INFORMATION

E.1.0 PROVIDE MEASUREMENTS FOR THE TREATED WASTE WATER PRIOR TO LAND APPLICATION FOR THE PARAMERTERS LISTED BELOW, UNLESS WAIVED BY THE PERMITTING AUTHORITY. ALL ANALYTICAL METHODS USED TO MEET THESE REQUIREMENTS SHALL, UNLESS APPROVED OTHERWISE IN WRITING BY ECOLOGY, CONFORM TO THE GUIDELINES ESTABLISHING TEST PROCEDURES FOR THE ANALYSIS OF POLLUTANTS CONTAINED IN 40 CODE OF FEDERAL REGULATIONS (CFR) PART 136.

The values in Table E.1-1 are estimates of streams concentrations after the implementation of BAT/AKART. These estimates are averages of projected estimates of the nine streams in this application taken from Table 2-7 of the Engineering Report. The present data in Table E.1-1 should be considered a placeholder until actual sampling data can be obtained. Data, as a result of the Sampling and Analysis Plans, will be available in the near future. However, reliable data may not be available until sometime after the facility is operating.

Table E.1-1. 200 Area Treated Effluent Disposal Facility Estimated Effluent Concentrations.

Parameter	200 Area TEDF Effluent (parts per billion unless otherwise noted)
pH	6.5-8.5
Conductivity	NA
Total Dissolved Solids	1.4 E+05
Total Suspended Solids	2.7 E+03
BOD (5 day)	ND
COD	ND
Ammonia-N	5.1 E+01
TKN-N	ND
Nitrate-N	7.1 E+02
Ortho-phosphate-P	ND
Total-phosphate-P	3.1 E+02
Total Oil & Grease	NA
Calcium	2.3 E+04
Magnesium	5.3 E+03
Sodium	2.6 E+04
Chloride	3.8 E+04
Sulfate	1.6 E+04
Fluoride	1.7 E+02
Cadmium (total)	5.6 E-01
Chromium (total)	1.9 E-03
Lead (total)	4.3 E+00
Mercury	6.3 E-02
Selenium (total)	ND
Silver (total)	4.9 E+00
Copper (total)	3.7 E+01
Iron (total)	1.9 E+02
Manganese (total)	1.0 E+01
Zinc (total)	4.8 E+01
Barium (total)	5.0 E+01
Total Coliform	NA

Notes: NA - Not Analyzed
ND - Not Detected

E.2.0 WASTE WATER CHARACTERISTICS FOR TOXIC POLLUTANTS

The intent of this question is to determine which chemicals are or might be present in the process water or waste water. For each chemical listed below:

a. Use the letter A in the ABST column if the chemical is not likely to be present because it is not used in the production process *or used on site.*

b. Use the letter S in the ABST column if the chemical may be present because it is used on site, but the chemical is *not used* in the production process.

c. Use the letter P in the PRST column if the chemical is likely to be present because it is used in the production process, *but the effluent has not been tested.*

d. Use the letter K in the PRST column *if the effluent has been tested and found to be present.* Attach the analytical results.

Table E.2-2 details the waste water characteristics for toxic pollutants for the combined effluent streams. Each of the effluent streams which will discharge to the 200 Area TEDF is currently being characterized. Table E.2-2 was completed using data available as of August 1994, from sampling and analyzing each effluent stream in accordance with Sampling and Analysis Plans approved by Ecology in 1992 and 1993.

Those constituents identified in the unvalidated analytical results in any of the effluent streams are indicated by the use of "K" in the present column. The unvalidated analytical data from the effluent stream which indicated the constituents as present, are being submitted as an attachment with this application. Validated data will be submitted at a later date to Ecology. When more analytical data becomes available, Table E.2-2 will be updated as necessary. Ecology will be informed of any changes. The available, unvalidated analytical data has indicated that other constituents, not listed in Table E.2-2, may be present in the effluent streams.

Table E.2-2. Analytical Results Waste Water Characterization for Toxic Pollutants.

Absent / Present		Constituent/CAS No.	Absent / Present		Constituent/CAS No.
A		Acrylamide/79-06-1	A		1,2 Dichloropropane/78-87-5
A		Acrylonitrile/107-13-1	A		1,3 Dichloropropene/542-75-6
A		Aldrin/309-00-2	A		Dichlorvos/62-73-7
A		Aniline/62-53-3	A		Dieldrin/60-57-1
A		Aramite/140-57-8	A		3,3' Dimethoxybenzidine/119-90-4
	K	Arsenic/7440-38-2	A		3,3 Dimethylbenzidine/119-93-7
A		Azobenzene/103-33-3	A		1,2 Dimethylhydrazine/540-73-8
A		Benzene/71-43-2	A		2,4 Dinitrotoluene/121-14-2
A		Benzidine/92-87-5	A		2,6 Dinitrotoluene/606-20-2
A		Benzo(a)pyrene/50-32-8	A		1,4 Dioxane/123-91-1
A		Benzotrichloride/98-07-7	A		1,2 Diphenylhydrazine/122-66-7
A		Benzyl chloride/100-44-7	A		Endrin/72-20-8
A		Bis(chloroethyl)ether/111-44-4	A		Epichlorohydrin/106-89-8
A		Bis(chloromethyl)ether/542-88-1	A		Ethyl acrylate/140-88-5
	K	Bis(2-ethylhexyl)phthalate/ 117-81-7	A		Ethylene dibromide/106-93-4
	K	Bromodichloromethane/75-27-4	A		Ethylene thioureae/96-45-7
A		Bromoform/75-25-2	A		Folpet/133-07-3
A		Carbazole/86-74-8	A		Furmecyclox/60568-05-0
	K*	Carbon tetrachloride/56-23-5	A		Heptachlor/76-44-8
A		Chlordane/57-74-9	A		Heptachlor epoxide/1024-57-3
A		Chlorodibromomethane/124-48-1	A		Hexachlorobenzene/118-74-1
	K	Chloroform/67-66-3	A		Hexachlorocyclohexane (alpha)/ 319-84-6
A		Chlorthalonil/1897-45-6	A		Hexachlorocyclohexane (tech.)/ 608-73-1
A		2,4-D/94-75-7	A		Hexachlorodibenzo-p-dioxin, mix/ 19408-74-3
A		DDT/50-29-3	A		Hydrazine/hydrazine sulfate/ 302-01-2
A		Diallate/2303-16-4	A		Lindane/58-89-9
A		1,2 Dibromoethane/106-93-4	A		2 Methylaniline/100-61-8
A		1,4 Dichlorobenzene/106-46-7	A		2 Methylaniline hydrochloride/ 636-21-5
A		3,3' Dichlorobenzidine/91-94-1	A		4,4' Methylene bis(N,N-dimethyl)aniline/101-61-1
A		1,1 Dichloroethane/75-34-3		K	Methylene chloride (dichloromethane)/75-09-2
A		1,2 Dichloroethane/107-06-2	A		Mirex/2385-85-5
A		Nitrofurazone/59-87-0	A		O-phenylenediamine/106-50-3
A		N-nitrosodiethanolamine/ 1116-54-7	A		Propylene oxide/75-56-9
A		N-nitrosodiethylamine/55-18-5	A		2,3,7,8-Tetrachlorodibenzo-p-dioxin/ 1746-01-6
A		N-nitrosodimethylamine/62-75-9	A		Tetrachloroethylene/127-18-4
A		N-nitrosodiphenylamine/86-30-6	A		2,4 Toluenediamine/95-80-7
A		N-nitroso-di-n-propylamine/ 621-64-7	A		o-Toluidine/95-53-4
A		N-nitrosopyrrolidine/930-55-2	A		Toxaphene/8001-35-2
A		N-nitroso-di-n-butylamine/ 924-16-3	A		Trichloroethylene/79-01-6
A		N-nitroso-n-methylethylamine/ 10595-95-6	A		2,4,6-Trichlorophenol/88-06-2
A		PAH/NA	A		Trimethyl phosphate/512-56-1
A		PBBs/NA	A		Vinyl chloride/75-01-4
A		PCBs/1336-36-3			

* Not used; storage only. The DOE-RL is locating offsite purchasers for the inventory.

APPENDIX F

STORM WATER

APPENDIX F

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SECTION F. STORM WATER

F.1.0 DO YOU HAVE A WASHINGTON STATE STORM WATER BASELINE GENERAL PERMIT?

Note: This answer applies to all seven facilities.

[ ] Yes [X] No

Federal facilities are excluded from coverage under the Washington State Storm Water Baseline Permit. However, an equivalent NPDES General Permit has been issued by EPA (General Permit No.: WAR00A17F). In addition, the Hanford Site is implementing a storm water pollution prevention program as described in *Hanford Site Storm Water Pollution Prevention Plan* (WHC 1993c)

If yes, please list the permit number here. _____

F.2.0 HAVE YOU APPLIED FOR A WASHINGTON STATE STORM WATER BASELINE GENERAL PERMIT?

Note: This answer applies to all seven facilities.

[ ] Yes [X] No

Federal facilities are excluded from coverage under the Washington State Storm Water Baseline Permit. However, an equivalent NPDES General Permit has been issued by EPA (General Permit No.: WA-R-00-000F). In addition, the Hanford site is implementing a storm water pollution prevention program as described in *Hanford Site Storm Water Pollution Prevention Plan* (WHC 1993c).

F.3.0 DO YOU HAVE ANY STORM WATER QUALITY OR QUANTITY DATA?

Note: This answer applies to all seven facilities.

[ ] Yes [X] No

F.4.0 DESCRIBE THE SIZE OF THE STORM WATER COLLECTION AREA.

F.4.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY (WASTE STREAM NO. 1)

The 200 Area TEDF does not have any storm water collection areas.

F.4.2 SUPPLEMENTARY INFORMATION ON FACILITIES DISCHARGING TO THE 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

F.4.2.1 Plutonium Finishing Plant (Waste Stream No. 1a)

a. Unpaved Area	33,474	square feet
b. Paved Area	10,014	square feet
c. Other Collection Areas (Roofs)	16,179	square feet

F.4.2.2 222-S Laboratory (Waste Stream No. 1b)

a. Unpaved Area	12,530	square feet
b. Paved Area	5,869	square feet
c. Other Collection Areas (Roofs)	5,725	square feet

F.4.2.3 T Plant (Waste Stream No. 1c)

a. Unpaved Area	60,141	square feet
b. Paved Area	4,595	square feet
c. Other Collection Areas (Roofs)	9,958	square feet

F.4.2.4 284-W Power Plant (Waste Stream No. 1d)

Storm water from the 284-W Powerhouse and surrounding facilities is not collected for point source discharge to the 200 Area TEDF. Therefore, there is no storm water collection area for the 284-W Power Plant.

F.4.2.5 PUREX Facility (Waste Stream No. 1e)

a. Unpaved Area	81,249	square feet
b. Paved Area	10,686	square feet
c. Other Collection Areas (Roofs)	18,999	square feet

F.4.2.6 B Plant (Waste Streams No. 1f, No. 1g, No. 1h)

a. Unpaved Area	Approx. 1,084,107	square feet
b. Paved Area	Approx. 1,668,420	square feet
c. Other Collection Areas (Roofs)	Approx. 180,512	square feet

F.4.2.7 242-A-81 Water Services Building (Waste Stream No. 1i)

Storm water from the 242-A-81 Water Services Building is not collected for point source discharge to the 200 Area TEDF. Therefore, there is no storm water collection area for the 242-A-81 Water Services Building.

F.5.0 DOES YOUR FACILITY'S STORM WATER DISCHARGE TO:

Note: This answer applies to all seven facilities.

Storm water from the generating facilities is not discharged directly to ground waters of Washington State. The storm water has no point source discharge to surface water or a municipal storm sewer. Storm water will be discharged to two five acre disposal ponds of the 200 Area TEDF and to the surface of the ground.

[ ] Storm sewer systems; name of storm sewer system (*operator*):_____
[ ] Directly to surface waters of Washington State (*e.g., river, lake, creek, estuary, ocean*).
[ ] Indirectly to surface waters of Washington State (*i.e., flows over adjacent properties first*).
[ ] Directly to ground waters of Washington State:
[ ] dry well [ ] drainfield [ ] Other

F.6.0 AREAS WITH INDUSTRIAL ACTIVITIES AT FACILITY: (*check all that apply*)

F.6.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY (WASTE STREAM NO. 1)

The 200 Area TEDF collects, transfers, and disposes of waste water from seven facilities. No other industrial activities are associated with the 200 Area TEDF.

F.6.2 SUPPLEMENTARY INFORMATION ON FACILITIES DISCHARGING TO THE 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

To help address this item, site maps with a boundaries drawn around each facility have been provided. Refer to Drawing H-13-000096 for the Plutonium Finishing Plant, Drawing H-13-000184 for the 222-S Laboratory, Drawing H-13-000185 for T Plant, Drawing H-13-000071 for the 284-W Power Plant, H-13-000041 for the PUREX Facility, Drawing H-13-000042 for B Plant, and Drawing H-13-000050 for the 242-A-81 Water Services Building. The facility boundary shown, has been drawn around the facilities considered applicable. Refer to Drawings H-13-000186 and H-13-000187 for the Hanford Site Facility Map General Notes and Legend.

F.6.2.1 Plutonium Finishing Plant (Waste Stream No. 1a)

[ ] Manufacturing Building
[X] Material Handling
[X] Material Storage
[X] Hazardous Waste Treatment, Storage, or Disposal (Refers to RCRA, Subtitle C Facilities Only)
[X] Waste Treatment, Storage, or Disposal

[X] Application or Disposal of Waste waters
[ ] Storage and Maintenance of Material Handling Equipment
[ ] Vehicle Maintenance
[ ] Areas Where Significant Materials Remain
[X] Access Roads and Rail Lines for Shipping and Receiving
[ ] Other_____

_____

F.6.2.2 222-S Laboratory (Waste Stream No. 1b)

[ ] Manufacturing Building
[X] Material Handling
[X] Material Storage
[X] Hazardous Waste Treatment, Storage, or Disposal (Refers to RCRA, Subtitle C Facilities Only)
[X] Waste Treatment, Storage, or Disposal
[X] Application or Disposal of Waste waters
[ ] Storage and Maintenance of Material Handling Equipment
[ ] Vehicle Maintenance
[ ] Areas Where Significant Materials Remain
[X] Access Roads and Rail Lines for Shipping and Receiving
[ ] Other_____

_____

F.6.2.3 T Plant (Waste Stream No. 1c)

[ ] Manufacturing Building
[X] Material Handling
[X] Material Storage
[X] Hazardous Waste Treatment, Storage, or Disposal (Refers to RCRA, Subtitle C Facilities Only)
[X] Waste Treatment, Storage, or Disposal
[X] Application or Disposal of Waste waters
[ ] Storage and Maintenance of Material Handling Equipment
[ ] Vehicle Maintenance
[ ] Areas Where Significant Materials Remain
[X] Access Roads and Rail Lines for Shipping and Receiving
[ ] Other_____

_____

F.6.2.4 284-W Power Plant (Waste Stream No. 1d)

[ ] Manufacturing Building
[X] Material Handling
[X] Material Storage
[ ] Hazardous Waste Treatment, Storage, or Disposal (Refers to RCRA, Subtitle C Facilities Only)
[X] Waste Treatment, Storage, or Disposal
[X] Application or Disposal of Waste waters

[ ] Storage and Maintenance of Material Handling Equipment
[ ] Vehicle Maintenance
[X] Areas Where Significant Materials Remain
[X] Access Roads and Rail Lines for Shipping and Receiving
[ ] Other_____

_____

F.6.2.5 PUREX Facility (Waste Stream No. 1e)

[ ] Manufacturing Building
[X] Material Handling
[X] Material Storage
[X] Hazardous Waste Treatment, Storage, or Disposal (Refers to RCRA, Subtitle C Facilities Only)
[X] Waste Treatment, Storage, or Disposal
[X] Application or Disposal of Waste waters
[ ] Storage and Maintenance of Material Handling Equipment
[ ] Vehicle Maintenance
[ ] Areas Where Significant Materials Remain
[X] Access Roads and Rail Lines for Shipping and Receiving
[ ] Other_____

_____

F.6.2.6 B Plant (Waste Stream No. 1f, No. 1g, No. 1h)

[ ] Manufacturing Building
[X] Material Handling
[X] Material Storage
[X] Hazardous Waste Treatment, Storage, or Disposal (Refers to RCRA, Subtitle C Facilities Only)
[X] Waste Treatment, Storage, or Disposal
[X] Application or Disposal of Waste waters
[ ] Storage and Maintenance of Material Handling Equipment
[ ] Vehicle Maintenance
[ ] Areas Where Significant Materials Remain
[X] Access Roads and Rail Lines for Shipping and Receiving
[ ] Other_____

_____

F.6.2.7 242-A-81 Water Services Building (Waste Stream No. 1i)

[ ] Manufacturing Building
[ ] Material Handling
[ ] Material Storage
[ ] Hazardous Waste Treatment, Storage, or Disposal (Refers to RCRA, Subtitle C Facilities Only)
[ ] Waste Treatment, Storage, or Disposal
[X] Application or Disposal of Waste waters
[ ] Storage and Maintenance of Material Handling Equipment

[ ] Vehicle Maintenance
[ ] Areas Where Significant Materials Remain
[ ] Access Roads and Rail Lines for Shipping and Receiving
[ ] Other_____

F.7.0 MATERIAL HANDLING/MANAGEMENT PRACTICES.

F.7.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY (WASTE STREAM NO. 1)

The 200 Area TEDF collects, transfers, and disposes of waste water from seven facilities. No material handling or material management practices are associated with the 200 Area TEDF.

F.7.2 SUPPLEMENTARY INFORMATION ON FACILITIES DISCHARGING TO THE 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

F.7.2.1 Plutonium Finishing Plant (Waste Stream No. 1a)

a. Types of materials handled and/or stored outdoors: (*check all that apply*)

[ ]	Solvents	[X]	Hazardous Wastes
[X]	Scrap Metal	[X]	Acids or Alkalies
[ ]	Petroleum or Petrochemical Products	[ ]	Paints/Coatings
[ ]	Plating Products	[ ]	Woodtreating Products
[ ]	Pesticides	[ ]	Other (Please List _____

b. Identify existing management practices employed to reduce pollutants in industrial storm water discharges: (*check all that apply*)

[ ]	Oil/Water Separator	[ ]	Detention Facilities
[X]	Containment	[ ]	Infiltration Basins
[X]	Spill Prevention	[ ]	Operational BMPs
[ ]	Surface Leachate Collection	[ ]	Vegetation Management
[ ]	Overhead Coverage	[ ]	Other (Please List _____

F.7.2.2 222-S Laboratory (Waste Stream No. 1b)

a. Types of materials handled and/or stored outdoors: (*check all that apply*)

[ ]	Solvents	[X]	Hazardous Wastes
[X]	Scrap Metal	[ ]	Acids or Alkalies
[X]	Petroleum or Petrochemical Products	[ ]	Paints/Coatings
[ ]	Plating Products	[ ]	Woodtreating Products
[ ]	Pesticides	[ ]	Other (Please List _____

b. Identify existing management practices employed to reduce pollutants in industrial storm water discharges: (*check all that apply*)

[ ]	Oil/Water Separator	[ ]	Detention Facilities
[ ]	Containment	[ ]	Infiltration Basins
[X]	Spill Prevention	[ ]	Operational BMPs
[ ]	Surface Leachate Collection	[ ]	Vegetation Management
[ ]	Overhead Coverage	[ ]	Other (Please List _____

F.7.2.3 T Plant (Waste Stream No. 1c)

a. Types of materials handled and/or stored outdoors: (*check all that apply*)

[ ]	Solvents	[X]	Hazardous Wastes
[X]	Scrap Metal	[ ]	Acids or Alkalies
[ ]	Petroleum or Petrochemical Products	[ ]	Paints/Coatings
[ ]	Plating Products	[ ]	Woodtreating Products
[ ]	Pesticides	[ ]	Other (Please List _____

b. Identify existing management practices employed to reduce pollutants in industrial storm water discharges: (*check all that apply*)

[ ]	Oil/Water Separator	[ ]	Detention Facilities
[X]	Containment	[ ]	Infiltration Basins
[X]	Spill Prevention	[ ]	Operational BMPs
[ ]	Surface Leachate Collection	[ ]	Vegetation Management
[ ]	Overhead Coverage	[ ]	Other (Please List _____

F.7.2.4 284-W Power Plant (Waste Stream No. 1d)

a. Types of materials handled and/or stored outdoors: (*check all that apply*)

[ ]	Solvents	[X]	Hazardous Wastes
[X]	Scrap Metal	[ ]	Acids or Alkalies
[ ]	Petroleum or Petrochemical Products	[ ]	Paints/Coatings
[ ]	Plating Products	[ ]	Woodtreating Products
[ ]	Pesticides	[X]	Other (Please List) COAL

Note: This item is considered not applicable because there is not a storm water collection area for point source discharges for the 284-W Power Plant.

b. Identify existing management practices employed to reduce pollutants in industrial storm water discharges: (*check all that apply*)

[ ]	Oil/Water Separator	[ ]	Detention Facilities
[ ]	Containment	[ ]	Infiltration Basins
[ ]	Spill Prevention	[ ]	Operational BMPs
[ ]	Surface Leachate Collection	[ ]	Vegetation Management
[ ]	Overhead Coverage	[ ]	Other (Please List _____

F.7.2.5 PUREX Facility (Waste Stream No. 1e)

a. Types of materials handled and/or stored outdoors: (*check all that apply*)

[X]	Solvents	[X]	Hazardous Wastes
[X]	Scrap Metal(minor amounts)	[X]	Acids or Alkalies
[X]	Petroleum or Petrochemical Products	[ ]	Paints/Coatings
[ ]	Plating Products	[ ]	Woodtreating Products
[ ]	Pesticides	[ ]	Other (Please List _____

Note: This item is considered not applicable because there is not a storm water collection area for point source discharges for the PUREX facility. However, containment dikes around storage tanks capture rainwater and the rainwater is pumped to the Chemical Sewer Line or underground storage.

b. Identify existing management practices employed to reduce pollutants in industrial storm water discharges: (*check all that apply*)

[ ]	Oil/Water Separator	[X]	Detention Facilities
[X]	Containment	[ ]	Infiltration Basins
[ ]	Spill Prevention	[ ]	Operational BMPs
[ ]	Surface Leachate Collection	[ ]	Vegetation Management
[ ]	Overhead Coverage	[ ]	Other (Please List _____

F.7.2.6 B Plant (Waste Stream No. 1f, No. 1g, No. 1h)

a. Types of materials handled and/or stored outdoors: (*check all that apply*)

[ ]	Solvents	[X]	Hazardous Wastes
[X]	Scrap Metal	[ ]	Acids or Alkalies
[X]	Petroleum or Petrochemical Products	[ ]	Paints/Coatings
[ ]	Plating Products	[ ]	Woodtreating Products
[ ]	Pesticides	[ ]	Other (Please List _____

b. Identify existing management practices employed to reduce pollutants in industrial storm water discharges: (*check all that apply*)

[ ]	Oil/Water Separator	[ ]	Detention Facilities
[X]	Containment	[ ]	Infiltration Basins
[X]	Spill Prevention	[ ]	Operational BMPs
[ ]	Surface Leachate Collection	[ ]	Vegetation Management
[ ]	Overhead Coverage	[ ]	Other (Please List _____

F.7.2.7 242-A-81 Water Services Building (Waste Stream No. 1i)

a. Types of materials handled and/or stored outdoors: (*check all that apply*)

[ ]	Solvents	[ ]	Hazardous Wastes
[ ]	Scrap Metal	[ ]	Acids or Alkalies
[ ]	Petroleum or Petrochemical Products	[ ]	Paints/Coatings
[ ]	Plating Products	[ ]	Woodtreating Products
[ ]	Pesticides	[ ]	Other (Please List _____

Note: This item is considered not applicable because there is not a storm water collection area for point source discharges for the 242-A-81 Water Services Building.

b. Identify existing management practices employed to reduce pollutants in industrial storm water discharges: (*check all that apply*)

[ ]	Oil/Water Separator	[ ]	Detention Facilities
[ ]	Containment	[ ]	Infiltration Basins
[ ]	Spill Prevention	[ ]	Operational BMPs
[ ]	Surface Leachate Collection	[ ]	Vegetation Management
[ ]	Overhead Coverage	[ ]	Other (Please List _____

F.8.0 ATTACH A MAP SHOWING STORM WATER DRAINAGE/COLLECTION AREAS, DISPOSAL AREAS AND DISCHARGE POINTS.

F.8.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY (WASTE STREAM NO. 1)

No storm water drainage/collection, disposal areas are associated with the 200 Area TEDF.

F.8.2 SUPPLEMENTARY INFORMATION ON FACILITIES DISCHARGING TO THE 200 AREA TREATED EFFLUENT DISPOSAL FACILITY[1]

F.8.2.1 Plutonium Finishing Plant (Waste Stream No. 1a)

Storm drains are located in the yard area south, and west of the 291-Z Building. Storm water that runs off of the areas that slope into these drains is collected and discharged into the waste water system. Storm water is collected from the roof drains of the 234-5Z Building and is discharged to the waste water system. No detention capacity is provided in the system so the flow of rainwater is highly variable and dependent upon the severity, duration, and timing of rainfall events. No constituents are likely to be present in the water that enters this collection system. The Plutonium Finishing Plant has an active contamination control program that remediates any surface contamination as soon as it is detected. Refer to Drawing H-13-000096 for a facility map.

[1] For the Hanford Site Facility Map, general notes and legend, refer to Figures F-8 and F-9.

F.8.2.2 222-S Laboratory (Waste Stream No. 1b)

The majority of storm water run-off is discharged directly to ground from roof areas and paved areas. However, small quantities of rainwater are collected by sumps located under various stairwells. Refer to Drawing H-13-000184 for a facility map.

F.8.2.3 T Plant (Waste Stream No. 1c)

Both the 214-T Building and the 211-T area contain blind sumps which collect storm water run-off and waste water generated during facility housekeeping and maintenance activities. These sumps have no drains; therefore when a sump is full, a portable sump pump is used to transfer the solution to the 271-T sump. This sump is then pumped to a 500 gallon stainless steel collection tank in the 221-T electrical gallery, which could be sampled before emptying it into the chemical sewer.

In addition, two roof drains from 221-T and four roof drains from 214-T Buildings discharge storm water via downspouts direct to ground. Refer to Drawing H-13-000185 for a facility site map.

F.8.2.4 284-W Power Plant (Waste Stream No. 1d)

There are no specific drainage/collection areas, disposal areas, or discharge points for the 284-W Power Plant. Storm water run-off is discharged directly to the ground from buildings and paved areas. Refer to Drawing H-13-000071 for a facility site map.

F.8.2.5 PUREX Facility (Waste Stream No. 1e)

There are no specific drainage/collection areas, disposal area, or discharge points for the PUREX Facility. Storm water run-off is discharged directly to the ground from buildings and paved areas. Refer to Drawing H-13-000041 for a facility map.

F.8.2.6 B Plant (Waste Stream No. 1f, No. 1g, No. 1h)

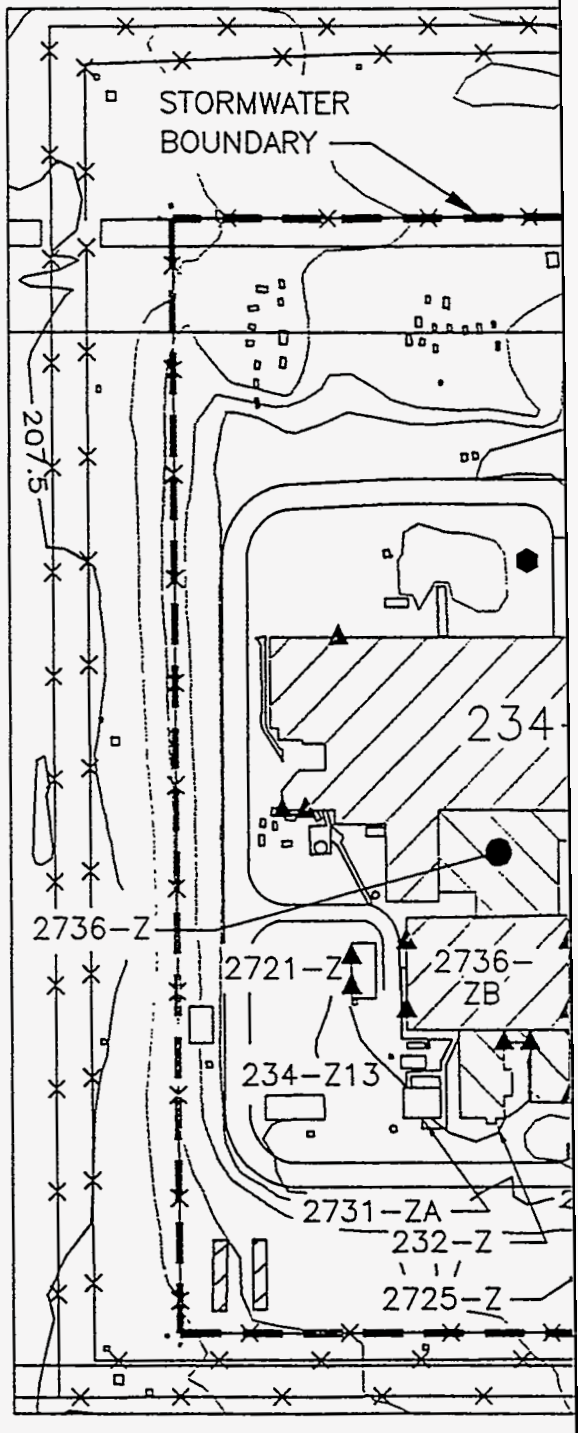
Three street drains and one yard drain are connected to the B Plant Chemical Sewer, which is combined with the B Plant Cooling Water and disposed of in the 216-B-3 Ponds. The B Plant Chemical Sewer is combined temporarily with the B Plant cooling water until the 200 Area TEDF is operational.

One street drain is connected to a small french drain that discharges directly to the ground.

Downspouts from the roof areas discharge water to paved areas that route the water to the street and yard drains mentioned previously. Limited amounts of storm water may discharge directly from the paved areas to the ground. Refer to Drawing H-13-000042 for a facility map.

F.8.2.7 242-A-81 Water Services Building (Waste Stream No. 1i)

There are no specific drainage/collection areas, disposal area, or discharge points for the 242-A-81 Water Services Building. Storm water run-off is discharged to ground directly from roof areas and paved areas. Refer to Drawing H-13-000050 for a facility map.



FOR GENERAL NOTES AND LEGEND SEE: H-13-000187

OFFICIAL RELEASE
BY WHC
DATE JUL 07 1994

SITE PLAN

SCALE: 1:1800

0 18 36 72 108 144

1 cm = 18 meters

0 100 200 300 400 500 FEET

H-13-000000	200E AREA TOPOGRAPHIC MAP				
H-13-000000	200E AREA TOPOGRAPHIC MAP				
REF NUMBER	TITLE	MFG REV NO	DESCRIPTION		F D
REFERENCE		REV REL	REVISIONS		
NEXT USED ON	H-13-000200	CADFILE	N0000096A	CADCOD	

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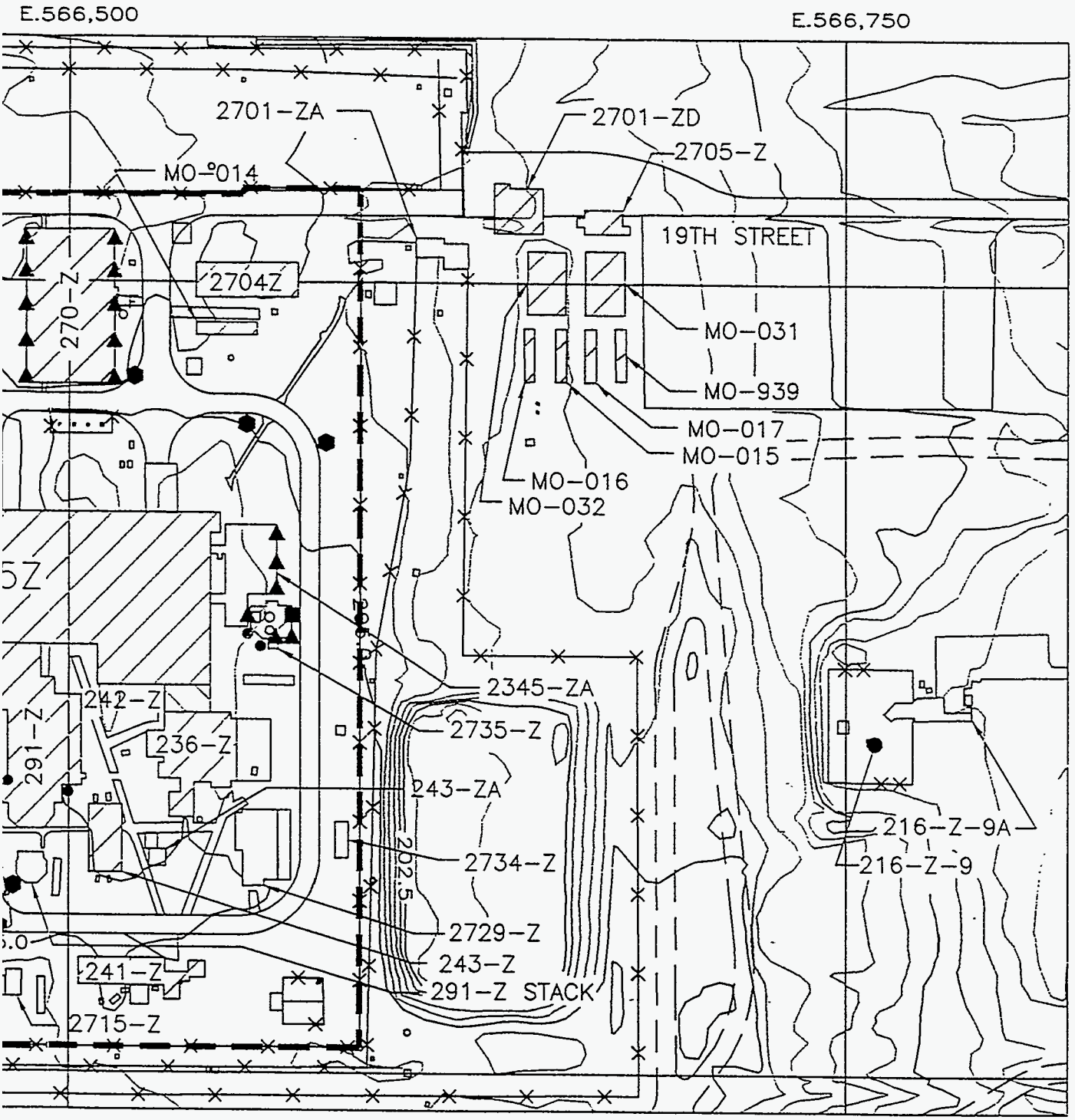

CHK BY DATE	DFTG APRVD DATE	COG ENGR	OTHER	OTHER	APPROVALS BY/DATE	

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CHECKED	6/9/94	
DFTG APVD	6/9/94	
COG ENGR	6/20/94	
APPVD	6-20-94	
APPVD		
APPVD		

U.S. DEPARTMENT OF ENERGY
DOE Field Office, Richland
Kaiser Engineers Hanford Company

PFP
FACILITY MAP

SIZE	BLDG NO	INDEX NO	DWG NO	REV
B	234-5Z	0110	H-13-000096	0

SCALE SHOWN | EDT 605125 | SHEET 1 OF 1

DWG NO H-13-000096 | SH 1 OF 1 | REV 0

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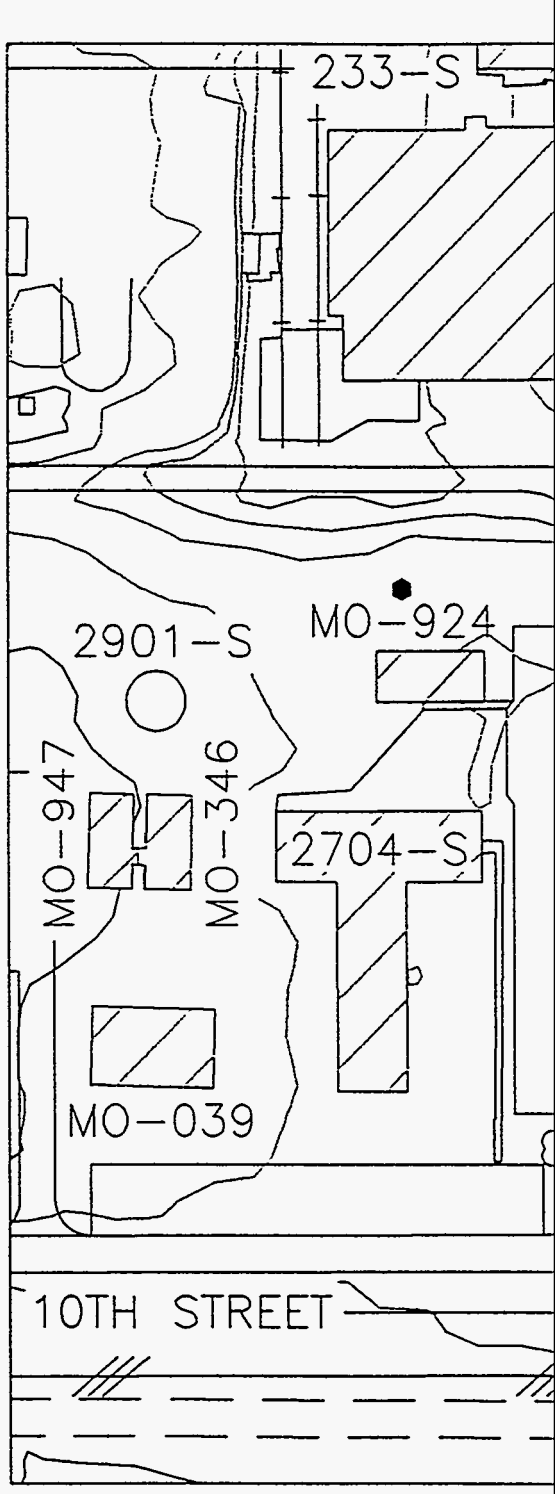

FOR GENERAL NOTES AND LEGEND SEE: H-13-000187

OFFICIAL RELEASE
BY WHC
DATE JUL 07 1994

SITE PLAN

SCALE: 1:1200

0 12 24 48 72 96

1 cm = 12 meters

0 100 200 300 400 500 FEET

H-13-000000	200E AREA TOPOGRAPHIC MAP
H-13-000000	200E AREA TOPOGRAPHIC MAP
REF NUMBER	TITLE
REFERENCE	
NEXT USED ON	H-13-000200

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REV REL	REVISIONS		
CADFILE N000184A			CADCODE

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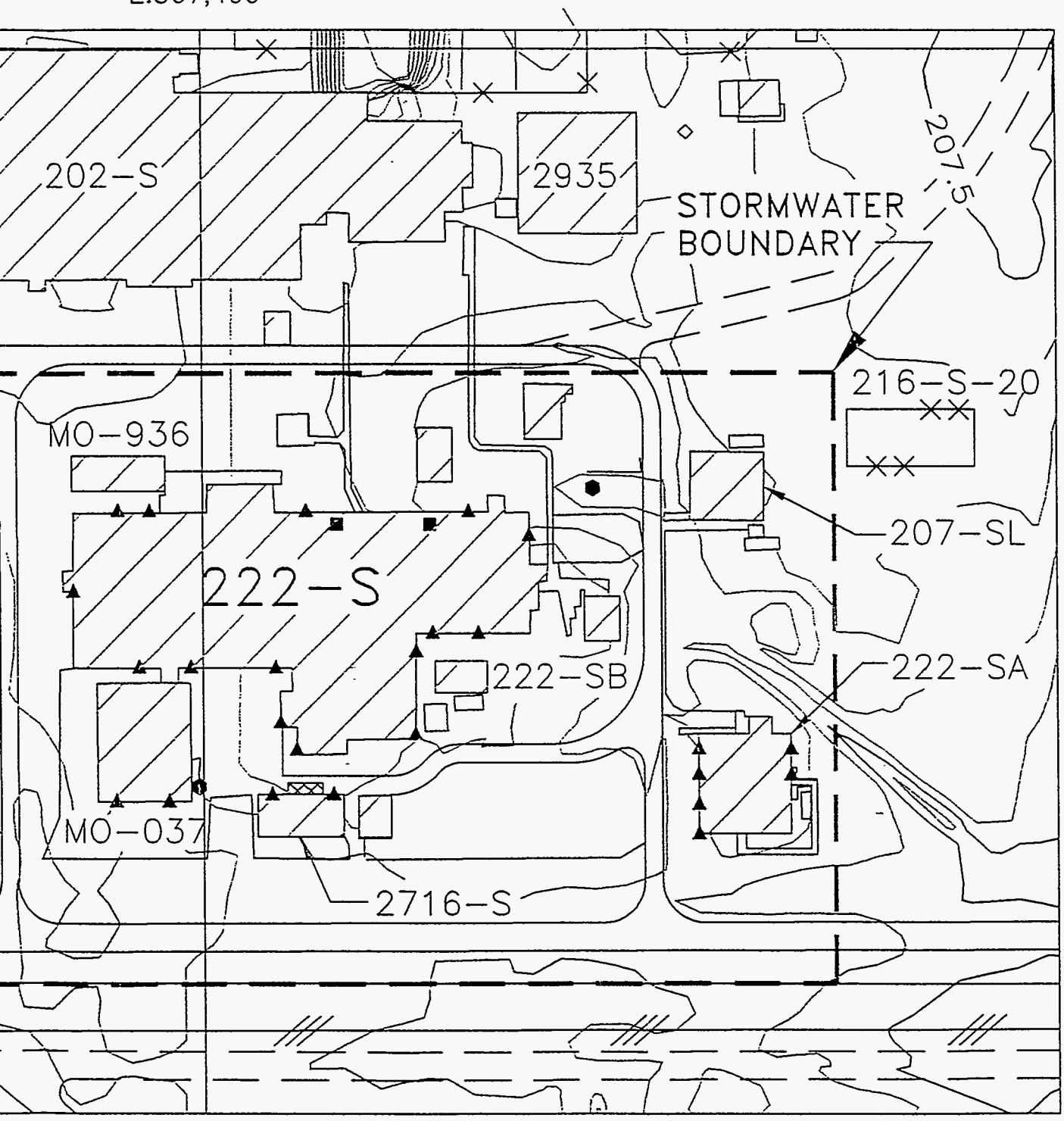

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CHECKED	6/9/94						
DFTG APVD	6/9/94	ANALYTICAL LABORATORY FACILITY MAP					
COG ENGR	6/21/94						
APPVD	6-20-94	SIZE	BLDG NO	INDEX NO	DWG NO		REV
APPVD		B	222-S	0110	H-13-000184		0
APPVD		SCALE SHOWN	EDT 605126		SHEET 1 OF 1		

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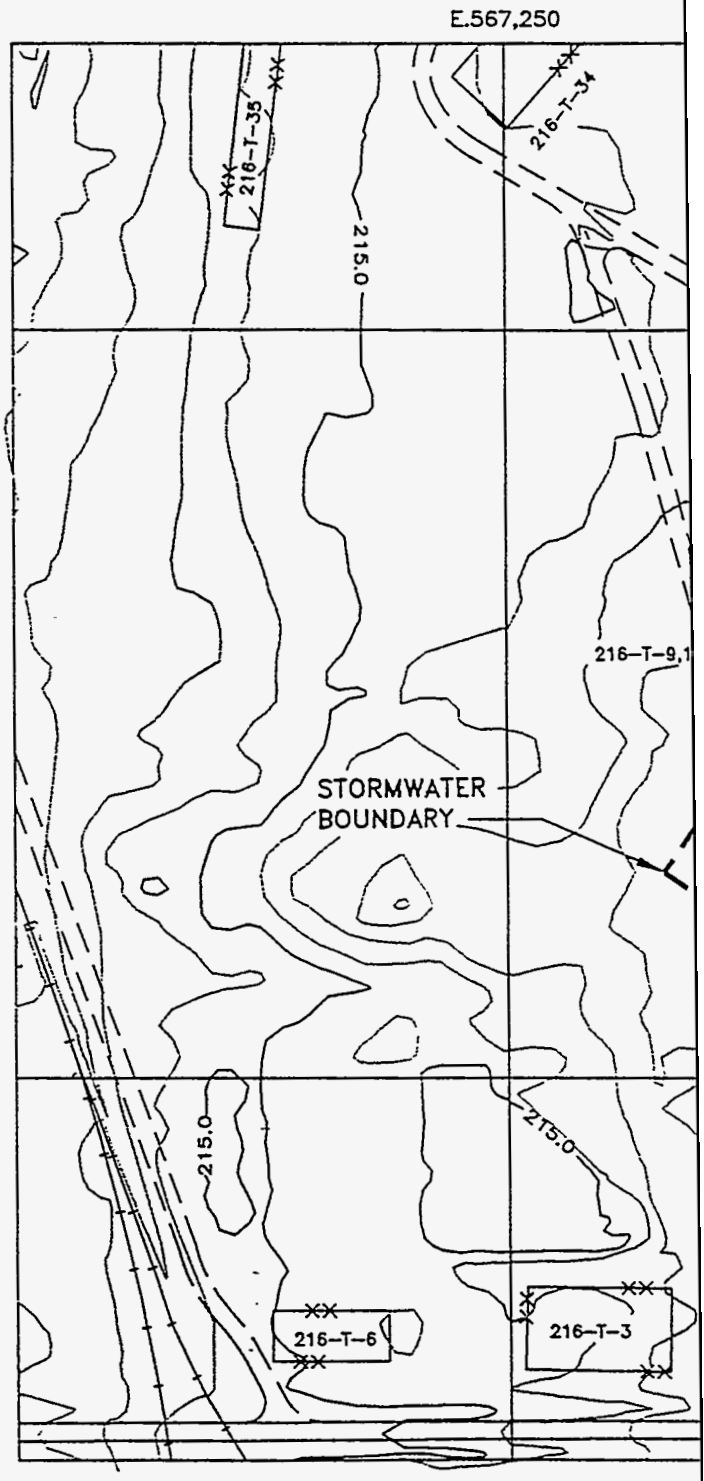
DWG NO H-13-000184 SH 1 OF 1 REV 0



FOR GENERAL NOTES AND LEGEND SEE: H-13-000187

OFFICIAL RELEASE
BY WHC
DATE JUL 07 1994

SITE PLAN

SCALE: 1:2500

0 25 50 100 150 200

1 cm = 25 meters

0 100 200 300 400 500 FEET

H-13-000211	200E AREA TOPOGRAPHIC MAP	MFG REV REL	REV NO	DESCRIPTION
REF NUMBER	TITLE			
REFERENCE		REVISIONS		
NEXT USED ON	H-13-000200	CADFILE N000185A		CADCOD

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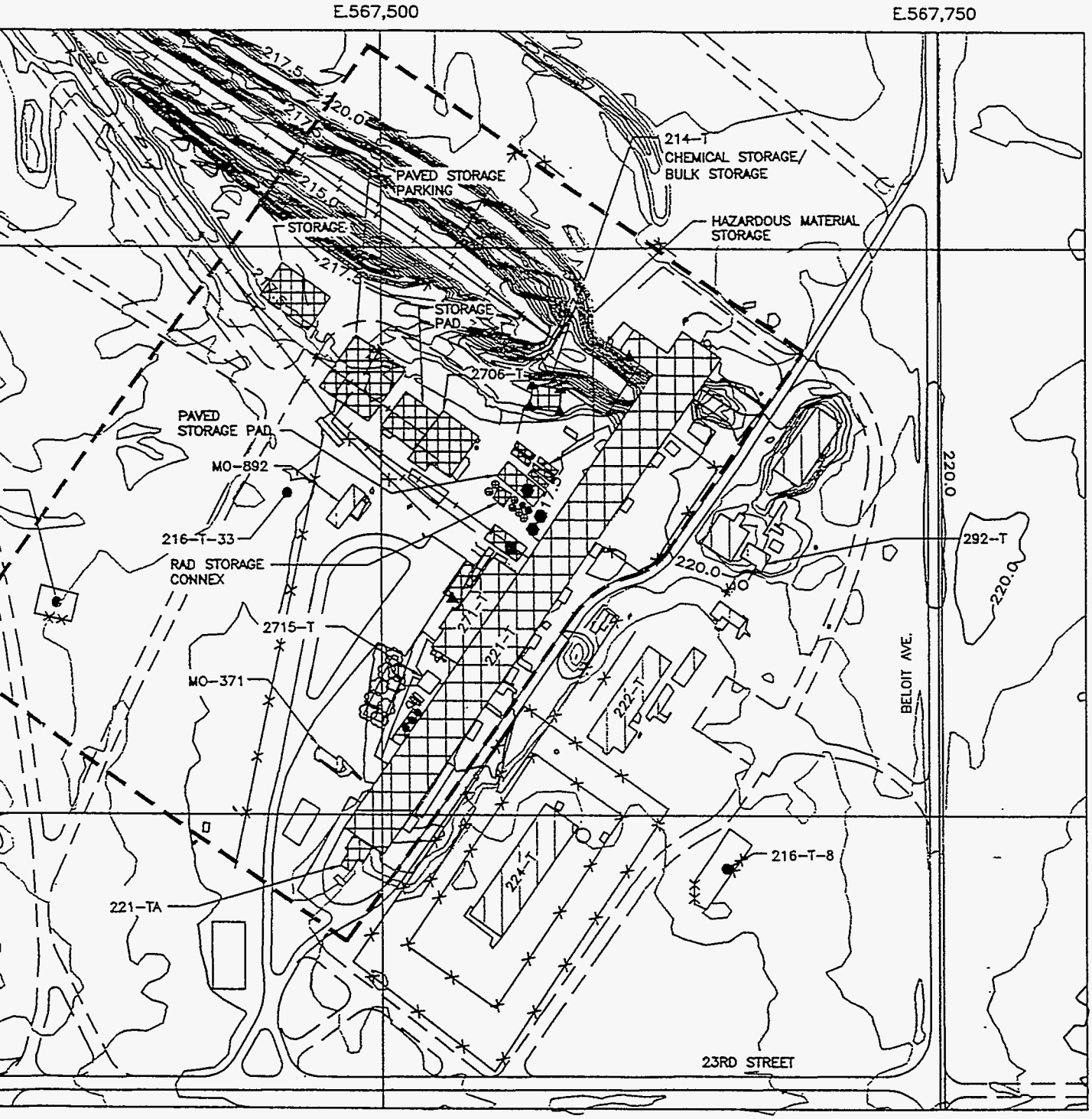

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		APPROVALS BY/DATE				

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DRAWN RAFAEL TORRES	DATE 5-13-94	
CHECKED	6/9/94	
DFTG APVD	6/9/94	
COG ENGR	6/21/94	
APPVD	6-20-94	
APPVD		
APPVD		

U.S. DEPARTMENT OF ENERGY
DOE Field Office, Richland
Westinghouse Hanford Company

T-PLANT FACILITY MAP

SIZE	BLDG NO	INDEX NO	DWG NO	REV
B	221-T	0110	H-13-000185	0

SCALE SHOWN | EDT 605127 | SHEET 1 OF 1

CHK PRINT ☐ COMMENT PRINT ☐

DWG NO H-13-000185 SH 1 OF 1 REV 0

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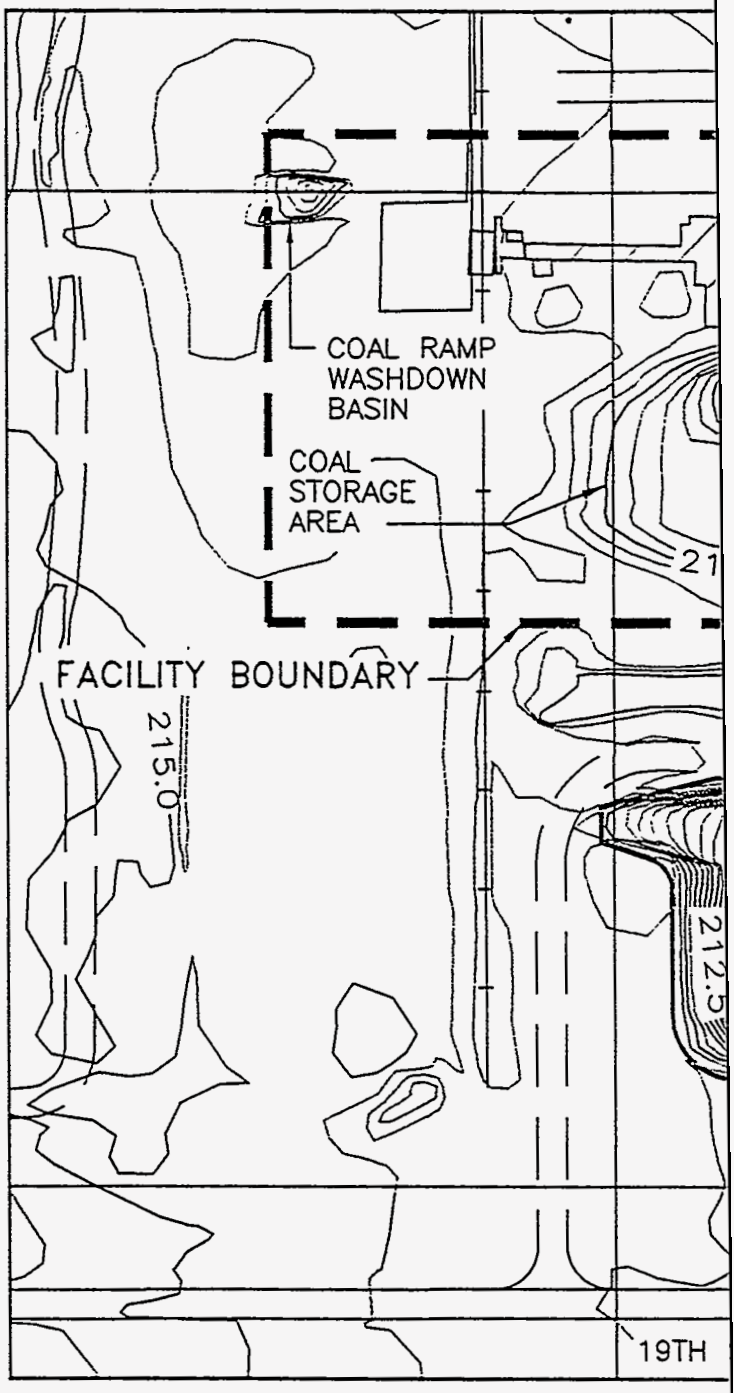

FOR GENERAL NOTES AND LEGEND SEE: H-13-000187

OFFICIAL RELEASE
BY WHC
DATE JUL 07 199

SITE PLAN

SCALE: 1:1500

0 15 30 60 90 120 0 100 200 300 400

1 cm = 15 meters

REF NUMBER	TITLE
H-13-000211	200E AREA TOPOGRAPHIC MAP
H-13-000219	200E AREA TOPOGRAPHIC MAP

REFERENCE

NEXT USED ON H-13-000200

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		REVISIONS	

CADFILE N000071A CADCOD

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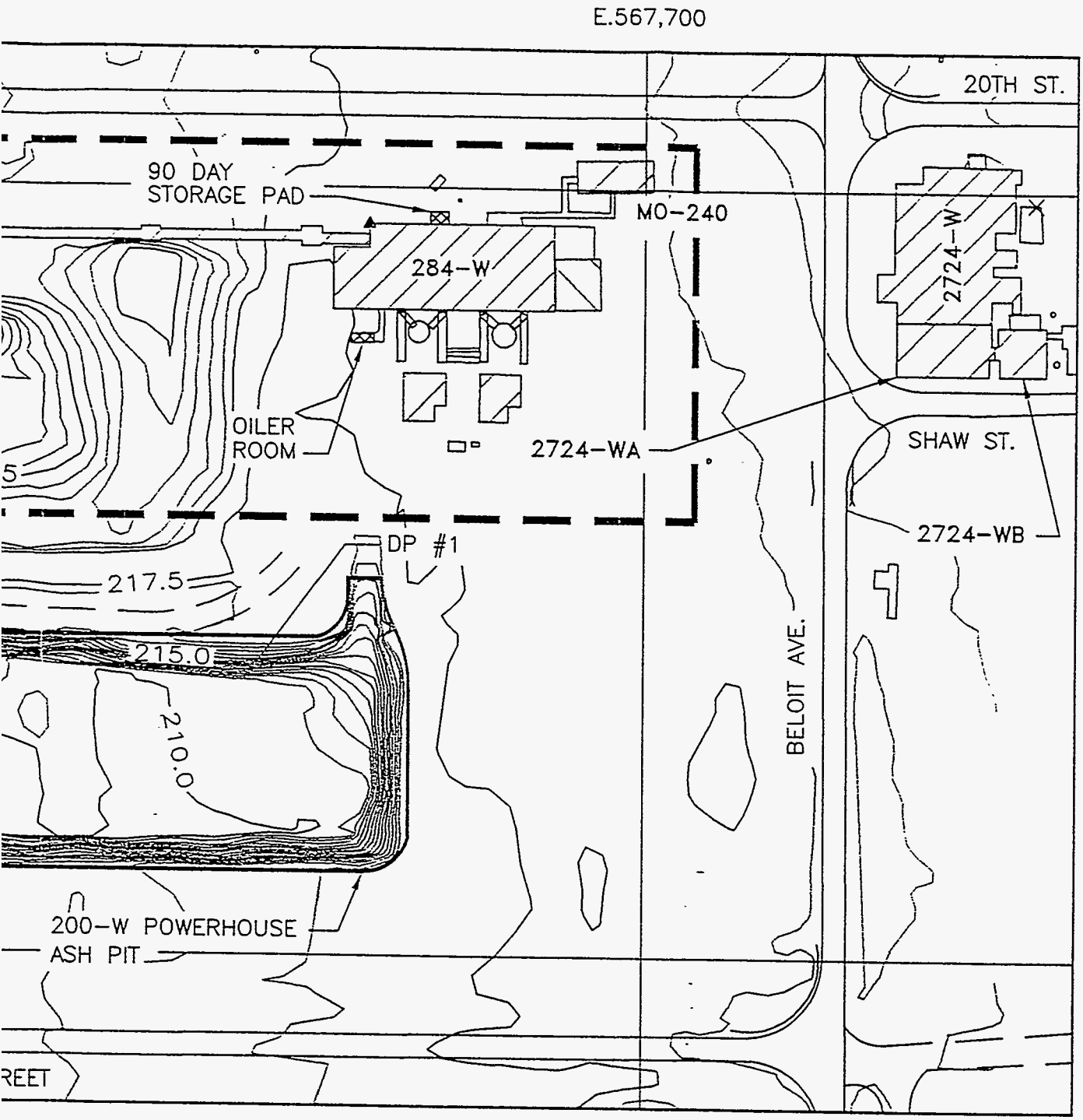

00 FEET

CHK BY DATE	DFTG APRVD DATE	COG ENGR	OTHER	OTHER
APPROVALS BY/DATE				

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DRAWN RAFAEL TORRES	DATE 5-16-94	
CHECKED	6/9/94	
DFTG APVD	6/9/94	
COG ENGR	6/20/94	
APPVD	6-20-94	
APPVD		
APPVD		

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200-W POWER PLANT FACILITY MAP

SIZE	BLDG NO	INDEX NO	DWG NO	REV
B	284-W	0110	H-13-000071	0

SCALE SHOWN | EDT 605124 | SHEET 1 OF 1

DWG NO H-13-000071 | SH 1 OF 1 | REV 0

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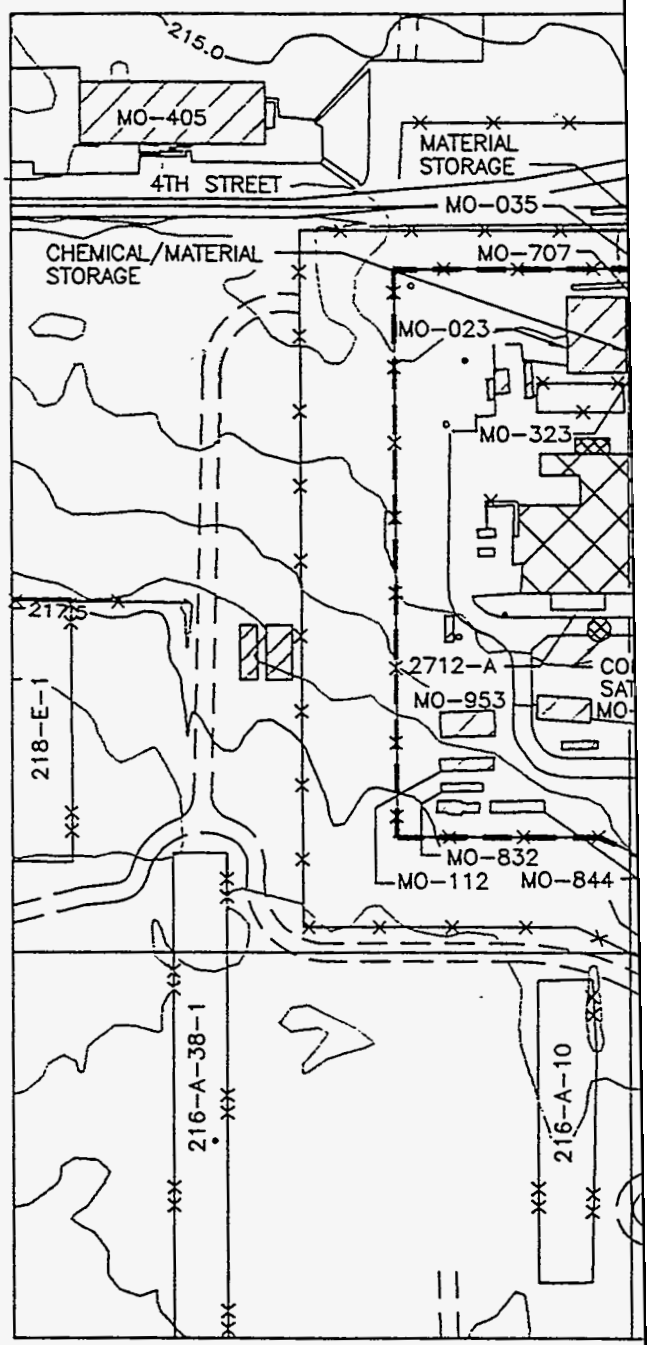

FOR GENERAL NOTES AND LEGEND SEE: H-13-000186

SITE PLAN

SCALE: 1:2500

0 25 50 100 150 200

1 cm = 25 meters

0 100 200 300 400 500 FEET

OFF

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H-13-000223	200E AREA TOPOGRAPHIC MAP	MFG REV REL	REV NO	DESCRIPTION	REV BY DAT
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REFERENCE			REVISIONS		
NEXT USED ON	H-13-000200	CADFILE N000041A			CADCODE

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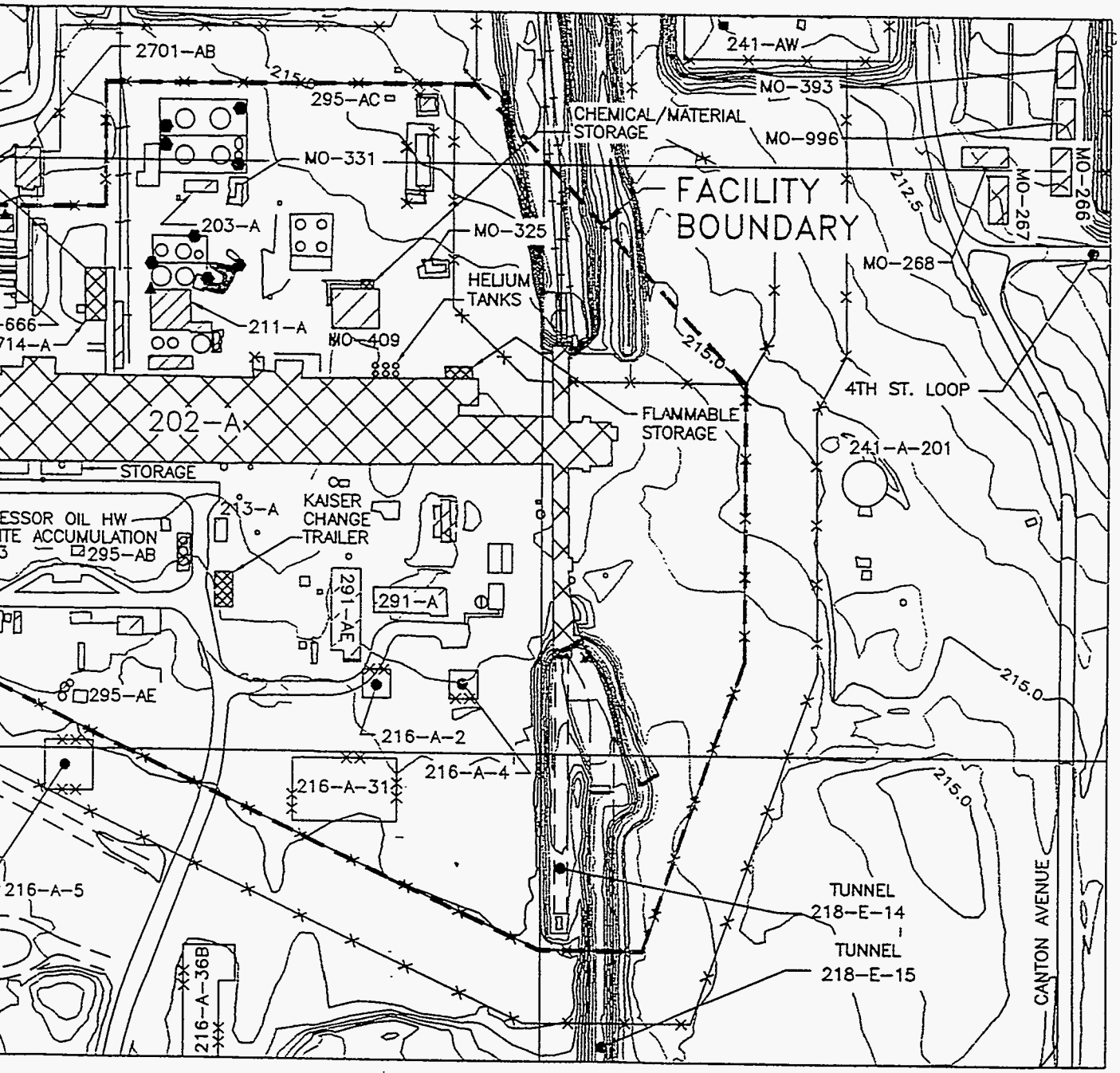

N.135,750

N.135,500

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JUL 07 1994

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		APPROVALS BY/DATE		

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		DATE
DRAWN	RAFAEL TORRES	5-18-94
CHECKED		6/9/94
DFTG APVD		6/9/94
COG ENGR		6/20/94
APPVD		6-20-94
APPVD		
APPVD		

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DOE Field Office, Richland
Westinghouse Hanford Company

PUREX FACILITY MAP

SIZE	BLDG NO	INDEX NO	DWG NO	REV
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SCALE SHOWN | EDT 605120 | SHEET 1 OF 1

DWG NO H-13-000041 | SH 1 OF 1 | REV 0

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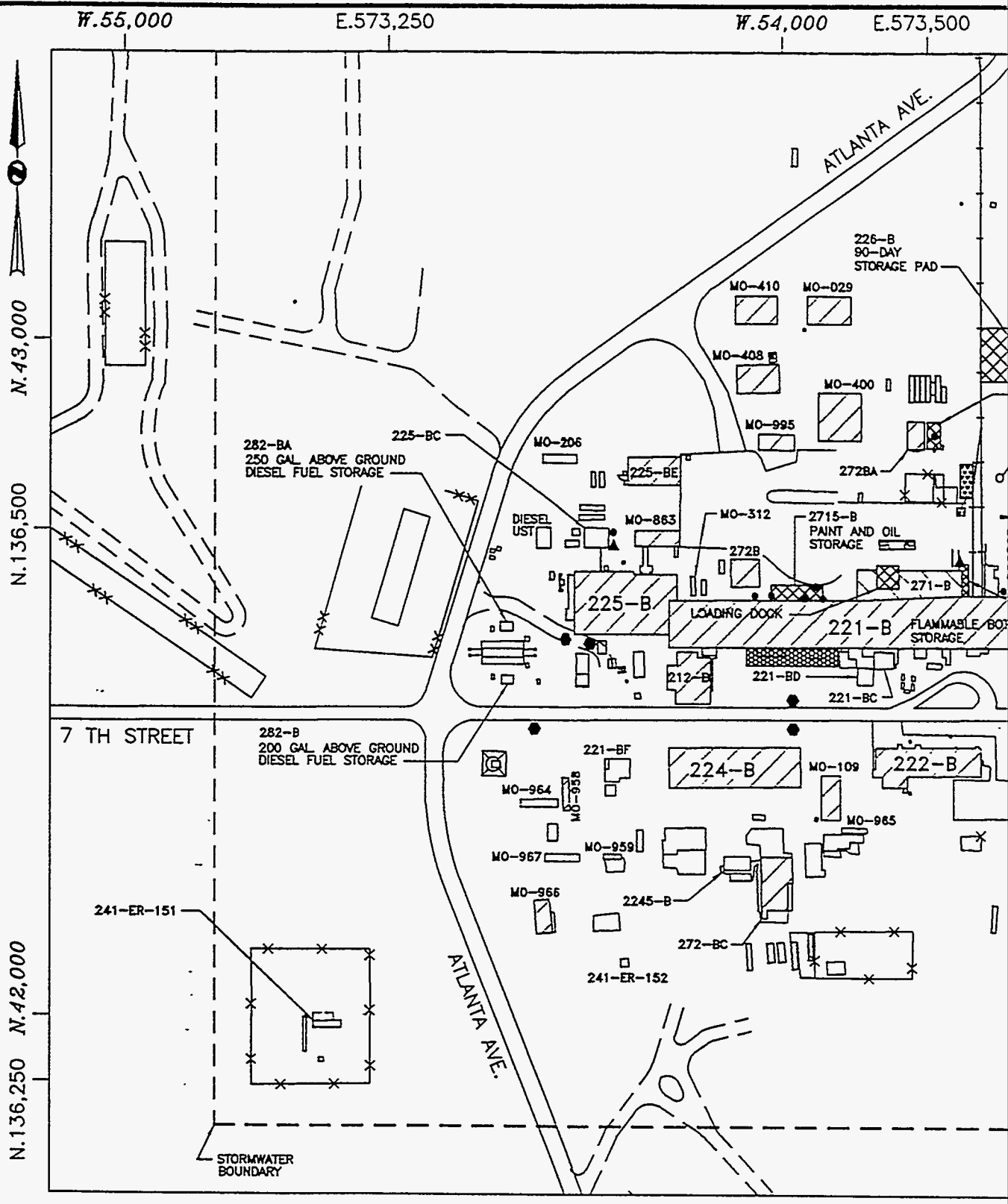

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H-13-000200	200E AREA TOPOGRAPHIC MAP
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REFERENCE	
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REVISIONS			
CADFILE N000042A			CADCODE

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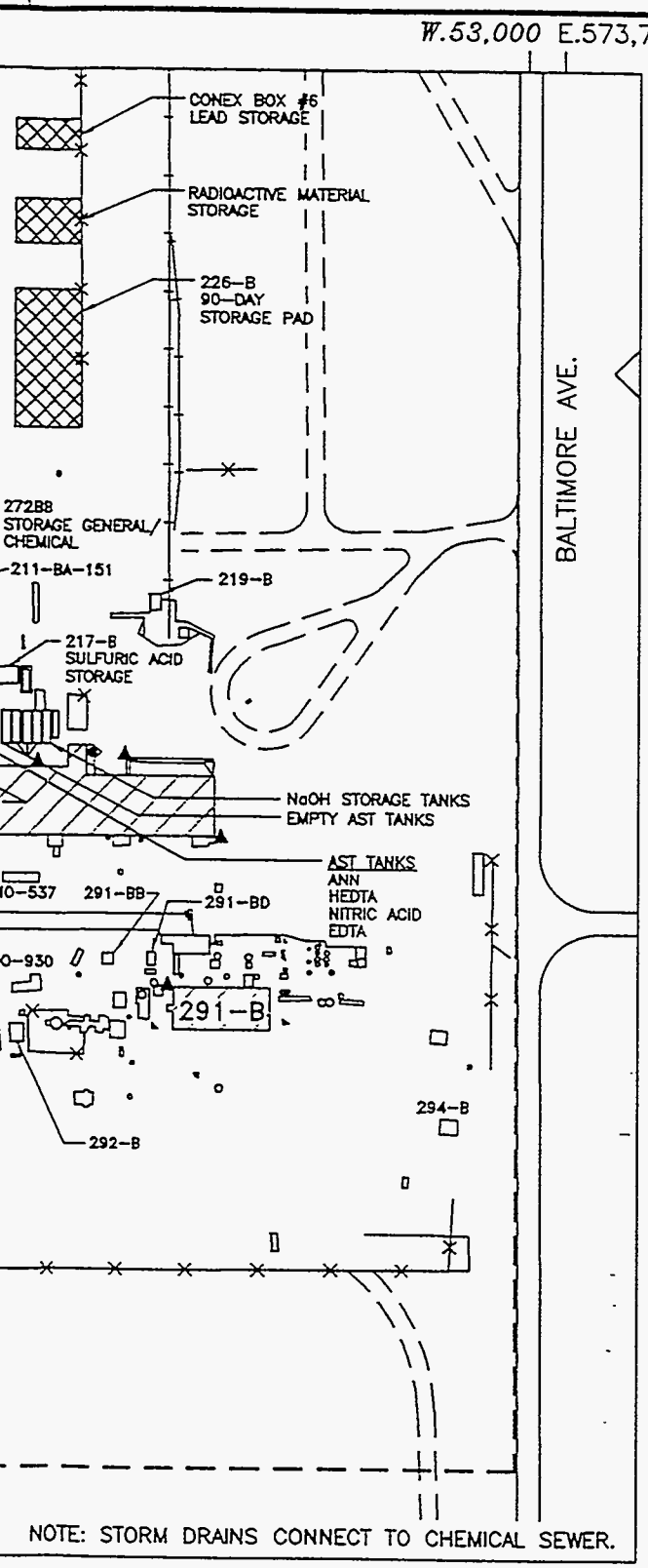

FOR GENERAL NOTES & LEGEND SEE H-13-000186

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BY WHC
DATE: JUL 07 1994

SITE PLAN

SCALE: 1:2500

0 25 50 100 150 200 METERS

1 cm = 25 meters

0 100 200 300 400 500 FEET

NOTE: STORM DRAINS CONNECT TO CHEMICAL SEWER.

CHK BY DATE	DFTG APRVD DATE	COG ENGR	OTHER	OTHER
		APPROVALS BY/DATE		

OS:6.0:ACD2:12.0:SS

DRAWN RAFAEL TORRES	DATE 5-18-94	
CHECKED	6/15/94	
DFTG APVD	6/9/94	
COG ENGR	6/20/94	
APPVD	6-20-94	
APPVD		
APPVD		

U.S. DEPARTMENT OF ENERGY
DOE Field Office, Richland
Westinghouse Hanford Company

B-PLANT
FACILITY MAP

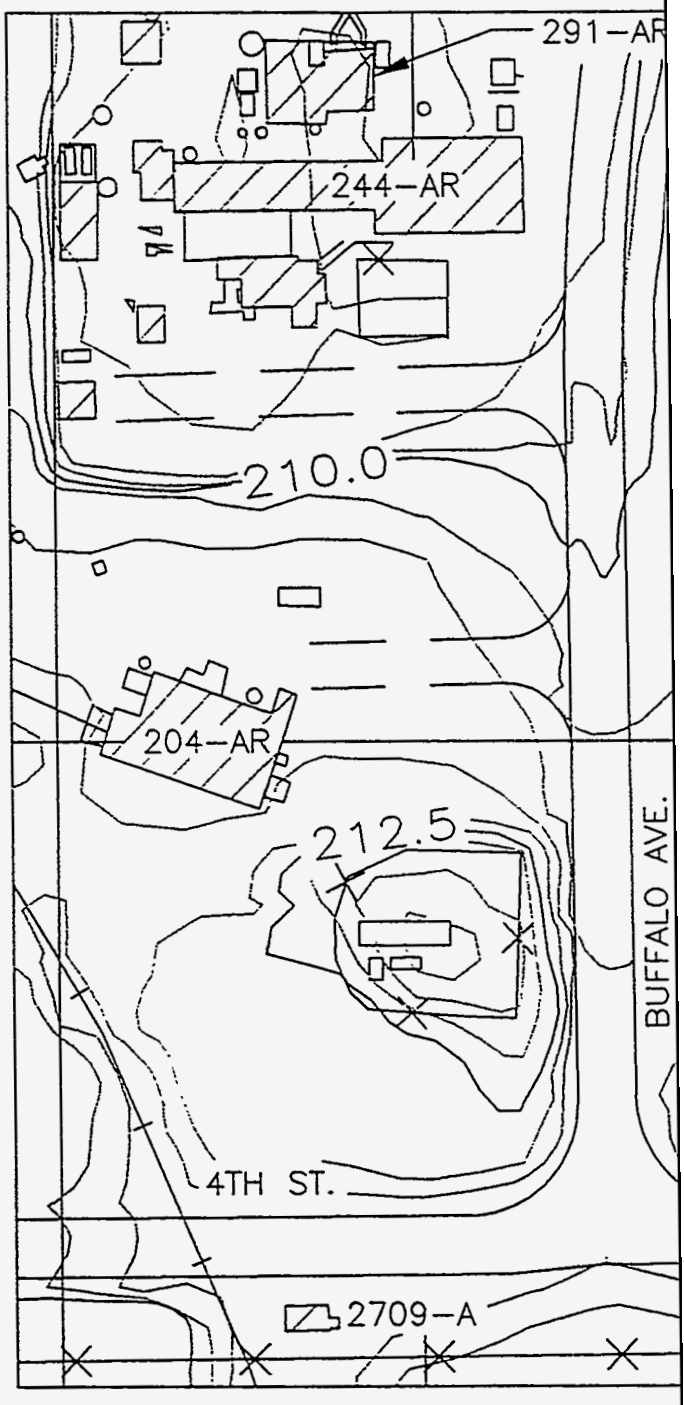
SIZE	BLDG NO	INDEX NO	DWG NO	REV
B	221-B	0110	H-13-000042	0

SCALE SHOWN | EDT 605121 | SHEET 1 OF 1

CHK PRINT ☐ COMMENT PRINT ☐

DWG NO H-13-000042 | SH 1 OF 1 | REV 0

E.575,200



FOR GENEREAL NOTES AND LEGEND SEE: H-13-000186

OFFICIAL RELEASE
BY WHC
DATE JUL 07 1994

SITE PLAN

SCALE: 1:1000

0 10 20 40 60 80

1 cm = 10 meters

0 100 200 300 400 500 FEET

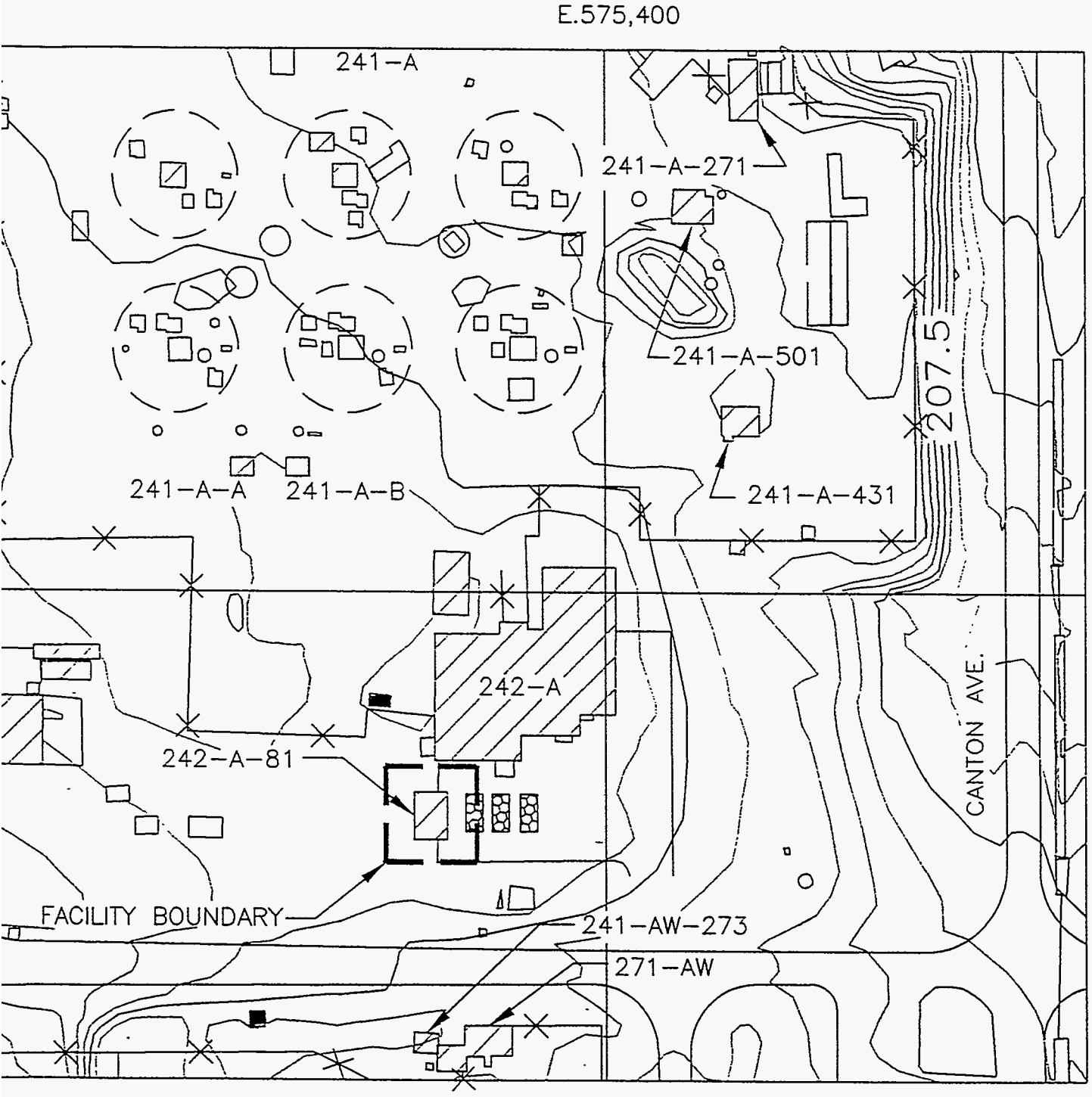
H-13-000215	200E AREA TOPOGRAPHIC MAP
H-13-000223	200E AREA TOPOGRAPHIC MAP
REF NUMBER	TITLE
REFERENCE	
NEXT USED ON	H-13-000200

MFG REV REL	REV NO	DESCRIPTION
REVISIONS		

CADFILE N000050A

CADC

ZDJB0006



DRAWN RAFAEL TORRES	DATE 5-16-94	U.S. DEPARTMENT OF ENERGY DOE Field Office, Richland Westinghouse Hanford Company
CHECKED	6/9/94	
DFTG APVD	6/9/94	WATER SERVICES BUILDING
COG ENGR	6/20/94	FACILITY MAP
APPVD	6-20-94	
APPVD		
APPVD		

SIZE	BLDG NO	INDEX NO	DWG NO	REV
B	242-A -81	0110	H-13-000050	0

SCALE SHOWN | EDT 605122 | SHEET 1 OF 1

DWG NO H-13-000050 SH 1 OF 1 REV 0

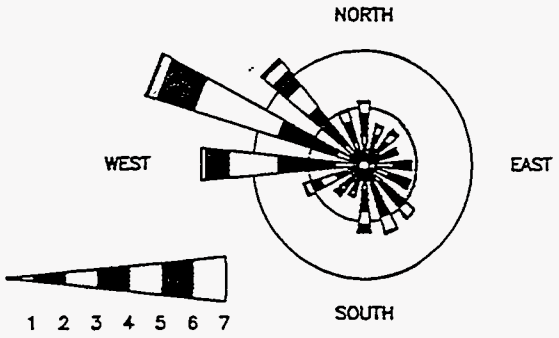
CHK BY DATE	DFTG APRVD DATE	COG ENGR	OTHER	OTHER
APPROVALS BY/DATE				

DOS:6.0:ACD2:12.0:SS

CHK PRINT ☐ COMMENT PRINT ☐

WIND ROSE FOR: 200E AREA
% CALM WINDS = .7
STATION NO.6

PERIOD COVERED
1/1/93 - 12/31/93



PADDLES INDICATE DIRECTION WIND IS COMING FROM.
RADIAL GRIDS REPRESENT 5.0% AND 10.0% OCCURRENCE.

WIND CLASS	MILES/HOUR
1	>1.0 - 3.0
2	4.0 - 7.0
3	8.0 - 12.0
4	13.0 - 18.0
5	19.0 - 24.0
6	25.0 - 31.0
7	32.0 +

WIND ROSE

W.47,000
N.43,000 HANFORD PLANT (FEET)

E.576,250
N.136,000 WASHINGTON STA (METERS)

2150 INDEX CONTOUR

INTERMEDIATE CO

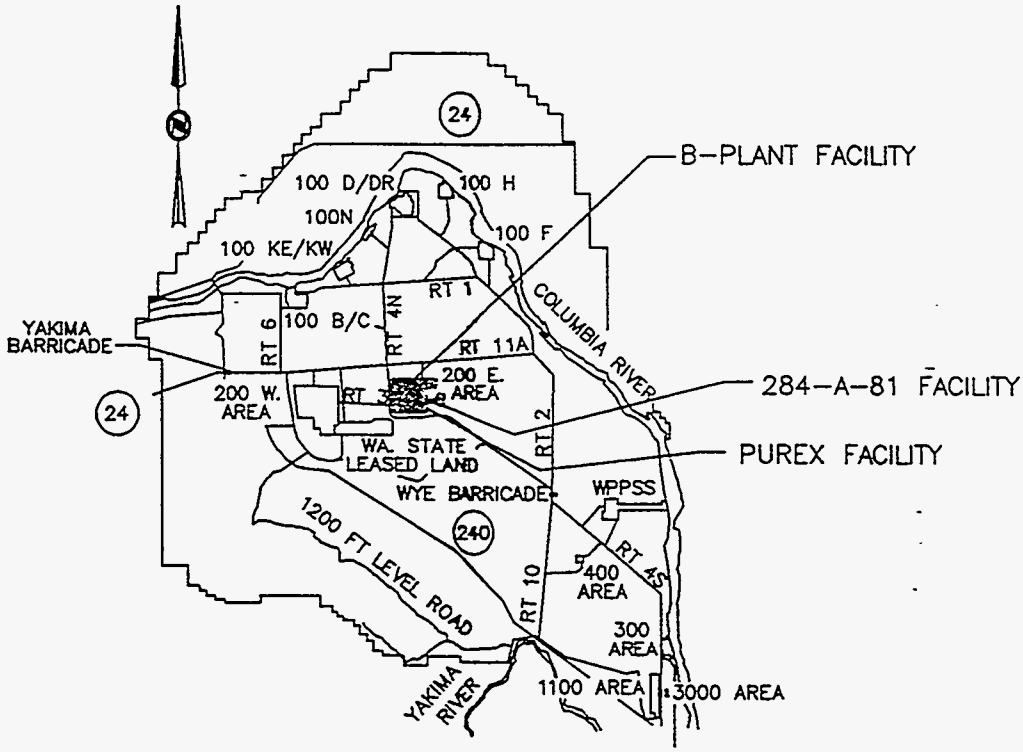
IMPROVED ROAD

UNIMPROVED ROA

DIRT ROAD

SIDEWALKS\PARKI

RAILROADS



KEY PLAN
SCALE: NONE

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REF NUMBER	TITLE
H-13-000041	PUREX FACILITY MAP
H-13-000042	B-PLANT FACILITY MAP
H-13-000050	284-A-81 FACILITY MAP

REFERENCE

NEXT USED ON H-13-000200

MFG REV NO	DESCRIPTION	REV BY DAT
REV REL	REVISIONS	

CADFILE N000186A CADCODE

ZDJB0006

LEGEND

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COORDINATES

ETERS)

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; LOTS

2-E25-25 ⊕	WELL 299-E25-25
—×—×—	SECURITY,WARNING,MISC FENCES
—×-×-×—	POST & CHAIN (CRIB,BURIAL GROUND FENCES)
—///—///—	PERIMETER FENCES
216-A-42	CRIB
218-E-10	BURIAL GROUND
■ □ ▨	BUILDINGS/STRUCTURES/TOWERS
242-A	BUILDING NUMBER
▨	MOBIL OFFICES
◯ ○	TANKS

▩	CHEMICAL\RADIOACTIVE STORAGE FACILITIES
▩	RADIOACTIVE MATERIAL STAGING AREA
▭	SEPTIC TILE FIELD
▽▽▽	STORM DRAIN AND TILE FIELD (FRENCH DRAIN)
■	WASTE OIL
●	FLAMMABLE MATERIAL STORAGE LOCKER
▲	DOWNSPOUTS
⬢	STORM DRAINS

GENERAL NOTES

MAP IS BASED ON AERIAL PHOTOGRAPHY FLOWN ON 6-24-89. THE TOPOGRAPHIC MAP WAS PREPARED
RRICK & COMPANY AND CERTIFIED TO MEET NATIONAL MAP ACCURACY STANDARDS.
AL COPIES OF THE MERRICK MAPS THAT SHOW THE CERTIFICATE ARE LOCATED IN THE WESTINGHOUSE
EERING FILES AS DRAWING NUMBERS H-2-79476 SHEET 1 AND H-2-79477 SHEET 1 THRU 37.
AMES OF PHYSICAL FEATURES AND THE TITLE BLOCK OF THE H-13-000201 THROUGH H-13-000237
WERE ADDED BY WESTINGHOUSE HANFORD COMPANY.

NGTON COORDINATE SYSTEM: THE OFFICIAL STATE PLANE COORDINATE SYSTEM AS DEFINED BY THE
D CODE OF WASHINGTON (RCW). THE HANFORD SITE LIES WITHIN THE WASHINGTON COORDINATE SYSTEM,
I ZONE. THIS GRID COVERS THE ENTIRE SITE AND USES X (EASTINGS) AND Y (NORTHINGS) COORDINATES.

ONTAL DATUM: NAD-83 LAMBERT PROJECTIONS

AL DATUM: NATIONAL GEODETIC SURVEY
DATUM AS PROVIDED BY KAISER
ENGINEERS HANFORD.

OFFICIAL RELEASE
BY WHC
DATE JUL 07 1994

INATES ARE SHOWN AS METERS.
URS ARE SHOWN AS 0.5 METERS.

RD PLANT GRID: A LOCAL GRID SYSTEM WITH ITS INITIAL POINT NORTHEAST OF THE 400 AREA. IT
S 200 EAST AND 200 WEST AREA AS WELL AS GENERAL SITE WORK SUCH AS WELLS AND BURIAL
NDS. COORDINATES ARE SHOWN AS FEET.

DWG NO H-13-000186 SH 1 OF 1 REV 0

CHK BY	DFTG APRVD	COG ENGR	OTHER	OTHER
ATE	DATE	APPROVALS BY/DATE		

DRAWN RAFAEL TORRES	DATE 5-13-94	
CHECKED	6/2/94	
DFTG APVD	6/9/94	
COG ENGR	6/21/94	
APPVD	6-20-94	
APPVD		
APPVD		

U.S. DEPARTMENT OF ENERGY
DOE Field Office, Richland
Westinghouse Hanford Company

HANFORD SITE FACILITY MAP GENERAL NOTES AND LEGEND

SIZE	BLDG NO	INDEX NO	DWG NO	REV
B	200E	0110	H-13-000186	0

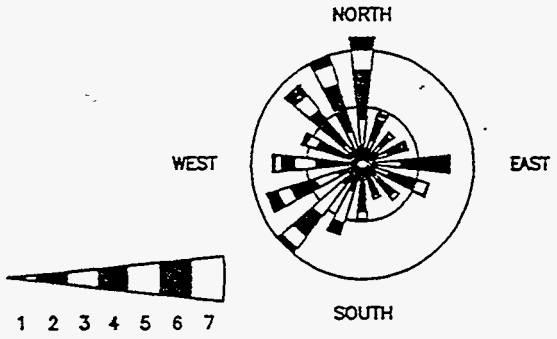
S:6.0:ACD2:12.0:SS

SCALE SHOWN | EDT 605119 | SHEET 1 OF 1

CHK PRINT ☐ COMMENT PRINT ☐

WIND ROSE FOR: HANFORD MET STATION
% CALM WINDS = .5
STATION NO. 21

PERIOD COVERED
1/1/93 - 12/31/93



PADDLES INDICATE DIRECTION WIND IS COMING FROM.
RADIAL GRIDS REPRESENT 5.0% AND 10.0% OCCURRENCE.

WIND CLASS	MILES/HOUR
1	>1.0 - 3.0
2	4.0 - 7.0
3	8.0 - 12.0
4	13.0 - 18.0
5	19.0 - 24.0
6	25.0 - 31.0
7	32.0 +

W.47,000
N.43,000 HANFORD PLANT C(
(FEET)

E.576,250
N.136,000 WASHINGTON STATE
(METERS)

215.0 INDEX CONTOUR (M

INTERMEDIATE CONT

IMPROVED ROAD

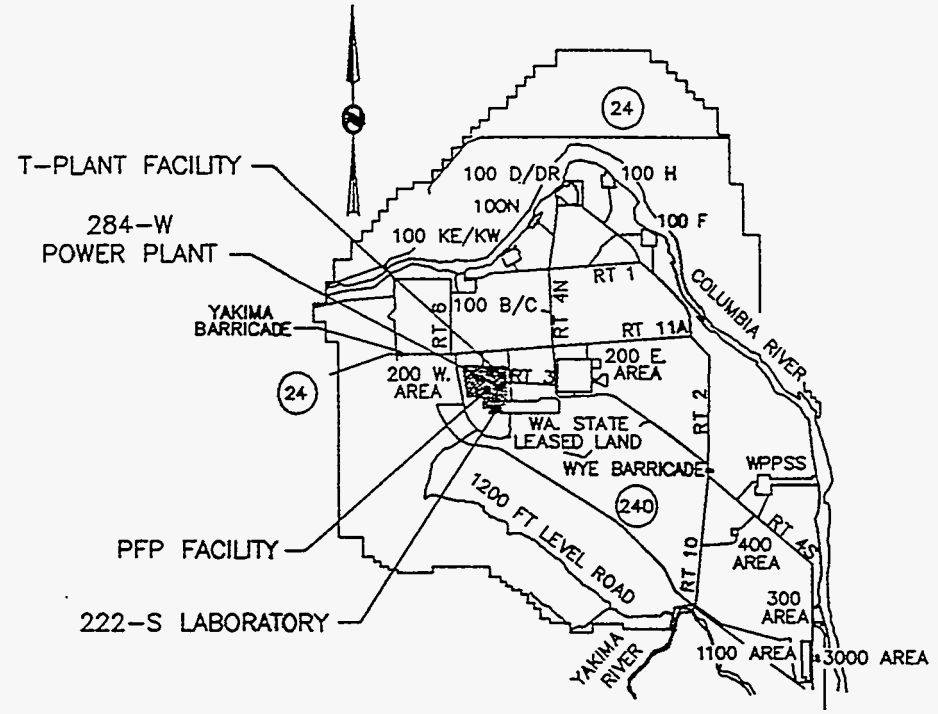
UNIMPROVED ROAD

DIRT ROAD

SIDEWALKS\PARKIN(

RAILROADS

WIND ROSE



KEY PLAN
SCALE: NONE

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H-13-000071	284-W POWER PLANT FACILITY MAP
H-13-000096	PFP FACILITY MAP
H-13-000184	222-S LABORATORY FACILITY MAP
H-13-000185	T-PLANT FACILITY MAP
REF NUMBER	TITLE
REFERENCE	
NEXT USED ON	H-13-000200

MFG / REV REL	REV NO	DESCRIPTION	REV BY DATE
REVISIONS			

CADFILE N000187A CADCODE D

ZDJ80006

LEGEND

RDINATES

OORDINATES

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2-E25-25 ⊕	WELL 299-E25-25
	SECURITY,WARNING,MISC FENCES
	POST & CHAIN (CRIB,BURIAL GROUND FENCES)
	PERIMETER FENCES
216-A-42	CRIB
218-E-10	BURIAL GROUND
	BUILDINGS/STRUCTURES/TOWERS
242-A	BUILDING NUMBER
	MOBIL OFFICES
	TANKS
	CHEMICAL\RADIOACTIVE STORAGE FACILITIES
	RADIOACTIVE MATERIAL STAGING AREA
	SEPTIC TILE FIELD
	STORM DRAIN AND TILE FIELD (FRENCH DRAIN)
	WASTE OIL
	FLAMMABLE MATERIAL STORAGE LOCKER
	DOWNSPOUTS
	STORM DRAINS

GENERAL NOTES

AP IS BASED ON AERIAL PHOTOGRAPHY FLOWN ON 6-24-89. THE TOPOGRAPHIC MAP WAS PREPARED RICK & COMPANY AND CERTIFIED TO MEET NATIONAL MAP ACCURACY STANDARDS.
COPIES OF THE MERRICK MAPS THAT SHOW THE CERTIFICATE ARE LOCATED IN THE WESTINGHOUSE RING FILES AS DRAWING NUMBERS H-2-79476 SHEET 1 AND H-2-79477 SHEET 1 THRU 37.
MES OF PHYSICAL FEATURES AND THE TITLE BLOCK OF THE H-13-000201 THROUGH H-13-000237 ERE ADDED BY WESTINGHOUSE HANFORD COMPANY.

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ITAL DATUM: NAD-83 LAMBERT PROJECTIONS

- DATUM: NATIONAL GEODETIC SURVEY DATUM AS PROVIDED BY KAISER ENGINEERS HANFORD.

NATES ARE SHOWN AS METERS.
RS ARE SHOWN AS 0.5 METERS.

OFFICIAL RELEASE
BY WHC
DATE JUL 07 1994

D PLANT GRID: A LOCAL GRID SYSTEM WITH ITS INITIAL POINT NORTHEAST OF THE 400 AREA. IT 200 EAST AND 200 WEST AREA AS WELL AS GENERAL SITE WORK SUCH AS WELLS AND BURIAL S. COORDINATES ARE SHOWN AS FEET.

REV 0 | SH 1 OF 1 | DWG NO H-13-000187

K E	DFTG APRVD DATE	COG ENGR	OTHER	OTHER
	APPROVALS BY/DATE			

6.0:ACD2:12.0:SS

DRAWN RAFAEL TORRES	DATE 5-13-94	U.S. DEPARTMENT OF ENERGY DOE Field Office, Richland Westinghouse Hanford Company
CHECKED	6/9/94	
DFTG APVD	6/9/94	HANFORD SITE FACILITY MAP GENERAL NOTES AND LEGEND
COG ENGR	6/28/94	
APPVD	6-20-94	
APPVD		
APPVD		

SIZE	BLDG NO	INDEX NO	DWG NO	REV
B	200W	0110	H-13-000187	0

SCALE SHOWN | EDT 605123 | SHEET 1 OF 1

CHK PRINT ☐ COMMENT PRINT ☐

APPENDIX G

OTHER INFORMATION

APPENDIX G

CONTENTS

G.1.0 DESCRIBE LIQUID WASTES OR SLUDGES BEING GENERATED THAT ARE NOT DISPOSED OF IN THE WASTE STREAM(S) . . . . . APP G-1
G.1.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY . . . . . APP G-1

G.2.0 DESCRIBE THE STORAGE AREAS FOR RAW MATERIALS, PRODUCTS AND WASTES . . . . . APP G-1
G.2.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY . . . . . APP G-1
G.2.2 SUPPLEMENTARY INFORMATION ON THE FACILITIES DISCHARGING TO THE 200 AREA TREATED EFFLUENT DISPOSAL FACILITY . . . . . APP G-1

G.3.0 HAVE YOU DESIGNATED YOUR WASTES ACCORDING TO THE PROCEDURES OF DANGEROUS WASTE REGULATIONS, CHAPTER 173-303 WAC? . . . . . APP G-2
G.3.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY . . . . . APP G-2
G.3.2 SUPPLEMENTARY INFORMATION ON THE FACILITIES DISCHARGING TO THE 200 AREA TREATED EFFLUENT DISPOSAL FACILITY . . . . . APP G-2

APPENDIX G

OTHER INFORMATION

G.1.0 DESCRIBE LIQUID WASTES OR SLUDGES BEING GENERATED THAT ARE NOT DISPOSED OF IN THE WASTE STREAM(S) AND HOW THEY ARE DISPOSED OF. FOR EACH TYPE OF WASTE, PROVIDE TYPE OF WASTE, NAME, ADDRESS, AND PHONE NUMBER OF HAULER.

G.1.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

No liquid wastes are generated by the 200 Area TEDF. Sludges as a result of soil accumulation in the pump pits associated with the 200 Area TEDF will be disposed of on the Hanford Site as nonradioactive waste according to DOE 5400.5 [II.5.c(6) and IV.2.c].

G.1.2 SUPPLEMENTARY INFORMATION ON THE FACILITIES DISCHARGING TO THE 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

Each facility, which discharges effluent to the 200 Area TEDF, generates liquid wastes or sludges that are not discharged to the 200 Area TEDF. The sanitary sewer from each facility is disposed of to a septic tank and drain field system. The mixed wastes are disposed of to double-shell tanks before processing by the 242-A Evaporator. The ash waste water from the 284-W Power Plant is disposed of in the ash disposal basin. The coal ramp at the 284-W Power Plant is washed with raw water and the waste water is discharged to a basin. Low-level radioactive liquid at B Plant is generated in maintaining the radioactive waste stored in B Plant. The low-level radioactive waste is stored temporarily in a 900 gallon tank in B Plant, before transfer to double-shell tanks.

G.2.0 DESCRIBE THE STORAGE AREAS FOR RAW MATERIALS, PRODUCTS AND WASTES.

G.2.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

Because the 200 Area TEDF is a liquid effluent collection, transfer, and disposal facility, no storage areas for raw materials, products and wastes are required.

G.2.2 SUPPLEMENTARY INFORMATION ON THE FACILITIES DISCHARGING TO THE 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

Each facility that generates dilute mixed waste, stores the waste in double-shell tanks. The solid waste from sanitary sewers is retained in septic tanks before periodic pumping and disposal offsite.

G.3.0 HAVE YOU DESIGNATED YOUR WASTES ACCORDING TO THE PROCEDURES OF DANGEROUS WASTE REGULATIONS, CHAPTER 173-303 WAC?

G.3.1 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

In accordance with the procedures in WAC 173-303 for determining whether or not a waste stream is designated as a dangerous waste or extremely hazardous waste, the streams that will discharge to the 200 Area TEDF have been determined not to be dangerous waste or extremely hazardous wastes.

G.3.2 SUPPLEMENTARY INFORMATION ON THE FACILITIES DISCHARGING TO THE 200 AREA TREATED EFFLUENT DISPOSAL FACILITY

X Yes ___ No

Note: This answer applies for all streams discharging to the 200 Area TEDF.

APPENDIX H

SITE ASSESSMENT

APPENDIX H

CONTENTS

H.1.0 GIVE THE LEGAL DESCRIPTION OF THE LAND TREATMENT SITE(S) . . . APP H-1

H.2.0 LIST ALL ENVIRONMENTAL CONTROL PERMITS OR APPROVALS NEEDED FOR THIS PROJECT . . . . . APP H-1

H.3.0 ATTACH A TOPOGRAPHIC MAP WITH CONTOUR INTERVALS USED BY U.S. GEOLOGICAL SURVEY . . . . . APP H-1

H.4.0 IDENTIFY ALL WELLS WITHIN 500 FEET OF THE SITE . . . . . APP H-2

H.5.0 DESCRIBE SOILS ON THE SITE USING INFORMATION FROM LOCAL SOIL SURVEY REPORTS . . . . . APP H-2

H.6.0 DESCRIBE THE REGIONAL GEOLOGY AND HYDROGEOLOGY WITHIN 1 MILE OF THE SITE . . . . . APP H-2

H.7.0 LIST THE NAMES AND ADDRESSES OF CONTRACTORS OR CONSULTANTS WHO PROVIDED INFORMATION AND CITE SOURCES OF INFORMATION BY TITLE AND AUTHOR . . . . . APP H-2

FIGURES

H-1. Soils Type Map of the Hanford Site . . . . . APP H-3

H-2. Soils Type Map of the 200 Area Treated Effluent Disposal Facility . . . . . APP H-4

APPENDIX H

SITE ASSESSMENT

H.1.0 GIVE THE LEGAL DESCRIPTION OF THE LAND TREATMENT SITE(S). GIVE THE ACREAGE OF EACH LAND TREATMENT SITE(S). ATTACH A COPY OF THE CONTRACT(S) AUTHORIZING USE OF THE LAND FOR TREATMENT.

Legal Description:

The land treatment site consists of two new adjacent 5-acre disposal basins. The four corners of the site of the two new adjacent 5-acre disposal basins are located:

Longitude	Latitude
119° 28' 27.884294"	46° 33' 14.396998"
119° 28' 6.767297"	46° 33' 14.248825"
119° 28' 6.982550"	46° 32' 59.680524"
119° 28' 28.097977"	46° 32' 59.828684"

A specific contract authorizing use of the new disposal basins does not exist; however, the Hanford Site was created to serve as a nuclear research and production facility for the U.S. Government. The Hanford Site has been in use since the early 1940's and all disposal facilities have been authorized by the U.S. Government.

H.2.0 LIST ALL ENVIRONMENTAL CONTROL PERMITS OR APPROVALS NEEDED FOR THIS PROJECT; FOR EXAMPLE, SEPTIC TANK PERMITS, SLUDGE APPLICATION PERMITS, OR AIR EMISSIONS PERMITS.

The following apply to this project:

- Hanford Environmental Compliance Environmental Assessment (DOE 1992)
- State Environmental Policy Act of 1971 checklist (WHC 1993d)
- Engineering Report (WHC 1993a) submitted pursuant to WAC 173-240.

H.3.0 ATTACH A TOPOGRAPHIC MAP WITH CONTOUR INTERVALS USED BY U.S. GEOLOGICAL SURVEY. SHOW THE FOLLOWING ON THIS MAP.

a. Location and name of internal and adjacent streets,
b. Surface water drainage systems,
c. Water supply and other wells within 500 feet of the site,
d. Surface water diversions within 500 feet of the site,
e. Chemical and product handling and storage facilities,
f. Infiltration sources, such as drainfields, lagoons, dry wells, and abandoned wells within 500 feet of the site,
g. Waste water and cooling water discharge points with ID numbers
h. Other activities and land uses within 1/4 mile of the site.

A USGS topographic map shows these items with the exception of item e (chemical and product handling and storage areas). The 200 Area TEDF does not have any chemical and product handling and storage areas. The chemical and product handling and storage areas are shown on the facility maps in Appendix F, Section F.6.0, for each facility discharging to the 200 Area TEDF. The disposal site is not located adjacent to any of the facilities that are producing the waste streams and have chemical and product handling and storage areas.

H.4.0 ATTACH WELLS LOGS AND WELL I.D.# WHEN AVAILABLE FOR ALL WELLS WITHIN 500 FEET AND ANY AVAILABLE WATER QUALITY DATA.

Monitoring wells within 500 feet of the disposal site include:

Refer to Figure 5, page 17, of the "Site Characterization Report: Results of Detailed Evaluation of the Suitability of the Site Proposed for Disposal of 200 Areas Treated Effluent" (Site Characterization Report) (WHC 1993b) for locations of monitoring wells located within 500 feet of the disposal site.

The well logs for the groundwater monitoring wells for the 200 Area TEDF, (699-40-36, 699-42-37, and 699-41-35) are in Appendix A of the Site Characterization Report submitted to Ecology in October 1993. The Site Characterization Report documents the results of a detailed evaluation of the suitability of the site proposed for disposal of 200 Area treated effluents.

H.5.0 DESCRIBE SOILS ON THE SITE USING INFORMATION FROM LOCAL SOIL SURVEY REPORTS. (SUBMIT ON SEPARATE SHEET.)

Chapter 3.0 of the Site Characterization Report describes the stratigraphy and results of lithologic analyses of the 200 Area TEDF site. The Ringold and Hanford formations, physical properties, and chemical analyses of the sediments are discussed. The soil types mapped on the Hanford Site are shown in Figure H-1. Soil types mapped at the 200 Area TEDF are provided in Figure H-2.

H.6.0 DESCRIBE THE REGIONAL GEOLOGY AND HYDROGEOLOGY WITHIN 1 MILE OF THE SITE. (SUBMIT ON SEPARATE SHEET.)

Chapter 2.0 of the Site Characterization Report describes the regional setting. Chapters 3.0 and 4.0 describe hydrogeologic, geologic and hydrology setting of the disposal site for the 200 Area TEDF. Chapter 4.0 provides detailed information on the hydrostratigraphic relationships, hydraulic gradient, groundwater quality, baseline infiltration rates, hydraulic tests, and the predicted effects of the operation of the 200 Area TEDF on the uppermost aquifer.

H.7.0 LIST THE NAMES AND ADDRESSES OF CONTRACTORS OR CONSULTANTS WHO PROVIDED INFORMATION AND CITE SOURCES OF INFORMATION BY TITLE AND AUTHOR.

A reference list is included in Section 2.0 of the document for all references cited in this permit application. Additionally, the Site Characterization Report (1993b) provides an extensive list of references.

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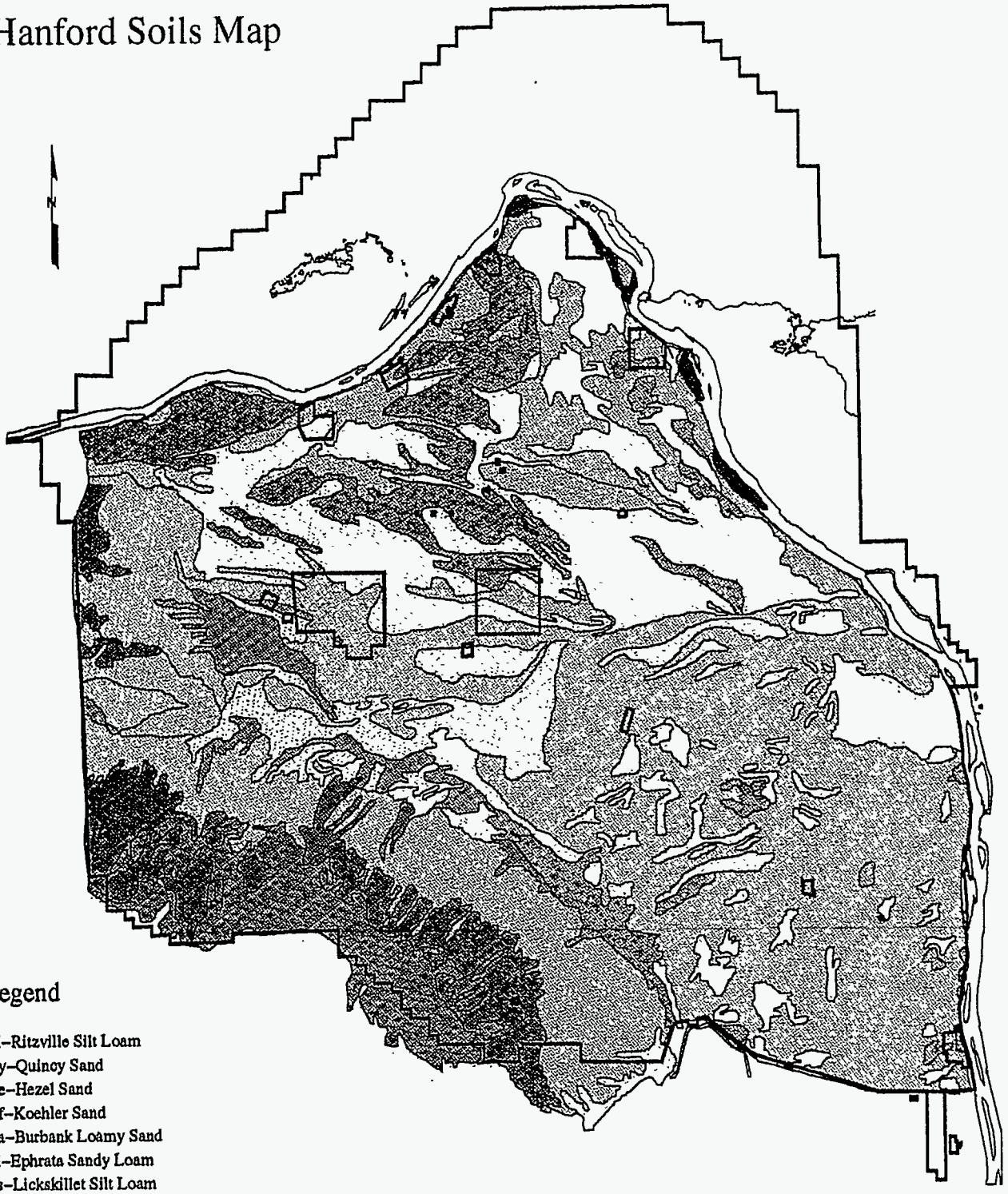
Hanford Soils Map



Legend

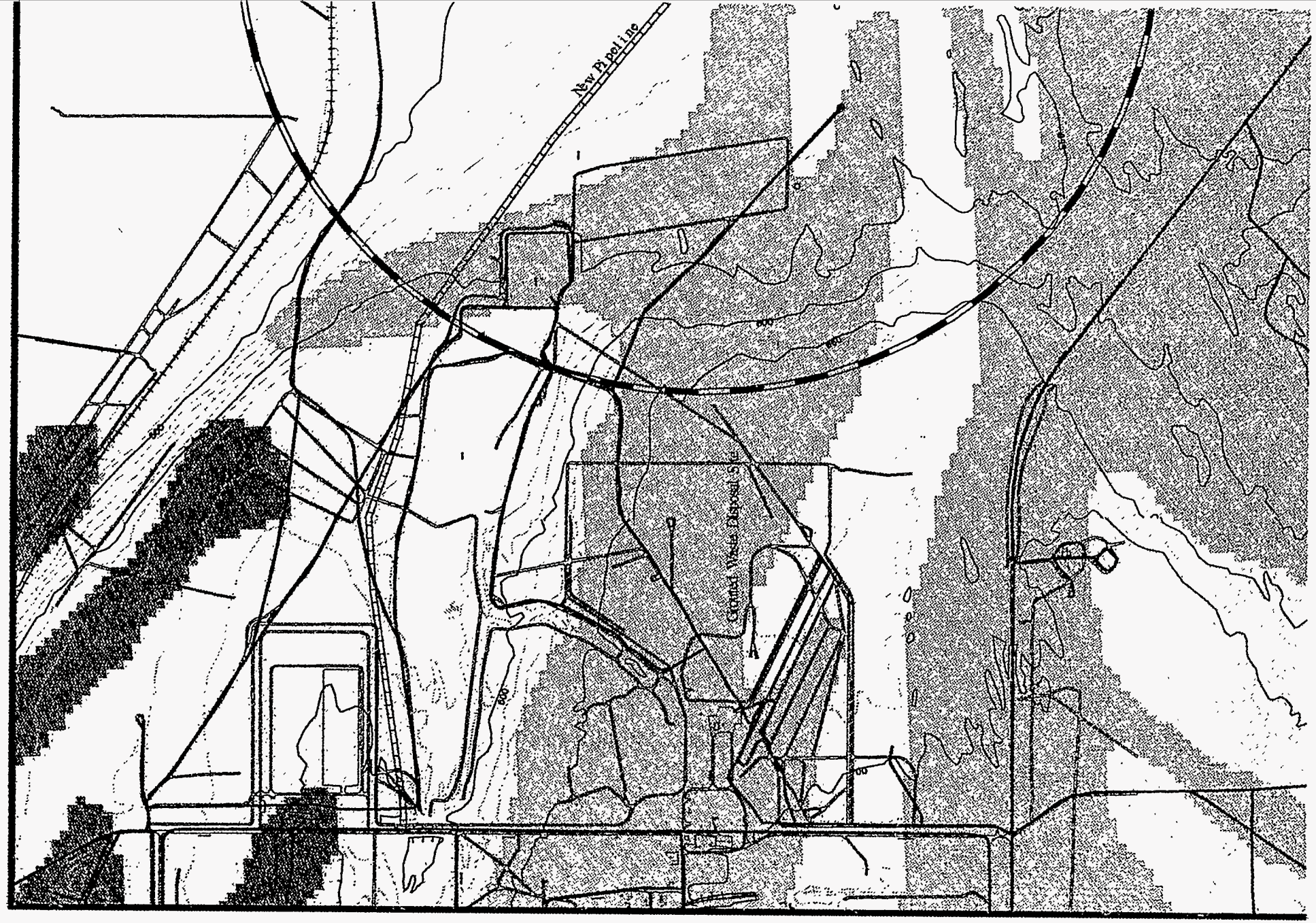
- Rl–Ritzville Silt Loam
- Qy–Quincy Sand
- He–Hezel Sand
- Kf–Koehler Sand
- Ba–Burbank Loamy Sand
- El–Ephrata Sandy Loam
- Ls–Lickskillet Silt Loam
- Eb–Ephrata Stoney Loam
- Ki–Kloana Silt Loam
- Wa–Warden Silt Loam
- Sc–Scootney Stony Silt Loam
- P—Pasco Silt Loam
- Qu–Esquatzel Silt Loam
- Rv–Riverwash
- D—Dunesand

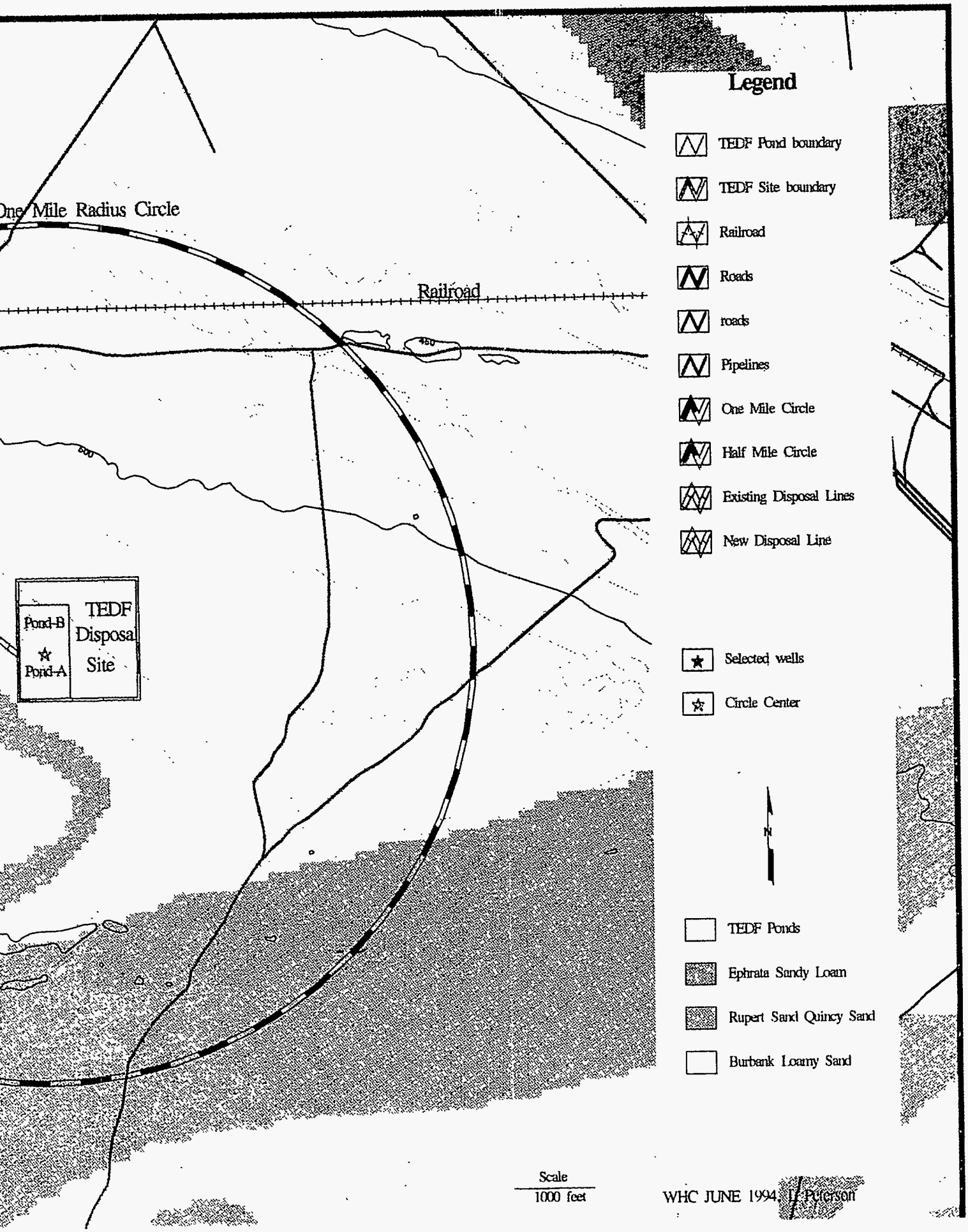
Scale Kilometers

0 7 14

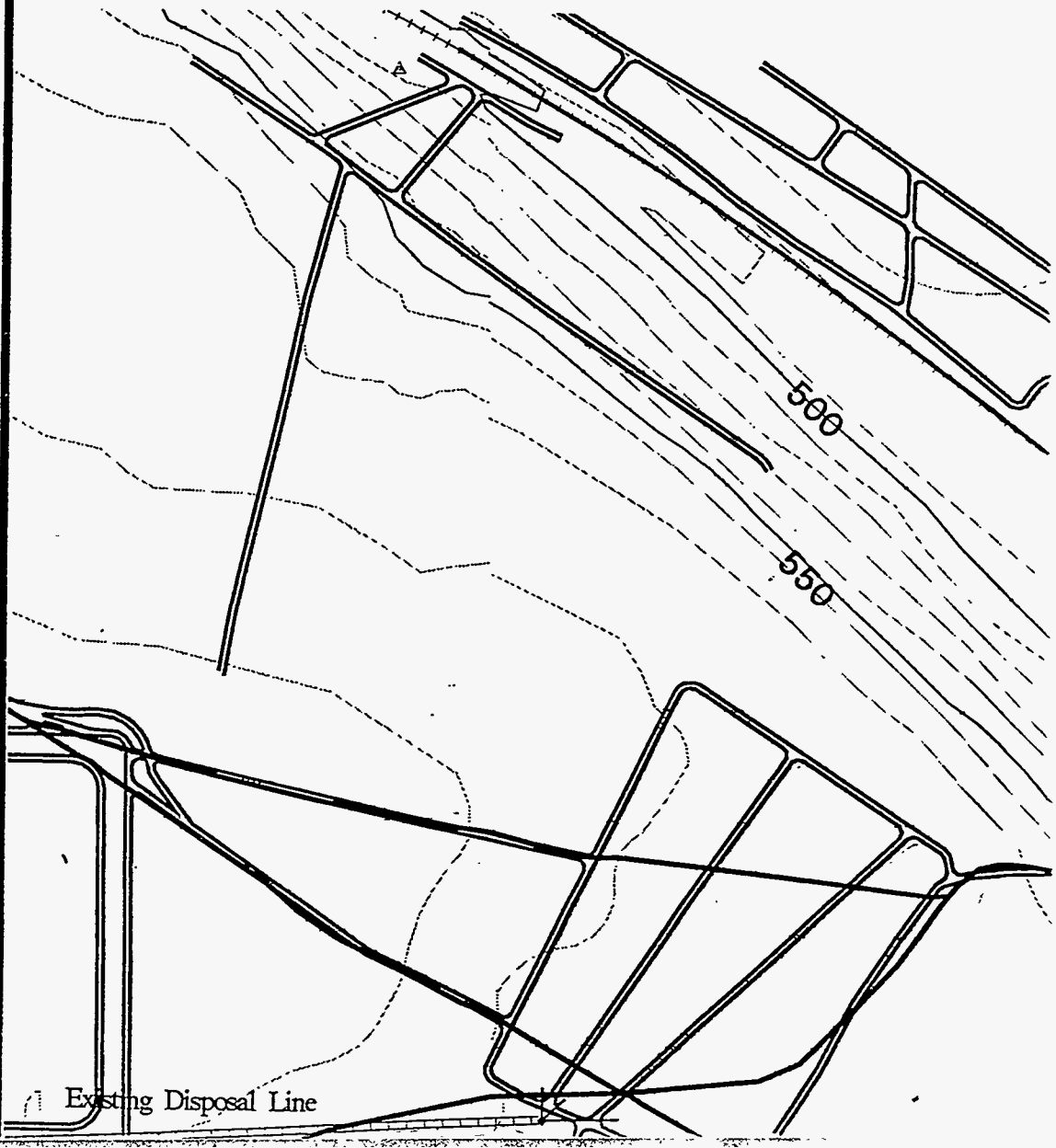
Soils Map of the Hanford Site (modified from Hajek 1966)

WHC:LAD:2-3-94

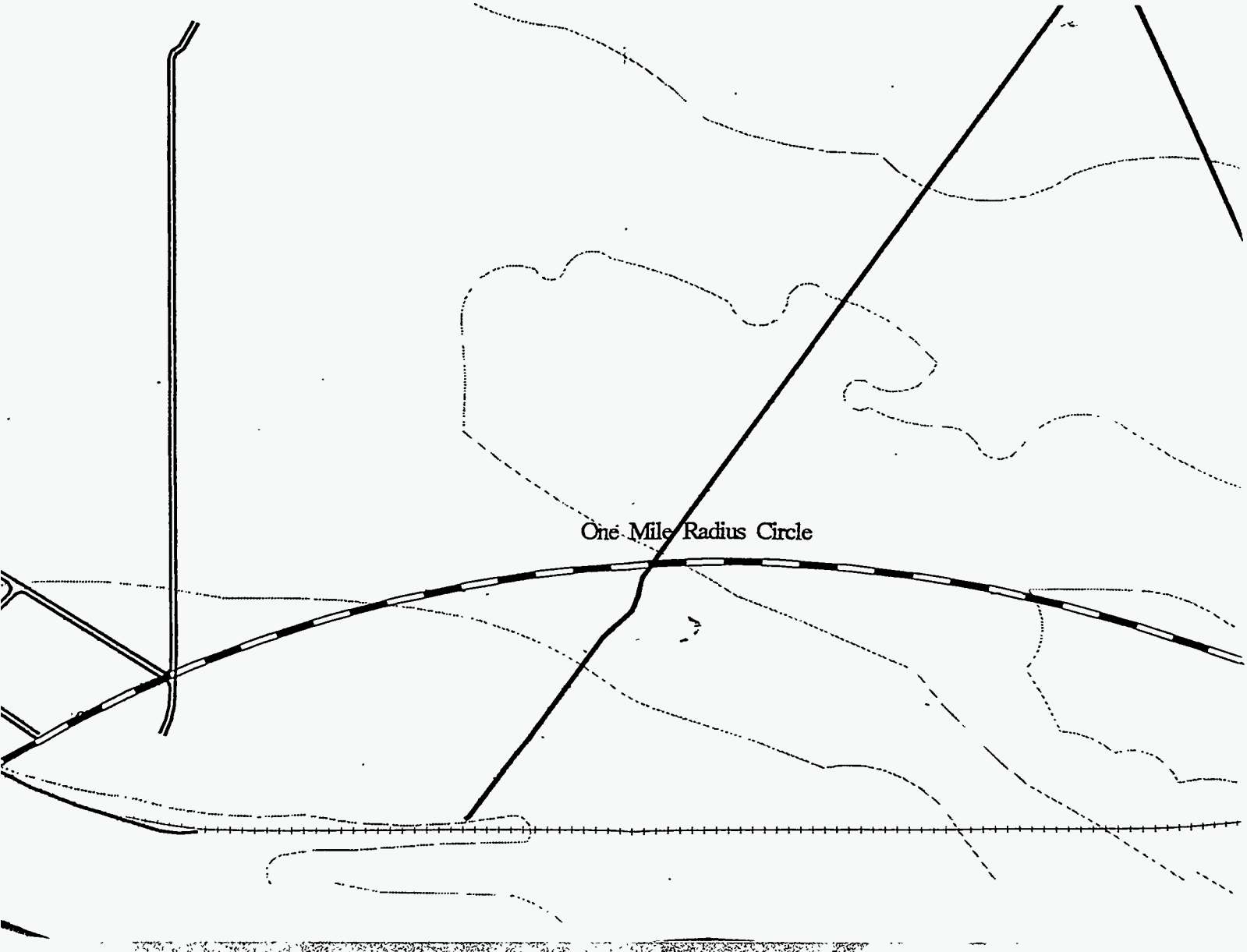

New Pipeline
Central Waste Disposal Site


One Mile Radius Circle
Railroad
450
500
Pond-B
Pond-A
TEDF
Disposal
Site
Legend
TEDF Pond boundary
TEDF Site boundary
Railroad
Roads
roads
Pipelines
One Mile Circle
Half Mile Circle
Existing Disposal Lines
New Disposal Line
Selected wells
Circle Center
N
TEDF Ponds
Ephrata Sandy Loam
Rupert Sand Quincy Sand
Burbank Loamy Sand
Scale
1000 feet
WHC JUNE 1994, JJ Peterson

W-049



REA TEDF DISPC



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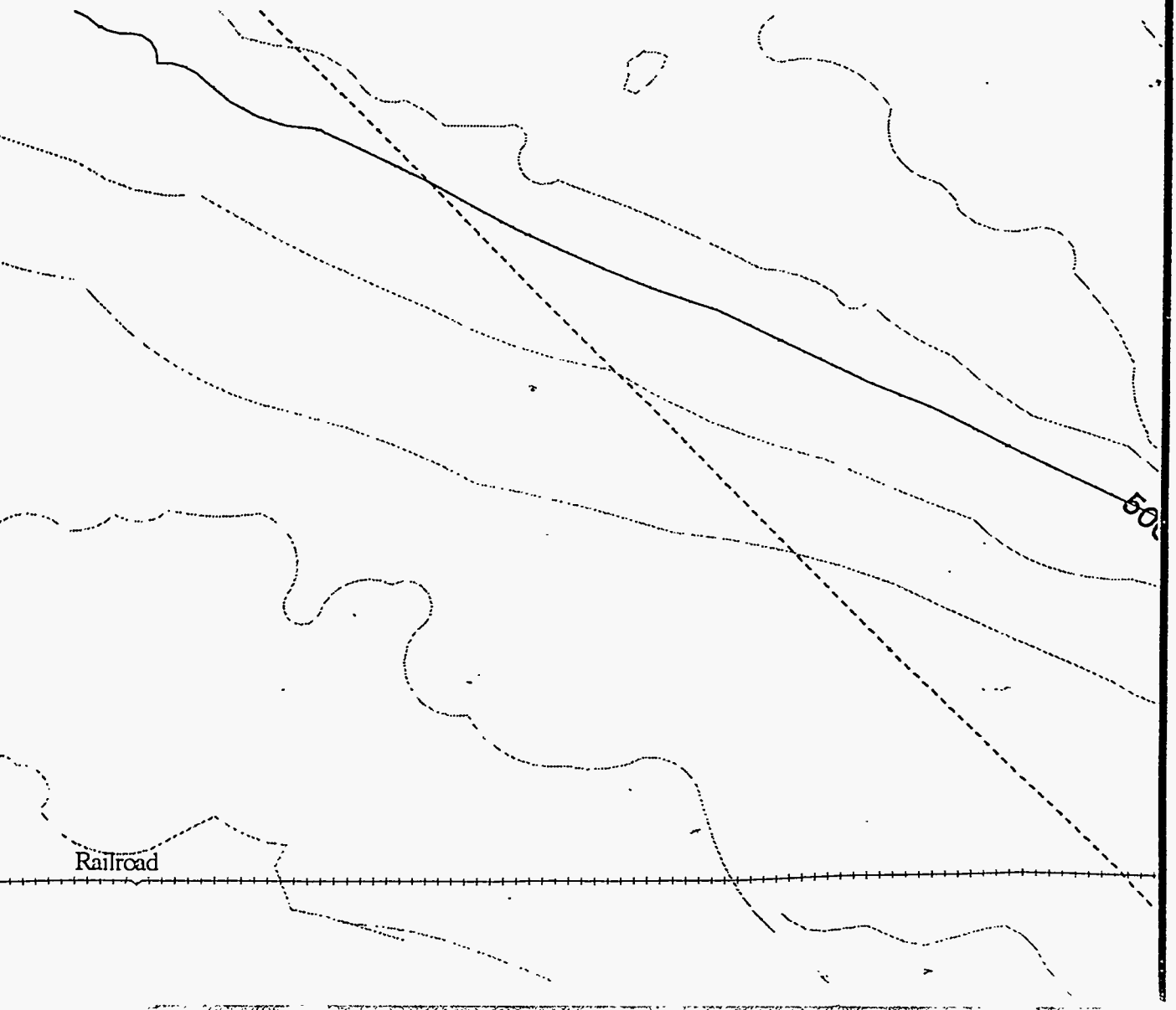
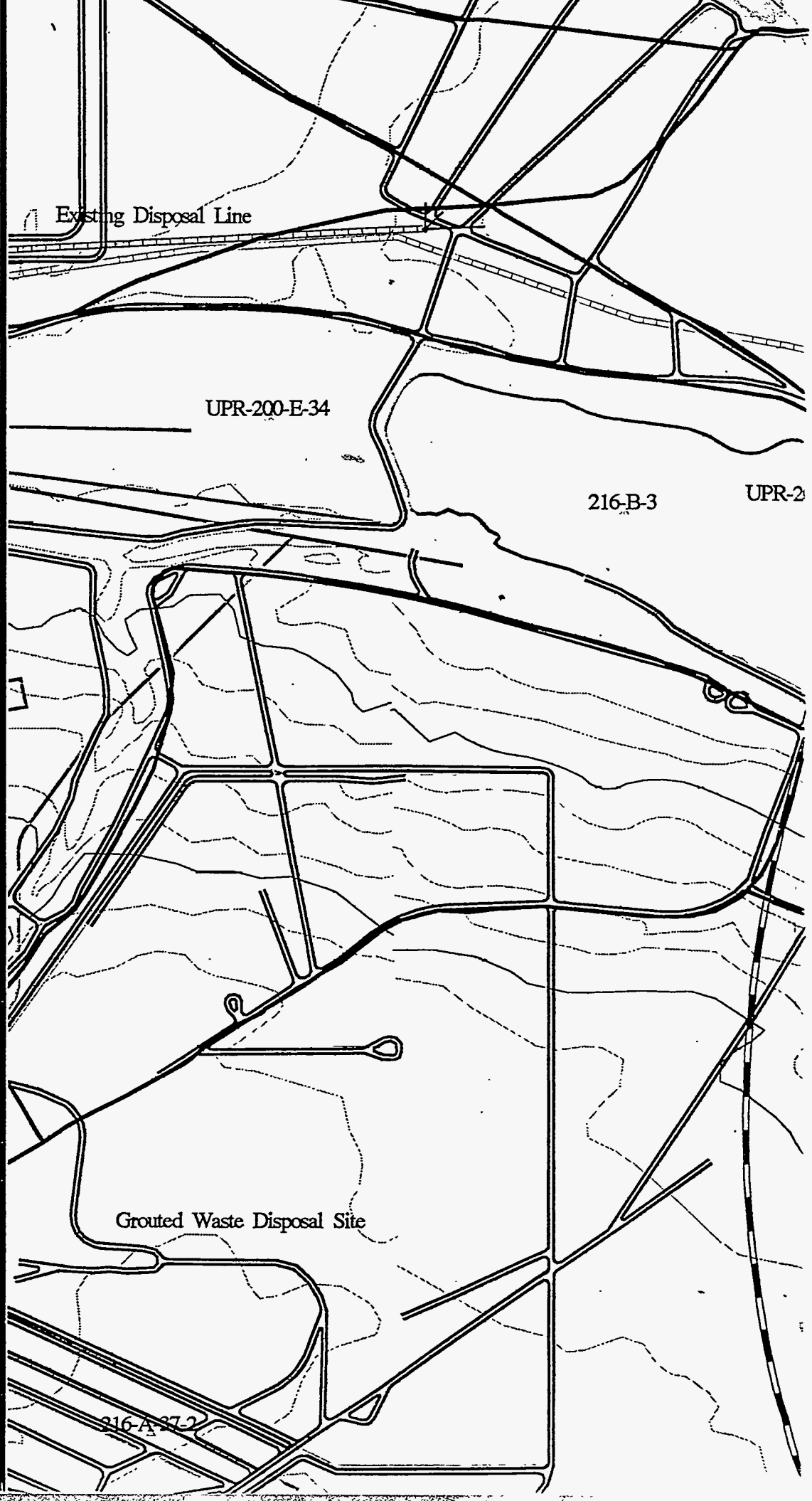
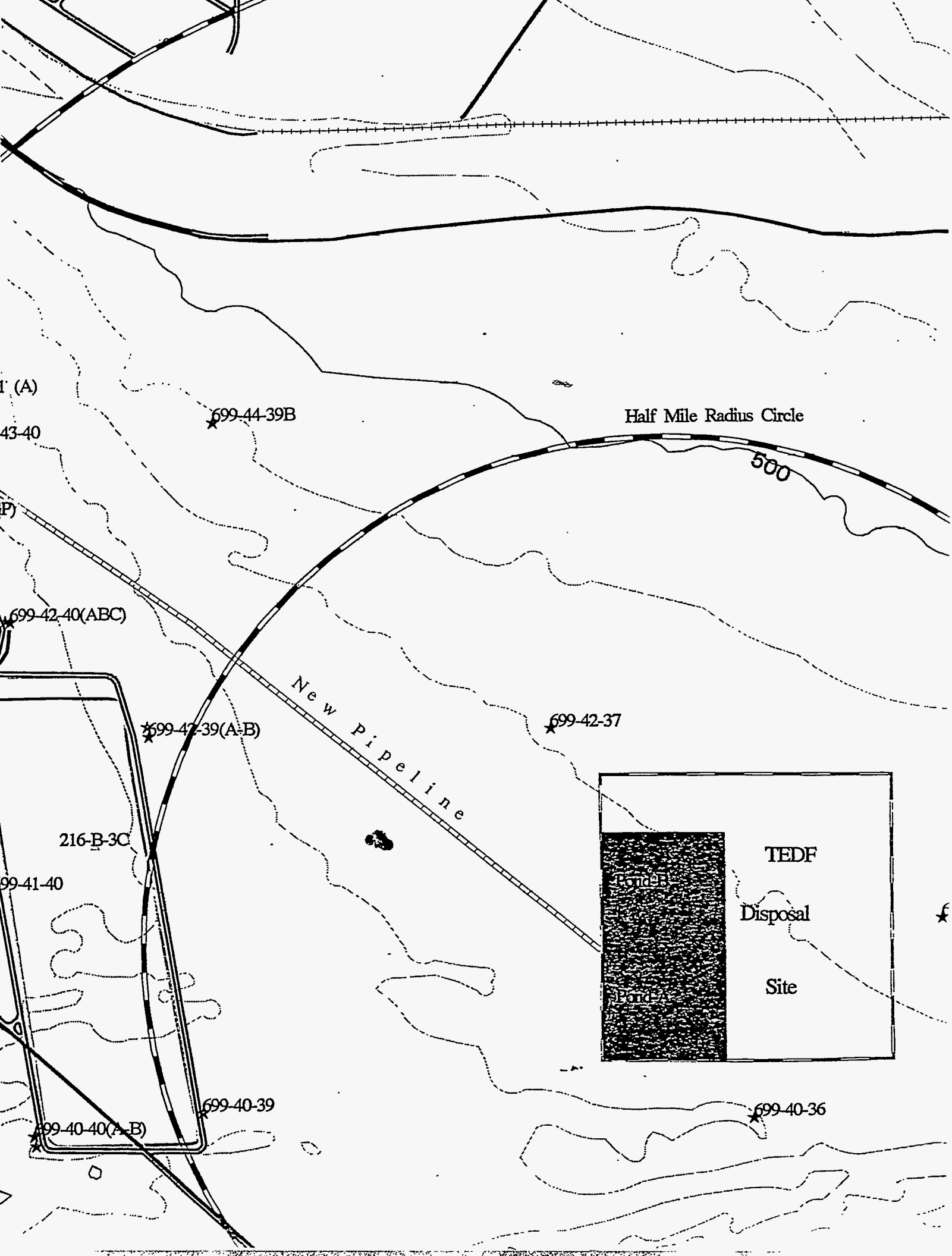
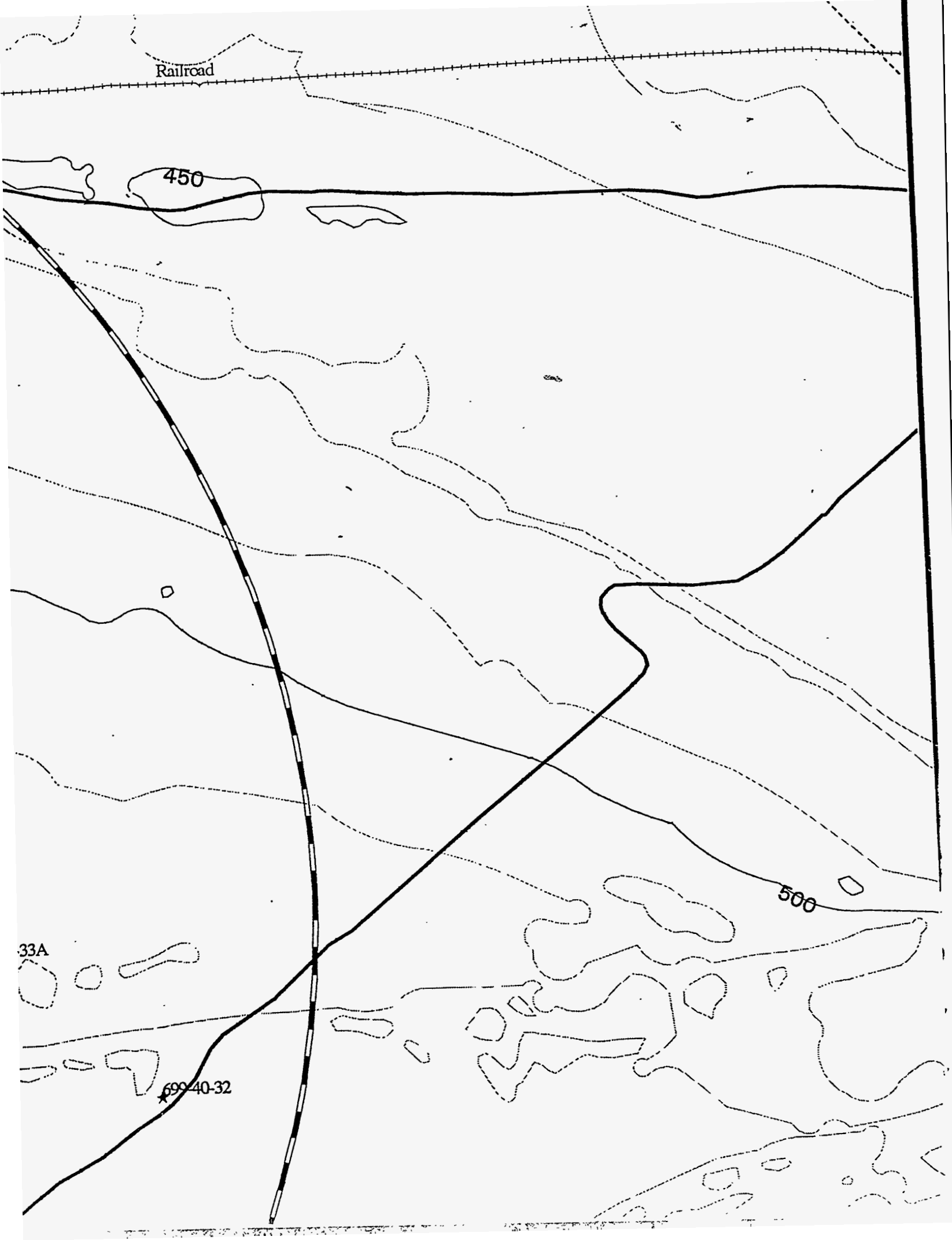
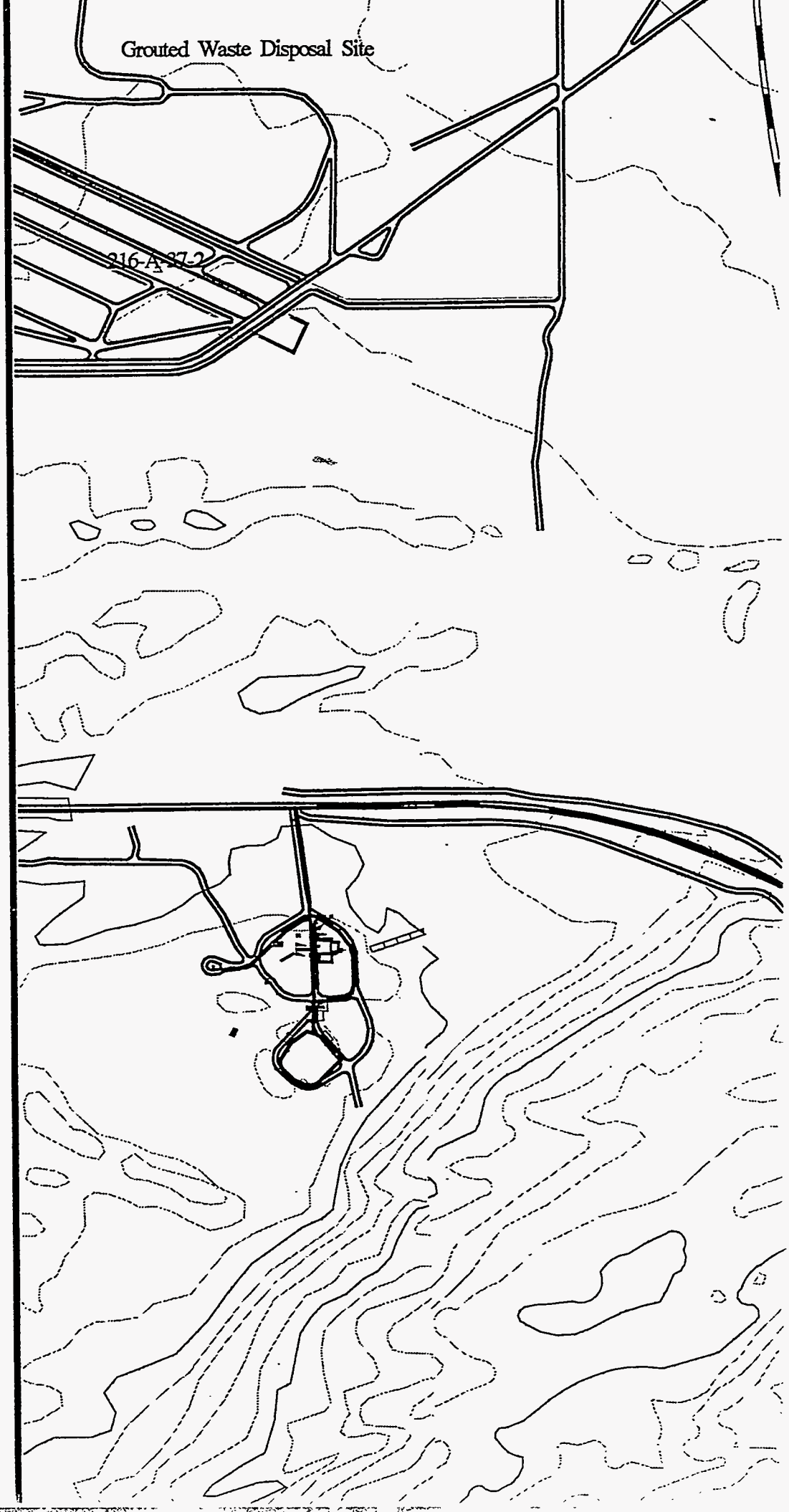
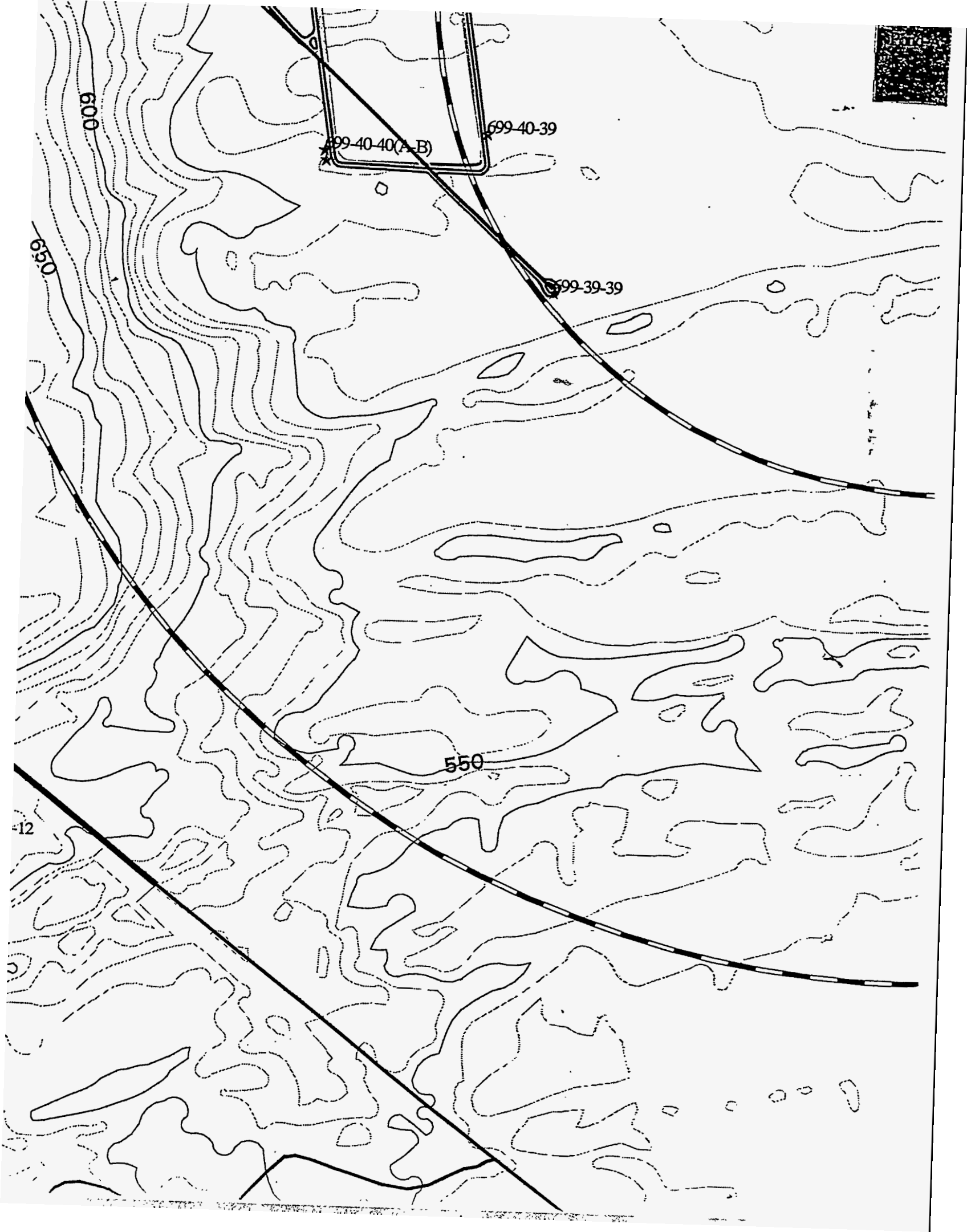


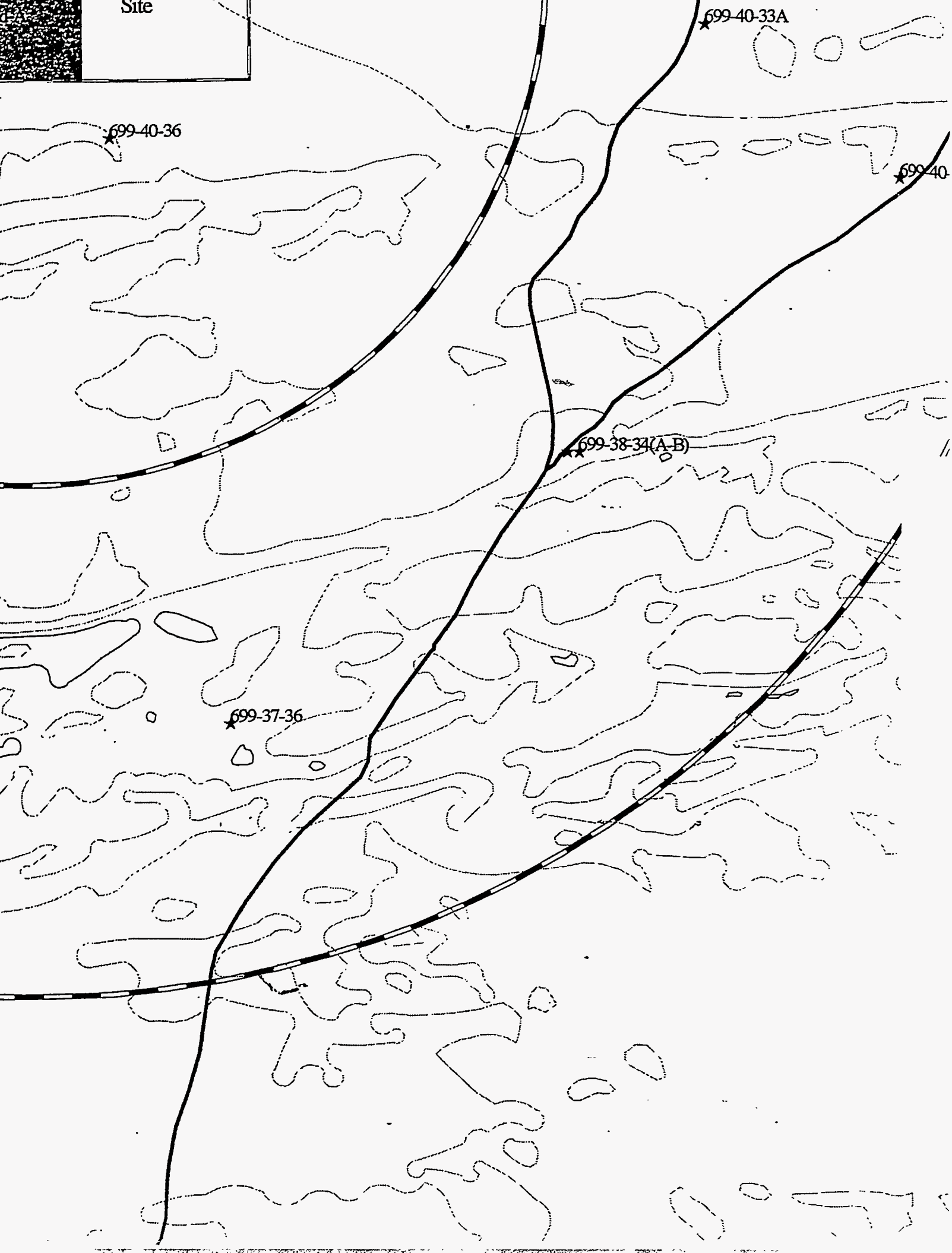

Existing Disposal Line
UPR-200-E-34
216-B-3
UPR-2
Grouted Waste Disposal Site
216-A-37-2

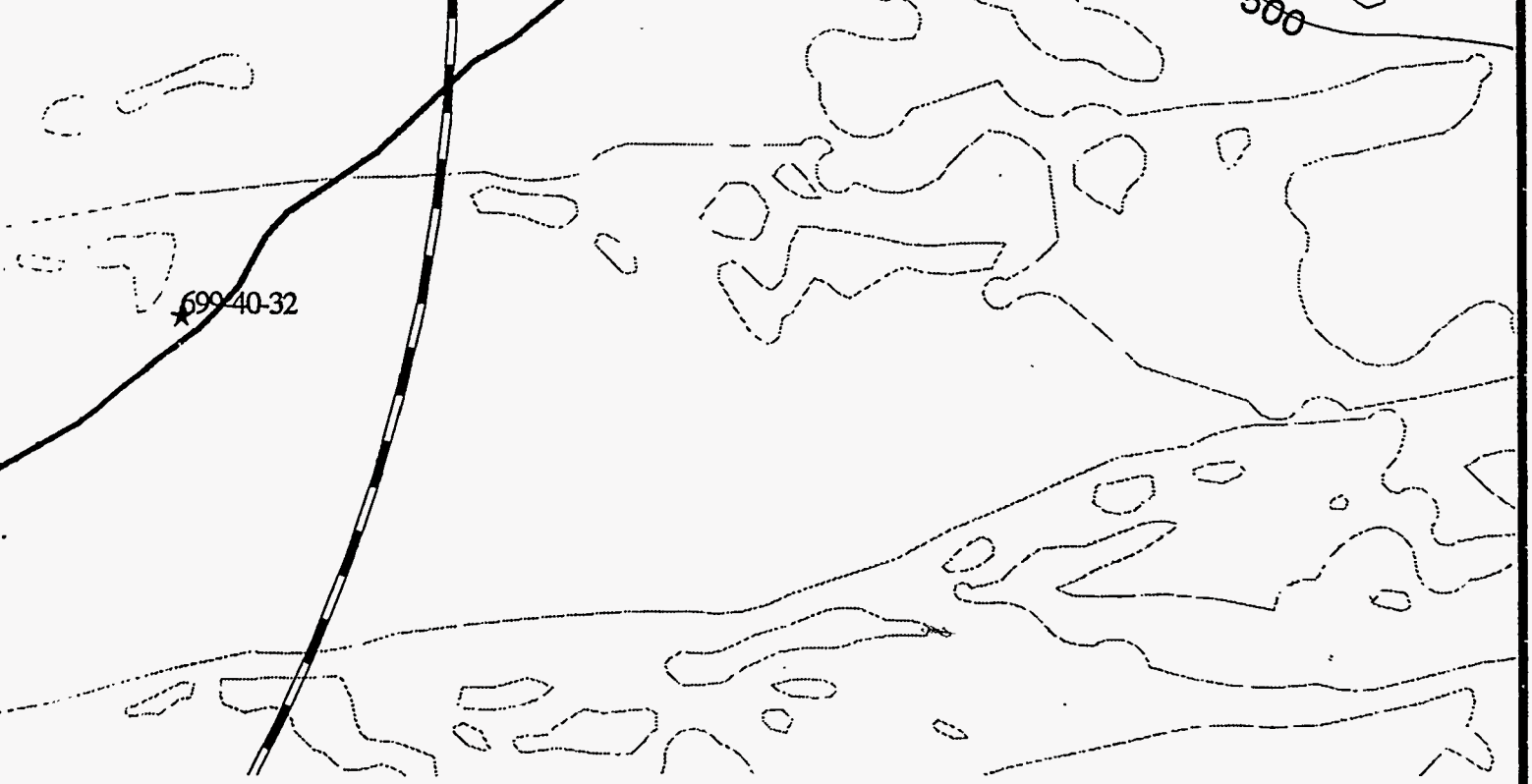

1' (A)
699-44-39B
43-40
Half Mile Radius Circle
500
699-42-40(ABC)
New Pipeline
699-42-39(A-B)
699-42-37
216-B-3C
99-41-40
TEDF
Pond B
Disposal
Site
Pond C
699-40-39
699-40-36
699-40-40(A-B)


Railroad
450
500
33A
699-40-32


Grouted Waste Disposal Site
216-A-37.2


699-40-39
699-40-40(A-B)
699-39-39
600
650
550


Site
699-40-33A
699-40-36
699-40
699-38-34(A-B)
699-37-36



TEDF Pond boundary

roads

Existing Disposal Lines

TEDF Site boundary

Pipelines

New Disposal Line

Railroad

One Mile Circle

Roads

Half Mile Circle

Selected wells

Circle Center

N

W

E

S

Scale

1000 feet

APPENDIX I

ADDITIONAL STREAM ACCEPTANCE CRITERIA

APPENDIX I

CONTENTS

I.1.0 ADDITIONAL STREAM ACCEPTANCE CRITERIA . . . . . APP I-1

APPENDIX I

I.1.0 ADDITIONAL STREAM ACCEPTANCE CRITERIA

Additional streams will be accepted into the 200 Area TEDF if the flow does not exceed the hydraulic capacity of the system and wastewater characteristics meet the permit limit. For existing streams, compliance with permit discharge limits will be demonstrated by flow and analytical data; and if the future stream is not yet in existence, compliance will be demonstrated by engineering analysis.

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