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Attachment 4

Northwest EnviroService Inc.

OCT 1989 RECEIVED EDMC

September 11, 1989

Regional Administrator
ENVIRONMENTAL PROTECTION AGENCY
Region 10
1200 - 6th Avenue
Seattle, WA 98101

Subject: Amendment of Letter dated April 10, 1989
Demonstration for Soft Hammer Waste
Per 40 CFR 268.8(a)(2) - U and P Listed Waste

Please amend the above referenced letter for demonstration of soft hammer waste.

This letter is being submitted for the U and P wastes listed below. The most practically available treatment which utilized the most environmentally beneficial option was considered prior to a disposal option being selected.

The disposal options took into account: environmental benefit; disposal cost; disposal availability; transportation cost; environmental safety due to lengthy transportation routes; and, the disposal hierarchy as follows:

1)	Reuse	5)	Physical and Chemical Treatment
2)	Reduction	6)	Incineration
3)	Recycling	7)	Stabilization
4)	Energy Recovery	8)	Landfilling

R = RECYCLE
ER = ENERGY RECOVERY

T = TREATMENT
I = INCINERATION
S = STABILIZATION

1st Third -
261.33(e) Wastes

I-P001—Warfarin(>0.3%)
I-P004—Aldrin
ER-P005—Allyl alcohol
T-2-P010—Arsenic acid
T-2-P011—Arsenic (V) oxide
T-2-P012—Arsenic (III) oxide
I-P016—Bis-(chloromethyl) ether
T-1-P018—Brucine
I-T-1-P020—Dinoseb
T-2-P030—Soluble cyanide salts not elsewhere specified
I-P036—Dichlorophenylarsine
I-P037—Dieldrin
I-P039—Disulfoton
I-P041—Diethyl-p-nitrophenyl phosphate
I-ER-P046—2,4-Dinitrophenol
I-P050—Endosulfan
T-2-P058—Fluoroacetic acid, sodium salt
I-P059—Heptachlor
T-2-P063—Hydrogen cyanide
T-S-P068—Methyl Hydrazine
I-ER-P069—Methyllactonitrile
I-P070—Aldicarb
I-P071—Methyl parathion
NONE-P081—Nitroglycerine
I-T-1-P082—N-Nitrosodimethylamine
I-T-1-P084—N-Nitrosomethylvinylamine
T-2-P087—Osmium tetraoxide
I-P089—Parathion
I-P092—Phenylmercuric acetate
I-P094—Phorate
I-P097—Famphur
I-ER-P102—Propargyl alcohol
T-2-P105—Sodium azide
T-1-P108—Strychnine and salts
I-P110—Tetraethyl lead
T-2-P115—Thallium (I) sulfate
T-2-P120—Vanadium pentoxide
T-1-P122—Zinc phosphide (>10%)
I-P123—Toxaphene

O. Box 24143 • Seattle, WA 98124 • 1700 Airport Way South • Seattle, WA 98134 • Phone 206-622-1090 / Toll-Free 1-800-735-7069

BEST AVAILABLE COPY

261.33(e) Wastes

S- U007—Acrylamide
I-ER- U009—Acrylonitrile
U010—Mitomycin C
I-T-1- U012—Aniline
S- U016—Benz(c)acridine
S- U018—Benz(a)anthracene
ER-I- U019—Benzene
S- U022—Benzo(a)pyrene
I- U029—Methyl bromide
ER- U031—n-Butanol
I- U036—Chlordane, technical
I- U037—Chlorobenzene
I- U041—n-Chloro-2,3-epoxypropane
I- U043—Vinyl chloride
I- U044—Chloroform
I- U046—Chloromethyl methyl ether
ER-T-1- U050—Chrysene
I-ER-T-1- U051—Creosote
U053—Crotonaldehyde
I- U061—DDT
T-1- U063—Dibenz o (a, h) anthracene
S- U064—1,2:7,8 Dibenzpyrene
I- U066—Dibromo-3-chloropropane 1,2-
I- U067—Ethylene dibromide
I- U074—1,4-Dichloro-2-butene
R-I- U077—Ethane, 1,2-dichloro-
R-I- U078—Dichloroethylene, 1,1-
I-ER-U086—N,N Diethylhydrazine
I-T-1- U089—Diethylstilbestrol
I-T-2- U103—Dimethyl sulfate
I-ER-T-1- U105—2,4-Dinitrotoluene
ER- U108—Dioxane, 1,4-
I-ER-S- U115—Ethylene oxide
I-T-1,T-2- U122—Formaldehyde
ER- U124—Furan
I- U129—Lindane
I- U130—Hexachlorocyclopentadiene
T-2- U133—Hydrazine
T-2- U134—Hydrofluoric acid
S- U137—Indeno(1,2,3-cd)pyrene
R- U151—Mercury
ER- U154—Methanol
I- U155—Methapyrilene
I- U157—3-Methylcholanthrene
S- U158—4,4-Methylene-bis-(2-chloroaniline)
ER- U159—Methyl ethyl ketone
ER-I- U171—Nitropropane, 2-
I-T-1- U177—N-Nitroso-N-methylurea
S- U180—N-Nitrosopyrrolidine
I- U185—Pentachloronitrobenzene
I-T-2- U188—Phenol
I- U192—Pronamide
I- U200—Reserpine
R-I- U209—Tetrachloroethane, 1,1,2,2-
R-I- U210—Tetrachloroethylene
I- U211—Carbon tetrachloride
T-1- U219—Thiourea
ER- U220—Toluene
I-ER- U221—Toluenediamine
ER- U223—Toluene diisocyanate
R-I- U226—Methylchloroform
R-I- U227—Trichloroethane, 1,1,2-
R-I- U228—Trichloroethylene
I- U232—Uracil mustard
I- U238—Ethyl carbamate
S- U240—Warfarin (40.3%)
T-I- U249—Zinc phosphide (≤10%)

2nd Third -

261.33(e) Wastes

S- P002 — 1-Acetyl-2-thiourea
ER- P003 — Acrolein
P007 — 5-(Aminomethyl)-3-isoxazolol
S- P008 — 4-Aminopyridine
S- P014 — Thiophenol
I- P026 — 1-(o-Chlorophenyl)thiourea
I- P027 — Propanenitrile, 3-chloro
T- P029 — Copper cyanides
I- P040 — O,O-Diethyl o-pyrazinyl phosphorothioate
P043 — Diisopropyl fluorophosphate
P044 — Dimethoate
S- P049 — 2,4-Dithiobiuret
T- I- P054 — Aziridine
I- P057 — Fluoroacetamide
I- P060 — Isodrin
I- P062 — Hexaethyltetraphosphate
T- I- P066 — Methomyl
I- P067 — 2-Methylaziridine
S- P072 — Alpha-naphthylthiourea(ANTU)
- P074 — Nickel cyanide
I- P085 — Octamethylpyrophosphoramide
T- 2- P098 — Potassium cyanide
T- 2- P104 — Silver cyanide
T- 2- P106 — Sodium cyanide
T- 2- P107 — Strontium sulfide
I- P111 — Tetraethylpyrophosphate
* P112 — Tetranitromethane
S- P113 — Thallic oxide
T- I- P114 — Thallium (I) selenite

* Explosive - Do not accept.

261.33(f) Wastes

ER- R- U002 — Acetone
ER- U003 — Acetonitrile
T- 1- U005 — o-Acetylaminofluorene
ER- I- U008 — Acrylic acid
S- I- U011 — Amitrole
S- U014 — Auramine
S- U015 — Azaserine
I- U020 — Benzenesulfonyl chloride
S- I- U021 — Benzidine
I- U023 — Benzotrichloride
I- U025 — Dichloroethyl ether
I- U026 — Chlornaphazine
I- U028 — Bis-(2-ethylhexyl)phthalate
T- U032 — Calcium chromate
S- U035 — Chlorambucil
I- U047 — Beta-chloronaphthalene
I- U049 — 4-Chloro-o-toluidine, hydrochloride
ER- U057 — Cyclohexanone
I- U058 — Cyclophosphamide
S- I- U059 — Daunomycin
I- U060 — DDD
ER- I- U062 — Diallate
I- U070 — o-Dichlorobenzene
I- U073 — Dichlorobenzidene, 3,3-
I- R- U080 — Methylene chloride
I- U083 — Dichloropropane, 1,2-
T- 2- U092 — Dimethylamine
U093 — Dimethylaminoazobenzene
T- 1- U094 — Dimethylbenz(a)anthracene,7,12-
S- I- U095 — Dimethylbenzidine,3,3'-
I- U097 — Dimethylcarbamoyl chloride
T- 2- U098 — Dimethylhydrazine, 1,1-
T- 2- U099 — Dimethylhydrazine, 1,2-
I- U101 — Dimethylphenol, 2,4-
I- U106 — Dinitrotoluene, 2,6-
I- U107 — Di-n-octyl phthalate
I- U109 — 1,2-Diphenylhydrazine
T- 2- U110 — Dipropylamine
S- U111 — Di-N-Propylnitrosamine
S- U114 — Ethylenebis-(dithiocarbamic acid)
S- U116 — Ethylene thiourea
I- U119 — Ethyl methanesulfonate
I- U127 — Hexachlorobenzene
I- U128 — Hexachlorobutadiene
I- U131 — Hexachloroethane
T- 2- U135 — Hydrogen sulfide
I- U138 — Methyl iodide
ER- R- U140 — Isobutyl alcohol
I- S- U142 — Kepone
I- S- U143 — Lasiocarpine
T- 2- U144 — Lead acetate
T- 2- U146 — Lead subacetate
T- 1- U147 — Maleic anhydride
ER- U149 — Malononitrile
I- S- U150 — Melphalan
ER- R- U161 — Methyl isobutyl ketone
ER- U162 — Methyl methacrylate
S- U163 — N-Methyl-N-nitro-N-nitrosoguanidine
T- 1- U164 — Methylthiouracil
ER- R- U165 — Naphthalene
ER- S- U168 — Naphthylamine, 2-
ER- U169 — Nitrobenzene
T- 1- U170 — p-Nitrophenol
S- U172 — N-Nitroso-di-n-butylamine
S- U173 — N-Nitroso-diethanolamine
S- U174 — N-Nitroso-diethylamine
S- U176 — N-Nitroso-N-ethylurea
S- U178 — N-Nitroso-N-methylurethane
S- U179 — N-Nitrosopiperidine
T- 2- U189 — Phosphorus sulfide
S- U193 — 1,3-Propane sultone
ER- U196 — Pyridine
ER- U203 — Safrole
T- 2- U205 — Selenium disulfide
T- 1- U206 — Streptozotocin
I- R- U208 — Tetrachloroethane, 1,1,1,2-
ER- U213 — Tetrahydrofuran
T- 1, T- 2- U214 — Thallium (I) acetate
T- 1, T- 2- U215 — Thallium (I) carbonate
T- 1, T- 2- U216 — Thallium (I) chloride
T- 1, T- 2- U217 — Thallium (I) nitrate
T- 1, T- 2- U218 — Thioacetamide
I- U235 — Tris (2,3-Dibromopropyl) phosphate
ER- R- U239 — Xylene
S- I- U244 — Thiram

3rd Third -

261.33(e) Wastes

I- P006—Aluminum phosphide
*T-I- P009—Ammonium picrate
T- P013—Barium cyanide
I- P017—Bromoacetone
T- P021—Calcium cyanide
I- P022—Carbon disulfide
I- P023—Chloroacetaldehyde
I- P024—p-Chloroaniline
I- P028—Benzyl chloride
I- P031—Cyanogen.
T-2- P033—Cyanogen chloride
S-I- P034—4,6-Dinitro-o-cyclohexylphenol
I- P038—Diethylarsine
T-I- P042—Epinephrine
P045—Thiofanox
S- P046—Alpha, alpha- Dimethylphenethylamine
P047—4,6-Dinitro-o-cresol and salts
I- P051—Endrin
T-I, T-2- P056—Fluorine
I- P064—Methyl isocyanate
P065—Mercury fulminate
I- P073—Nickel carbonyl
T-I- P075—Nicotine and salts
T-2- P076—Nitric oxide
T-I- P077—p-Nitroaniline
† P078—Nitrogen dioxide
I- P088—Endothall
S- P093—N-Phenylthiourea
Ŧ P095—Phosgene
Ŧ P096—Phosphine
T- P099—Potassium silver cyanide
ER- P101—Propanenitrile
S- P103—Selenourea
I- P109—Tetraethyldithiopyrophosphate
T-I- P116—Thiosemicarbazide
I- P118—Trichloromethanethiol
T-2- P119—Ammonium vanadate
T- P121—Zinc cyanide

* Potentially explosive if dry.

† Rocket fuel N_2O_4 - Don't accept.

Ŧ. Poison gasses - Don't accept.

261.33(f) Wastes

ER- U001—Acetaldehyde
ER- U004—Acetophenone
I-U006—Acetyl chloride
I-U017—Benzal chloride
I-U024—Bis(2-chloroethoxy)methane
I- U027—Bis(2-chloroisopropyl)ether
S- U030—Benzene, 1-bromo-4-phenoxy
Ŧ U033—Carbonyl fluoride
I- U034—Chloral
U038—Ethyl-4-4'-dichlorobenzilate
I-U039—4-Chloro-m-cresol
I- U042—Vinyl ether 2-chloroethyl
I- U045—Methyl chloride
I-U048—o-Chlorophenol
ER- U052—Cresols
T-I- U055—Cumene
ER- U056—Cyclohexane
I-U068—Methane, dibromo
I-U069—Dibutyl phthalate
I-U071—m-Dichlorobenzene
I-U072—p-Dichlorobenzene
R-U075—Dichlorodifluoromethane - Freon 11
I-R-U076—Ethane, 1,1-dichloro-
I-R-U079—1,2-Dichloroethylene
I-U081—2,4 Dichlorophenol
I-U082—2,6-Dichlorophenol
I-U084—1,3-Dichloropropene
T-S- U085—2,2'-Bioxirane
I-U087—O,O,-Diethyl-S-methyl- dithiophosphate
I- U088—Diethyl phthalate
ER- U090—Dihydrosafrole
S-U091—3,3'-Dimethoxybenzidine
U096—alpha,alpha-Dimethylbenzylhydroxyperoxide
I-U102—Dimethyl phthalate
ER-U112—Ethyl acetate
ER-U113—Ethyl acrylate
ER-U117—Ethyl ether
U118—Ethylmethacrylate
I-I-U120—Fluoranthene - PNA
I-R-U121—Trichloromonofluoromethane
T-2-U123—Formic acid
T-I-U125—Furfural
ER-U126—Glycidylaldehyde
I-U132—Hexachlorophene
U136—Cacodylic acid
S-U139—Iron dextran
ER-U141—Isosafrole
T-I, T-2-U145—Lead phosphate
ER-U148—Maleic hydrazide
ER-U152—Methacrylonitrile
I-U153—Methanethiol
I-U156—Methyl chlorocarbonate
T-I-U160—Methyl ethyl ketone peroxide
T-I-U166—1,4-Naphthaquinone
T-I-U167—1-Naphthylamine
T-I-U181—5-Nitro-o-toluidine
T-I-U182—Paraldehyde
I-U183—Pentachlorobenzene
I-R-U184—Pentachloroethane
ER-U186—1,3-Pentadiene
S-U187—Phenacetin - Acetophenetidin
T-U190—Phthalic anhydride
ER-U191—2-Picoline
T-2-U194—1-Propanamine
S-U197—p-Benzoquinone
T-I-U201—Resorcinol
T-I-U202—Saccharin and salts
T-2, T-I-U204—Selenious acid
I-U207—1,2,4,5-tetrachlorobenzene
T-I-U222—o-Toluidine hydrochloride
I-U223—Bromoform
S-ER-U234—Sym-Trinitrobenzene
S-U236—Trypan blue
I-U240—2,4-D, salts and esters
I-U243—Hexachloropropene
T-2-U246—Cyanogen bromide
I-U247—Methoxychlor

The facilities contacted are listed below along with facility officials, addresses, telephone numbers and contact dates.

Washington Chemical
P.O. Box 743
Spokane, WA 99201
(509)489-9176

August 29, 1989
Mr. Don Herron

The following U listed solvents will be sent for <u>recycling</u> when the following codes are added to Washington Chemical's Part B Permit. Currently they are limited to these solvents as F-listed.

1st Third - U019, U031, U077, U078, U086, U105, U108, U124, U154, U159, U209, U210, U220, U226, U227, U228

Baron Blakeslee
5920 NE 87th
Portland, OR 97220
(503)252-3468

August 29, 1989
Randy Pattock

The following U listed solvents will be sent for recycling.

1st Third - U226, U228

Mercury Refining Company, Inc.
Railroad Avenue
Albany, NY 12205
1-800-833-3505

August 24, 1989
Heidi Geiger

The following will be Recycled:

1st Third - U151

Systech Environmental Corp.
23505 Crenshaw Blvd, #201
Torrance, CA 90505
(213)325-2800

August 29, 1989
Mike Zimmer

When in unacceptable size for recycling, the following U's will be burned for Energy Recovery:

1st Third - U031, U086, U105, U124, U154, U159, U019, U220, U221, U223.

2nd Third - U002, U057, U140, U161, U165, U239

Northwest EnviroService, Inc.
1500 Airport Way S.
Seattle, WA 98134
(206)622-1090

August 28, 1989
Michael Uhlendorf

The following U's and P's will be treated by physical or chemical means to detoxify. These are chemicals which have no reuse potential but may be beneficial in the neutralization or detoxification of other hazardous waste resulting in less virgin chemicals being purchased and, therefore, produced.

1st Third - P010, P011, P012, P087, P122, U133, U134

2nd Third - P029, P074, P098, P104, P106, U028, U032

3rd Third - P013, P021, P099, P121, U190

Rollins Environmental
1781 Fox Drive
San Jose, CA 95131
(408)437-9770

August 28, 1989
Patrick Lane

Ensco
5251 N. 16th St. - #701
Phoenix, AZ 85016
(602) 285-1001

August 29, 1989
Diane Abrams

Incineration will be utilized as the most environmental safe way of destroying compounds that have not been recycled or detoxified. The following compounds will be blended and bulked into a solvent blend that has BTU value which will reduce the amount of virgin energy consumed at the incinerator.

1st Third - P001, P004, P016, P020, P036, P037, P039, P041, P048, P050, P059, P069, P070, P071, P082, P084, P087, P089, P092, P094, P097, P102, P110, P122, P123,
U009, U012, U019, U029, U036, U037, U041, U043, U044, U046, U051, U061, U066, U067, U074, U077, U078, U086, U089, U103, U105, U115, U122, U129, U130, U155, U157, U177, U185, U188, U192, U200, U209, U210, U211, U221, U226, U227, U228, U237, U238, U248

2nd Third - P040, P043, P044, P062, P111, U025, U047, U049, U060, U069, U070, U075, U080, U088, U102, U107, U127, U131, U208, U235

Chem-Security Systems
Star Route
Arlington, OR 97812
(503)454-2643

August 29, 1989
Cheryl Steward

The following items will be stabilized and/or treated prior to landfilling to reduce their toxicity or in labpack form.

1st Third - F007, F009, F019, P015, P018, P105, P108, U016, U018, U022, U050, U051, U158, U219, U248

2nd Third - U032

Envirosafe Services of Idaho
P.O. Box 16217
Boise, ID 83715-6217
(208)384-1500

August 28, 1989
Gary Robinson

The following items will be stabilized and/or treated prior to landfilling to reduce their toxicity or in labpack form.

1st Third - F007, F009, F019, P015, P018, P108, U016, U018, U022, U050, U051, U158, U219, U248

2nd Third - P029, P074, P098, P104, P106, U032

3rd Third - P013, P021, P099, P121, U190

Romic Chemical Corporation
2081 Bay Road
E. Palo Alto, CA 94303
(415)324-1638

August 29, 1989
Chris Zinc

The following U listed solvents will be sent for recycling.

1st Third - U210, U226, U227, U228

2nd Third - U002, U080, U140, U161, U239

All First, Second, and Third Third U and P listed waste that is a spill residue in soil, clean-up with absorbant, and empty previous contents containers of P listed waste may be landfilled based on the cost ratio below.

Average Incineration Cost	$. [illegible]	per pound	
Transportation Cost	. [illegible]	per pound	= $. [illegible] per pound
Average Landfill Cost	. [illegible]	per pound	
Transportation Cost	. [illegible]	per pound	= $. [illegible] per pound

Incineration is [illegible] times as expensive as landfilling and, therefore, not economically practical.

CERTIFICATION STATEMENT FOR
LANDFILL ITEMS WHICH HAVE BEEN STABILIZED:

I certify under penalty of law that the requirements of 40 CFR 268.8(a)(1) have been met and that disposal in a landfill or surface impoundment is the only practical alternative to treatment currently available. I believe that the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Jerry Bartlett	V.P. and General Manager	9-11-89
Signature	Title	Date

CERTIFICATION STATEMENT FOR
RECYCLING, ENERGY RECOVERY AND INCINERATION:

I certify under penalty of law that the requirements of 40 CFR 268.8 (a)(1) have been met and that I have contracted to treat my waste (or will otherwise provide treatment) by the practically available technology which yields the greatest environmental benefit as indicated in my demonstration. I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Jerry Bartlett	V.P. and General Manager	9-11-89
Signature	Title	Date

CERTIFICATION STATEMENT FOR
TREATMENT AT NORTHWEST ENVIROSERVICE, INC:

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d) without dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

Jerry Bartlett	V.P. and General Manager	9-11-89
Signature	Title	Date