Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

FEB 03 1995

95-PCA-165

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington 99352

Mr. Joseph J. Witczak
Unit Supervisor
Regulatory and Technical Support Unit
Nuclear Waste Program
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Messrs. Sherwood and Witczak:

CLOSE-OUT OF THE 304 CONCRETION FACILITY CLOSURE PLAN NOTICE OF DEFICIENCY COMMENTS (TS-3-2, M-20-15)

References:
1. Letter, T. L. Nord, Ecology, to S. H. Wisness, RL, "Notice of Deficiency for the 303-K Radioactive Mixed-Waste Storage Facility Closure Plan and the 304 Concretion Facility Notice of Deficiency Response Tables," dated November 6, 1990. 11819
2. Letter, T. L. Nord, Ecology, to S. H. Wisness, RL, "Notice of Deficiency for the 304 Concretion Facility Notice of Deficiency Response Tables," dated April 3, 1991. 13469
3. Letter, S. E. McKinney, Ecology, to A. L. Rodriguez, RL, "Notice of Deficiency for the 304 Concretion Facility Notice of Deficiency Response Table Dated October 17th, 1991," dated February 27, 1992. 40411

The U.S. Department of Energy, Richland Operations Office (RL) and the Westinghouse Hanford Company (WHC) are submitting the completed 304 Concretion Facility Notice of Deficiency (NOD) response table to the U.S. Environmental Protection Agency (EPA) and the State of Washington Department of Ecology (Ecology). This NOD response table includes the 68 written comments on Revisions 0 and 1 of DOE/RL-90-03, "304 Concretion Facility Closure Plan," and the one verbal comment from Revision 2 of the Closure Plan. The basis of determining completion of the NOD response table is discussed below. Also, RL and WHC recommend that work on the final page changes to Revision 2 of the Closure Plan begin immediately. 17683 9111

At the November 17, 1993, Unit Managers' Meeting (UMM), the status of the 68 NOD comments from Revisions 0 and 1 of the Closure Plan was discussed. The 68 NOD comments were determined either to have been closed by References 1, 2, and 3 or provisionally closed as of this UMM pending Ecology's review of Revision 2 of the Closure Plan. 35774

Revision 2 of the Closure Plan was issued on November 30, 1993, for Ecology's review. At the September 23, 1994, UMM, the Ecology Unit Manager verbally indicated that the NOD comments (Number 1 through Number 68) from Revisions 0 and 1 of the Closure Plan had been adequately addressed in Revision 2 or in the Hanford Facility Resource Conservation and Recovery Act Permit (Hanford Facility RCRA Permit). On this basis, all of the NOD comments (Number 1 through Number 68) from Ecology's review of Revisions 0 and 1 of the Closure Plan, are considered to be resolved and closed as of September 23, 1994. 32892 39896

One verbal NOD comment on Revision 2 of the Closure Plan was provided by Ecology at the September 23, 1994, UMM. This comment noted that the Closure Plan Chapter 8, "Postclosure," did not include the notice to the local land-use authority. At the October 13, 1994 UMM, RL and WHC verbally accepted Ecology's comment. This single Ecology comment and the RL and WHC response have been added to the NOD response table as Comment Number 69.

With RL and WHC acceptance of Ecology's last verbal NOD comment (Number 69), RL and WHC consider the Closure Plan workshops and NOD response table to be complete. To prepare the Closure Plan for future public review and ultimate inclusion in the Hanford Facility RCRA Permit, work will begin immediately on the page changes required to incorporate NOD comment Number 69 into the Closure Plan.

Should you have any questions, please contact Ms. E. M. Mattlin, RL, on (509) 376-2385 or Mr. F. A. Ruck III, WHC, on (509) 376-9876.

Sincerely,

James E. Rasmussen

James E. Rasmussen, Acting Program Manager
Office of Environmental Assurance,
Permits, and Policy
DOE Richland Operations Office

EAP:EMM

William T. Dixon, Director
Environmental Services
Westinghouse Hanford Company

Enclosure:
304 Concretion Facility Notice of
Deficiency Response Table

cc w/encl:
Admin. Record
EDMC, H6-08
D. Duncan, EPA
M. Jaraysi, Ecology
S. McKinney, Ecology
F. Ruck III, WHC
J. Bartz, GSSC

cc w/o encl:
W. Dixon, WHC
R. Jim, YIN
D. Powaukee, NPT
S. Price, WHC
R. Wilkinson, CTUIR

Enclosure

304 Concretion Facility
Notice of Deficiency Response Table

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

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

November 6, 1990

Mr. Steven H. Wisness
Hanford Project Manager
U.S. Department of Energy
P.O. Box 550
Richland, Washington 99352

Re: Notices of Deficiency for the 303-K Radioactive Mixed-Waste Storage Facility Closure Plan and the 304 Concretion Facility Notice of Deficiency Response Tables

Dear Mr. Wisness:

This letter transmits Ecology's comments on the 303-K Radioactive Mixed-Waste Storage Facility and the 304 Concretion Facility Closure Plan Notice of Deficiency Response Tables of October 1990. The Response Tables were individually reviewed for compliance with final facility status standards in the state Dangerous Waste Regulations (Chapter 173-303 WAC).

Although these tables were reviewed separately, they were found to have the same primary areas of concern. These are as follows:

1. The changes proposed to address the lack of detail in these plans will not adequately correct their deficiencies.

2. Although the stated goal for these sites is clean closure, the closure strategy outlined will not fulfill the performance standards of the Dangerous Waste Regulations for clean closure.

3. The quality assurance and quality control remain inadequate.

4. The RCRA/CERCLA integration strategy proposed for these sites remains inappropriate and must be reevaluated.

5. Controls for the health and safety hazards associated with radioactive contaminants are still not adequately addressed. The cleanup of the radioactive constituents remains inappropriately deferred from the closure activities.

I am requesting that USDOE/WHC respond to these comments with revised Closure Plans. These Plans should be submitted no later than January 3, 1991. Should you have questions or concerns regarding these notices, please contact Megan Lerchen of my staff at (206) 438-3089.

Sincerely,

Timothy L. Nord
Hanford Project Manager

Enclosures

cc: P. Day - EPA, Richland
D. Duncan - EPA, Seattle
T. Michelena - Ecology, Olympia
T. Veneziano (AR) - WHC

DEPARTMENT OF ECOLOGY
NOTICE OF DEFICIENCY FOR
THE 304 CONCRETION FACILITY
NOD RESPONSE TABLE OF OCTOBER 1990
November 6, 1990

The following comments correspond to the numbers from the 304 Concretion Facility Closure Plan NOD Response Table dated October 5, 1990. Proposals made in the following comments are accepted by Ecology:

2	3	5	7	8	9	10	12	15	19	22
26	29	33	34	36	39	41	43	44	45	46
47	48	49	51	52	53	55	56	59	61	63
64										

Proposals made in the following comments are accepted by Ecology pending submission of further information as proposed in the USDOE-RL/WHC responses:

1	6	11	13	14	16	18	23	24	25	30
31	37	40	42	54	58	62	65	67		

Proposals made in the following comments are not accepted by Ecology:

4	17	20	21	27	28	32	35	38	50	57
60	66									

In numerous instances changes to the closure plan are proposed, yet the exact language is not provided. Following this course will result in USDOE/PNL producing a document without specific guidance from Ecology. In order to minimize the number of corrections that will be necessary in the next revision of the closure plan, the proposed changes will be addressed within the scope of the Unit Managers Meetings. Provide draft text revisions for the following comment numbers to Ecology for discussion purposes:

4	11	14	17	18	23	25	27	32	31	42
54	57	58	60	65						

It is anticipated that the above issues will be the most difficult to achieve consensus between the parties. Other issues may also cause confusion; text revisions for these may be provided to Ecology for comment as well.

General Comment: USDOE-RL/WHC repeatedly proposes development of clean closure performance standards that are not in accordance with those stipulated under WAC 173-303-610(2)(b). This is unacceptable; the only closure performance standards allowable under the Dangerous Waste Regulations for clean closure are those stipulated in WAC 173-303-610(2)(b). However, while clean closure is a desirable goal in all cases, in some instances it may not be feasible. If clean closure is not attainable, then compliance with the requirements of WAC 173-303-610(7) through -610(11) is necessary.

4. Comment: This NOD comment addresses a number of issues, these are as follows:

a. DOE-RL/WHC proposes, "If dangerous constituents are determined to exist in concentrations above action levels and reevaluation of action levels is not warranted, remediation of the soil will be evaluated under the CERCLA RI/FS process for the 300-FF-3 Operable Unit." This is not acceptable. See comment numbers 17 and 60.

b. DOE-RL/WHC states that because the proposed method of closure for the 304 Concretion Unit is clean closure, "... a postclosure plan is not required unless the facility cannot be clean closed." A postclosure plan is required; this must be included in the next revision of the closure plan.

c. DOE-RL/WHC proposes to include a number of paragraphs within the text in order to clarify the definitions of "baseline," "baseline threshold," and "action level." These terms should be defined in a section for acronyms, abbreviations, and definitions similar to that provided in Part B permit applications. How these concepts will be used in developing the cleanup strategy to be implemented after obtaining the results of the sampling and analysis at the unit should be provided in both the form of a narrative and flow-chart in the appropriate sections of the closure plan.

Requirement: Compliance with the above is required. Provide draft language to Ecology for interim guidance.

16. Transcription Error: The transcription of Ecology's NOD requirement incorrectly cites WAC 173-303 for the Model Toxics Control Act (MTCA). The citation as originally provided (WAC 173-340) is correct. Refer also to NOD comment number 18.

17. Comment: For clean closure, the building and concrete and asphalt pads must be decontaminated to the contamination levels stipulated in WAC 173-303-610(2)(b) or removed from the unit boundaries. The approach proposed for the soil cleanup is unacceptable. The soil must be cleaned to at least area background levels (area background is defined in WAC 173-340-200). If contamination remains in the soil that exceeds the performance standards stipulated in WAC 173-303-610(2)(b), then the unit can not be clean closed. A postclosure plan that provides for management of the unit within the CERCLA cleanup must be prepared.

Requirement: Compliance with the above is required. See also comment number 60.

18. Comment: USDOE-RL/WHC proposes to establish criteria for contamination levels that "pose a *subscantial* threat to human health or the environment" for certifying clean closure.

Requirement: Any criteria developed for threats to human health or the environment must be based on the cleanup standards of MTCA (WAC 173-340). Any criteria for closure must have Ecology concurrence. For clean closure, the cleanup standards are stated in WAC 173-303-610(2)(b).

20. Comment: USDOE-RL/WHC proposes sole use of samples obtained within the 304 Concretion Unit for establishing background concrete contamination levels. This is not acceptable.

Requirement: Concrete samples from areas not subject to contamination must be used for establishing a background concrete contamination value.

21. Comment: USDOE-RL/WHC proposes sole use of samples obtained within the 304 Concretion Unit for establishing background asphalt contamination levels. This is not acceptable.

Requirement: Asphalt samples from areas not subject to contamination must be used for establishing a background asphalt contamination value.

22. General Comment: Ecology accepts DOE-RL/WHC's assertion that the process sewer begins immediately beneath the building floor.

Requirement: Ecology will require that the permitting process for the 300 Area Process Sewers incorporate all sewer lines to the point where they enter a building floor.

24. Comment: The proposed language is acceptable, but further information is required on this topic in the sampling and analysis plan to adequately describe the verification sampling.

Requirement: Describe the sampling and analytical parameters for the verification sampling. This must include the sample size, target analytes, and quality assurance/quality control plan. Refer to the 2101-M Pond Closure Plan for guidance.

27. Comment: DOE-RL/WHC proposes expanding the text "to indicate the option of cleaning to baseline if feasible."

Requirement: Cleaning the unit's soils to at least area background contamination levels is not optional. Revise the closure strategy as necessary to reflect this. See comment numbers 17 and 60.

28. Comment: In order to clean close the 304 Concretion Unit, the contamination levels of dangerous wastes and dangerous waste residues must be decontaminated or removed to meet the performance standards stipulated in WAC 173-303-610(2)(b).

Requirement: This requirement must be integrated within the closure plan. See comment numbers 17 and 60.

32. Comment: Development of a soil sampling plan based on the 300 Area Solvent Evaporator (300 ASE) is inappropriate; the 300 ASE is located on top of a burial ground.

Requirement: The soil sampling plan must address vadose zone contamination at this unit.

35. Comment: Because of the past uses of this building, it is not possible to determine conclusively what type of contaminants will be expected due to past practices. For clean closure it is required that all dangerous wastes or waste residues (including soil) be cleaned or removed to the performance standards stipulated in WAC 173-303-610(2)(b). Levels of contamination in the soils above these performance standards but below area background values may be managed under the CERCLA clean-up if this is provided for within the postclosure plan.

Requirement: Revise the closure plan to comply with the above. See comments 17 and 60.

38. Comment: Analysis for only a limited number of organic compounds is proposed, see comment number 35.

Requirement: A more comprehensive list of organic analytes must be evaluated.

44. Comment: Concrete and asphalt background samples may not be obtained within a TSD unit.

Requirement: Refer to comment numbers 20 and 21.

50. Comment: USDOE-RL/WHC proposes that the requirement for the unit-specific personnel decontamination procedures be provided in the Hanford Site-Wide health and safety plan.

Requirement: The unit-specific plan must be presented within the unit's closure plan. It is anticipated that the health and safety plan for the 304 Concretion unit will be more detailed than that for the Site-wide. Refer to comment number 54.

52. Comment: This is acceptable if uranium testing is the only variance from the analytical methods stipulated in WAC 173-303-110.

Requirement: Any analytical methods which deviate significantly from the methods stipulated in WAC 173-303-110 must be submitted to Ecology to determine acceptance prior to their use.

57. Comment: Although Ecology requested information regarding training, USDOE/WHC states that the information provided is, "sufficient for the purposes of this closure plan." The information presented is not adequate.

Requirement: Describe the course contents and list which training is required for individual job classifications.

60. Comment: There appears to be some confusion about the closure strategy acceptable to Ecology. This unit is being permitted to close under WAC 173-303, therefore, the performance standards of WAC 173-303-610 must be met. Ecology has determined that if clean closure of the soils to these standards is not appropriate due to wide spread contamination throughout the 300-FF-3 Operable Unit then the soils must be cleaned to a local area background contamination levels and the RCRA postclosure must be managed within the requirements of the CERCLA closure.

Requirement: Ecology will accept a closure plan in which soils with contamination levels exceeding the performance standards stipulated under WAC 173-303-610(2)(b) may be left in place under the following two conditions:

- The contamination levels do not exceed the area background contamination levels present throughout the 300-FF-3 Operable Unit and
- The RCRA postclosure plan provides for management of the 304 Concretion Unit within the CERCLA cleanup.

Revise the closure plan accordingly.

62. Comment: DOE-RL/WHC states, "... equipment used during closure activities will be decontaminated or disposed of according to EIIs 4.2, 5.4, and 5.5."

Requirement: This is acceptable pending Ecology's review of the cited EIIs. Ecology anticipates that these will be reviewed as part of the development of the Hanford Site-Wide Permit.

65. Comment: DOE-RL/WHC argues that a legal description of the unit is not required at this time because a) it is not required under WAC 173-303 if the unit is clean closed or b) if it is not clean closed, the information would not be provided until after remediation because the size of the area to be remediated would not be known.

Requirement: In order to plan a cleanup of this unit, it is necessary to know the boundaries. Ecology realizes that there is some difficulty in obtaining the precise legal boundaries at this point in time, however, we also recognize that boundaries must be determined in order to determine the scope of the cleanup for this unit. Provide the legal description of this unit when the information is available. In the interim, provide a description and illustration of the boundaries of this unit for use in the closure of the unit. Note that the asphalted area surrounding the building will be considered part of this unit. The sampling plan must be revised to incorporate this area.

66. Comment: DOE-RL/WHC proposes to provide a postclosure plan if the soil cannot be clean closed which will describe, "... the interim stabilization and care prior to remediation under the CERCLA RI/FS process." This is not adequate for the purposes of a postclosure plan. The postclosure plan

must be provided with the closure plan. It must provide for management of the unit through the CERCLA closure process. Refer to WAC 173-303-610(7) for guidance. It will not be necessary to implement the postclosure plan if the performance standards of WAC 173-303-610(2)(b) for clean closure are met.

Requirement: Compliance with the above is required.

68. Comment: USDOE-RL/WHC explains the table title indication of a 5 percent frequency.

Requirement: This type of information should be provide in the quality assurance/quality control section of the closure plan. Refer to the 2101-M Pond Closure Plan in development for guidance.

DEPARTMENT OF ECOLOGY
NOTICE OF DEFICIENCY FOR
THE 303-K STORAGE FACILITY NOD
RESPONSE TABLE OF OCTOBER 1990
November 6, 1990

The following comments correspond to the numbers from the 303-K Radioactive Mixed-Waste Storage Facility Closure Plan NOD Response Table dated October 5, 1990. Proposals made in the following comments are accepted by Ecology:

1	2	5	8	9	10	11	13	15	18	19
20	22	29	30	31	35	39	40	42	44	45
46	47	48	52	55	57	60	61			

Proposals made in the following comments are accepted by Ecology pending submission of further information as proposed in the USDOE-RL/WHC responses:

3	4	6	16	28	32	33	34	36	38	41
43	49	50	54	58	59					

Proposals made in the following comments are not accepted by Ecology:

7	12	14	17	21	23	24	25	26	27	28
37	51	53	56	62						

In a number of instances changes to the closure plan are proposed, yet the exact language is not provided. Following this course will result in USDOE/PNL producing a document without specific guidance on these topics from Ecology. In order to minimize the number of corrections that will be necessary in the next revision of the closure plan, the proposed changes will be addressed within the scope of the Unit Managers Meetings. Provide draft text revisions for the following comment numbers to Ecology for discussion purposes:

4	12	16	25	36	49	50	53	56	62

It is anticipated that the above issues will be the most difficult to achieve consensus between the parties. Other issues may also cause confusion; text revisions for these may be provided to Ecology for comment as well.

General Comment: USDOE-RL/WHC repeatedly proposes development of clean closure performance standards that are not in accordance with those stipulated under WAC 173-303-610(2)(b). This is unacceptable; the only closure performance standards allowable under the Dangerous Waste Regulations for clean closure are those stipulated in WAC 173-303-610(2)(b). However, while clean closure is a desirable goal in all cases, in some instances it may not be feasible. If clean closure is not attainable, then compliance with the requirements of WAC 173-303-610(7) through -610(11) is necessary.

3. Comment: USDOE-RL/WHC states that additional maps will be provided if a specific request is made.

Requirement: Maps which delineate the waste management areas, and describe and illustrate the land uses in the immediate area (i.e., what are the nearby buildings, etc.) must be included in the next revision of the closure plan.

6. Comment: The USDOE-RL/WHC discussion along with the proposed new tables and drawings will provide the information requested by Ecology.

Requirement: Revise the text of the closure plan to include the discussion provided in this response.

7. Comment: The information presented is not adequate for documenting that Table 4-1 covers all wastes sent to the unit.

Requirement: Edit the text and legend regarding this table to indicate it is not comprehensive. In addition, incorporate the text presented in the closure plan.

12. Comment: DOE-RL/WHC proposes to include a number of paragraphs within the text in order to clarify the definitions of "baseline," "baseline threshold," and "action level." Any terms not defined should be defined in a section for acronyms, abbreviations, and definitions similar to that provided in Part B permit applications. How these concepts will be used in developing the cleanup strategy to be implemented after obtaining the results of the sampling and analysis at the unit should be provided in both the form of a narrative and flow-chart in the appropriate sections of the closure plan. Ascertain whether or not these terms are appropriate within the requirements of Chapter 173-303 WAC, see the next paragraph for guidance.

The proposed text and clean closure objectives are not acceptable. The original requirement in Ecology's NOD stated that the closure standard for this facility will be background. From USDOE-RL/WHC's response it appears that clarification of this comment is necessary. Under WAC 173-303-610(2)(b), closure performance standard, the levels of dangerous waste or dangerous waste constituents or residues remaining after closure of a unit may not exceed background environmental levels or designation limits for clean closure. If these performance standards cannot be met then the unit is subject to subsections (7) through (11) of WAC 173-303-610. Refer to WAC 173-303-610 for guidance.

The approach proposed for the soil cleanup is unacceptable. The soil must be cleaned to at least area background levels (area background is defined in WAC 173-340-200), not baseline. A postclosure plan that provides for management of the unit within the CERCLA cleanup must be prepared.

Requirement: Compliance with the above is required.

14. Comment: USDOE-RL/WHC proposes sole use of samples obtained within the 304 Concretion Unit for establishing background concrete contamination levels. This is not acceptable.

Requirement: Concrete samples from areas not subject to contamination must be used for establishing background concrete contamination values.

17. Comment: USDOE-RL/WHC proposes to revise the text to, "The decision on remediation of soil (clean to baseline or defer to CERCLA) ...."

Requirement: The soils must be remediated to at least area background contamination levels. See comment number 12.

21. Comment: USDOE-RL/WHC proposes a text revision to state, "... waste stored more than 90 days will be transferred ...." This does not give all the information requested in the original comment. It is unacceptable to have dangerous waste stored in the same location in which closure activities are taking place.

Requirement: Specify the locations where waste will be transferred and the timing of the transfer for all waste stored at the unit, including waste stored less than ninety days.

23. Comment: USDOE-RL/WHC will describe any deviations from required test methods.

Requirement: Procedures for any test method which deviates from required test methods must be submitted to Ecology with a request for approval of the substitute method.

24. Comment: Development of a soil sampling plan based on the 300 Area Solvent Evaporator (300 ASE) is inappropriate; the 300 ASE is located on top of a burial ground.

Requirement: The soil sampling plan must address vadose zone contamination at this unit. Refer to the 2101-M Pond Closure Plan in development for guidance.

25. Comment: USDOE-RL/WHC states that all of the dangerous waste constituents stored at the 303-K Facility are listed on Table 7-1.

Requirement: This table must be revised to list all constituents of concern. This includes any radioactive constituents. Refer to Section 6.3 of the Hanford Federal Facility Agreement and Consent Order. This requirement also applies to comment numbers 26 and 27.

30. Comment: USDOE-RL/WHC states that the *Environmental Investigations and Site Characterization Manual* (EII Manual, WHC-CM-7-7) has been submitted as part of the Hanford Site-Wide permit and that no changes to the text are required.

Requirement: Reference to the entire EII manual is not acceptable. The specific section must be referenced. Note that acceptance of any EII procedure is dependent on Ecology review and approval. Ecology anticipates that these will be reviewed as part of the development of the Hanford Site-Wide Permit.

36. Comment: USDOE-RL/WHC is developing a set of criteria for baseline values in the 300 Area.

Requirement: The appropriate criteria is area background (see comment number 12). A plan for determining these values must be submitted to Ecology; it should include at least the sampling plan, a quality assurance/quality control plan, and a timetable for this effort. This plan may be submitted under separate cover and used for TSD units throughout the 300-FF-3 Operable Unit.

37. Comment: Concrete and asphalt samples obtained within a TSD unit will not be accepted for determination of background contamination values.

Requirement: Refer to comment number 14.

51. Comment: USDOE-RL/WHC proposes revising the text to state, "The 90-day period will begin when the material is designated." As previously stated, the 90-day clock begins at the time of generation; counting the 90-day period from the time of designation is likely to result in non-compliance.

Requirement: Revise the text to state, "The 90-day period will begin when the material is *generated*."

53. Comment: Although Ecology requested information regarding training, USDOE/WHC states that the information provided is, "adequate for this closure plan." The information presented is not adequate.

Requirement: Describe the course contents and list which training is required for individual job classifications.

56. Comment: USDOE-RL/WHC states that in no case will a cover design be necessary. If it is determined after the sampling and analysis that it will be necessary for contaminated soils to be left in place until the CERCLA cleanup then a cover may be required; no other contaminated materials will be allowed to be left in place. This cover must be designed and approved prior to closure as part of the postclosure plan.

Requirement: Submit specifications for cover materials and design within the required postclosure plan. See comment number 62.

62. Comment: USDOE-RL/WHC states that they will not submit a postclosure plan. A postclosure plan is required, it should be presented in the form of an additional chapter to the closure plan with appendices as appropriate.

Requirement: A postclosure plan that provides for management of the unit within the CERCLA cleanup must be prepared and submitted to Ecology.

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

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

April 3, 1991

Mr. Steven H. Wisness
Hanford Project Manager
U.S. Department of Energy
P.O. Box 550
Richland, Washington 99352

Re: Notice of Deficiency for the 304 Concretion Facility Notice of Deficiency Response Table

Dear Mr. Wisness:

This letter transmits Ecology's comments on the 304 Concretion Facility Closure Plan Notice of Deficiency Response Table dated January 30, 1991. The information presented was reviewed for compliance with final facility status standards in the state Dangerous Waste Regulations (Chapter 173-303 WAC).

The areas of concern for this closure plan are as follows:

1. The level of detail is inadequate.

2. Proposals relating to closure standards will be impacted by a closure policy that is currently being developed by the Nuclear and Mixed Waste Management Program (N&MWMP).

3. The quality assurance and quality control provisions remain inadequate.

4. Controls for the health and safety hazards associated with radioactive contaminants are still not adequately addressed. Furthermore, it is unacceptable to omit cleanup of the radioactive constituents from these closure activities.

Mr. Steven H. Wisness
April 3, 1991

USDOE/WHC must respond to these comments with a revised closure plan. However, because the revision will be affected by the N&MWMP Closure Policy under development, the date for submittal will be transmitted to USDOE/WHC with the finalized policy. Should you have questions or concerns regarding this notice, please contact Ms. Megan Lerchen of my staff at (206) 438-3089.

Sincerely,

Timothy L. Nord
Hanford Project Manager

Enclosure

cc: P. Day - EPA, Richland
D. Duncan - EPA, Seattle
D. Nylander - Ecology, Kennewick
T. Michelena - Ecology, Olympia
T. Veneziano (AR) - WHC

DEPARTMENT OF ECOLOGY
NOTICE OF DEFICIENCY FOR
THE 304 CONCRETION FACILITY
NOD RESPONSE TABLE OF JANUARY 1990
April 3, 1991

The following comments correspond to the numbers from the 304 Concretion Facility Closure Plan NOD Response Table dated January, 1990. Underlined numbers signify changes made since the previous NOD. Proposals made in the following comments are accepted by Ecology:

2	3	5	7	8	9	10	11	12	14	15
19	22	26	28	29	31	33	34	36	39	41
42	43	44	45	46	47	48	49	51	52	53
55	56	58	59	61	63	64	65			

Proposals made in the following comments are accepted by Ecology pending our review of further information as proposed in the USDOE-RL/WHC responses:

1	6	13	16	18	23	24	25	30	35	37
40	54	62	65	67						

Proposals made in the following comments are not accepted by Ecology:

4	17	20	21	27	32	38	50	57	60	66

4. USDOE/WHC Proposal: A number of proposals relating to closure standards are made.

Ecology Response: Ecology is developing a policy for soil closure standards. It is anticipated that this policy will impact the proposals made by USDOE/WHC. In keeping with the Tri-Party Agreement, an integral part of this policy will be the goal of only one remediation at any unit; i.e., it will not be acceptable to postpone any part of the closure activities to the 300-FF-3 Operable Unit response. This closure policy will be made available to USDOE/WHC as soon as possible.

17. USDOE/WHC Proposal: USDOE-RL/WHC discusses a closure strategy.

Ecology Response: The acceptability of this proposal will be dependent on conformance with the Ecology closure policy which is in development. See number 4 for details.

18. USDOE/WHC Proposal: Setting health-based standards for closure.

Ecology Response: The Ecology policy for closure will cover health-based standards. See number 4.

304 Concretion Facility Closure Plan
Second NOD Response Table Comments
April 3, 1991

20. USDOE/WHC Proposal: Using TCLP to demonstrate that potentially contaminated concrete samples do not designate as dangerous waste.

Ecology Response: This approach seems reasonable but too narrow in scope; following the designation procedure delineated under WAC 173-303-070 will be acceptable. This may not be sufficient for clean closure, however, and it will be necessary to close in accordance with the N&MWMP closure policy under development. See number 4.

21. USDOE/WHC Proposal: Similar testing for asphalt as for concrete to demonstrate that it is not dangerous waste.

Ecology Response: This approach will be acceptable under the same caveats as for concrete. See number 20.

23. USDOE/WHC Proposal: Determination of area background is proposed at the surface, one foot, and two feet depths. It is stated that, "If general or source contamination exists, it would be from the past practice operations and not from operations conducted in the 304 Facility. The Tri-Party Agreement states source contamination will be evaluated and remediated under the CERCLA RI/FS process."

Ecology Response: It is not clear if this proposed background determination is to be used as part of the Hanford Site-Wide background study. If it is not, this should be clearly stated. If it is, this evaluation of the vadose zone background contaminant levels is too limited in scope. Because comparisons of contaminated vadose zone data to the 300 Area background data must be between the same soil horizons for this unit and others, the plan must be expanded to include deeper soil horizons. Refer to the Hanford Site-Wide soil background study for reference.

In the quoted statement, the first sentence is unsubstantiated and the second sentence is not in agreement with the general tenor of the Tri-Party Agreement and will not be in accordance with the closure policy under development by the N&MWMP. The quoted statement should be deleted.

25. USDOE/WHC Proposal: Inclusion of the proposed flowchart (Figure 6-1) and text (Section 6.2). There is no flowchart labelled Figure 6-1, however, the chart labelled GEN\122890-A appears to fulfill the same function and was assumed to be Figure 6-1.

Ecology Response: The flowchart is acceptable but will probably require some revision to accommodate the closure policy currently under development. The proposed text seems a little sketchy; further details

must be provided in later text. It will also need to be revised to accommodate the closure policy under development. See number 4.

27. USDOE/WHC Proposal: USDOE/WHC states, "With the exception of imminent danger, all soil remediation will be conducted under the CERCLA RI/FS process."

Ecology Response: This is unacceptable, see previous Ecology NOD's for this unit. Additionally, it will be in conflict with the Ecology closure policy in development. See number 4 for additional details.

32. USDOE/WHC Proposal: Sampling of soils to a maximum depth of two feet because it is predicted that contaminants will remain in the uppermost portion of the vadose zone due to soil sorption.

Ecology Response: While it is correct that sorbed contaminants would be expected to be in the uppermost layer, assuming that all contaminants will sorb is not correct. See, for example, Freeze and Cherry 1979 or W.B. Mills *et al.*, Journal of Association of Ground Water Scientists and Engineers, March-April 1991.

Samples must be taken at the soil-concrete and soil-asphalt interfaces, one foot, two feet, and three feet depths. The closure plan must describe the sampling methods, sample sizes, and analytical methods to be employed. The closure plan must also have detailed provisions for the case where contamination is detected at three feet (the lowest horizon). This contingency must be provided for in the scheduling of the closure activities. More specifically, the closure plan must have plans for resampling to greater depths and removal/remediation of contamination at depths greater than the initial soil sampling. In addition, all phases of the closure activities must occur in a timely fashion (including any resampling and removal/remediation necessary). See number 23.

35. USDOE/WHC Proposal: Reevaluation of the chemicals known to have been stored and used in the 304 Facility.

Ecology Response: The reevaluation is acceptable but implementation may be impacted by the closure policy under development (as discussed at the February 12, 1991, Unit Manager's Meeting). See number 4.

38. USDOE/WHC Proposal: The compounds listed in Table 7-1 are the only organic compounds associated with the 304 Facility and the only organic compounds which will be evaluated for closure.

304 Concretion Facility Closure Plan
Second NOD Response Table Comments
April 3, 1991

Ecology Response: This is unacceptable. See number 35.

50. USDOE/WHC Proposal: Postpone addition of the unit-specific health and safety plan to the closure plan until sampling occurs.

Ecology Response: This is not acceptable. This plan must be submitted prior to approval of the closure plan; sufficient time for Ecology review is required. The health and safety plan must be included with the next submittal.

54. See number 50.

57. USDOE/WHC Proposal: Inclusion of proposed text, table, and appendix.

Ecology Response: This is not adequate because it is too narrow in scope. For example, the 304 Concretion Facility has radiation zones, but RPT's are not covered. Expand the training section to cover all of the personnel which are required to be present during the closure activities.

60. See number 4.

66. See number 4.

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

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

February 27, 1992

Ms. Annabelle Rodriguez
304 Concretion Unit Manager
U.S. Department of Energy
P.O. Box 550
Richland, WA 99352

Re: Notice of Deficiency for the 304 Concretion Facility Notice of Deficiency Response Table Dated October 17th, 1991.

Dear Ms. Rodriguez:

This letter transmits Ecology's Notice of Deficiency (NOD) for the 304 Concretion Facility Closure Plan Revision 1 and accompanying NOD Response Table dated October 17, 1991. The majority of the outstanding issues for the 304 Concretion unit concern the closure performance standards. These standards were recently issued in the Nuclear and Mixed Waste Management Program Soil Clean-up Remediation Policy (SCP).

The Notice of Deficiency comments are intended to be a guide to the major outstanding sections of the closure plan which are currently unresolved, and which will be impacted by the SCP. In addition, there are some interpretive comments regarding application of the SCP to the 304 Concretion unit. It is anticipated that upcoming Unit Manager meetings will be concerned with the specifics on how Ecology and Westinghouse Hanford Company foresee applying the SCP to this unit. These specifics will then be incorporated into the closure plan. The Soil Clean-up Remediation Policy is included with this transmittal.

If you have any questions, please contact me at (206) 493-9425.

Sincerely,

Scott E. McKinney

Scott E. McKinney
304 Concretion Unit Manager
Nuclear and Mixed Waste Management Program

SM:jw
Enclosure

cc: Dan Duncan, EPA
Fred Ruck, WHC
T.B. Veneziano, WHC/AR
Dave Jansen, Ecology
Dave Nylander, Ecology

DEPARTMENT OF ECOLOGY
NOTICE OF DEFICIENCY FOR
THE 304 CONCRETION FACILITY CLOSURE PLAN
NOTICE OF DEFICIENCY RESPONSE TABLE
DATED OCTOBER 17, 1991
February 28, 1992

The numbers used below reflect the numbers used in the Notice of Deficiency (NOD) Response Table dated October 17th, 1991.

Proposals made in the following comments are accepted by Ecology (underlined numbers indicate new items since the last NOD cycle):

2	3	5	6	7	8	9	10	11	12	13	14
15	19	22	26	28	29	30	31	33	34	36	39
40	41	42	43	44	45	46	47	48	49	51	52
53	55	56	57	58	59	61	63	64	67		

Proposals made in the following comments are not accepted by Ecology:

1. This requirement will be satisfied if all the other elements of the closure plan have been approved.

4. See the N&MWMP Soil Cleanup Policy (SCP), attached to this NOD. In particular, options 2 and 3 are the only options under which any contaminants may remain in the soil above natural background levels. This closure plan will need to state which option this unit is intended to be closed under, and the levels to which the soil will be remediated. Please note that taking no action to remediate the soil, unless current soil contaminant levels are below the option 1 or 2 levels, will require full post-closure activities, including but not limited to ground water monitoring, capping, access restrictions, etc. This closure plan may contain the option of sampling the soil to determine contaminant levels prior to choosing the course of action, but the plan must include the full details of all possible options (i.e., post-closure requirements).

16. The language in this section will need to be modified to reflect the closure option selected from the SCP. In particular the actions to be taken in the event clean closure is not achievable must be included with this section, including the postclosure plan.

17. Again, the language in this section will need to be modified to reflect the closure options available for the 304 Concretion unit. In particular the postclosure elements of option 2 and/or 3 must be included in the plan.

18. This section must be revised to reference the SCP regarding closure standards for soils. Also, it will not be possible to leave soil contaminants for later remediation under the operable unit. See comment number 4.

304 Concretion Facility Closure Plan
October 17th, 1991 NOD Response Table Comments
February 28, 1992

20. It continues to be the position of Ecology that concrete background must be determined from samples taken at units not impacted by past practices. Ecology is requiring that four samples be taken at different concrete "pours" around the Hanford Facility. These samples will be fully characterized and compared in order to determine what the potential range of constituent concentrations may be found in concrete pours. This approach will determine what constituents are commonly contained in concrete, and the range of variation in different pours. In addition, it will clarify what, if any, dangerous waste constituents are commonly or potentially contained in the concrete at dangerous waste designation levels. The constituents of concern that may be found in concrete should only be inorganic elements. If the variation between samples is not significant statistically, a median value for each element could be determined, and this median value could possibly be applied to other units undergoing closure at the Hanford Facility (e.g. 303-K, and 105-DR). Even if there are wide variations between the samples for certain elements, the information obtained through the sampling and analyses will help determine whether there is a potential designation problem with uncontaminated concrete. DOE-RL/WHC/PNL must submit a proposal for this background sampling to Ecology for approval prior to sampling.

21. A process similar to the concrete background plan outlined in comment number 20 will be used for asphalt. See comment number 20.

23. The use of 300 area local background levels for comparison to the 304 Concretion unit soil background levels is no longer the appropriate method. In order to qualify for a "clean closure" under WAC 173-303 it will be necessary to show that no contaminants remain in the soil that exceed the Hanford Facility-wide background levels, as determined by the Characterization and Use of Soil and Groundwater Background for the Hanford Site (Hoover and LeGore, 1991). Following approval by Ecology of this study and the findings, they will become the standards used for background closures at the Hanford Facility.

24. With the issuance of the SCP, it is not appropriate for soil remediation to be deferred to the CERCLA process. Text addressing the verification sampling of excavated sites must be discussed in the appropriate section of this closure plan. This verification sampling should reflect the closure standards of the SCP.

25. Figure 6-1 will need to be revised to reflect the SCP standards. In particular, the flow path for soils will need to be changed, since deferral to the CERCLA process is not appropriate.

27. This section of the plan must be revised to follow the SCP. See comment number 4.

304 Concretion Facility Closure Plan
October 17th, 1991 NOD Response Table Comments
February 28, 1992

28. The language in this section regarding soil remediation must be changed. Specifically, soils which do not meet performance standards will not be left for remediation under CERCLA. Also, interim stabilization referenced here must be explained in greater detail in Chapter 8.0, in order for option 2 of the SCP to be utilized.

32. This section must be re-evaluated in light of the SCP. Sampling plans for the various scenarios possible at the 304 Concretion unit must be explained fully. For example, it will be necessary to characterize the soil beneath the 304 Concretion unit and to compare the values for the soil with the SCP. Once the soil has been characterized it can be determined what closure option is most appropriate.

35. The primary impact to this section by the SCP will be the expansion of the soil analyte parameters to include full characterization of the soils underlying the 304 Concretion unit. See comment number 4. In regard to the constituents to be analyzed, all of the analytes included in the SW-846 test methods selected for use in this sampling plan should be included in the data report. In other words, for SW-846 method 6010, all of the elements listed in Table 1 of that section should be included in the analyses. These expanded analyte parameters will add to the information available for evaluating the potential contamination at the 304 Concretion unit due to unknown chemicals stored here in the past.

37. The information contained in DOE-RL/WHC response number 1 concerning the EPA wipe sampling procedure "A compendium of Superfund Field Methods, EPA P-87-001", has not been added to this section. If it has been added to this section, or another section of this plan, it can be pointed out at the next Unit Managers meeting, and this issue will be closed. However, if it has not been added, it must be included before this issue can be closed.

38. See comment number 35.

44. See comment numbers 20 and 21.

50. As discussed at the December 19th, 1991 Unit Managers meeting, it may be acceptable to defer submittal of the Health and Safety Plan until just prior to sampling at the site. This is contingent upon the submittal of an example Hazardous Waste Operation Permit to Ecology. The exact details of the timing of HASP submittal and the sampling plan/closure plan approval will be discussed at future Unit Managers meetings.

54. See response number 50.

60. The SCP will impact this section. Namely, it is not acceptable to leave contaminated soils that exceed the SCP performance standards in place for remediation under the CERCLA process.

62. There are portions of these documents, particularly E.I.I. 4.2, that are not acceptable practices. For example, it is not acceptable at this facility to delay the marking of the accumulation date for suspected hazardous waste until after the waste has been verified as dangerous waste or it meets the requirements of section 6.4 of E.I.I. 4.2. In general, these documents are open-ended and vague, and do not consistently comply with WAC 173-303. It may be more efficient to write specific requirements for decontamination and interim storage of suspected dangerous waste than to try to change the E.I.I.'s.

65. The legal description of the facility has not been added to the post-closure section. Page 8-1, line 25.

66. All the possible options for closure of the 304 Concretion unit must be explained in detail within the closure plan. This includes the postclosure plan if one of the options for this unit is to leave dangerous waste and/or constituents in place. In the past DOE-RL/WHC have stated that their intention is to leave dangerous waste in place in the soil. If this is the closure approach for this facility, then it is necessary to submit a postclosure plan along with a permit application. WAC 173-303-610 calls for the postclosure plan to be submitted with the permit application within 90 days following the decision by the owner or operator or the department that the unit must be closed as a landfill (i.e., dangerous waste will be left in place upon closure).

68. The wording following the dash in the Table B-1 title should be deleted. The new title will read: "The 304 Wall Sampling Locations." Please note that Table B-1 on page B-2 also needs to be corrected. Correct the other table titles in B-2 as necessary.

No.	Comment/Response	Ecology Concurrence
1.	General Comment. In general, the lack of detail in this closure plan led to a large number of deficiencies. Ecology Requirement: Revise this plan so that it is in compliance with the requirements of WAC 173-303-610. For example, under WAC 173-303-610(3)(a)(iv), the closure plan must include, "a detailed description of the methods to be used during partial closures and final closure ...." This information is not presented in the closure plan. In addition, in Ecology's letter of May 2, 1990, to R. D. Izatt and R. E. Lerch from T. L. Nord, some comments were made on the DOE's proposed standardized outline for closure/postclosure plans. The suggestions made in these comments should be followed in order to improve this closure plan. Refer to the enclosed copy of this letter for guidance. **DOE-RL/WHC Response No. 1: Additional detail will be provided where needed. The responses to the suggestions in Ecology's letter of May 2, 1990, are as follows.** **1. Line numbering was used in this Revision 0 and will continue to be used.** **2. The Part A permit application will be moved from the introduction to a separate section.** **3. A brief description of each chapter and appendix will be included in the introduction, similar to Part B permit applications.** **4. A bar graph was included in Revision 0 and will continue to be used in the closure plan.** **5. This information will be included in a postclosure plan if one is required for this facility; however, this information is not required for a closure plan.** **6. Official notifications are provided in separate sections in Revision 0. Certification of Closure is a closure activity (Chapter 7.0) and is in Section 7.9. The Notice In Deed is part of the Postclosure (Chapter 8.0) and is in Section 8.1.**	UMM of November 17, 1993

No.	Comment/Response	Ecology Concurrence

The schedule for closure is provided in Section 7.7 and in Figure 7-15.

Ecology Response No. 1 (Rev. 1): This requirement will be satisfied if all the other elements of the closure plan have been approved.

DOE-RL/WHC Response No. 2: This NOD comment will be considered accepted when the other NOD comments are resolved.

2. General Comment. The closure plan could be followed more easily if sections requiring detail (such as the quality assurance and quality control sections) were presented in appendices. Refer to the 616 Nonradioactive Dangerous Waste Storage Facility Permit Application for guidance. — Ecology letter of November 6, 1990

DOE-RL/WHC Response: Detailed sections will be included in appendices where appropriate. In addition, a quality assurance project plan will be included as an appendix.

3. Page 1-1, line 21. The Resource Conservation and Recovery Act of 1976 (RCRA) is referenced for a definition of closure. — Ecology letter of November 6, 1990

Ecology Recommendation: This facility will be closed under the State Dangerous Waste Regulations, WAC 173-303. Closure is defined und r WAC 173-303-040(12); this would be a more appropriate reference.

DOE-RL/WHC Response: The reference to *Washington Administrative Code* (WAC) 173-303-040 will be included in the closure plan.

4. Page 1-1, line 29. The plan states that because the 304 Concretion Facility (304 Facility) is located in the 300-FF-3 (source) and 300-FF-5 (groundwater) Operable Units, "... any remedial action with respect to contaminants not associated with the facility will be deferred to the CERCLA process." This approach does seem reasonable for the soils underlying the 304 Facility structures, however, it is not sufficiently developed here or elsewhere in the closure plan for evaluation. — UMM of November 17, 1993

No.	Comment/Response	Ecology Concurrence

Ecology Requirement: The following must be presented in the closure plan so that the acceptability of the above approach may be evaluated:

- Criteria to determine whether contamination should be addressed under the RCRA or CERCLA process.
- A postclosure plan which provides for administration of the site until closure of the applicable operable unit.

DOE-RL/WHC Response No. 1: Clarification and additional information will be provided, where appropriate, to evaluate the 304 Concretion Facility closure approach regarding the RCRA and CERCLA interface. In addition, a clearer definition of baseline and action levels will be provided with relationship to clean closure. The following paragraphs will be included in Chapter 6.0 of the closure plan.

> **"Three important terms in the following information on the 304 Facility closure strategy are 'baseline', 'baseline threshold', and 'action levels'. Baseline is the set of analytical results of the local background samples. Baseline, therefore, refers to the population of constituent concentrations in the soil or building materials in the vicinity of the 304 Facility that are not attributable to the 304 Facility operations. Baseline threshold refers to concentrations that define an upper limit of the baseline population and is not to be confused with the average baseline concentration. Baseline threshold concentrations will be determined by statistical methods such as those described in *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Final Guidance* (EPA 1989) (e.g., the tolerance interval approach to the analysis of variance). Action levels are the constituent concentration levels that will prompt an action of some type. These actions would include additional evaluation, cleanup, or deferral to the CERCLA process. Action level values include concentrations based on risk to human health and the environment, baseline threshold concentrations, or other appropriate cleanup criteria."**

Clean closure will be accomplished by demonstrating that the constituents used in the

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304 Facility operations are not present above action levels. Reevaluation of the action levels will be considered if one or more of the action levels are exceeded by any of the compliance constituents listed in the table located in Section 7.3.2.2. This measure is proposed because contaminant concentrations for soil and concrete may exceed an action level; however, the concentrations may be significantly below any health or environmentally-based risk level. Any additional evaluation would be based on the following:

- Type and extent that action levels are exceeded
- Further assessment of health-based risk using toxicity criteria guidance such as the U.S. Environmental Protection Agency (EPA) *Integrated Risk Information System* (IRIS) database (EPA 1989b), the *Technical Information Memorandum (TIM) No. 86-1* (Ecology 1986), and other appropriate information.

If dangerous constituents are determined to exist in concentrations above action levels and reevaluation of action levels is not warranted, remediation of the soil will be evaluated under the CERCLA remedial investigation/feasibility study (RI/FS) process for the 300-FF-3 Operable Unit. Initial action levels for the constituents in the soil samples will be the baseline threshold values. Baseline samples will be obtained within the 300-FF-3 Operable Unit.

The proposed method of closure for the 304 Concretion Facility is clean closure. Therefore, a postclosure plan is not required unless the facility cannot be clean closed.

Ecology Response No. 1:

a) DOE-RL/WHC proposes, "If dangerous constituents are determined to exist in concentrations above action levels and reevaluation of action levels is not warranted, remediation of the soil will be evaluated under the CERCLA RI/FS process for the 300-FF-3 Operable Unit." This is not acceptable. See comment numbers 17 and 60.

b) DOE-RL/WHC states that because the proposed method of closure for the 304 Concretion Unit is clean closure, "... a postclosure plan is not required unless the facility

No.	Comment/Response	Ecology Concurrence

cannot be clean closed." A postclosure plan is required; this must be included in the next revision of the closure plan.

c) DOE-RL/WHC proposes to include a number of paragraphs within the text in order to clarify the definitions of "baseline," "baseline threshold," and "action level." These terms should be defined in a section for acronyms, abbreviations, and definitions similar to that provided in Part B permit applications. How these concepts will be used in developing the cleanup strategy to be implemented after obtaining the results of the sampling and analysis at the unit should be provided in both the form of a narrative and flowchart in the appropriate sections of the closure plan.

Ecology Requirement: Compliance with the above is required. Provide draft language to Ecology for interim guidance.

DOE-RL/WHC Response No. 2:

a) The portion of Chapter 6.0 in question will now read as follows: "If dangerous constituents are determined to exist in the soil in concentrations above action levels, closure for the soil will take place after the remediation of the 300-FF-3 Operable Unit under the CERCLA RI/FS process. With the exception of imminent hazard, all soil remediation will take place under the CERCLA RI/FS process for the 300-FF-3 Operable Unit." See comment responses No. 17 and 18.

b) General information will be provided on the actions to be taken if dangerous constituents are left in the soil for the CERCLA RI/FS process remediation. Section 8.2, Postclosure Care, will contain the following text: "Postclosure care is generally required when a waste management facility cannot attain clean closure. At the 304 Facility, underlying soils and groundwater may have been contaminated by waste generated during operations in the 300 Area. Under the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement), source contamination and groundwater will be investigated and remediated through the operable units under the CERCLA RI/FS process.

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With the exception of an imminent health threat, all soil remediation will take place under the CERCLA RI/FS process. If the soil within the 304 Facility boundary is found to be contaminated (chemical concentrations above local background threshold and health based standards) from operations conducted (chemicals used or waste stored) in the 304 Facility, the facility will not be considered closed until the remediation under CERCLA is complete. During the time between closure of the building, floor, and pads and any soil remediation under CERCLA, steps will be taken to isolate any contamination.

Any data obtained from sampling and analyses during RCRA closure activities will be part of the record and included in the closure plan. This data will be taken into account and used during the CERCLA evaluation of the 300-FF-3 Operable Unit, as well as data collected specifically for the CERCLA evaluation.

Temporary covers will be installed, if necessary, to prevent migration of any contamination. The temporary covers would be less permeable than the surrounding soil and may be composed of constituents such as asphalt, clay, or a fixative spray. The existing facility floor and pads may be used as covers if they were found to be uncontaminated or were decontaminated. The exact nature of any covers would be determined at the time the need was identified and this information would be added to the closure plan. In addition, access to the areas of contamination would be controlled if necessary to protect personnel or prevent the migration of contamination.

During the period between closure and soil remediation under CERCLA, the facility area would be inspected at a minimum of once a week. This inspection would be combined with facility inspections presently conducted. The inspections would determine the need for maintenance of any temporary covers or other physical barriers. Any required maintenance would be performed by trained personnel from the Hanford Site."

c) The terms 'baseline' and 'baseline threshold' will be replaced by the terms 'local background' and 'local background threshold'. These terms and the term 'action levels' will be added to the List of Terms section of the closure plan and defined as follows:

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"Local background--The data set of chemical concentrations from analyses of samples obtained in the local vicinity of a facility. Samples within the facility will be compared to the local background data set to determine the presence or absence of contamination from the facility. For the 304 Facility, the samples to determine the local background concentrations would be obtained within the 300-FF-3 Operable Unit.

Local background threshold--Refers to the chemical concentrations that define an upper limit of the local background population. It is not an average local background concentration. It is determined statistically (e.g., the tolerance interval approach to the analysis of variance).

Action levels--Chemical concentration levels that will prompt an action. Action level values will commonly be local background threshold concentrations and health- and environmental-based concentrations."

The flowchart indicates the closure strategy. This flowchart will be located in Chapter 6.0.

Ecology Response No. 2: Ecology is developing a policy for soil closure standards. It is anticipated that this policy will impact the proposals made by USDOE/WHC. In keeping with the Tri-Party Agreement, an integral part of this policy will be the goal of only one remediation at any unit; i.e., it will not be acceptable to postpone any part of the closure activities to the 300-FF-3 Operable Unit response. This closure policy will be made available to USDOE/WHC as soon as possible.

DOE-RL/WHC Response No. 3: Because of the delay in the release of the policy on soil closure standards being developed by Ecology, our position on these comments remains the same.

With the exception of an imminent health threat, it is still the position of the DOE-RL and Westinghouse Hanford Company (WHC) to defer all soil remediation (if needed) to the CERCLA RI/FS remediation process. Deferring soil remediation to the CERCLA process would make any remediation more efficient and would avoid the possibility of cleaning a small area twice.

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If a larger area was being remediated, which extended around a smaller area that was previously remediated, the remediation could be very inefficient. One of the main purposes of the Tri-Party Agreement was to integrate RCRA and CERCLA activities. According to the Tri-Party Agreement, ".... a procedure to coordinate the TSD unit closure or permitting activity is necessary to prevent overlap and duplication of work, thereby economically and efficiently addressing the contamination."

Ecology Response No. 3 (Rev. 1): See the N&MWMP Soil Cleanup Policy (SCP), attached to this NOD. In particular, options 2 and 3 are the only options under which any contaminants may remain in the soil above natural background levels. This closure plan will need to state which option this unit is intended to be closed under, and the levels to which the soil will be remediated. Please note that taking no action to remediate the soil, unless current soil contaminant levels are below the option 1 or 2 levels, will require full post-closure activities, including but not limited to ground water monitoring, capping, access restrictions, etc. This closure plan may contain the option of sampling the soil to determine contaminant levels prior to choosing the course of action, but the plan must include the full details of all possible options (i.e., post-closure requirements).

DOE-RL/WHC Response No. 4: The position of the DOE-RL and WHC remains the same on this comment. Applying an option from the Soil Cleanup Policy issued by Ecology to the closure plan would not be appropriate because it is the opinion of the DOE-RL and WHC that the Soil Cleanup Policy issued by Ecology is flawed. The approach or methods used to develop numerical cleanup standards were not based on well-founded scientific principles or evidence. The numerical standards chosen in the policy are below the *Model Toxics Control Act* (MTCA) soil cleanup standards, which are conservative and were adopted after a comprehensive rule adoption process. Ecology provides no consistent or technically defensible basis for defining the concentration levels in the policy.

Before any cleanup option could be chosen, integration with the Record of Decision (ROD) for the cleanup of the Operable Unit (300-FF-3) would have to be accomplished. One of the main purposes of the Tri-Party Agreement was to integrate RCRA and CERCLA activities. These activities include cleanup standards as well as the physical remediation of the site (if necessary). According to the Tri-Party Agreement, ".... a procedure to coordinate the TSD unit closure or permitting activity is necessary to prevent overlap and duplication of work,

No.	Comment/Response	Ecology Concurrence

thereby economically and efficiently addressing the contamination." It is the position of the DOE-RL and WHC that the most logical, cost effective, efficient integration of RCRA and CERCLA in the 300 Area is to conduct all soil remediation, RCRA and CERCLA, at the same time and to the same cleanup standards.

The position of the DOE-RL and WHC remains the same in providing a postclosure plan in the closure plan of a treatment or storage facility. No requirements exist for providing a postclosure plan with the closure plan for a treatment or storage facility unless a decision is made to leave waste in place. If a decision is made to leave waste in place and close as a landfill, a postclosure plan would be required within 90 days [WAC 173-303-610(8)]. At this time, no decision has been made to leave waste in place. The only other requirements for a postclosure plan are for waste disposal units, certain surface impoundments, and certain waste piles [WAC-173-303-610(8)]. The 304 Concretion Facility does not fall into these categories.

5. Part A, page 1-1, line 49. An unsigned copy of revision 4 of the Part A Permit Application is included in this plan. The version on file With Ecology is revision 3. — Ecology letter of November 6, 1990

Ecology Requirement: Include a copy of a signed Part A Permit Application for this facility which is on file with Ecology.

DOE-RL/WHC Response: A signed copy of the Part A permit application will be provided. Also, as requested, the Part A permit application will be moved from Chapter 1.0 (Introduction) to a separate section.

6. Page 2-1, line 29. The plan does not adequately describe the potential sources of environmental contamination from past operations within the building. For example, the building walls have numerous holes which may have allowed airborne contaminants to leave the facility without treatment. — Ecology letter of February 27, 1992

Ecology Requirement: Include a discussion of potential routes for environmental contamination of the 304 Facility site from the 304 Building in the description.

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DOE-RL/WHC Response: The uranium contamination outside the 304 Building has been attributed to the method of cleaning the building. When the building floors were washed down with hoses, splashing against the steel walls carried uranium fines out of the building. During the concretion operation, the floor was hosed down at least daily. The steel walls were not sealed to the concrete wall base and there were numerous small holes in the walls. In addition, there were no berms at the north and south doors to stop wash down water from leaving the building. The north fenced pad does not have a berm to contain spills or precipitation. Damp uranium saw fines and chips are too large and dense for easy air suspension. Uranium has a specific gravity of 18.9 and uranium oxides 7.3 to 10.9; this compares to lead with 11.3 and lead oxides from 8.0 to 9.5. The damp saw fines have a tendency to stick together and about 73 percent of the new saw fines are greater than 100 mesh (150 microns).

This information will be included in the closure plan. A plan to sample for this potential contamination will also be included.

7. Page 2-1, line 36. The location of the exhaust system and its vent(s) is not given. No description of facility plumbing is given. — Ecology letter of November 6, 1990

Ecology Requirement: The building ventilation and plumbing systems must be described and illustrated.

DOE-RL/WHC Response: The following information will be included in the revised closure plan.

The 304 Building has three roof vents (Figure 2-3). They were powered with 2,050-cubic feet per minute electric fans during the pilot plant operations. The electricity was disconnected about 1971.

A 10,000-cubic feet per minute evaporative (swamp) cooler was used in hot weather for the building. The swamp cooler is located on the concrete pad outside the southeast corner of the building (Figures 2-3 and 2-4).

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When the building had molten metal furnaces (from 1952 to late 1950's) the furnace cooling air was exhausted out a 6-inch-diameter exhaust on the west side of the building. The exhaust pipe is still there, but is sealed off in the sump (formerly a furnace pit).

The first fume exhaust system was a 1,900-cubic feet per minute American Air Filter (Rotoclone Exhauster) and was used for acid and nitrous oxide fumes from the nickel plating line (late 1950's to mid-1960's). There was no monitoring capability on the exhaust system.

The present cyclone exhaust system replaced the plating line exhaust system in 1971. Both exhausters were located on the concrete pad outside the east side of the building (Figures 2-3 and 2-4). The flow rate, manufacturer, and efficiency of the present cyclone exhauster is unknown. The exhaust system was used to remove irritating cement dust from the operator's work area when bags of cement were being emptied and the concrete mixer was in operation.

During concretion operations, the north sliding door was generally left open to allow fork-lift traffic for barrel transport.

(A drawing of the present exhaust system and drain system will be included in the closure plan.) A floor drain near the cement mixer discharges to the sump where fines settle out. The sump has a removable screened standpipe about 16 inches high that overflows into an underground drain line to the process sewer on the east side of the building. A water line discharges directly into the overflow pipe below the screen and is used when the concrete process is in operation. This flowing water (flow rate unknown) helps prevent plugging of the P-trap with concrete, which has happened at least twice during the operation of the facility. Three other drains enter the main underground drain as follows:

- A drain from the east side floor trench
- A drain from the sink in the southwest corner of the building
- An overflow drain from the outside steam condensate quench sump on the east side of the building (Figures 2-3 and 2-4).

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No radiation detectors or routine sampling were in the process sewer from the 304 Building. This was done at the outflow from the combined 300 Area process sewer system.

Once a year during the recyclable uranium concretion operation (1971 to 1982), a 3-day sample in the overflow pipe in the sump was taken to calculate a loss factor to the sewer for uranium chips and fines. The highly variable flow rate was calculated by adding a known dilute concentration of lithium nitrate (0.2 pound per gallon) at a known flow rate to the sump for a known sampling time. The change in lithium concentration and time would give the total volume of solution discharged from the sump.

8. Page 2-1, line 38. The plan mentions a cyclone precipitator which was used to control uranium particulate emissions during operations. It is also stated that the discharge was continuously sampled when the precipitator was in service. — Ecology letter of November 6, 1990

Ecology Requirement: Describe how effective the precipitator was in removing particulates, i.e., state the efficiency of the precipitator and the estimated amounts of particulates that were released to the atmosphere. Also clarify if the precipitator was running at all times the concretion unit was operating.

DOE-RL/WHC Response: See response No. 7.

9. Page 2-3. Figure 2-2 is not an adequate map. — Ecology letter of November 6, 1990

Ecology Requirement: Compliance with WAC 173-303 is required; a checklist of map requirements is enclosed. Refer to the 305-B Storage Facility Permit Application for an example.

DOE-RL/WHC Response: The extensive maps required in Part B permit applications [WAC 173-303-806(4)(a)] are not necessary in closure plans. If Figure 2-2 is not adequate for a specific reason, additional information will be added to the figure.

10. Page 2-4. Figure 2-3 does not indicate the ground cover of the area surrounding the building nor is it discussed in the text. — Ecology letter of November 6, 1990

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Ecology Requirement: This area is part of the facility and must be described in the closure plan. Revise this and all other applicable sections accordingly. At a minimum, the following information must be provided.

- The legal boundary of the 304 Facility.
- The outside ground cover.
- The date(s) the ground cover was applied.
- A discussion of the potential contaminants of the ground cover and its underlying soils.

DOE-RL/WHC Response: The following information will be included in the revised closure plan.

No 'legal' boundary exists for just the 304 Facility. However, the stated boundary on the west, south, and east sides will be the median point between the adjoining buildings. On the north side the boundary will be the edge of Gingko Street. A drawing will be included to show the ground cover around the 304 Building. Several layers of asphalt have been placed over old asphalt and gravel areas in past years to prevent the spread of uranium contamination. The latest asphalt was added in 1988 on all four sides. In early 1989, uranium contaminated areas on the asphalt were covered with two layers of PPG Industries enamel paint; Safety Yellow and Dixie Gray [the material safety data sheets (MSDS) will be included in an appendix].

To prevent future uranium contamination outside the building, the holes and joints in the building walls were sealed in late 1989 and early 1990 with the following (MSDSs to be included in an appendix):

- **Monsanto, Butvar Aqueous Dispersion BR**
- **Dow Corning, 3-6548 Silicone RTV Foam, Part A and B**
- **Beecham Home Improvement Products, DAP Acrylic Latex Caulk with Silicone.**

11. Page 2-4. Figure 2-3 indicates that there are additional structures associated with the building but external to the building walls, they are as follows: — Ecology letter of April 3, 1991

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- One structure located on the east wall south of the change room
- One structure on the southeast corner of the building
- One structure attached to the center of the south wall.

These are not described in the text nor are they identified in the drawings.

Ecology Requirement: These structures must be described in the text.

DOE-RL/WHC Response No. 1: The text will be revised accordingly and the structures will be identified on drawings.

DOE-RL/WHC Response No. 2: The drawing will be included in the closure plan indicating the features in question.

12. Page 3-1, line 44. "Lathe coolant" is mentioned. — Ecology letter of November 6, 1990

Ecology Requirement: State this material's chemical composition and include potential contaminants it may have acquired during use.

DOE-RL/WHC Response: The spent counterbore lathe coolant used for makeup water for concretion in the 304 Building was Tabco Products, Polar Chip 350L, which was diluted with water 20:1 (the MSDS will be included in an appendix). Besides uranium, copper-silicon alloy, Zircaloy-2 alloy and graphite particulates, the only other potential contaminant was the Chevron, AW Hydraulic Oil 32, used in the counterbore lathe (the MSDS will be included in an appendix). These lathe coolants will be evaluated for RCRA regulated chemicals and, if present, will be included in the compliance list. This information will be included in the text.

13. Page 3-2, line 15. The plan states, "there are no records of spills or leaks occurring at the facility." It does not seem plausible that in over three decades of operations there were no leaks or spills; this statement implies that there were not. — Ecology letter of February 27, 1992

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Ecology Requirement: State whether records of spills or leaks were kept; if the records were not kept, delete this sentence as it is misleading. Refer also to the first paragraph of page 2-8 of this closure plan.

DOE-RL/WHC Response: The sentence referred to in the comment will be deleted. No records were kept of spills or leaks that may have occurred. Routine discharges of chemicals to the process sewer were terminated after March 1975. Until March 1975, all waste liquid chemicals in the fuels operation were discharged to the process sewer, which discharged into the North or South Ponds. Therefore, during the nickel plating pilot plant operation in late 1950's to mid 1960's, the chemicals would have entered the process sewer. The chemicals used during this period will be included in a table in the revised *304 Concretion Facility Closure Plan*.

The water covering uranium chips and fines and 5 percent Beryllium/Zircaloy-2 chips in the incoming drums were drained into the process sewer after passing through the sump to settle out entrained solids. The water covering the chips and fines would have contained an unknown amount of cutting fluid from the lathe operations. Four different types of cutting fluids have been used. This information will be included in a table and the MSDS will be added to an appendix.

14. Page 4-1, line 48. Contamination from past operations is not discussed. — Ecology letter of April 3, 1991

Ecology Requirement: All potential dangerous waste contaminants must be considered; for example, chemical contamination resulting from the materials described in Chapter 3.0 of this plan must also be targeted for analysis (see comment number 33).

DOE-RL/WHC Response No. 1: Information on chemicals used in past operations will be included in Chapter 4.0 and uranium will be added to Table 4-1. However, potential contamination from past operations was considered in determining the chemical constituents for the compliance list (Table 7-1). For example, lead was added to the compliance list because of operations conducted in the 1950's, a lead-dip canning process.

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The information in Section 4.2, 3rd paragraph, will be moved to Chapter 3.0. Additionally, a photograph of the burned billets and the Unusual Events Report will be included as an appendix.

DOE-RL/WHC Response No. 2: A table will show the chemicals used or stored in the 304 Facility during the various operations over the life of the facility. This table will be added to Chapter 4.0 of the closure plan.

15. Page 5-1, line 4. The groundwater contamination at this site will be addressed as part of the 300-FF-5 Operable Unit for which a draft Remedial Investigation/Feasibility Study (RI/FS) work plan was prepared in 1989. No further information is given. While Ecology accepts that groundwater contamination for this facility is appropriately addressed as part of the 300-FF-5 Operable Unit, the information presented is not adequate.

Ecology letter of November 6, 1990

Ecology Requirement: A brief description of the 300-FF-5 Operable Unit is required. This description must describe and/or illustrate the following:

- Schedule for groundwater cleanup
- Groundwater cleanup objectives
- The 300-FF-5 Operable Unit's boundary.

DOE-RL/WHC Response: The following information will be included in Chapter 5.0.

"The 300-FF-5 Operable Unit consists of the aquifer beneath the 300-FF-1, 300-FF-2, and 300-FF-3 Operable Units. The operable unit is defined by "the observed and assumed extent of uranium contamination in the groundwater" (300-FF-5 Operable Unit Work Plan). Ultimately, the operable unit will include all contamination exceeding applicable or relevant and appropriate requirements emanating from the three operable units detected in groundwater and sediments below the water table. The Columbia River forms the eastern boundary of the unit (figures will be included).

The current schedule for the completion of the remedial investigation/feasibility study process is October of 1996. Following this process, a ROD on the remediation of the aquifer will be handed down, and remediation will begin.

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The remedial action objectives for this operable unit will be based on the following general objectives:

- **Protecting human health by ensuring that applicable or relevant and appropriate requirements will not be exceeded and health risks, as determined through analysis of all exposure pathways, will be kept at or below acceptable limits.**

- **Ensuring acceptably low risks to the environment, such as Columbia River Biota."**

16. Page 6-1, line 6. The plan states that the clean closure strategy for the facility is, "... contingent upon verifying that constituents originating from the 304 Facility are not present in concentrations that represent a threat to human health or the environment." — UMM of November 17, 1993

Ecology Requirement: Consider costs in terms of time, money, and resources in evaluating the clean closure strategy pursued at this facility. Compare with the costs for closure based on the clean closure criteria delineated in WAC 173-303-610(2). Refer to the 2101-M Pond Closure Plan and the Model Toxics Control Act--Cleanup (WAC 173-303) in development for guidance.

DOE-RL/WHC Response No. 1: An exposure scenario method like the one provided for the *2101-M Pond Closure Plan* will be used for the *304 Concretion Facility Closure Plan*. The analysis for the exposure scenario will be conducted when sample analyses are obtained. The scenario will provide the criteria for comparing element concentrations to the risk to human health and the environment. These factors will then be evaluated for clean closure.

Ecology Response No. 1: The transcription of Ecology's NOD requirement incorrectly cites WAC 173-303 for the Model Toxics Control Act (MTCA). The citation as originally provided (WAC 173-340) is correct. Refer also to NOD comment number 18.

DOE-RL/WHC Response No. 2: This was noted.

Ecology Response No. 2 (Rev. 1): The language in this section will need to be modified to reflect the closure option selected from the SCP. In particular the actions to be taken in

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the event clean closure is not achievable must be included with this section, including the postclosure plan.

DOE-RL/WHC Response No. 3: See DOE-RL/WHC response No. 4 for comment No. 4.

17. Page 6-1, line 13. In the event that clean closure is not achievable, it is proposed that the 304 Facility be 'interim stabilized' and that closure and postclosure, "be performed in conjunction with the activities for the 300-FF-3 Operable Unit." — UMM of November 17, 1993

Ecology Requirement: More information is required to evaluate the acceptability of this approach. In order to facilitate this approach, the facility may be viewed as consisting of the three components (the building, the concrete and asphalt, and the underlying soil). Each of these parts may be separately evaluated for closure. Ecology will accept an approach that utilizes the following:

- The building must be removed
- The concrete pad and asphalt layer must be removed or cleaned to background contamination levels
- The soils should be cleaned and/or removed until only background contamination remains or if they can only be cleaned to baseline concentration levels (as defined in the 300 Area Solvent Evaporator Closure Plan) a postclosure plan with provisions for management under the CERCLA cleanup must be provided.

DOE-RL/WHC Response No. 1: The approach of separately evaluating the building and concrete pad or floor from the soil for clean closure will be adopted. An explanation of this approach will be included in the closure plan. A clearer definition of action levels and baseline will be provided (see response No. 4). If the chemical concentrations in the soil in an area that could have been potentially affected by the 304 Concretion Facility are below baseline (local background), the soil will be considered 'clean' and the facility will be clean closed. General contamination in the soil of the 300-FF-3 Operable Unit or contamination from nearby facilities will be evaluated under the CERCLA RI/FS process.

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Ecology Response No. 1: For clean closure, the building and concrete and asphalt pads must be decontaminated to the contamination levels stipulated in WAC 173-303-610(2)(b) or removed from the unit boundaries. The approach proposed for the soil cleanup is unacceptable. The soil must be cleaned to at least area background levels (area background is defined in WAC 173-340-200). If contamination remains in the soil that exceeds the performance standards stipulated in WAC 173-303-610(2)(b), then the unit can not be clean closed. A postclosure plan that provides for management of the unit within the CERCLA cleanup must be prepared.

Ecology Requirement: Compliance with the above is required. See also comment number 60.

DOE-RL/WHC Response No. 2: To facilitate closure, the 304 Concretion Facility will be viewed as consisting of three components; the building, the floors and pads (concrete and asphalt), and the soil. These three components will be evaluated separately for closure of the facility. The building, concrete floor, and the concrete and asphalt pads will be decontaminated to Toxicity Characteristic Leaching Procedure levels, or removed.

With the exception of an imminent hazard, all necessary soil remediation will be accomplished under the CERCLA RI/FS process. If the soil within the 304 Facility boundary is found to be contaminated (chemical concentrations above local background threshold and health-based standards) from operations conducted (chemicals used or waste stored) in the 304 Facility, the facility will not be considered closed until the remediation under CERCLA is complete. However, if chemical concentrations are below local background (within the 300-FF-3 Operable Unit) and health-based standards, the 304 Facility will be considered closed. As described in the Tri-Party Agreement, any source contamination in the soil from past operations (such as manufacturing fuel rods) in the 300 Area, will be evaluated and remediated under the CERCLA RI/FS process. Methods used to determine chemical concentrations for health-based standards will be scientifically and technically defensible (e.g., the MTCA, WAC 173-340).

The flowchart (Figure 6-1) shows the closure strategy for the 304 Facility. Section 8.2, Postclosure Care, will contain the text shown in response No. 4b.

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Ecology Response No. 2: The acceptability of this proposal will be dependent on conformance with the Ecology closure policy which is in development. See number 4 for details.

DOE-RL/WHC Response No. 3: Because of the delay in the release of the policy on soil closure standards being developed by Ecology, DOE-RL/WHC position on these comments remains essentially the same.

Ecology Response No. 3 (Rev. 1): Again, the language in this section will need to be modified to reflect the closure options available for the 304 Concretion unit. In particular the postclosure elements of option 2 and/or 3 must be included in the plan.

DOE-RL/WHC Response No. 4: See DOE-RL/WHC response No. 4 for comment No. 4.

18. Page 6-1, line 38. Criteria will be established for contamination levels that pose a substantial threat to human health or the environment in order to certify clean closure. — UMM of November 17, 1993

Ecology Requirement: This approach must be evalu ted in comparison with the criteria delineated in WAC 173-303-610(2) (see comment number 16).

DOE-RL/WHC Response No. 1: Additional information will be provided for evaluation. See responses No. 4, 16, and 17.

Ecology Response No. 1: The DOE-RL/WHC proposes to establish criteria for contamination levels that "post a substantial threat to human health or the environment" for certifying clean closure.

Ecology Requirement: Any criteria developed for threats to human health or the environment must be based on the cleanup standards of MTCA (WAC 173-340). Any criteria for closure must have Ecology concurrence. For clean closure, the cleanup standards are stated in WAC 173-303-610(2)(b).

DOE-RL/WHC Response No. 2: Methods used to determine chemical concentrations for health-based standards will be scientifically and technically defensible. The paragraph starting with line 30 on page 6-1, will be changed as follows:

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"If the concentration of any constituent identified in Chapter 7.0, Table 7-1, is above the initial action level (local background), the action level will be reevaluated. This measure is proposed because contaminate concentrations for soil that may exceed an action level may also be below any health or environmental-based risk level. Any additional evaluation would be based on: 1) the type and extent to which the action levels are exceeded, and 2) assessment of health-based risk. Health-based risk standards will be scientifically and technically defensible and criteria guidance will be used such as the MTCA, WAC 173-340, the EPA IRIS database (EPA 1989b), the Human Health Evaluation Manual (EPA 1989a), and other appropriate information. If dangerous constituents are determined to exist in the soil in concentrations above action levels, closure for the soil will be complete after the remediation of the 300-FF-3 Operable Unit under the CERCLA RI/FS process. With the exception of imminent hazard, all soil remediation will take place under the CERCLA RI/FS process for the 300-FF-3 Operable Unit."

See comment responses No. 4 and 17.

Ecology Response No. 2: The Ecology policy for closure will cover health-based standards. See number 4.

DOE-RL/WHC Response No. 3: See response No. 17 (DOE-RL/WHC Response No. 3).

Ecology Response No. 3 (Rev. 1): This section must be revised to reference the SCP regarding closure standards for soils. Also, it will not be possible to leave soil contaminants for later remediation under the operable unit. See comment number 4.

DOE-RL/WHC Response No. 4: See DOE-RL/WHC response No. 4 for comment No. 4.

19. Page 6-1, line 43. Closure of the facility in conjunction with the 300-FF-3 Operable Unit RI/FS is proposed in the case that the clean closure objectives cannot be met. — Ecology letter of November 6, 1990

Ecology Requirement: This approach will be evaluated upon receipt of further information (see comment number 17).

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DOE-RL/WHC Response: The information provided will be revised. See responses No. 4, 16, and 17.

20. Page 6-2, line 4. Sole use of concrete cores from this facility to establish baseline values for inorganic and organic contamination is proposed. This is objectionable for a number of reasons, chief among these are the following: — UMM of November 17, 1993

- This facility may have suffered facility-wide contamination during the life of its operations in which case, the baseline values would be established using contaminated samples
- This facility has had a number of building additions; more than just one concrete pour was used to construct this facility. Some of these are in areas with certain contamination and are, therefore, unsuitable for 'baseline' samples
- Coring concrete is not a technologically sound method for detecting volatile organics.

Ecology Requirement: Baseline concrete contamination levels established from cores taken at this facility must be compared to concrete contamination levels from sites not impacted by past practices. Cleanup levels for clean closure should be established subject to the results of this comparison. Volatile organic contamination levels must be determined using thermal desorption mass spectrometry or an equivalent method. Refer to the 300 Area Solvent Evaporator Closure Plan for guidance in sampling and analyzing concrete and associated subsoils.

DOE-RL/WHC Response No. 1: Concrete slabs could have wide variations in concentrations of inorganic elements, depending where the cement and aggregate were obtained. Because of the potential for wide variations, a concrete background sample must be taken from the same pour.

A concrete background sample will be obtained by taking a core of the concrete slab in an area where contamination is least likely and away from cracks or other potential pathways. The concrete slabs are approximately 6 inches thick. The core will be cut into four equal sections perpendicular to the core and each section analyzed. The analytical results from each section will be compared to determine the baseline for the concrete slab.

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The center and lower portion of a 6-inch concrete slab would not be contaminated from the operations conducted in the 304 Facility, even if the surface was contaminated by some method (i.e., spill), unless a pathway or crack existed. The contamination assessment conducted for the *300 Area Solvent Evaporator Closure Plan* indicated that water with solvents would not penetrate the concrete more than 3/8 inch, and TCE and PCE no more than 2 millimeters under the scenario outlined. The scenario would be worse than a worse-case scenario in the 304 Facility. This information will be included in the text.

Ecology Response No. 1: The DOE-RL/WHC proposes sole use of samples obtained within the 304 Concretion Unit for establishing background concrete contamination levels. This is not acceptable.

Ecology Requirement: Concrete samples from areas not subject to contamination must be used for establishing a background concrete contamination value.

DOE-RL/WHC Response No. 2: Although the original proposal for obtaining background samples is valid, there may be problems in ensuring representative samples because of the aggregate in the concrete and in the number of samples necessary for statistical validity. An appropriate alternative method may be the Toxicity Characteristic Leaching Procedure (TCLP) to demonstrate the concentrations of constituents in the concrete are below regulatory concern (i.e., if they are below the TCLP limits). They are not deleterious to the environment or human health. The advantages to this approach would be the use of established procedures, fewer samples, less impact on the facility, and less uncertainty in the results.

Ecology Response No. 2: This approach seems reasonable but too narrow in scope; following the designation procedure delineated under WAC 173-303-070 will be acceptable. This may not be sufficient for clean closure, however, and it will be necessary to closure in accordance with the N&MWMP closure policy under development. See number 4.

DOE-RL/WHC Response No. 3: See response No. 17 (DOE-RL/WHC Response No. 3).

Ecology Response No. 3 (Rev. 1): It continues to be the position of Ecology that concrete background must be determined from samples taken at units not impacted by past practices.

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Ecology is requiring that four samples be taken at different concrete "pours" around the Hanford Facility. These samples will be fully characterized and compared in order to determine what the potential range of constituent concentrations may be found in concrete pours. This approach will determine what constituents are commonly contained in concrete, and the range of variation in different pours. In addition, it will clarify what, if any, dangerous waste constituents are commonly or potentially contained in the concrete at dangerous waste designation levels. The constituents of concern that may be found in concrete should only be inorganic elements. If the variation between samples is not significant statistically, a median value for each element could be determined, and this median value could possibly be applied to other units undergoing closure at the Hanford Facility (e.g. 303-K, and 105-DR). Even if there are wide variations between the samples for certain elements, the information obtained through the sampling and analyses will help determine whether there is a potential designation problem with uncontaminated concrete. DOE-RL/WHC/PNL must submit a proposal for this background sampling to Ecology for approval prior to sampling.

DOE-RL/WHC Response No. 4: This comment is a step backward from Ecology's previous position on obtaining background for concrete samples (see Ecology Response No. 2 for comment 20) and is not acceptable. The latest proposal from Ecology for obtaining concrete background samples is not statistically or scientifically defensible.

Concrete at the Hanford Site can have wide variations in concentrations of inorganic elements, depending where the cement, sand, and aggregate were obtained and the amount of each used. The concentrations of the inorganic elements could vary as much or more (depending on the source of the cement, sand, and aggregate) as the concentrations found in sitewide background study for soil. Because of the potential for these wide variations, any concrete background samples must be obtained from the same pour as the concrete to be sampled for contamination. If background samples cannot be obtained from the same pour, an analytical method must be used that will reduce the possibility of extracting constituents from the aggregate and sand (i.e., dissolving part of the aggregate and sand). In addition, there can be problems in ensuring representative concrete background samples because of the size and amount of the aggregate present and obtaining enough samples necessary for statistical validity.

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	The closure plan will be revised to use the methodology recommended by Ecology at the December 8, 1992 and February 10, 1993 UMMs. A portion of concrete and asphalt inorganic analysis samples will first be subject to hot-acid digestion (SW-846 Method 3050) followed by the appropriate metals analysis. This step determines if there are any metals present that could posse a potential threat to human health and the environment. The second step is to subject remaining portion of the concrete and asphalt inorganic analysis samples to the Toxic Characteristics Leachate Procedure (40 CFR 261 Appendix II). This part determines if any of the metallic constituents of concern could leach out of the concrete matrix and pose a threat to human health and the environment.	
21.	Page 6-2, line 12. Baseline contamination levels for asphalt will be established similarly to concrete. The same objections apply in this case as in establishing concrete baseline contamination levels. Ecology Requirement: Asphalt contamination levels must also be compared with contamination levels for samples taken at a site not affected by past practices (see response number 20). **DOE-RL/WHC Response No. 1: As with the concrete, the concentration of various elements in asphalt could vary greatly. Contamination would only penetrate a relatively small amount into an asphalt pad from a spill or other potential contamination unless a pathway existed. The center and lower portions of an asphalt pad would not be contaminated unless a pathway such as a crack existed. Therefore, a core of an asphalt pad divided into several sections could be used for baseline samples (see response No. 20). This information will be included in the text.** Ecology Response No. 1: The DOE-RL/WHC proposes sole use of samples obtained within the 304 Concretion Unit for establishing background asphalt contamination levels. This is not acceptable. Ecology Requirement: Asphalt samples from areas not subject to contamination must be used for establishing a background asphalt contamination value. **DOE-RL/WHC Response No. 2: Asphalt sampling would be accomplished in the same manner as concrete; taking chip samples and using TCLP methods for analysis. See response No. 20.**	UMM of November 17, 1993

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Ecology Response No 2: This approach will be acceptable under the same caveats as for concerts. See number 20.

DOE-RL/WHC Response No. 3: See response No. 17 (DOE-RL/WHC Response No. 3).

Ecology Response No 3 (Rev. 1): A process similar to the concrete background plan outlined in comment number 20 will be used for asphalt. See comment number 20.

DOE-RL/WHC Response No. 4: See DOE-RL/WHC response No. 4 for comment 20.

22. Page 6-2, line 15. The process sewer system is scheduled to be addressed under the 300-FF-3 Operable Unit RI/FS process, therefore, it will not be addressed in this closure plan. — Ecology letter of February 27, 1992

Ecology Requirement: At a minimum, the closure plan for the 304 Facility must incorporate closure of the plumbing system to the point that it meets the process sewer system.

DOE-RL/WHC Response No. 1: The process sewer is considered to begin immediately beneath the building floor (concrete slab). It would be impractical to close any drain or plumbing in the soil (beneath a concrete slab) separately from the rest of the sewer system.

Ecology Response No. 1: Ecology accepts DOE-RL/WHC's assertion that the process sewer begins immediately beneath the building floor.

Ecology Requirement: Ecology will require that the permitting process for the 300 Area Process Sewers incorporate all sewer lines to the point where they enter a building floor.

23. Page 6-2, line 19. The plan states, "initial action levels for the inorganic constituents in the soil samples will be the baseline threshold values obtained from the compositions of the baseline samples." It is not clear what this statement means. — UMM of November 17, 1993

Ecology Requirement: Define clearly what is meant by "initial action levels." State clearly which 'baseline' samples the soil cleanup levels will be based on. These must be samples obtained from similar soil types that are not impacted by past practices; demonstrate that this criterion has been met. Refer to WAC 173-303-610(2)(b) for dangerous

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waste cleanup levels. Refer also to the 300 Area Solvent Evaporator Closure Plan for guidance.

DOE-RL/WHC Response No. 1: This statement will be redefined using the information shown in response No. 4. Additional information on the baseline samples will be provided.

DOE-RL/WHC Response No. 2: Action levels are defined as chemical concentration levels that will prompt an action. The initial or first action level the sample analysis data would be compared to is the local background (within the 300-FF-3 Operable Unit) threshold value (defined in response No. 4c). The second action level the sample analysis data would be compared to is health- and environmental-based risk values.

Local background threshold values will be based on soil samples obtained within the 300-FF-3 Operable Unit. When the location of these samples has been determined, they will be included in the closure plan. Local background samples will not be taken in places of obvious contamination from past operations conducted in the 300 Area; however, any general contamination (if present) from past operations would be included. If general or source contamination exists, it would be from past practice operations and not from operations conducted in the 304 Facility.

The local background sample analyses results will be analyzed statistically, using the tolerance interval test, to determine if the chemical concentrations from each sample are from a 'hot spot'. The purpose of the tolerance interval approach is to define a concentration range from local background data within which a large proportion of the monitoring observations should fall with high probability. Any 'hot spots' would fall outside of this range and not be included in the determination of the local background threshold (the initial action level).

Ecology Response No. 1: It is not clear if this proposed background determination is to be used as part of the Hanford Site-Wide background study. If it is not, this should be clearly stated. If it is, this evaluation of the vadose zone background contaminated vadose zone data to the 300 Area background data must be between the same soil horizons for this unit and others, the plan must be expanded to include deeper soil horizons. Refer to the Hanford Site-Wide soil background study for reference.

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In the quoted statement, the first sentence is unsubstantiated and the second sentence is not in agreement with the general tenor of the Tri-Part Agreement and will not be in accordance with the closure policy under development by the N&MWMP. The quoted statement should be deleted.

DOE-RL/WHC Response No. 3: Soil samples from the 304 Concretion Facility will be compared to local background determined from samples obtained within the 300 Area and are not part of the Hanford Site-wide background study. Because of the potential for general contamination throughout the 300 Area from past practice operations, it would be inappropriate to use Site-wide background for comparison to the 304 Concretion Facility samples. The locations for the 300 Area local background determinations have not been determined. When these locations are determined, the information will be added to the closure plan. Information on the 300 Area local background sampling can be found in Section 7.3.2.5.1 of the closure plan.

While it may not be substantiated, it is logical to assume any general contamination in the 300 Area would not be the result of the minor activities associated with the 304 Concretion Facility. Any general contamination would likely be from past practice operations such as fuel fabrication activities.

The second sentence is not in the closure plan.

Ecology Response No. 2 (Rev. 1): The use of 300 area local background levels for comparison to the 304 Concretion unit soil background levels is no longer the appropriate method. In order to qualify for a "clean closure" under WAC 173-303 it will be necessary to show that no contaminants remain in the soil that exceed the Hanford Facility-wide background levels, as determined by the Characterization and Use of Soil and Groundwater Background for the Hanford Site (Hoover and LeGore. 1991). Following approval by Ecology of this study and the findings, they will become the standards used for background closures at the Hanford Facility.

DOE-RL/WHC Response No. 4: It is still the position of DOE-RL and WHC that a TSD unit is only responsible for the constituents managed at that particular unit. This is substantiated by WAC 173-303-610(2)(b)(i) and (ii). Because of the potential for wide

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spread contamination in the 300 Area from past practice operations, such as fuel fabrication, it would be inappropriate to use Site-wide Background (which excluded the 300 Area) for comparison to samples from the 300 Area. Any general contamination would be from past practice operations and remediated with the 300-FF-3 Operable Unit.

24. Page 6-2, line 29. Verification sampling of soils will be conducted if any soil is removed as part of the closure strategy. It is not clear what the procedure for verification sampling is. — UMM of November 17, 1993

Ecology Requirement: Describe the verification sampling procedure in the appropriate section. Refer to the description here.

DOE-RL/WHC Response No. 1: The text will be modified to read, "If soil is removed, verification samples will be collected from the excavation site to determine the effectiveness of any soil removal. The number of samples collected will be dependant on the areal extent of contamination encountered, but will be no less than one sample from the area previously determined to be contaminated."

Ecology Response No. 1: The proposed language is acceptable, but further information is required on this topic in the sampling and analysis plan to adequately describe the verification sampling.

Ecology Requirement: Describe the sampling and analytical parameters for the verification sampling. This must include the sample size, target analytes, and quality assurance/quality control plan. Refer to the 2101-M Pond Closure Plan for guidance.

DOE-RL/WHC Response No. 2: Because of the position of all soil remediation being conducted under the CERCLA RI/FS process, the text shown in DOE-RL/WHC Response No. 1 has been deleted.

Ecology Response No. 2 (Rev. 1): With the issuance of the SCP, it is not appropriate for soil remediation to be deferred to the CERCLA process. Text addressing the verification sampling of excavated sites must be discussed in the appropriate section of this closure plan. This verification sampling should reflect the closure standards of the SCP.

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DOE-RL/WHC Response No. 3: The Soil Cleanup Policy issued by Ecology and the integration of RCRA and CERCLA remediation are two different issues. The Soil Cleanup Policy as presently written does nothing to integrate RCRA and CERCLA remediation activities. It is still the position of the DOE-RL and WHC to integrate these activities according to the Tri-Party Agreement. See DOE-RL/WHC Response No. 4 for comment No. 4.

Because soil remediation will be conducted under the CERCLA RI/FS process, a discussion of verification sampling is not necessary in this plan.

25. Page 6-2, line 37. The general closure procedures listed in this section are not consistent with the closure flowchart in Figure 6-1. — UMM of November 17, 1993

Ecology Requirement: Resolve discrepancies and clarify the closure procedures list and flowchart as necessary. Revise the plan accordingly.

DOE-RL/WHC Response No. 1: The general closure procedures will be made consistent with the flowchart shown in Figure 6-1.

DOE-RL/WHC Response No. 2: The flowchart (Figure 6-1) and Section 6.2, General Closure Procedures, have been revised for consistency.

Ecology Response No. 1: The flowchart is acceptable but will probably require some revision to accommodate the closure policy currently under development. The proposed text seems a little sketchy; further details must be provided in later text. It will also need to be revised to accommodate the closure policy under development. See number 4.

DOE-RL/WHC Response No. 3: See response No. 17 (DOE-RL/WHC Response No. 3).

Ecology Response No. 2 (Rev. 1): Figure 6-1 will need to be revised to reflect the SCP standards. In particular, the flow path for soils will need to be changed, since deferral to the CERCLA process is not appropriate.

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DOE-RL/WHC Response No. 4: It is still the position of the DOE-RL and WHC to integrate RCRA and CERCLA activities for soil remediation. See DOE-RL/WHC response No. 4 for comment No. 4 and the first paragraph in DOE-RL/WHC response No. 3 for comment No. 24.

26. Page 6-2, line 46. "Baseline" samples are mentioned here and elsewhere, this term is not defined. — Ecology letter of November 6, 1990

Ecology Requirement: Describe what a "baseline" sample is. Refer to the 300 Area Solvent Evaporator Closure Plan for guidance.

DOE-RL/WHC Response: A specific definition for baseline will be provided. See response No. 4.

27. Page 6-5, line 15. The plan states that required soil remediation will be performed under the CERCLA RI/FS process. — UMM of November 17, 1993

Ecology Requirement: Soil remediation must clean to baseline contamination levels as defined in the 300 Area Solvent Evaporator Closure Plan. State or reference the criteria for soil remediation to be performed under the CERCLA RI/FS process. This would be appropriately addressed in the postclosure plan.

DOE-RL/WHC Response No. 1: The text will be expanded to indicate the option of cleaning to baseline, if feasible. A flowchart will be included in the closure plan.

Ecology Response No. 1: The DOE-RL/WHC proposes expanding the text "to indicate the option of cleaning to baseline if feasible."

Ecology Requirement: Cleaning the unit's soils to at least area background contamination levels is not optional. Revise the closure strategy as necessary to reflect this. See comment numbers 17 and 60.

DOE-RL/WHC Response No. 2: With the exception of imminent danger, all soil remediation will be conducted under the CERCLA RI/FS process. See response No. 17 and the flowchart.

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Ecology Response No. 2: This is unacceptable, see previous Ecology NOD's for this unit. Additionally, it will be in conflict with the Ecology closure policy in development. See number 4 for additional details.

DOE-RL/WHC Response No. 3: See response No. 4 (DOE-RL/WHC Response No. 3).

Ecology Response No. 3 (Rev. 1): This section of the plan must be revised to follow the SCP. See comment number 4.

DOE-RL/WHC Response No. 4: See DOE-RL/WHC response No. 4 for comment No. 4.

28. Page 6-5, line 41. Interim stabilization of contaminants due to sources other than this facility is discussed in this section. It is not clear how it will be determined that contamination is due to operations at this facility rather than another. — Ecology letter of April 3, 1991

Ecology Requirement: State clearly the criteria for determining if a contaminant is due to widespread contamination in the 300-FF-3 Operable Unit. Also state what the policy for widespread contamination originating from the 304 Facility will be (see comment number 27).

DOE-RL/WHC Response No. 1: If soil sample analyses taken at the 304 Facility are above the established baseline (local background) concentration for a particular element shown in Table 7-1, the amount of contamination above baseline was probably from the 304 Facility (see responses No. 4 and 17). Constituents not listed in Table 7-1 (not used in the facility) will be considered to have been from other facilities.

A postclosure plan is not required if the facility is clean closed.

Ecology Response No. 1: In order to clean close the 304 Concretion Unit, the contamination levels of dangerous wastes and dangerous waste residues must be decontaminated or removed to meet the performance standards stipulated in WAC 173-303-610(2)(b).

Ecology Requirement: This requirement must be integrated within the closure plan. See numbers 17 and 60.

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DOE-RL/WHC Response No. 2: The closure strategy and the criteria to obtain closure are explained in responses No. 4, 17, and 18, and in the flowchart (Figure 6-1).

Ecology Response No. 2 (Rev. 1): The language in this section regarding soil remediation must be changed. Specifically, soils which do not meet performance standards will not be left for remediation under CERCLA. Also, interim stabilization referenced here must be explained in greater detail in Chapter 8 . 0, in order for option 2 of the SCP to be utilized.

DOE-RL/WHC Response No. 3: See DOE-RL/WHC response No. 4 for comment No. 4 and the first paragraph of DOE-RL/WHC response No. 3 for comment No. 24.

29. Page 7-1, line 43. One of the objectives of the sampling plan is to establish 'baseline' concentrations of contaminants. The applicable standard under WAC 173-303-806(4)(b) is background or designation levels depending on the contaminant. — Ecology letter of November 6, 1990

Ecology Requirement. Clearly define what is meant by 'baseline' concentrations. Describe this in terms of background contamination levels if necessary. Revise the plan so that compliance with the requirements of WAC 173-303-806(4)(b) is achievable (see comment numbers 18 and 26).

DOE-RL/WHC Response: A clear definition of baseline will be provided (see responses No. 4 and 17).

30. Page 7-1, line 49. A brief reference to sampling methods in SW-846 is made. — Ecology letter of February 27, 1992

Ecology Requirement: The sampling and analysis methods acceptable are stipulated in WAC 173-303-110. The methods to be used should be presented in a table for clarity. Refer to the 2101-M Pond Closure Plan for guidance.

DOE-RL/WHC Response: All analysis methods will be summarized in tabular form. Deviation from the standard analytical methods of SW-846 will be described in the text or appendices.

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31.	Page 7-2. Some items are duplicated in the flowchart depicted in Figure 7-1. It also has two legends. Ecology Requirement: Revise Figure 7-1 to eliminate duplication. **DOE-RL/WHC Response No. 1: Figure 7-1 will be revised to remove the duplication and the extraneous caption.** **DOE-RL/WHC Response No. 2: The flowchart in Figure 7-1 has been clarified and the duplication removed.**	Ecology letter of April 3, 1991
32.	Page 7-3, line 1. Sampling of only the top 1 foot of soil is proposed. This is deficient; sampling of only the top 1 foot of soil will not adequately describe the contamination at this site. Ecology Requirement: Develop a sampling and analysis plan that will determine the contamination at this site as required under WAC 173-303-610(3)(a). Refer to comment number 32 of the 303-K Storage Facility Closure Plan NOD. **DOE-RL/WHC Response No. 1: Information to date suggests any potential organic or inorganic contamination from the 304 Facility would be located in the upper most part of the soil column. However, the soil sampling depth will be reevaluated using contamination scenarios and assessments similar to those presented in the *300 Area Solvent Evaporator Closure Plan*. The objective of these assessments will be to determine the most likely location in the soil column of any potential contamination from this facility. The information will be presented and discussed with Ecology in a future unit managers meeting.** Ecology Response No. 1: Development of a soil sampling plan based on the 300 Area Solvent Evaporator (300 ASE) is inappropriate; the 300 ASE is located on top of a burial ground. Ecology Requirement: The soil sampling plan must address vadose zone contamination at this unit.	UMM of November 17, 1993

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DOE-RL/WHC Response No. 2: The previous response referencing the *300 Area Solvent Evaporator Closure Plan* was in error. The reference should have been to the *2101-M Closure Plan*.

It can be shown that concentrations of inorganic constituents added to the soil by sorption from an effluent containing even drinking water levels of these constituents are greatest in the upper few millimeters, and decrease with increased thickness of the soil column. Because of the well-known process of sorption (Conway 1982, Freeze and Cherry 1979, CRC 1984), any contamination remaining in the soil would be the result of equilibrium reactions and/or irreversible sorption. In either case, residual contamination would be most concentrated in the uppermost part of the soil column, with rapidly decreasing concentrations downward. Therefore, the uppermost part of the soil column is most likely to contain contamination, if it is present.

It is also indicated that any contamination of the soil by organic solvents associated with the facility is likely to be small and, if present, dominate in the uppermost part of the soil column. The only possibility for contamination of the soil is the one-time wash down of the inside of the building following the repackaging of the degreaser solvents (no spills were reported). The wash down was the last activity to occur in the building and was performed with a garden hose. Most of the water was flushed to the building sumps and thus the process sewer.

The only pathway for the organic contaminates to the soil would have involved the transport of a very small fraction of this water to the soil through cracks in the concrete floor. Because of the relatively small amount of potentially contaminated water, the general lack of evaporation under the concrete floor, and the tendency for such water to be retained in the soil, any potential organic contamination from this source is most likely to be present in the upper part of the soil column.

Because the potential contamination from the 304 Facility would remain in the upper part of the soil column, a maximum sampling depth of 2 feet would be adequate. During soil sampling, a sample will be obtained at the surface, at 1 foot, and at 2 feet.

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Ecology Response No. 2: While it is correct that sorbed contaminants would be expected to be in the uppermost layer, assuming that all contaminants will sorb is not correct. See, for example, Freeze and Chorry 1979 or W. B. Mills et al., Journal of Association of Ground Water Scientists and Engineers, March-April 1991.

Samples must be taken at the soil-concrete and soil-asphalt interfaces, one foot, two feet, and three feet depths. The closure plan must describe the sampling methods, sample size, and analytical methods to be employed. The closure plan must also have detailed provisions for the case where contamination is detected at three feet (the lowest horizon). This contingency must be provided for in the scheduling of the closure activities. More specifically, the closure plan must have plans for resampling to greater depths and removal/remediation of contamination at depths greater the initial soil sampling. In addition, all phases if the closure activities must occur in a timely fashion (including any resampling and removal/remediation necessary). See number 23.

DOE-RL/WHC Response No. 3: The soil sampling for the *304 Concretion Facility Closure Plan* now states that samples will be taken at the surface, 1 foot, 2 feet, and 3 feet. However, it is still the position of the DOE-RL and WHC to only sample to a maximum of three feet. Any deeper sampling and analyses will be conducted during the CERCLA RI\FS process. See response No. 4 DOE-RL/WHC Response No. 3.

Ecology Response No. 3 (Rev. 1): This section must be re-evaluated in light of the SCP. Sampling plans for the various scenarios possible at the 304 Concretion unit must be explained fully. For example, it will be necessary to characterize the soil beneath the 304 Concretion unit and to compare the values for the soil with the SCP. Once the soil has been characterized it can be determined what closure option is most appropriate.

DOE-RL/WHC Response No. 4: It is still the position of the DOE-RL and WHC to only sample to a maximum of 3 feet. Any deeper sampling and analyses will be conducted during the investigation and remediation of the 300-FF-3 Operable Unit. Soil will be sampled under the floor and pads where potential pathways (e.g., cracks and joints) to the soil exist. See DOE-RL/WHC response No. 4 for comment No. 4.

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33.	Page 7-3, line 10. The plan states it was, "developed to determine the presence of 304 Facility derived contaminants that are regulated by Ecology." It is not clear how this plan will determine which contaminants are "304 Facility derived." Nor is it clear what criteria were used to restrict the analyses to the elements and/or compounds listed in Table 7-1. Ecology Requirement: The sampling and analyses must be designed to detect the regulated contamination at the site regardless of the source of the contaminants. Describe also how this phase of the cleanup will be integrated with the CERCLA remediation. See the 300 Area Solvent Evaporator Closure Plan for guidance (see comment number 14). **DOE-RL/WHC Response: See responses No. 4, 14, 17, 27, 28, and 35.** **The elements and compounds listed in Table 7-1 are the RCRA-regulated substances from the material treated or used in past operations in the 304 Facility.**	Ecology letter of November 6, 1990
34.	Page 7-3, line 25. Sampling activities are described in very general terms. The sampling activities will not be adequate to accomplish the objectives for closure. Ecology Requirement: Under WAC 173-303-610(3)(a)(v), the closure plan must include a detailed description of the sampling and analysis methods to be employed. Revise the plan to comply with this requirement (see comment number 30). **DOE-RL/WHC Response: Further detail on the sampling activities and procedures can be found later in the text. Section 7.3 is dedicated to the description of sampling procedures, location selection, and quality assurance and quality control. A quality assurance project plan will be included as an appendix.**	Ecology letter of November 6, 1990
35.	Page 7-4. Table 7-1 lists a limited number of the potential compliance constituents at the 304 Facility. Ecology Requirement: The analysis to be performed must cover a more comprehensive range of chemicals; the analyses should not be limited to detect only the contaminants resulting from concretion operations (see comment numbers 33 and 34).	UMM of November 17, 1993

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DOE-RL/WHC Response No. 1: The compliance constituents for the 304 Facility are listed in Table 7-1. These constituents are the hazardous substance used in the building and would be the only potential contaminants in the building. These are the substances to be evaluated for closure. Any contamination in the soil by other substances will be evaluated under the CERCLA RI/FS process.

Ecology Response No. 1: Because of the past uses of this building, it is not possible to determine conclusively what type of contaminants will be expected due to past practices. For clean closure, it is required that all dangerous wastes or waste residues (including soil) be cleaned or removed to the performance standards stipulated in WAC 173-303-610(2)(b). Levels of contamination in the soils above these performance standards but below area background values may be managed under the CERCLA cleanup if this is provided for within the postclosure plan.

Ecology Requirement: Revise the closure plan to comply with the above. See comments 17 and 60.

DOE-RL/WHC Response No. 2: The chemicals stored and used in the past operations and the waste treated and stored over the life of the 304 Facility are known. The newly added table (see response No. 14) will be reevaluated to determine if any potentially hazardous substance was omitted from the compliance list (Table 7-1) of the closure plan. According to WAC 173-303-610, the 304 Facility is only responsible for hazardous substances managed at the 304 Facility. Any contamination in the soil from operations in the 300 Area will be evaluated and remediated under the CERCLA RI/FS process for the 300-FF-3 Operable Unit. See responses No. 4, 17, and 18.

Ecology Response No. 2: The reevaluation is acceptable but implementation may be impacted by the closure policy under development (as discussed at the February 12, 1991, UMM). See number 4.

DOE-RL/WHC Response No. 3: See response No. 17 (DOE-RL/WHC Response No. 3).

Ecology Response No. 3 (Rev. 1): The primary impact to this section by the SCP will be the expansion of the soil analyte parameters to include full characterization of the soils

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underlying the 304 Concretion unit. See comment number 4. In regard to the constituents to be analyzed, all of the analytes included in the SW-846 test methods selected for use in this sampling plan should be included in the data report . In other words, for SW- 846 method 6010, all of the elements listed in Table 1 of that section should be included in the analyses. These expanded analyte parameters will add to the information available for evaluating the potential contamination at the 304 Concretion unit due to unknown chemicals stored here in the past.

DOE-RL/WHC Response No. 4: The chemicals stored and used in the past operations and the waste treated and stored over the life of the 304 Facility are known. According to WAC 173-303-610(2)(b)(i) and (ii), the 304 Facility is only responsible for hazardous substances managed at the 304 Facility. Any contamination in the soil from past practice operations or other TSD units in the 300 Area will be evaluated and remediated appropriately.

36. Page 7-3, line 44. The *Environmental Investigations and Site Characterization Manual* (EII, WHC-CM-7-7) is referenced. This document has not yet been reviewed in full by Ecology. — Ecology letter of November 6, 1990

Ecology Requirement: Acceptance of referenced procedures in the EII is pending, subject to approval by Ecology.

DOE-RL/WHC Response: The *Environmental Investigations and Site Characterization Manual* (WHC-CM-7-7) has been submitted to Ecology and will be included in the Site-wide Part B permit application. The procedures will be implemented at the 304 Concretion Facility pending approval from Ecology. No changes to the text are necessary.

37. Page 7-5, line 3. The plan states, "wipe samples will be collected according to standard sampling techniques ...." No reference to the source of these standard techniques is given. — UMM of November 17, 1993

Ecology Requirement: The specific source(s) for these standard sampling techniques must be referenced. Accepted sampling and testing methods are given in WAC 173-303-110. Deviations from these methods must be described within the closure plan and approved by Ecology prior to implementation.

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DOE-RL/WHC Response No. 1: The wipe sampling procedure was based on the procedure in *A Compendium of Superfund Field Methods*, EPA P-87-001 (OSWER Directive 9335.0-14). The specific procedure is found in Section 13.1 of the referenced document. This information will be provided in the closure plan. Enhancements to the procedure will be fully described in the closure plan.

Ecology Response No. 1 (Rev. 1): The information contained in DOE-RL/WHC response number 1 concerning the EPA wipe sampling procedure "A compendium of Superfund Field Methods, EPA P-87-001", has not been added to this section. If it has been added to this section, or another section of this plan, it can be pointed out at the next Unit Managers meeting, and this issue will be closed. However, if it has not been added, it must be included before this issue can be closed.

DOE-RL/WHC Response No. 2: The procedure in *A Compendium of Superfund Field Methods*, EPA P-87-001 (OSWER Directive 9335.0-14) is referenced in the *304 Concretion Facility Closure Plan*, Revision 1 on Page 7-6 in Section 7.3.2.4.1.3, Surface Sampling Methodology.

38. Page 7-5, line 4. The plan states that wipe samples will be analyzed for the organic compounds listed in Table 7-1. — UMM of November 17, 1993

Ecology Requirement: Table 7-1 is too limited in scope for the potential organic contaminants in the 304 Facility (see comment number 35).

DOE-RL/WHC Response No. 1: The organic compounds and their degradation compounds listed in Table 7-1 are the organic chemicals that were repackaged in the facility. These substances are the only regulated organic compounds associated with the facility and will be evaluated for closure (see response No. 35).

Ecology Response No. 1: Analysis for only a limited number of organic compounds is proposed, see comment number 35.

Ecology Requirement: A more comprehensive list of organic analytes must be evaluated.

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DOE-RL/WHC Response No. 2: The organic compounds listed in the closure plan and on the compliance list (Table 7-1), along with their degradation products, are the only organic chemicals associated with the 304 Facility. According to WAC 173-303-610, the facility is responsible for the chemicals used in the facility. Therefore, analysis and evaluation of other organic chemicals are not required.

Ecology Response No. 2: This is unacceptable. See number 35.

DOE-RL/WHC Response No. 3: The position of the DOE-RL and WHC is that stated in DOE-RL/WHC Response No. 2, comment 38.

Ecology Response No. 3: See comment number 35

DOE-RL/WHC Response No. 4: See DOE-RL/WHC response No. 4 for comment No. 35.

39. Page 7-5, line 6. The plan states that wipe samples will be analyzed for the inorganic contaminants listed in Table 7-1. — Ecology letter of November 6, 1990

Ecology Requirement: Table 7-1 is too limited in scope for the potential inorganic contaminants in the 304 Facility.

DOE-RL/WHC Response: See response No. 35.

40. Page 7-5. This section describes the sampling and analysis method. For waste designation, the procedures required are stipulated under WAC 173-303-110 (see comment number 35). — Ecology letter of February 27, 1992

Ecology Requirement: The descriptions provided should have deviations from the methods stipulated in WAC 173-303-110 clearly delineated. These must be approved by Ecology prior to implementation.

DOE-RL/WHC Response: No standard procedure exists to sample metal walls and girders. This procedure was derived from the standard EPA wipe sampling procedure (see response to comment No. 37).

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41.	Page 7-17, line 1. Replace the method for obtaining concrete chip samples with a method similar or equivalent to that described in the 300 Area Solvent Evaporator Closure Plan. **DOE-RL/WHC Response: The procedure will be revised as follows.** **"Removal of the concrete samples will be performed 'dry' to eliminate any contamination effects by coring or cutting lubricants. Chip samples will be collected by cutting a set of grooves, 1.63 to 2 inches apart, approximately 10.5 inches long, in the surface of the concrete. The grooves will be cut at least 2 inches deep and one groove will be angled about 30 degrees toward the other to yield a narrow triangular sample segment between the bottoms of the grooves. Cross grooves, perpendicular to the ends of the sample grooves will permit the sample to be broken by prying out from the surface to yield a prism-shaped sample piece with an intact surface layer.** **Commercial equipment for cutting grooves is available. The equipment operates dry by pneumatically driven impact bits. The bits are readily cleaned to eliminate cross-contamination between samples."**	Ecology letter of November 6, 1990
42.	Page 7-18, line 50. Background sampling will be performed throughout the 300-FF-3 Operable Unit. This operable unit has not been examined for patterns of contamination yet. It is not clear how it will be determined that the sampling sites chosen are not subject to 'hotspot' contamination from past practices. Ecology Requirement: Describe how it will be documented that the background sampling sites in the 300-FF-3 Operable Unit are not contaminated from past practices. Also clarify if the intent of this phase of the sampling plan is to determine 'baseline' contamination rather than background. **DOE-RL/WHC Response No. 1: Samples collected from various locations in the 300-FF-3 Operable Unit will be used to determine baseline (local background) concentrations. These analyses will be used to evaluate clean closure for the 304 Facility.**	Ecology letter of April 3, 1991

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Hot spots will be determined using statistical analysis. The concentrations will be evaluated to determine if there is more than one population. The following information will be included in the text.

DOE-RL/WHC Response No. 2: The tolerance interval test will be used to determine the statistical evidence for 'hot spots' in the local background data. The purpose of the tolerance interval approach is to define a concentration range (local background threshold) from local background data, within which a large proportion of the monitoring observations should fall with high probability. Any 'hot spots' would fall outside of this range and not be included in the action level determination.

43. Page 7-19, line. Background soil samples will be taken to a depth of 1 foot. — Ecology letter of November 6, 1990

Ecology Requirement: The background sampling must be done at depths appropriate for comparison with the soil samples taken under the 304 Facility (i.e., samples from the same soil horizons may be compared). These background samples should also be taken in a manner that they will be adequate for use in the future for examining the pattern of contamination in the 300-FF-3 Operable Unit.

DOE-RL/WHC Response: The baseline soil sampling program will match the soil sampling program (depth) determined to be necessary for the facility (see response No. 32).

44. Page 7-19, line 9. Concrete and asphalt 'baseline' samples will be taken from the outside storage pad and floor of the building. This area is subject to contamination from past operations. — Ecology letter of November 6, 1990

Ecology Requirement: Background samples for the concrete and asphalt must be taken in an area that has not been exposed to contamination.

DOE-RL/WHC Response No. 1: Concrete and asphalt baseline samples will be located, as much as possible, away from activities and potential pathways in the facility (see responses No. 20 and 21).

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Ecology Response No. 1: Concrete and asphalt background samples may not be obtained within a TSD unit.

Ecology Requirement: Refer to comment numbers 20 and 21.

DOE-RL/WHC Response No. 2: See responses No. 20 and 21.

Ecology Response No. 2 (Rev. 1): See comment numbers 20 and 21.

DOE-RL/WHC Response No. 3: See DOE-RL/WHC response No. 4 for comments No. 20 and 21.

45. Page 7-19, line 47. Typographical error. The period is missing at the end of this line. — Ecology letter of November 6, 1990

DOE-RL/WHC Response: The typographical error will be corrected.

46. Page 7-21, line 2. Soil samples will be taken to a depth of 1 foot through the core holes left from sampling cracks. — Ecology letter of November 6, 1990

Ecology Requirement: Soil sampling must be done to a depth adequate for determining the extent of soil contamination.

DOE-RL/WHC Response: See response No. 32.

47. Page 7-26, line 51. Typographical Error. There is a page break after "manner." — Ecology letter of November 6, 1990

DOE-RL/WHC Response: The typographical error will be corrected.

48. Page 7-27, line 21. Equipment blanks will be used to determine if equipment decontamination procedures are adequate. These samples are collected at the final distilled water rinse in the decontamination procedure. Distilled water will not necessarily dissolve all types of contamination. In other words, contamination may still be present, but not dissolved by the water and will, therefore, not be detected. — Ecology letter of November 6, 1990

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Ecology Requirement: Utilize a method that will detect a wider range contamination on the equipment in order to assess the decontamination procedures. Refer to EII 5.5, Rev. 1, Section 6.4, Quality Control.

DOE-RL/WHC Response: As written, the section on equipment blanks is misleading. This blank is a field quality control method. It is not intended to be used as the method to verify decontamination of equipment. Decontamination of equipment is performed according to EII 5.5. The field equipment blank method is used as a quality check on the equipment. This method has been taken from SW-846. The equipment blank paragraph will be replaced by the following.

> **"Equipment blanks serve as a check on sampling device cleanliness. An equipment blank is comprised of distilled water, which is transported to the site, opened in the field, and poured over or through the sample collection device, collected in a sample container, and returned to the laboratory for analysis. These samples will be collected daily."**

49. Page 7-30, line 2. The plan states, "... seals should be attached so that the seal must be broken to open the container." — Ecology letter of November 6, 1990

Ecology Requirement: Replace the word "should" with "must" in the above statement.

DOE-RL/WHC Response: The sentence will be revised to read: "seals must be attached so that the seal must be broken to open the container."

50. Page 7-31, line 45. Procedures for personnel decontamination will be provided in a sitewide health and safety plan. — UMM of November 17, 1993

Ecology Requirement: These procedures must be discussed within the closure plan.

DOE-RL/WHC Response No. 1: A Hanford Site-wide Health and Safety Plan is being prepared to describe health and safety activities for sampling activities. The plan is currently undergoing final comment incorporation and is expected to be completed by the end of the calendar year.

No.	Comment/Response	Ecology Concurrence

Ecology Response No. 1: The DOE-RL/WHC proposes that the requirement for the unit-specific personnel decontamination procedures be provided in the Hanford Site-Wide Health and Safety Plan.

Ecology Requirement: The unit-specific plan must be presented within the unit's closure plan. It is anticipated that the health and safety plan for the 304 Concretion unit will be more detailed than that for the site-wide. Refer to comment number 54.

DOE-RL/WHC Response No. 2: A Site-Wide Health and Safety Plan is being prepared and will be referenced in the closure plan. In addition, the 304 Facility-specific health and safety plan will be prepared before sampling and added to the closure plan at that time. This plan is titled *Hazardous Waste Operation Permit* and will be prepared in accordance with EII 2.2, *Preparation of Hazardous Waste Operation Permit*.

Ecology Response No. 2: This is not acceptable. This plan must be submitted prior to approval of the closure plan; sufficient time for Ecology review is required. The health and safety plan must be included with the next submittal.

DOE-RL/WHC Response No. 3: The position of the DOE-RL and WHC is that stated in DOE-RL/WHC Response No. 2, comment 50.

Ecology Response No. 3 (Rev. 1): As discussed at the December 19th, 1991 Unit Managers meeting, it may be acceptable to defer submittal of the Health and Safety Plan until just prior to sampling at the site. This is contingent upon the submittal of an example Hazardous Waste Operation Permit to Ecology. The exact details of the timing of HASP submittal and the sampling plan/closure plan approval will be discussed at future Unit Managers meetings.

DOE-RL/WHC Response No. 4: An example of a Hazardous Waste Operations Permit will be sent to Ecology.

51. Page 7-32, line 17. The plan states that analyses will be performed according to SW-846 requirements except for uranium which will be determined by the *SCINTREX UA-3 method. No discussion of the specific SW-846 methods is made, nor are the specific analytes mentioned. — Ecology letter of November 6, 1990

No.	Comment/Response	Ecology Concurrence

Ecology Requirement: All analysis planned should be presented in a table which gives the following information:

- Sampling method
- Analytical method
- Analyte(s)
- Contract detection limit(s).

DOE-RL/WHC Response: The procedure for using the SCINTREX UA-3 Method will be referenced in the closure plan and a copy provided to Ecology. The analytical method for each analyte will be included in a table.

52. Page 7-32, line 34. Non-standard analytical methods will be approved by a Westinghouse Hanford contracts representative. No criteria are discussed. — Ecology letter of November 6, 1990

Ecology Requirement: Any substantial changes to standard analytical methods must be presented within the closure plan for approval. Criteria for determining what constitutes a substantial change to a method must be included in the closure plan for approval by Ecology.

DOE-RL/WHC Response No. 1: The analysis method in SW-846 is limited to the detection of gross alpha and beta only. The SCINTREX UA-3 laser method is better suited to detect uranium. Lines 34 and 35 will be deleted and the procedure will be referenced. A copy of the procedure will be provided to Ecology.

Ecology Response No. 1: This is acceptable if uranium testing is the only variance from the analytical methods stipulated in WAC 173-303-110.

Ecology Requirement: Any analytical methods which deviate significantly from the methods stipulated in WAC 173-303-110 must be submitted to Ecology to determine acceptance prior to their use.

No.	Comment/Response	Ecology Concurrence
53.	Page 7-33, line 4. A decommissioning work plan is mentioned but not described in any detail. Ecology Requirement: The information covered in the decommissioning work plan must be approved by Ecology prior to implementation. This information must be presented within the closure plan. **DOE-RL/WHC Response: A 'decommissioning work plan' is a generic term for the implementation procedure used to provide specific field direction to workers performing the decontamination and demolition. The general decontamination information is included in Sections 7.4, 7.5, and 7.6 of the closure plan. The decommissioning work plan will specify sufficient detail for field implementation of the items addressed in these sections. The decommissioning work plan will be included as an appendix in the closure plan. This will take place just before the work begins.**	Ecology letter of November 6, 1990
54.	Page 7-33, line 8. The health and safety plan specific to the 304 Facility is not yet prepared and, therefore, not presented in the closure plan. Ecology Requirement: The 304 Facility health and safety plan must be presented within the closure plan. **DOE-RL/WHC Response No. 1: The 304 Facility Health and Safety Plan will be prepared and included in the closure plan. This plan is titled *Hazardous Waste Operation Permit* and will be prepared in accordance with EII 2.2, *Preparation of Hazardous Waste Operations Permit*.** **DOE-RL/WHC Response No. 2: See response No. 50.** Ecology Response No. 1: See number 50. **DOE-RL/WHC Response No. 3: See response No. 50 (DOE-RL/WHC Response No. 3).** Ecology Response No. 2 (Rev. 1): See response number 50. **DOE-RL/WHC Response No. 3: See DOE-RL/WHC response No. 4 for comment 50.**	UMM of November 17, 1993

No.	Comment/Response	Ecology Concurrence
55.	Page 7-33, line 12. Standard Westinghouse Hanford radiation work procedures are mentioned but not discussed. Ecology Requirement: Describe the standard Westinghouse Hanford radiation work procedures. **DOE-RL/WHC Response: Standard WHC radiation work procedures will not be discussed further in the text. Personnel safety will be fully described in the Site-wide Health and Safety Plan and in the Site Specific Health and Safety Plan (also known as the *Hazardous Waste Operations Permit*). The site-specific health and safety plan will be included in an appendix in the closure plan.**	Ecology letter of November 6, 1990
56.	Page 7-33, line 23. The plan states that, "excess sample material will be containerized as described previously." Ecology Requirement: Reference the section where this is described. **DOE-RL/WHC Response: Disposal procedures of unknown or suspect waste materials are controlled by EII 4.2 *Interim Control of Unknown, Suspected Hazardous and Mixed Waste*. The reference will be provided in the text in addition to the summary already provided.**	Ecology letter of November 6, 1990
57.	Page 7-33, line 37. The training courses and activities are listed by title, but the course contents are not described. Ecology Requirement: Describe the course contents and list which training is required for individual job classifications. **DOE-RL/WHC Response No. 1: The information provided in the text on training requirements is sufficient for the purposes of this closure plan.** Ecology Response No. 1: Although Ecology requested information regarding training, the DOE-RL/WHC states that the information provided is, "sufficient for the purposes of this closure plan." The information presented is not adequate.	Ecology letter of February 27, 1992

No.	Comment/Response	Ecology Concurrence

Ecology Requirement: Describe the course contents and list which training is required for individual job classifications.

DOE-RL/WHC Response No. 2: The following text, table, and appendix will be added to the closure plan in the appropriate place.

> **"All personnel involved with the closure procedure of the 304 Facility, will receive a level of dangerous waste training commensurate with their position. Personnel are generally placed into two job categories, Operations Manager and Supervisors, and Nuclear Operators.**
>
> - **Operations Manager and Supervisors are responsible for supervising, coordinating, and directing the activities of nuclear operators.**
>
> - **Nuclear Operators are responsible for sampling, packaging, and handling of dangerous waste, nonradioactive as well as radioactive material.**
>
> **Table 7-4 contains a matrix that relates job categories to the individual training course. Appendix E contains brief descriptions of selected training courses, including descriptions of the target audience, instructional technique, evaluation method, length of course, and frequency of retraining."**

Ecology Response No. 2: This is not adequate because it is too narrow in scope. For example, the 304 Concretion Facility has radiation zones, but RPT's are not covered. Expand the training section to cover all of the personnel which are required to be present during the closure activities.

DOE-RL/WHC Response No. 3: The training plan has been expanded to cover all the personnel that may be required to be present during closure activities. This information is included in Section 7.3.12.3 and Appendix E of the closure plan.

No.	Comment/Response	Ecology Concurrence
58.	Page 7-35, line 24. Low-level radioactive mixed waste (LLRMW), will be kept onsite until a treatment, storage, and/or disposal facility is available. Ecology Requirement: State where and how this material will be stored. In no case will storage of LLRMW at a nonpermitted facility be allowed that exceeds the 90-day storage limit. **DOE-RL/WHC Response No. 1: The text will be modified to indicate that low-level radioactive mixed waste will not be stored at a nonpermitted facility for period in excess of 90 days.** **DOE-RL/WHC Response No. 2: Page 7-24, bullet on line 24 will be modified to read as follows.** **"If the building demolition material is dangerous, low-level radioactive mixed waste (LLRMW), it will be transferred to the Central Waste Complex for interim storage and future treatment or disposal. Hanford Site requirements for radioactive solid waste packaging, storage, and disposal (WHC 1990) will be followed when preparing waste for storage and/or disposal."** **Willis, N. P., 1990, *Hanford Site Radioactive Solid Waste Acceptance Criteria*, WHC-EP-0063-2, Westinghouse Hanford Company, Richland, Washington.**	Ecology letter of April 3, 1991
59.	Page 7-35, line 31. Disposal of materials that are not dangerous or radioactive mixed waste will be disposed of in an onsite rubble pit or the central landfill. Ecology Requirement: Although building materials are not subject to the *Dangerous Waste Regulations*, they must be disposed of at a solid waste landfill which meets the minimal functional standards in WAC 173-304 or other more stringent local standards. Document that wastes are disposed of in accordance with applicable laws and regulations and modify the text accordingly. **DOE-RL/WHC Response: The section will be changed to read as follows, "If the material is not dangerous and is not LLRMW, the demolition rubble will be disposed of at a solid waste landfill, which meets the standards in WAC 173-304 and applicable local standards."**	Ecology letter of November 6, 1990

No.	Comment/Response	Ecology Concurrence
60.	Page 7-35, line 39. The plan states, "soils affected by other operations will be left in place and managed under CERCLA." This criterion is not appropriate; soils impacted in a larger portion of the 300-FF-3 Operable Unit will be appropriately addressed under the CERCLA cleanup, but only if the 304 treatment, storage, and/or disposal unit is affected, it should be cleaned under the RCRA closure. Ecology Requirement: Restate this criterion to reflect the above. **DOE-RL/WHC Response No. 1: The sentence will be changed to read as follows, "Soils affected by other facilities in the 300 Area will be left in place and managed under CERCLA."** Ecology Response No. 1: There appears to be some confusion about the strategy acceptable to Ecology. This unit is being permitted to close under WAC 173-303, therefore, the performance standards of WAC 173-303-610 must be met. Ecology has determined that if clean closure of the soils to these standards is not appropriate due to wide-spread contamination throughout the 300-FF-3 Operable Unit, then the soils must be cleaned to a local area background contamination levels and the RCRA postclosure must be managed within the requirements of the CERCLA closure. Ecology Requirement: Ecology will accept a closure plan in which soils with contamination levels exceeding the performance standards stipulated under WAC 173-303-610(2)(b) may be left in place under the following two conditions: • The contamination levels do not exceed the area background contamination levels present throughout the 300-FF-3 Operable Unit • The RCRA postclosure plan provides for management of the 304 Concretion Unit within the CERCLA cleanup. Revise the closure plan accordingly. **DOE-RL/WHC Response No. 2: The closure strategy for the 304 Facility is presented in responses No. 4, 17, 18, and the flowchart (Figure 6-1).**	UMM of November 17, 1993

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Ecology Response No. 2: See number 4.

DOE-RL/WHC Response No. 3: See response No. 4 (DOE-RL/WHC Response No. 3).

Ecology Response No. 3 (Rev. 1): The SCP will impact this section. Namely, it is not acceptable to leave contaminated soils that exceed the SCP performance standards in place for remediation under the CERCLA process.

DOE-RL/WHC Response No. 4: See DOE-RL/WHC response No. 4 for comment No. 4 and the first paragraph in DOE-RL/WHC response No. 3 for comment No. 24.

61. Page 7-35, line 46. The plan mentions RCRA-listed contaminants. The applicable regulatory listing is the Washington State Dangerous Waste Regulations, WAC 173-303. — Ecology letter of November 6, 1990

Ecology Requirement: Revise the text accordingly.

DOE-RL/WHC Response: The text will be revised. "RCRA-listed contaminates," will be deleted and 'WAC 173-303' will be referenced.

62. Page 7-36, line 5. All equipment will be decontaminated or disposed of, "according to regulatory requirements." — UMM of November 17, 1993

Ecology Requirement: State clearly what is meant by the above statement.

DOE-RL/WHC Response No. 1: The sentence will be revised to read: "In addition, all equipment used during closure activities will be decontaminated or disposed of according to EIIs 4.2, 5.4, and 5.5.

Ecology Response No. 1: The DOE-RL/WHC states, "... equipment used during closure activities will be decontaminated or disposed of according to EIIs 4.2, 5.4, and 5.5."

Ecology Requirement: This is acceptable pending Ecology's review of the cited EIIs. Ecology anticipates that these will be reviewed as part of the development of the Hanford Site-Wide Permit.

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Ecology Response No. 2 (Rev. 1): There are portions of these documents, particularly E.I.I. 4.2, that are not acceptable practices. For example, it is not acceptable at this facility to delay the marking of the accumulation date for suspected hazardous waste until after the waste has been verified as dangerous waste or it meets the requirements of section 6.4 of E.I.I. 4.2. In general, these documents are open-ended and vague, and do not consistently comply with WAC 173-303. It may be more efficient to write specific requirements for decontamination and interim storage of suspected dangerous waste than to try to change the E.I.I.'s.

DOE-RL/WHC Response No. 2: The EII 4.2 is being revised.

63. Page 7-36, line 11. Closure of the 304 Facility will begin after approval by Ecology according to the schedule presented in Figure 7-15. — Ecology letter of November 6, 1990

Ecology Requirement: Some of the items on the closure schedule must be reviewed by Ecology prior to approval of the closure plan and are, therefore, required to be presented within the plan. For example, the health and safety plan and the work plan must be reviewed. Revise the closure plan and schedule accordingly.

DOE-RL/WHC Response: See responses No. 50, 53, and 55. Preparation of health and safety plans and decommissioning work plans will be removed from the schedule. These are lower-tier documents for a job-specific site and do not require Ecology approval.

64. Page 7-37. A greenhouse is referenced in the closure schedule. — UMM of November 17, 1993

Ecology Requirement: Design drawings and performance specifications must be included within the work plan for this structure.

DOE-RL/WHC Response: The following will be included in the closure plan.

> **"Depending on the surface area, method, material, and location of areas to be decontaminated, a wood frame greenhouse may be necessary to control the spread of low-level radiological and hazardous contaminants. This greenhouse will provide a negative air pressure [via high-efficiency particulate air (HEPA) filter equipped**

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exhauster], airlock entry and exits, and other attributes similar to an asbestos work enclosure described by EPA in *Asbestos Waste Management Guidance* [Occupational Safety and Health Administration (OSHA) Regulations, 29 *Code of Federal Regulations* (CFR) 1926.58 Appendix F]."

65. Page 8-1, line 25. Replace, "(legal description of 304 Concretion Facility Site)," with the legal description. — Ecology letter of April 3, 1991

DOE-RL/WHC Response No. 1: The WAC 173-303-610(10) does not require this information if the facility is clean closed. In addition, the information would not be provided until after remediation because the size of the area remediated would not be known.

Ecology Response No. 1: The DOE-RL/WHC argues that a legal description of the unit is not required at this time because: a) it is not required under WAC 173-303 if the unit is clean closed, or b) if it is not clean closed, the information would not be provided until after remediation because the size of the area to be remediated would not be known.

Ecology Requirement: In order to plan a cleanup of this unit, it is necessary to know the boundaries. Ecology realizes that there is some difficulty in obtaining the precise legal boundaries at this point in time, however, we also recognize that boundaries must be determined in order to determine the scope of the cleanup for this unit. Provide the legal description of this unit when the information is available. In the interim, provide a description and illustration of the boundaries of this unit for use in the closure of the unit. Note that the asphalted area surrounding the building will be considered part of this unit. The sampling plan must be revised to incorporate this area.

DOE-RL/WHC Response No. 2: For the purpose of closing the 304 Facility, the boundaries of the facility have been determined to be halfway to the neighboring facility on the east, west, and south and to the street on the north. The boundary is illustrated in Figure 2-3. This figure will be added to the closure plan. The asphalt on the sides of the building will be included in the sampling plan.

Ecology Response No. 2 (Rev. 1): The legal description of the facility has not been added to the postclosure section. Page 8-1, line 25.

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DOE-RL/WHC Response No. 3: The resolution to this comment was accepted by Ecology (see DOE-RL/WHC response No. 2). The figure referred to in DOE-RL/WHC response No. 2 for this comment, along with the boundary discussion, is located in the *304 Concretion Facility Closure Plan*, Revision 1. The discussion is located in the first paragraph of Section 2.2 on Page 2-1 of the closure plan. The figure is located on Page 2-4.

66. Page 8-2, line 10. No postclosure plan is provided and none will be until it is shown that the site is not remediable under the CERCLA closure effort. — UMM of November 17, 1993

Ecology Requirement: A postclosure plan with provisions for management under the CERCLA cleanup effort must be provided.

DOE-RL/WHC Response No. 1: A postclosure plan is not required unless the facility is not clean closed. If the soil cannot be clean closed, a section will be added to the closure plan describing the interim stabilization and care before remediation under the CERCLA RI/FS process.

Ecology Response No. 1: The DOE-RL/WHC proposes to provide a postclosure plan if the soil can not be clean closed which will describe, "... the interim stabilization and care prior to remediation under the CERCLA RI/FS process." This is not adequate for the purposes of a postclosure plan. The postclosure plan must be provided with the closure plan. It must provide for management of the unit through the CERCLA closure process. Refer to WAC 173-303-610(7) for guidance. It will not be necessary to implement the postclosure plan if the performance standards of WAC 173-303-610(2)(b) for clean closure are met.

Ecology Requirement: Compliance with the above is required.

DOE-RL/WHC Response No. 2: The text shown in response No. 17 will be added to the closure plan. This text indicates the steps that will be taken between closure of the building and remediation of the soil by the CERCLA RI/FS process if the soil requires remediation from contamination caused by operations conducted in the 304 Facility.

Ecology Response No. 2: See number 4.

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DOE-RL/WHC Response No. 3: See response No. 50 (DOE-RL/WHC Response No. 3).

Ecology Response No. 3 (Rev. 1): All the possible options for closure of the 304 Concretion unit must be explained in detail within the closure plan. This includes the postclosure plan if one of the options for this unit is to leave dangerous waste and/or constituents in place. In the past DOE-RL/WHC have stated that their intention is to leave dangerous waste in place in the soil. If this is the closure approach for this facility, then it is necessary to submit a postclosure plan along with a permit application. WAC 173-303-610 calls for the postclosure plan to be submitted with the permit application within 90 days following the decision by the owner or operator or the department that the unit must be closed as a landfill (i.e., dangerous waste will be left in place upon closure).

DOE-RL/WHC Response No. 4: The DOE-RL and WHC have not stated that the intention is to leave waste in place in the soil at this unit. The DOE-RL and WHC have stated that, with the exception of an imminent health threat, all soil remediation will take place under the CERCLA RI/FS process for the 300-FF-3 Operable Unit. A final decision on the remediation of the soil will not be made until after sampling is complete and the ROD for the operable unit is prepared. See DOE-RL/WHC response No. 4 for comment No. 4 and the first paragraph of DOE-RL/WHC response No. 3 for comment No. 24.

67. Section 9.0, References. Some of the documents referenced are outdated and have been superseded by more recent information. For example, the document by T.L. Jones, 1978, *Sediment Moisture Relations: Lysimeter Project 1976-1977 Water Year*, could be replaced by PNL 6400 or a more recent document. — Ecology Letter of February 27, 1992

Ecology Requirement: Review the documents referenced and use the most recent accurate information available. Decade old reports are not acceptable if more recent information is available.

DOE-RL/WHC Response: The documents referenced in the closure plan will be reviewed to ensure that the most appropriate up-to-date references are used.

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68.	Page B-1, line 2. The table title indicates a 5 percent frequency. Ecology Requirement: Describe what this 5 percent frequency refers to. **DOE-RL/WHC Response No. 1: The 5-percent frequency refers to a random sampling of 5 percent of the gridded sections that are shown on the sampling diagrams. Each area to be sampled has been broken down into 1 meter grids, 5 percent of which will be randomly sampled. Because this information is not relevant to random number tables, it will be deleted.** Ecology Response No. 1: The DOE-RL/WHC explains the table title indication of a 5 percent frequency. Ecology Requirement: This type of information should be provided in the quality assurance/ quality control section of the closure plan. Refer to the 2101-M Pond Closure Plan in development for guidance. **DOE-RL/WHC Response No. 2: A random 5-percent sampling of the 1-meter-square gridded area is stated in Section 7.3.2.5, Sampling Locations.** Ecology Response No. 2 (Rev. 1): The wording following the dash in the Table B-1 title should be deleted. The new title will read: "The 304 all Sampling Locations.n Please note that Table B-1 on page B-2 also needs to be corrected. Correct the other table titles in B-2 as necessary. **DOE-RL/WHC Response No. 3: The changes will be made as suggested by Ecology.**	UMM of November 17, 1993
69.	Section 8: There is no discussion of the notice to the local land use authority. Ecology Requirement: Add wording that includes the notice to the local land-use authority per the requirements of WAC 173-303-610(9). **DOE-RL/WHC Response: A sub-section will be added to Chapter 8.0, 'Postclosure', that includes the notice to the local land-use authority.**	UMM of October 13, 1994