

# START

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STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

February 4, 1992

TO: Interested Parties

FROM: Roger Stanley, Program Manager  
Nuclear and Mixed Waste Management Program

SUBJECT: Nuclear and Mixed Waste Management Program  
Interim Soil Cleanup Policy

Attached for your information is a copy of the Nuclear and Mixed Waste Management Program's interim policy for soil cleanup. The purpose of this policy is to provide a basis for consistent cleanups, remediations, and closures at the Hanford Site.

This policy has been developed in order to promote an integrated regulatory approach to soil cleanup by allowing for implementation of unified cleanup standards. In applying the policy, the Department of Energy, in conjunction with the Environmental Protection Agency and Ecology, will select an appropriate soil cleanup option that is protective of the environment and human health, while recognizing that final decisions regarding eventual land use at Hanford are many years off.

The policy is being issued as an interim program policy until an agency policy for soil cleanup is developed. Once Ecology issues a state-wide policy, the NMWMP policy will be considered and incorporated as appropriate.

If you have any questions concerning the contents of the policy, feel free to contact Laurie Davies of my staff at (206) 438-7765.

ATTACHMENT



9413092 1992



## Nuclear & Mixed Waste Management Program - Interim Policy -

### Policy C-1 Soil Cleanup/Remediation for Hanford

Effective Date: 2/5,

**Purpose:** To establish and promote consistent cleanups, remediations, and closures that are protective of the environment and human health, that minimize the need for postclosure care, and that eliminate the need for subsequent remedial action at the Hanford Site.

**Application:** This policy is designed to aid coordinated and consistent implementation of the Hanford Federal Facility Agreement and Consent Order and is applicable at all closures and remediations that are regulated pursuant to the Model Toxics Control Act, the Hazardous Waste Management Act, the Resource Conservation and Recovery Act and/or any other cleanup or remediation for which the N&MWMP is the lead regulatory authority. This policy is a to-be-considered ARAR for Comprehensive Environmental Remediation Compensation Liability Act sites.

#### 1. Acronyms and Definitions

ARAR - Applicable or Relevant and Appropriate Requirement  
 CERCLA - Comprehensive Environmental Response, Compensation and Liability Act  
 HWMA - Hazardous Waste Management Act  
 MTCA - Model Toxics Control Act  
 N&MWMP - Nuclear and Mixed Waste Management Program  
 RCRA - Resource Conservation and Recovery Act  
 TSD - Treatment, Storage, and Disposal

**Cleanup** - means to eliminate, destroy, or remove a hazardous substance.

**Department** - means the Department of Ecology.

**Hazardous Substances** - means all substances which are hazardous substances as defined under CERCLA, MTCA, or HWMA. To be exempted from this definition, a substance must be exempted under CERCLA, MTCA, and HWMA.

**Environmental Background** - at the Hanford Site means natural background, i.e. the concentration of a substance consistently present in the environment which has not been influenced by human activities.

**Remediation** - means to render less toxic, stabilize, contain, immobilize, isolate, or treat a hazardous substance.

**Unit** - means a contiguous area of land and its associated structures and/or improvements which is regulated under MTCA, HWMA, CERCLA, and/or RCRA.

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## 2. Resource Contacts and References

### Resource Contacts:

Policy Unit Supervisor, Technical Support and Public  
Involvement Section

RCRA Unit Supervisor, Hanford Project

CERCLA Unit Supervisor, Hanford Project

### References:

Hazardous Waste Management Act

Model Toxics Control Act

Comprehensive Environmental Response, Compensation and  
Liability Act

Resource Conservation and Recovery Act

## 3. Units Are to Undergo Cleanup/Remediation in Compliance With State and Federal ARAR's

Efficient and effective cleanup or remediation at the Hanford Facility necessitates the application of consistent cleanup/remediation standards. The applicability of these standards is based on whether the individual cleanup/remediation action is protective of the environment and human health, minimizes the need for postclosure care, and eliminates the need for subsequent remedial actions. Any Hanford Facility cleanup/remediation will be conducted in a manner which ensures compliance with the technical requirements of state and federal ARAR's.

The need for subsequent cleanup/remediation actions at units regulated by more than one statute over time, should be eliminated by implementation of this policy. This means that a RCRA TSD Unit located within a CERCLA Operable Unit may undergo final cleanup/remediation before cleanup/remediation of the surrounding Operable Unit.

This policy does not supersede any applicable statute or regulation.

## 4. Three Options Are Available for Cleanup/Remediation

The following three options are available as cleanup/remediation objectives:

- I. Clean closure by removal or remediation of all hazardous substances to environmental background levels (clean closure standards for groundwater must also be met).

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Option I. No requirements.

Option II. Post-cleanup/remediation care and conditions will be imposed to the extent necessary to meet technical and regulatory requirements. The following must be complied with:

- setting and meeting applicable performance standards,
- notice to local land authority, and
- notice in deed to property.

The following requirements must be met at any TSD closure or RCRA past practice. These requirements may be met by existing systems approved by the Department, or unit-specific systems may be required:

- capping,
- ground water monitoring and reporting,
- security requirements,
- establish a contingency plan, and
- returning the site to the appearance and use of the surrounding land areas.

Option III. Post-cleanup/remediation requirements appropriate for landfill facilities must be met, i.e., institutional and/or physical controls for fulfillment of any technical and regulatory requirement. The following must be complied with:

- setting and meeting performance standards,
- ground water monitoring and reporting,
- establishment and maintenance of physical controls to prevent contaminant migration (e.g., capping, run-on/run-off control, leachate collection),
- maintenance and monitoring of waste containment systems,
- site use restrictions,
- notice to local land authority, and
- notice in deed to property.

The following may also be required:

- access control,
- security requirements, and
- return the site to the appearance and use of the surrounding land areas.

Post-cleanup/remediation requirements more extensive than the II and III above may be required by the NEMWMP. A post-closure permit will be required for TSD units closed under options II or III.

6. Final Selection of a Cleanup/Remediation Option shall Be Made in Conjunction With the N&MMP. All Closures Subject to this Policy Are Subject to Approval by the Department.

APPROVED BY: Roger Stanley  
DATE: FEBRUARY 5, 1992

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**APPENDIX A**  
**OPTION II - SOIL CLEANUP LEVELS**

The concentrations in the following table are based on the Dangerous Waste Regulations and residential cleanup levels in the Model Toxics Control Act Cleanup Regulations. Each column heading is defined below.

- a) **DW DESIGNATION LIMIT** = dangerous waste designation limits (i.e., the minimum concentrations which would result in a dangerous waste designation under WAC 173-303-070 except for listed wastes),
- b) **MTCA LIMIT (100X MCL-final)** = 100 times primary MCLs and non-zero MCLGs (i.e., maximum contaminant levels in 40 CFR 141, non-zero maximum contaminant level goals in 40 CFR 141, and primary maximum contaminant levels in WAC 246-290-310),
- c) **MTCA LIMIT (100X MCL-proposed)** = 100 times proposed MCLs and non-zero MCLGs (from 54 FR 22062, 55 FR 30370, and 56 FR 3526 federal registers; these values will be applied as "to-be-considered" ARARs for CERCLA cleanups),
- d) **MTCA LIMIT (100X Criteria)** = 100 times ambient water quality criteria for freshwater chronic toxicity (from the Clean Water Act, 'EPA Gold Book'),
- e) **MTCA LIM (100X GW)** = 100 times the groundwater cleanup levels derived from equations in WAC 173-340-720(3)(a)(ii)(A) and WAC 173-340-720(3)(a)(ii)(B) for noncarcinogens and carcinogens respectively,
- f) **MTCA LIM (Soil)** = concentrations which are anticipated to result in no toxic effects on human health (i.e., concentrations calculated from the equation for noncarcinogens in WAC 173-340-740(3)(a)(iii)(A)), and for which the excess cancer risk is less than or equal to 1 in 1,000,000 for individual carcinogens and less than or equal to 1 in 100,000 for the cumulative effects of multiple carcinogens (calculated from the equation for carcinogens in WAC 173-340-740(3)(a)(iii)(B)).

Data in the following table are correct as of July 1, 1991. Using the above methodology, the table should be updated by the Department of Ecology whenever new toxicological information about the listed contaminants or any new contaminants becomes available. In no case should the cleanup levels be set below either natural background concentrations for naturally occurring constituents, or the practical quantitation limit for any analyte.

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## APPENDIX A: OPTION II - SOIL CLEANUP LEVELS (ppm)

CONTAMINANT	SYNONYM	CAS #	DW DESIGNATION LIMIT	MTCA LIMIT (100X MCL) (final)/(proposed)	MTCA LIMIT (100X Criteria)	MTCA LIM (100X GW)	MTCA LIM (Soil)	CLEANUP LEVEL	
1 acetone	2-propanone	67-64-1	100000			80	8000	80	
2 gross alpha, excluding U (pCi/Kg)				1500	1500			1500	
3 aluminium		7429-90-5							
4 ammonium/ammonia (as N)		7664-41-7	1000		137.7	1552	77600	138	
5 antimony		7440-36-0	100000	0.3	160	0.64	32	0.3	
6 arsenic		7440-38-2	10	5	5	19	0.005	0.005	
7 barium		7440-39-3	2000	100	100		112	5600	100 (1)
8 benzene		71-43-2	10	0.5	0.5	530	0.15	34	0.15 (1)
9 beryllium		7440-41-7	100		0.1	0.53	0.002	0.23	0.002
10 bis(2-ethylhexyl)phthalate		117-81-7	10		0.4	0.3	0.63	71	0.3
11 boron		7440-42-8					144	7200	144
12 bromide									
13 butanoic acid	butyric acid	107-92-6	10000					10000	
14 n-butyl alcohol	1-butanol	71-36-3	100000			80	8000	80	
15 cadmium		7440-43-9	20	0.5	0.5	0.08	0.8	80	0.08 (1)
16 carbon disulfide	carbon bisulfide	75-15-0	1000					1000	
17 carbon tetrachloride		56-23-5	10	0.5	0.5	3520	0.03	7.7	0.03 (1)
18 chlordane		57-74-9	0.6	0.2	0.2	0.00043	0.007	0.77	0.0004 (1)
19 chloride									
20 chlorinated fluorocarbons	freons		100					100	
21 chlorobenzene	monochlorobenz	108-90-7	100	10	10	25	16	1600	10
22 chloroform	trichloromethan	67-66-3	100	10	10	124	0.72	164	0.72
23 chromium (total)		7440-47-3	100	5	5		1600	80000	5 (1)
24 chromium VI		7440-47-3	100			1.1	8	400	1.1 (1)
25 cobalt		7440-48-4							
26 copper		7440-50-8	100000	130	130	1.20	59.2	2960	1.2
27 o-cresol	2-methylphenol	95-48-7	4000				40	4000	40 (1)
28 m-cresol	3-methylphenol	108-39-4	4000				40	4000	40 (1)
29 p-cresol	4-methylphenol	106-44-5	4000				40	4000	40 (1)
30 cresols (total)	cresylic acid, hyd	1319-77-3	4000				40	4000	40 (1)
31 cyanide			100	20	20	0.52	32	1600	0.5
32 cyclohexanone		108-94-1	10000						10000
33 2,4-D		94-75-7	100	7	7				7
34 DDT		50-29-3	10			0.0001	0.03	2.9	0.0001

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CONTAMINANT	SYNONYM	CAS #	DW DESIGNATION LIMIT	MTCA LIMIT (100X MCL) (final)/(proposed)	MTCA LIMIT (100X Criteria)	MTCA LIM (100X GW)	MTCA LIM (Soil)	CLEANUP LEVEL	
1,2-dichlorobenzene	o-dichlorobenze	95-50-1	100	60	60	763	72	7200	60
1,4-dichlorobenzene	p-dichlorobenze	106-46-7	100	7.5	7.5	763	0.18	42	0.18
1,1-dichloroethane	ethylidene chlori	75-34-3	100				0.05	11	0.05
1,2-dichloroethane	ethylene dichlori	107-06-2	10	0.5	0.5	2000	0.05	11	0.05 (1)
1,1-dichloroethylene	vinylidene chlori	75-35-4	14	0.7	0.7	1160	0.007	1.7	0.007 (1)
cis-1,2-dichloroethylene	acetylene dichlor	156-59-2	100	7	7	1160			7
trans-1,2-dichloroethylene	acetylene dichlor	156-60-5	100	10	10	1160	16	1600	10
2,4-dinitrotoluene	DNT	121-14-2	2.6			23	0.006	1.5	0.006 (1)
endrin		72-20-8	0.4	0.02	0.02	0.00023	0.48	24	0.0002 (1)
ethyl acetate		141-78-6	100000				720	72000	720
ethylbenzene		100-41-4	10000	70	70	3200	80	8000	70
ethylene dibromide	1,2-dibromoetha	106-93-4	100	0.005	0.005		0.00005	0.01	0.00005
ethyl ether	diethyl ether	60-29-7	1000				400	40000	400
fluoride ion				400	400		96	4800	96
halogenated hydrocarbons			100						100
heptachlor		76-44-8	0.16	0.04	0.04	0.00038	0.002	0.22	0.0004 (1)
heptachlorepoide		1024-57-3	0.16	0.02	0.02		0.001	0.11	0.0010 (1)
hexachlorobenzene		118-74-1	2.6		0.1	25	0.003	0.59	0.003 (1)
hexone	methyl isobutyl	108-10-1	100000				40	4000	40
iron		7439-89-6				100			100
isobutanol	isobutyl alcohol,	78-83-1	100000				240	24000	240
lead		7439-92-1	100	1.5	1.5	0.19	22.4	1120	0.2 (1)
lindane	1,2,3,4,5,6-hexac	58-89-9	8	0.02	0.02	0.2	0.48	24	0.02 (1)
manganese		7439-96-5					320	16000	320
mercury		7439-97-6	4	0.2	0.2	0.0012	0.48	24	0.001 (1)
mercury (inorganic)		7439-97-6	4	0.2	0.2	0.0012	0.48	24	0.001 (1)
methanol		67-56-1	100000						100000
methylene chloride	dichloromethane	75-09-2	100		0.5		0.58	133	0.5
methoxychlor		72-43-5	10	4	4	1.003	160	8000	0.003
methyl butyl ketone	2-hexanone	591-78-6	100000						100000
methyl ethyl ketone	2-butanone, ME	78-93-3	4000				40	4000	40 (1)
molybdenum		7439-98-7							
nickel		7440-02-0	1000		- 10	6.96	32	1600	7
nitrate ion (as N)				1000	1000		2560	128000	1000

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APPENDIX A: OPTION II - SOIL CLEANUP LEVELS (ppm)

CONTAMINANT	SYNONYM	CAS #	DW DESIGNATION LIMIT	MTCA LIMIT (100X MCL) (final)/(proposed)	MTCA LIMIT (100X Criteria)	MTCA LIM (100X GW)	MTCA LIM (Soil)	CLEANUP LEVEL
nitrite				100	100		160	100
nitrobenzene		98-95-3	40			2700	0.4	40
PAHs (carcinogenic)			10000				0.00076087	0.086956522
PCB mixtures			10	0.05	0.05	0.0014	0.001	0.13
pentachlorophenol		87-86-5	100			0.32	24	2400
1-propanol	n-propyl alcohol	71-23-8	100000					100000
pyridine		110-86-1	100				0.8	80
radium-226 (pCi/kg)		7440-14-4	100000		300			300
radium-226 and 228 (pCi/kg)		7440-14-4	100000	500	500			500
selenium		7782-49-2	20	1	1	3.5	4.8	240
silver		7440-22-4	100	5	5	0.012	4.8	240
strontium - 90 (pCi/kg)		7440-24-6		800	800			800
sulfate ion					40000			40000
1,1,1,2-tetrachloroethane		630-20-6	10				24	2400
1,1,2,2-tetrachloroethane		79-34-5	10			240	0.02	5
tetrachloroethylene	tetrachloroethen	127-18-4	10	0.5	0.5	84	0.09	20
thallium		7440-28-0	10000		0.05	4	0.11	5.6
tin		7440-31-5					960	48000
toluene	methylbenzene	108-88-3	10000	100	100	1750	160	16000
toxaphene		8001-35-2	10	0.3	0.3	0.0013	0.008	0.91
TPH (gasoline)		8006-61-9						100
TPH (dicscl)								200
TPH (other)								200
tributyl phosphate	TBP	126-73-8	100000					100000
1,2,4-trichlorobenzene		120-82-1	100		0.9	25	16	1600
1,1,1-trichloroethane		71-55-6	100	20	20	1800	72	7200
1,1,2-trichloroethane		79-00-5	10		0.3	940	0.08	18
trichloroethylene	trichloroethene	79-01-6	10	0.5	0.5	2190	0.40	91
trichlorofluoromethane	Freon 11	75-69-4	100			1100	240	24000
1,1,2-trichloro-1,2,2-trifluoroethane	Freon 113	76-13-1	100				24000	2400000
trihalomethanes	trihalomethanes		100	10	10	1100		10
2,4,5-trichlorophenol		95-95-4	100					100
2,4,6-trichlorophenol		88-06-2	40			97	0.22	50
2,4,5-TP (Silverx)	2-(2,4,5-trichlor	93-72-1	20	1	1			1

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## APPENDIX A: OPTION II - SOIL CLEANUP LEVELS (ppm)

CONTAMINANT	SYNONYM	CAS #	DW DESIGNATION LIMIT	MTCA LIMIT (100X MCL) (final)/(proposed)	MTCA LIMIT (100X Criteria)	MTCA LIM (100X GW)	MTCA LIM (Soil)	CLEANUP LEVEL
uranium		7440-61-1		2		93	4640	2
vanadium		7440-62-2				11	560	11
vinyl chloride	chloroethene, ch	75-01-4	4	0.2	0.2	0.002	0.43	0.002 (1)
xylenes	dimethylbenzen	1330-20-7	10000	1000	1000	1600	160000	1000
zinc		7440-66-6	10000			4.7	320	16000
zirconium		7440-67-7						

(1) DW Cleanup Limits for these compounds assume complete extraction in the TCLP. Actual values may differ.

(2) Cleanup Levels for these compounds are taken from the MTCA Method A Table.

**Department of Energy**

Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

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92-RPA-114

APR 03 1992

Ms. Narda Pierce, Assistant Director  
for Waste Management  
State of Washington  
Department of Ecology  
P.O. Box 47600  
Olympia, Washington 98504-7600

Dear Ms. Pierce:

**NUCLEAR AND MIXED WASTE MANAGEMENT PROGRAM INTERIM SOIL CLEANUP POLICY**

This letter and enclosure contain our comments on the February 4, 1992, letter from Roger Stanley to Interested Parties on the Nuclear and Mixed Waste Management Program Interim Soil Cleanup Policy. We are extremely disappointed that Ecology issued an interim program policy to promote an integrated regulatory approach without following the express provisions and procedures established by the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement). The Tri-Party Agreement is the governing document for all Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6901 et seq., and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9621 et seq., cleanup activities at the Hanford Site. There is no question that soil cleanup standards are an integral part of the overall Hanford Site cleanup scheme. Instead of being unilaterally issued by Ecology, soil cleanup standards must be negotiated by all the parties and incorporated into the Tri-Party Agreement. We do not believe that it was appropriate for Ecology to have issued the Interim Policy and we request that it be withdrawn.

We believe that any formal application of the Interim Policy to cleanup at Hanford at the present time would constitute rulemaking in violation of statutory administrative provisions and requirements. The U.S. Department of Energy Richland Field Office (RL) cannot waive any of its rights to contest the inappropriate application of the Interim Policy to cleanups, remediations, and closures at Hanford.

Our review indicates that the Interim Policy is technically flawed because it:

- o does not accurately base cleanup standards on clear regulatory authorities;

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Ms. Narda Pierce  
92-RPA-114

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APR 03 1992

- o does not correctly describe closure and post-closure responsibilities and requirements under RCRA;
- o is inconsistent with CERCLA concepts of operable units which have been incorporated into the Tri-Party Agreement;
- o does not utilize well-founded scientific principles or evidence in setting numerical cleanup standards;
- o fails to correctly recognize and properly apply State Model Toxic Control Act (MTCA) provisions; and
- o is insensitive to potential inconsistencies between RCRA and the Atomic Energy Act (AEA), as amended.

In order to be considered an applicable or relevant and appropriate requirement (ARAR) pursuant to CERCLA, a State Standard must be promulgated and of general applicability within the state. The Interim Policy meets neither of these criteria. We therefore disagree and strenuously object to the State's declaration that the Interim Policy "is a to-be-considered ARAR for CERCLA sites" (See Lines 15 to 17 of Page 1 of Policy C-1, February 5, 1992). The MTCA cleanup standards should be evaluated for identification as an ARAR in accordance with Section 121 of CERCLA.

Despite the problems we have with the issuance and contents of the interim policy, we are prepared to continue to work with Ecology in a manner consistent with our policy of having open dialogue and the working relationships and procedures established by the Tri-Party Agreement. We believe that soil cleanup standards should be carefully, cooperatively developed and well founded on the regulatory requirements and authorities. Our agencies must also be sensitive to potential inconsistencies between RCRA and the AEA. Issues such as clean closure and the manner in which MTCA standards should be applied at Hanford and should be decided only after careful and detailed evaluation and discussion.

We are providing specific comments on the Interim Policy in the enclosure. Lengthy debate and delay can be avoided by scheduling discussions for resolving specific issues. The issues addressed in the enclosure and letters that will be raised during discussion should be considered in the development of a revised policy. It will be most helpful if full resolution and integration of AEA, RCRA, and CERCLA issues is achieved before formal agency policies are announced which affect our responsibilities under the Tri-Party Agreement. This will certainly improve working relationships between our agencies and provide assurance that the Hanford cleanup can proceed in an environmentally sound, mutually beneficial, effective, and cost-efficient manner.

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Ms. Narda Pierce  
92-RPA-114

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APR 02 1992

If you have any questions please contact me or Mr. Paul Krupin of my staff on  
(509) 376-5441.

Sincerely,



R. D. Izatt, Program Manager  
Office of Environmental Assurance,  
Permits, and Policy

EAP:PJK

Enclosure

cc w/encl:  
C. Clarke, Ecology  
D. Rasmussen, EPA  
~~W. Perch, EPA~~  
R. Stanley, Ecology  
P. Day, EPA

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## ENCLOSURE

COMMENTS ON INTERIM SOIL CLEANUP POLICY

1. Section 1: The definition of "environmental background" should be revised to reflect the definition of "natural background" in the Model Toxics Control Act (MTCA) regulations. The MTCA regulations recognize that natural background should be based upon contamination from *localized* human activities. Concentrations of radionuclides due to global distribution of fallout from bomb testing and nuclear accidents are considered natural background under MTCA regulations. The definition of environmental background should be changed to include only contamination resulting from localized human activities.
2. Section 3, 2nd paragraph: Although the goal of cleaning up the TSD unit may be commendable, in practice it may not be possible to distinguish between the extent of contamination associated with the TSD vs. the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) operable unit. It should also be recognized that, from a cost standpoint, early cleanup of a Treatment, Storage and Disposal (TSD) unit in the middle of a larger area of contamination that will be addressed at a later time may not make sense, even if the extent of TSD contamination can be defined.
3. Section 3, last sentence: Change to "This policy does not supersede the Federal Facility Compliance Agreement and Consent Order, or any applicable statute or regulation."
4. Section 4, item I: Although Washington Administrative Code (WAC) 173-303-610(2)(b)(i) indicates that background environmental levels must be reached for "clean closure," U.S. Department of Energy, Richland Field Office (RL) is aware that this requirement has not been consistently applied throughout the State. Approved closure plans for other facilities have established a precedent by allowing "clean closure" if health-based limits are reached. RL recommends that the policy be reconsidered based upon this approach. RL also supports efforts by the Association of Washington Businesses aimed at revising WAC 173-303-610 closure requirements to clearly allow the precedent of using health-based limits.

RL also notes that the policy inappropriately interprets the "clean closure" regulations to require cleanup to background environmental levels for hazardous substances. In actuality, the requirements of WAC 173-303-610 apply this standard only to those wastes regulated under the Federal Resource Conservation and Recovery Act (RCRA) program (i.e., listed and characteristic wastes). Per WAC 173-303-610(b)(ii), "clean closure" standards for State-only dangerous waste is possible at the designation limits. RL recommends revising the term "hazardous substance" in the first sentence of Section 4, item I to "hazardous waste" to conform with the scope of the regulatory requirements in WAC 173-303-610(2)(b)(i).

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ENCLOSURE  
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The cleanup levels shown in the Appendix do not reflect Practical Quantitation Limits (PQL's), despite the fact that Section 4, item II of the policy states that "in no case should the cleanup levels be set below either natural background concentrations for naturally occurring constituents, or the practical quantitation limits for any analyte." The cleanup level shown for chlordane, for example, is shown as 0.0004 ppm in Appendix A. According to EPA's *Test Methods for Evaluating Solid Waste* (SW-846), the method detection limit for this constituent is 0.014 ppb. In order to convert to a PQL, however, the method detection limit must be multiplied by a matrix factor. According to SW-846, this factor ranges from 10 for groundwater to 100,000 for non-water miscible waste. The multiplication factor for low-level soil is 670. Using this value, the PQL is 0.009 ppm, a value that is 20 times greater than the cleanup standard shown in Appendix A. Ecology needs to revise Appendix A to consider PQL's based upon appropriate SW-846 data.

RL requests further information regarding the basis of the dangerous waste designation limits shown in Appendix A. Some of the values in the Table appear to be based upon CERCLA Spill Table toxicity assignments rather than the more appropriate Registry of Toxic Effects of Chemical Substances information.

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ENCLOSURE  
Page 2 of 4

5. Section 4, item II, first sentence: What basis will be used for determining the WAC 173-303 designation limits for listed wastes (e.g., will the Environmental Protection Agency's (EPA's) "contained-in" policy be honored?).
6. Section 4, item II, third sentence: Why is the 100 X surface water limits stated? This is not consistent with MTCA standards, which use 100 X groundwater standards as a basis, but not necessarily 100 X the surface water limits. What is the basis for selecting this value? In reality, the 100 X value has no scientific validity, whether used in conjunction with surface water, groundwater, or drinking water standards.
7. Section 4, 1st paragraph after item III: Revise the last sentence to read "In no case will the Nuclear and Mixed Waste Management Program (N&MWMP) require cleanup or remediation of substances to below natural background levels or to levels which do not represent a threat to human health or the environment." As currently written, the sentence indicates that N&MWMP will *not* require cleanup "to levels which result in continued significant threat to the environment and/or human health." Obviously, this is in error.
8. Section 5, item II: Why would any additional requirements be imposed if the site is cleaned up to meet residential site standards of MTCA? No such requirements are mandated either by MTCA or by EPA's RCRA TSD requirements for clean closure. As noted previously, Ecology has already established a precedent of health-based standards, with no additional activities, in approved TSD closure plans. Even if Ecology believes some monitoring should be required if background environmental levels are not reached at the TSD unit due to the language in WAC 173-303-610(2)(b)(i), it is inappropriate to extend these additional requirements to non-TSD remediations. Additional requirements of this type are not mandated via MTCA regulations. Instead, cleanups that meet Method B cleanup levels for residential use are not subject to further control. RL believes this approach is appropriate for all cleanup/remediation activities, but especially should be extended to non-TSD actions.
9. Section 5, item II, last requirement: Revise this requirement to read as follows: "Returning the site to the appearance and use of the surrounding land use area *to the degree possible given the nature of the previous dangerous waste activity.*" The italicized language is appropriate to reflect the actual regulatory requirement as shown in WAC 173-303-610(2)(a)(iii). Ecology should recognize that capping a unit, as indicated in the first requirement under option II, may preclude returning the site to the use of the surrounding land area in certain instances. This situation is consistent with the actual regulatory requirement, but not with the inappropriate interpretation specified in the soil cleanup policy.

2061-AD08446