

# Plan and Schedule for Disposition and Regulatory Compliance for Miscellaneous Streams

PL-2214-1  
FEB 22 1994  
OSTI

Date Published  
January 1994



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

Approved for Public Release

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

Date Received: 1/21/94

## INFORMATION RELEASE REQUEST

Reference: WHC-CM-3-4

Complete for all Types of Release

Purpose		ID Number (include revision, volume, etc.) DOE/RL-93-94, Revision 0	List attachments.
<input type="checkbox"/> Speech or Presentation	<input type="checkbox"/> Reference		
<input type="checkbox"/> Full Paper	<input type="checkbox"/> Technical Report		
<input type="checkbox"/> Summary	<input type="checkbox"/> Thesis or Dissertation		
<input type="checkbox"/> Abstract	<input type="checkbox"/> Manual		
<input type="checkbox"/> Visual Aid	<input type="checkbox"/> Brochure/Flier		
<input type="checkbox"/> Speakers Bureau	<input type="checkbox"/> Software/Database		
<input type="checkbox"/> Poster Session	<input type="checkbox"/> Controlled Document		
<input type="checkbox"/> Videotape	<input checked="" type="checkbox"/> Other		

Title Plan and Schedule for Disposition and Regulatory Compliance for Miscellaneous Streams		Unclassified Category	Impact Level 4
---	--	-----------------------	----------------

New or novel (patentable) subject matter? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has disclosure been submitted by WHC or other company? <input type="checkbox"/> No <input type="checkbox"/> Yes Disclosure No(s).	Information received from others in confidence, such as proprietary data, trade secrets, and/or inventions? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Identify)
Copyrights? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has written permission been granted? <input type="checkbox"/> No <input type="checkbox"/> Yes (Attach Permission)	Trademarks? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Identify)

Complete for Speech or Presentation			
Title of Conference or Meeting N/A		Group or Society Sponsoring N/A	
Date(s) of Conference or Meeting N/A	City/State N/A	Will proceedings be published? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Will material be handed out? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Title of Journal N/A			
-------------------------	--	--	--

CHECKLIST FOR SIGNATORIES						
Review Required per WHC-CM-3-4	<u>Yes</u>	<u>No</u>	Reviewer - Signature Indicates Approval			
			Name (printed)	Signature	Date	
Classification/Unclassified Controlled						
Nuclear Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Patent - General Counsel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	S. W. Berglin	B. Williamson	1-6-94	
Legal - General Counsel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	B. D. Williamson	B. Williamson	1-11-94	
Applied Technology/Export Controlled						
Information or International Program	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
WHC Program/Project	<input checked="" type="checkbox"/>	<input type="checkbox"/>	D. R. Speer	Wayne Green	1-11-94	
Communications	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
RL Program/Project	<input checked="" type="checkbox"/>	<input type="checkbox"/>	J. D. Berwick	J. D. Berwick	1-21-94	
Publication Services	<input checked="" type="checkbox"/>	<input type="checkbox"/>	D. J. Hastings	D. J. Hastings	1-21-94	
Other Program/Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Information conforms to all applicable requirements. The above information is certified to be correct.

Yes	No	INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP	
References Available to Intended Audience <input checked="" type="checkbox"/> <input type="checkbox"/>		Stamp is required before release. Release is contingent upon resolution of mandatory comments.	
Transmit to DOE-HQ/Office of Scientific and Technical Information <input type="checkbox"/> <input checked="" type="checkbox"/>			
Author/Requestor (Printed/Signature) <i>S. J. Skurla</i> Date <i>1/6/94</i>			
Intended Audience <input type="checkbox"/> Internal <input type="checkbox"/> Sponsor <input checked="" type="checkbox"/> External			
Responsible Manager (Printed/Signature) <i>J. J. Luke</i> Date <i>1-11-94</i>		Date Cancelled	Date Disapproved

## CONTENTS

1.0	INTRODUCTION	1
2.0	PURPOSE	1
3.0	BACKGROUND	2
3.1	CONSENT ORDER MILESTONES FOR MISCELLANEOUS STREAMS	2
3.2	STATE WASTE DISCHARGE PERMIT PROGRAM AND THE UNDERGROUND INJECTION CONTROL PROGRAM	3
4.0	DEFINITION OF MISCELLANEOUS STREAMS AND STREAM CATEGORIES	4
5.0	PLAN FOR DISPOSITION AND REGULATORY COMPLIANCE OF MISCELLANEOUS STREAMS	6
5.1	CLARIFICATION AND JUSTIFICATION - FIGURE 5-1, PAGE 1	7
5.2	CLARIFICATION AND JUSTIFICATION - FIGURE 5-1, PAGE 2	11
5.3	CLARIFICATION AND JUSTIFICATION - FIGURE 5-1, PAGE 3	13
6.0	SCHEDULE FOR DISPOSITION AND REGULATORY COMPLIANCE OF MISCELLANEOUS STREAMS	15
7.0	REFERENCES	17
7.1	DOCUMENTS AND LETTERS	17
7.2	CODE OF FEDERAL REGULATIONS AND FEDERAL REGISTER	17
7.3	FEDERAL AND STATE ACTS	17
7.4	WASHINGTON ADMINISTRATIVE CODE	17

## FIGURE

5-1	Plan for Disposition of Miscellaneous Streams Discharging to Land	8
-----	---	---

## TABLE

6-1	Schedule for Disposition and Regulatory Compliance of the Miscellaneous Streams	16
-----	---	----

## PLAN AND SCHEDULE FOR DISPOSITION AND REGULATORY COMPLIANCE FOR ALL REMAINING MISCELLANEOUS STREAMS

### 1.0 INTRODUCTION

On December 23, 1991, the U.S. Department of Energy, Richland Operations Office (RL) and the Washington State Department of Ecology (Ecology) agreed to adhere to the provisions of Department of Ecology Consent Order No. DE 91NM-177 (Consent Order) (Ecology and USDOE, 1991). The Consent Order lists regulatory milestones for liquid effluent streams at the Hanford Site to comply with the permitting requirements of Washington Administrative Code 173-216 or 173-218 where applicable (WAC 173-216/218).

Hanford Site liquid effluent streams discharging to the soil column have been categorized in the Consent Order as follows:

- Phase I Streams
- Phase II Streams
- Miscellaneous Streams.

Phase I and Phase II Streams are identified in two RL reports: "Plan and Schedule to Discontinue Disposal of Contaminated Liquids into the Soil Column at the Hanford Site" (DOE-RL 1987), and "Annual Status of the Report of the Plan and Schedule to Discontinue Disposal of Contaminated Liquids into the Soil Column at the Hanford Site" (Stordeur 1988). There are 33 Phase I and Phase II Streams. Miscellaneous Streams are those liquid effluent streams discharged to the ground that are not categorized as Phase I or Phase II Streams.

Miscellaneous Streams discharging to the soil column at the Hanford Site are subject to the requirements of several milestones identified in the Consent Order. This document provides a plan and schedule for the disposition of Miscellaneous Streams to satisfy one of the Miscellaneous Stream Consent Order requirements. The disposition process for the Miscellaneous Streams as developed for this milestone is facilitated using a decision tree format. The logic diagram and corresponding analysis for determining appropriate disposition of these streams is presented in this document. The options for disposition of the Miscellaneous Streams have been selected based on demonstrating compliance with the intent of the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) (Ecology, et al., 1992),, Consent Order, WAC 173-216, WAC 173-218, WAC 173-226, and RCW 90.48.

### 2.0 PURPOSE

This document satisfies the Milestone in Section 6 of the Consent Order to "submit a plan and schedule for disposition and regulatory compliance for all remaining Miscellaneous Streams to Ecology for approval by 1/94." This Milestone is applicable to all Miscellaneous streams inventoried as a result of implementing the "Plan and Schedule for Identification and

Evaluation for all Miscellaneous Streams," (WHC 1992) submitted to Ecology in September 1992.

### 3.0 BACKGROUND

As part of Tri-Party Agreement negotiations, RL, Ecology, and U.S. Environmental Protection Agency (EPA) agreed that liquid effluents discharged to the soil column would be regulated in accordance with the M-17 series of milestones as set forth in the Tri-Party Agreement.

The three parties, RL, Ecology and EPA, agreed in the Second Amendment of the Tri-Party Agreement, September 9, 1991: ". . . that those waste water streams currently discharged to the soil column or future waste water streams (excluding discharges that are exempt from permitting under Section 121 of the Comprehensive Environmental Response, Compensation and Liability Act), which affect ground water or have the potential to affect ground water, shall be subject to regulatory permitting under RCW 90.48.160, WAC 173-216, or if applicable, WAC 173-218." (Ecology, et. al., 1992) The three parties further agreed that RL and Ecology would negotiate a separate agreement by September 1991, or a later date as agreed upon by the necessary actions leading to obtaining such permits at the Hanford Site. That agreement, the Ecology Consent Order DE 91NM-177, was signed by RL and Ecology on December 23, 1991.

### 3.1 CONSENT ORDER MILESTONES FOR MISCELLANEOUS STREAMS

Section 6 of the Consent Order stipulates several milestones for miscellaneous streams. Table 4 of Section 6 promulgates a schedule for the submittal of WAC 173-216/218 permit applications for eleven miscellaneous streams and corresponding disposal sites. The Consent Order specifically allows for any liquid effluent stream that is discontinued or rerouted, prior to the submittal date for any pertinent regulatory milestone, to be exempted from the milestone requirements for that effluent stream. However, if rerouted (which may occur only with Ecology approval), the liquid effluent stream shall assume the submittal date for any pertinent regulatory milestone established for the effluent treatment, collection, conveyance, storage or disposal facility it is rerouted to, in accordance with Tables 1 through 6 of the Consent Order.

Three milestones in Section 6 apply to miscellaneous streams not identified in Table 4:

- Submit revised "Inventory of Disposal Sites for Miscellaneous Stream, July, 1991" to Ecology by August 1992.
- Submit a plan which includes an overall regulatory strategy, methodology, and schedule for identification and evaluation of all Miscellaneous Streams by September 1992.

- Submit a plan and schedule for disposition and regulatory compliance for all remaining Miscellaneous Streams to Ecology for approval by January 1994.

The requirements of the first and second milestone listed above have been met through the submittal of the "Revised Inventory of Miscellaneous Streams, August 1992", and the "Plan for Identification and Evaluation of All Miscellaneous Streams (September 1992)", respectively. This document will satisfy the requirements of the third milestone.

Section 7 of the Consent Order specifies that WAC 173-216/218 permits shall not be required for liquid effluent streams that:

- remain discontinued,
- are currently discharging to ground but shall not continue to discharge to ground after June 1995,
- are permitted through the NPDES, or through an Ecology approved pretreatment program, where applicable.

Although this statement is provided under the section heading of "Phase I and Phase II Liquid Effluents for which WAC 173-216 (WAC 173-218 where applicable) Permits Shall not be Required," the intent is considered applicable to miscellaneous streams as well.

### **3.2 STATE WASTE DISCHARGE PERMIT PROGRAM AND THE UNDERGROUND INJECTION CONTROL PROGRAM**

The State Waste Discharge Permit (SWDP) Program described in WAC 173-216 applies to the discharge of waste materials from industrial, commercial, and municipal operations into ground and surface waters of the state and into municipal sewer systems. WAC 173-216 does not apply to the following:

- The point source discharge of pollutants into navigable waters of the state which are regulated by the National Pollutant Discharge Elimination System (NPDES) Permit Program described in WAC 173-220.
- The discharge of pollutants into waters of the state which are regulated by the State Waste Discharge General Permit Program described in WAC 173-226.
- The injection of fluids through wells which are regulated by the Underground Injection Control Program described in WAC 173-218.

The Consent Order requires that liquid effluents at the Hanford Site be subjected to certain regulatory milestones for complying with the WAC 173-216/218 permitting requirements. The Consent Order addresses discharges to the soil column, and does not promulgate milestones for liquid effluent discharges permitted through the NPDES process.

The State Waste Discharge General Permit Program, defined in WAC 173-226, became effective in May 1993. At the time the Consent Order was agreed upon (December 1991), the liquid effluent discharges at Hanford were considered to be best addressed through WAC 173-216, the State Waste Discharge Program. WAC 173-226, the State Waste Discharge General Permit Program was not yet effective at the time of the Consent Order negotiations. However, WAC 173-226 is considered to be a viable option for permitting selected liquid effluent discharges at Hanford while continuing to satisfy the intent of the Consent Order. A general permit covers multiple discharges within a designated geographical area, in lieu of individual permits being issued to each discharger. As stated in WAC 173-226-060, "For all general permits, the department [Ecology] shall make a preliminary determination to develop a general permit. Interested persons may petition the director requesting that a category of discharges be considered for the development of a general permit."

The State Underground Injection Control Regulations are provided in WAC 173-218. The Consent Order recognizes the applicability of WAC 173-218 to govern liquid effluent discharges to the subsurface through a well at the Hanford Site. A well is any bored, drilled or driven shaft, or dug hole whose depth is greater than the largest surface dimension. If the discharge is a waste fluid, WAC 173-218-090 refers to WAC 173-216 requirements for obtaining a State Waste Discharge Permit. If the discharge is not a waste fluid, or any other waste whose underground injection is prohibited by WAC 173-218, a class V injection well notification or registration form may be submitted and must include all required information.

#### **4.0 DEFINITION OF MISCELLANEOUS STREAMS AND STREAM CATEGORIES**

Implementation of the "Plan for Identification and Evaluation of All Miscellaneous Streams (September 1992)" (WHC 1992) provided an inventory of miscellaneous liquid effluent streams discharging to the soil column at the Hanford Site. The inventory has been segregated into a quantitative inventory and a qualitative inventory. The quantitative inventory was compiled to provide an estimate of total discharge rates and quantities for those types of streams that may be considered to potentially contain contaminants or discharge within or to a surface contaminated area. The qualitative inventory consists of stream categories that are not expected to affect ground water or have the potential to affect ground water; are being discontinued or rerouted; or are managed under a separate agreement with Ecology. Information regarding the number of streams within a category and the discharge rates were not considered necessary for the types of streams included in the qualitative inventory.

The Miscellaneous Streams quantitative inventory has been categorized into the following stream types:

- Steam condensate discharges
- Storm water discharges
- HVAC cooling water

- Filter backwash
- Sink drains
- Well pump leakage
- Safety showers
- Other.

This inventory consists of approximately 400 individual streams. The total gallons per minute as a rate of liquid effluent discharged to the soil column for all miscellaneous streams included in the inventory is approximately 145 gallons per minute. Steam condensate discharges make up approximately 73% of the total number of Miscellaneous Streams and 95% of the total volume of Miscellaneous Streams included in the inventory. Storm water discharges make up approximately 15% of the total number of Miscellaneous Streams and 3% of the total volume of Miscellaneous Streams. The remaining streams constitute less than 12% of the total number of Miscellaneous Streams and less than 2% of the total volume.

The following types of routine liquid effluent discharges to the soil make up the qualitative inventory and are not included in the quantitative Miscellaneous Stream inventory:

- Effluent streams that will be eliminated by June 1995, or routed to and included in a treatment facility and/or effluent stream permit or application for permit under WAC 173-216.
- Purge water resulting from well sampling, well development, well rehabilitation and aquifer testing. Purge water from these activities is discharged and managed according to an agreement between DOE, Ecology, and EPA on August 21, 1990 (DOE-RL 1990).
- Fire sprinkler testing wastewater - Fire sprinkler tests check for free water flow and ensure that gauges, flow switches, pressure switches, and by-pass valves operate per design. All sprinkler tests use sanitary water only.
- Wastewater from cleaning of transportation equipment - Sanitary water is used for the washing of all vehicles on site (e.g., cars, buses, trucks).
- Irrigation water (raw or sanitary) used for aesthetics such as lawns, trees, and shrubs.
- Condensate and cooling water (sanitary) from HVAC units in office facilities.
- Raw or sanitary water used for construction and dust control.
- Sanitary water used for hydrostatic testing of equipment.

With the exception of streams to be eliminated by June 1995, or rerouted to a permitted treatment facility and/or stream and the purgewater, the plan for disposition of all Miscellaneous Streams (in both quantitative and qualitative inventories) is presented in Section 5.0.

## **5.0 PLAN FOR DISPOSITION AND REGULATORY COMPLIANCE OF MISCELLANEOUS STREAMS**

The primary objective for compiling the inventory was to identify types and categories of Miscellaneous Streams for subsequent evaluation to determine regulatory and permitting requirements. This evaluation is presented as a logic diagram in Figure 5-1 and provides the plan for disposition and regulatory compliance of the Miscellaneous Streams. The plan has been developed to identify a process for managing Miscellaneous Streams in accordance with the applicable regulations stated in WAC 173-216, 173-218, and/or 173-226 and Chapter 90.48, RCW. The strategy developed includes the following elements:

- Establishment of a 'de minimus' discharge rate below which no permit or registration would be sought,
- Identifying and implementing "Best Management Practices" (BMP) for those streams which have a significant potential to be contaminated or are discharged close to known contaminated areas,
- Submission of WAC 173-216 permit applications for those waste streams which have significance in terms of high flow rates,
- Registering discharges to injection wells under WAC 173-218,
- Registering sanitary sewage systems with a capacity of less than 10,500 gallons per day under WAC 246-272, and
- Petitioning the State of Washington for a general permit under WAC 173-226 for all other waste streams.

This strategy was developed based upon the strict requirements of WAC regulations and further discussions with representatives of the Washington State Department of Ecology and the Environmental Protection Agency. The intent is to ensure proper State involvement with the permitting of waste discharges while not wasting State of Washington and Department of Energy resources on discharges which have no significance in terms of potential to pollute the ground waters. This strategy and logic is further strengthened by the language found in the Tri-Party Agreement which requires the permitting of only those streams that "affect the ground water or have the potential to affect the ground water".

The logic diagram in Figure 5-1 utilizes a series of criteria to determine the appropriate disposition and/or regulatory action for a Miscellaneous Stream or categories of

Miscellaneous Streams. Application of the criteria in Figure 5-1 will result in one of the following determinations or actions for the Miscellaneous Streams:

- Permit under WAC 173-226, the State Waste Discharge General Permit Program.
- Permit under WAC 173-216, the State Waste Discharge Permit Program.
- Register as an injection well under WAC 173-218, the Underground Injection Control Program.
- Register as an injection well under WAC 173-218, the Underground Injection Control Program and permit under WAC 173-226, the State Waste Discharge General Permit Program.
- No permits or registration required.
- Eliminate discharge of Miscellaneous Stream.

The following sections provide clarification and justification for the logic and decision tree analysis presented in Figure 5-1.

## **5.1 CLARIFICATION AND JUSTIFICATION - FIGURE 5-1, PAGE 1**

Liquid effluent discharges require the decision tree analysis that begins on page 1 of Figure 5-1.

### **Is Effluent a Domestic Wastewater?**

As defined in WAC 173-216-030(4), domestic wastewaters are water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments or other places, together with such ground water infiltration or surface waters as may be present. Examples of these wastewaters at the Hanford Site include sanitary wastewaters from bathrooms, showers, and kitchen areas discharged to the sanitary sewer system. The 100-N, 300 and 400 Area sanitary sewage systems are identified in Table 4 of the Consent Order and are subject to permitting milestones provided therein. Sanitary wastewaters in the 1100 Area discharge to the City of Richland sewer system. The remaining sanitary wastewaters are discharged to septic tanks on the Hanford Site.

### **Is discharge from a septic tank with subsurface sewage treatment and disposal and an ultimate design capacity less than or equal to 14,500 gallons per day?**

If the septic system meets this criteria, then per WAC 173-216-050(f), the systems are governed by WAC 246-172 (recodified from WAC 248-96), which is administered by the Washington State Department of Social and Health Services.

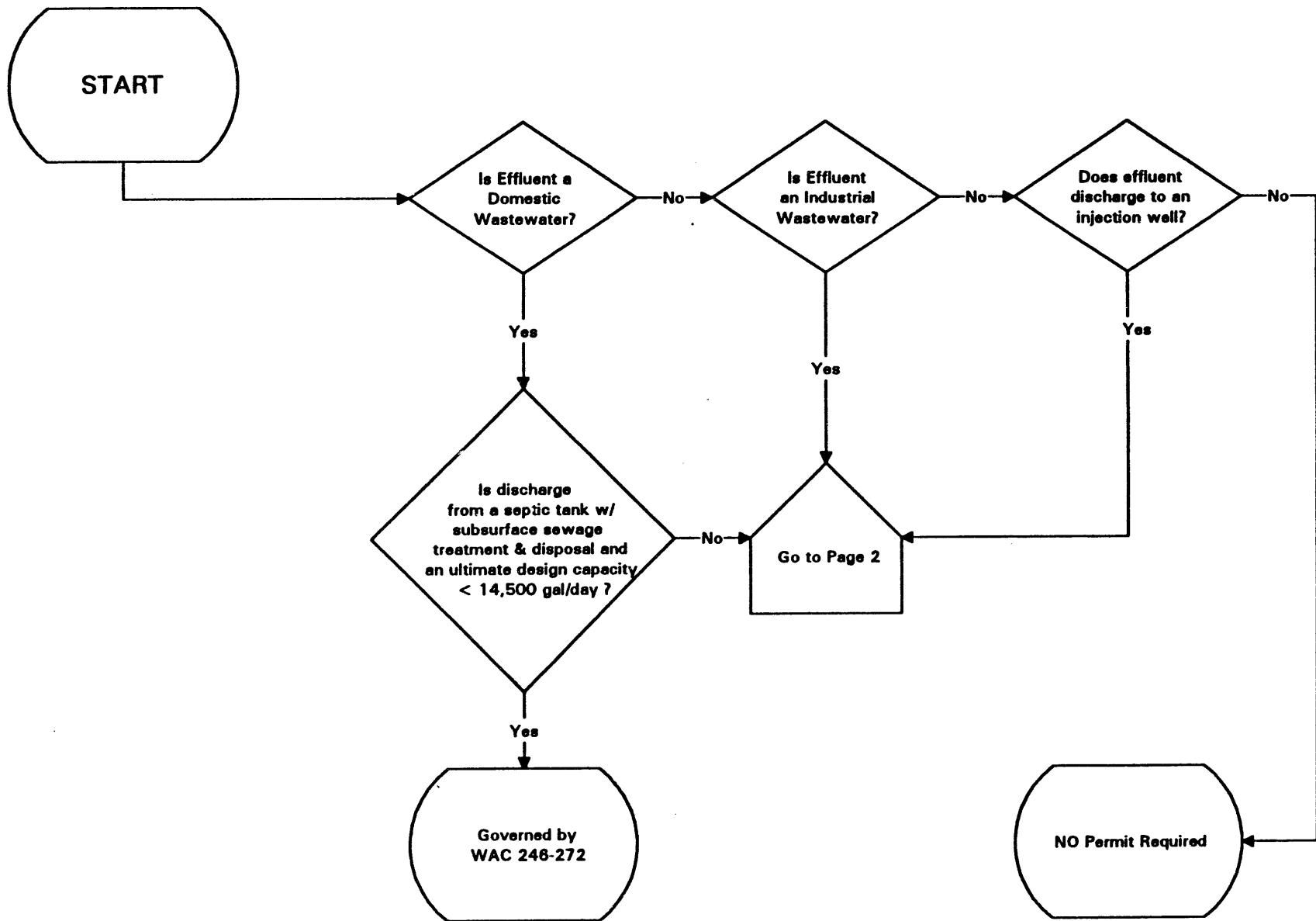


Figure 5-1. Plan for Disposition of Miscellaneous Streams Discharging to Land  
(1 of 3)

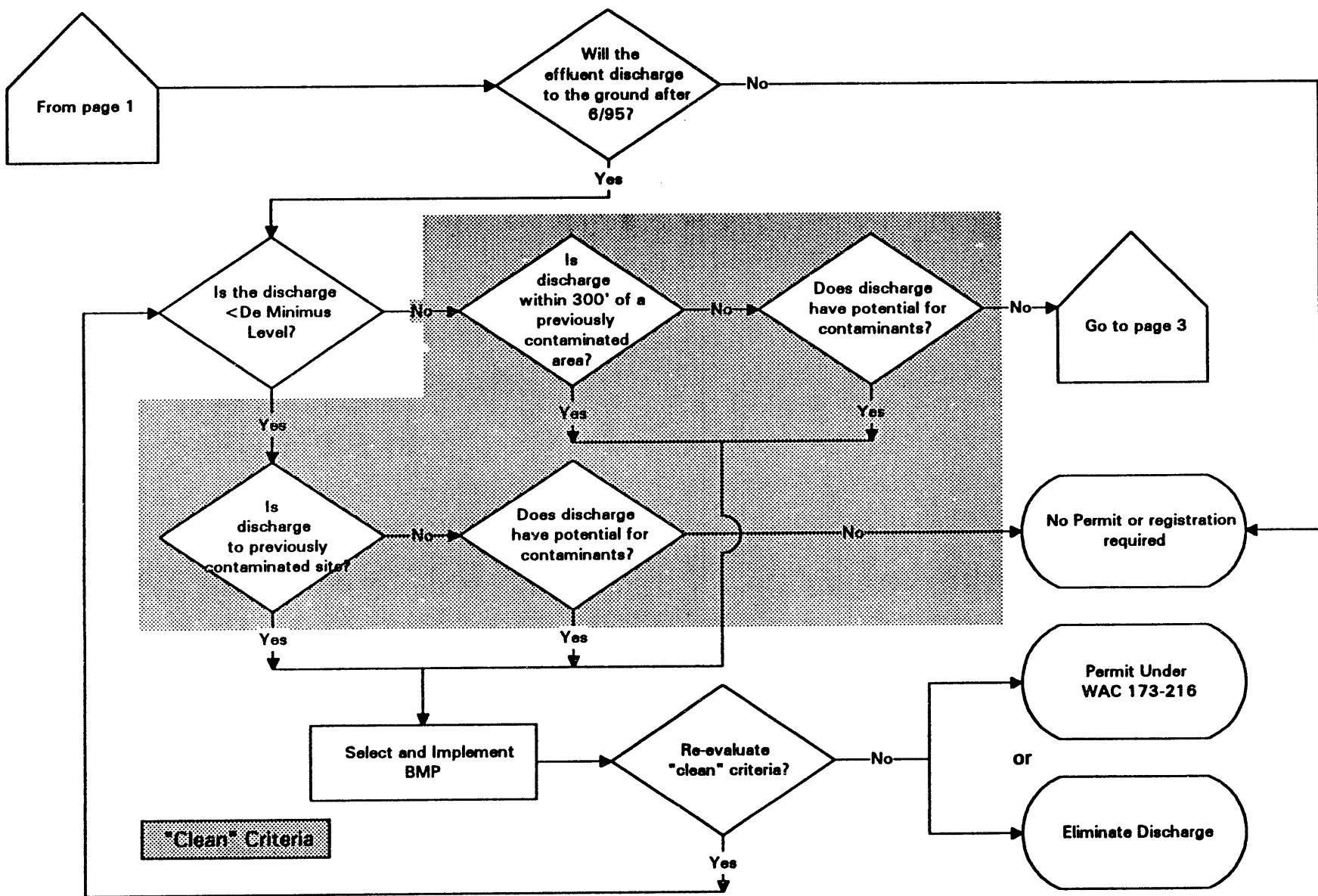


Figure 5-1. Plan for Disposition of Miscellaneous Streams Discharging to Land  
(2 of 3)

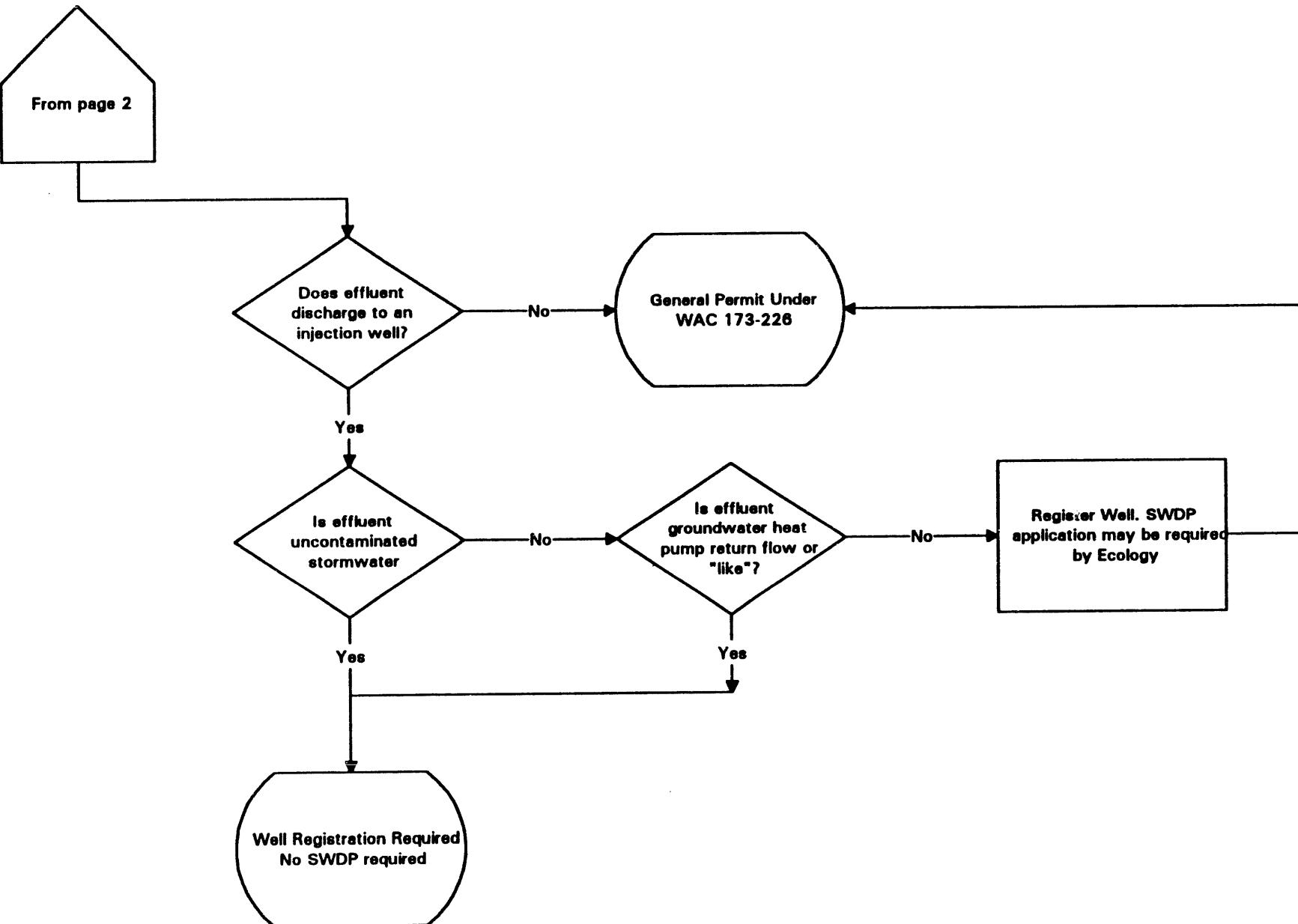


Figure 5-1. Plan for Disposition of Miscellaneous Streams Discharging to Land  
(3 of 3)

Is the Effluent an Industrial Wastewater?

Industrial wastewaters are defined WAC 173-216-030(7) as water or liquid carried waste from industrial or commercial processes, as distinct from domestic wastewater, resulting from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated stormwater and leachate from solid waste facilities.

Does effluent discharge to an injection well?

As defined in WAC 173-218-030 (11, 18), an injection well is a bored, drilled, or driven shaft or dug hole whose depth is greater than the largest surface dimension, that is used for the subsurface emplacement of fluids.

If the liquid effluent is determined not to be a domestic wastewater or an industrial wastewater and is not discharged to an injection well, the regulations in WAC 173-216, 173-218, or 173-226 are not considered applicable to these types of wastes, and, therefore, a State Waste Discharge Permit would not be required. Examples of wastes not subject to these regulations are irrigation water used for aesthetics and water discharged during fire sprinkler tests.

## **5.2 CLARIFICATION AND JUSTIFICATION - FIGURE 5-1, PAGE 2**

Liquid effluent discharges directed to page 2 of Figure 5-1 in the decision tree analysis require the following analysis to ascertain proper disposition:

Is the liquid effluent discharge rate less than 10 gallons per minute or the total discharge volume less than 14,500 gallons per day?

The purpose of this determination is to apply a de minimus level for discharge rates (in the case of continuous discharge) or total discharge volume (in the case of batch discharge). The de minimus level of 10 gallons per minute and 14,500 gallons per day is proposed. The level is based on criteria set in WAC 173-216-050(f) that domestic wastewater from a septic system discharging less than or equal to 14,500 gallons per day (approximately 10 gallons per minute) to the soil is not subject to the state waste discharge permitting requirements. The assumption for this criterion is that Ecology considers discharges less than 14,500 gallons per day as having no significant potential to adversely affect the ground water. The de minimus level is one of a series of criteria presented in the decision tree analysis to determine necessary actions for acceptable management of the Miscellaneous Streams. It is recognized that because of the strict nature of the language contained in WAC 173-216, this de minimus level may be too high and another level may be negotiated. However, if this happens, this does not effect the overall logic and implementability of this Plan and Schedule.

A State Waste Discharge Permit or well registration per WAC 173-218 (if applicable) is not required if a Miscellaneous Stream has a discharge rate less than the de minimus level and meets the "clean" criteria as presented in Figure 5-1. The Miscellaneous Stream is not considered a "clean" wastewater, if any of the following questions are answered with a "yes":

1. Is the discharge within a surface contaminated area? Provided the discharge rate is less than the de minimus level, the subsequent criterion to be considered is the potential for effecting migration of existing contaminants present in the soil of the discharge site to the ground water. For discharges less than the de minimus level, the concern is with Miscellaneous Streams discharging directly to a surface contaminated area. Surface-contaminated areas are defined as those soils contaminated with dangerous and/or radioactive wastes.
2. Is the discharge within a 300-foot horizontal radius of an active or inactive contaminated crib, ditch, trench? For liquid effluent discharges exceeding the de minimus level, the potential for migration of existing contaminants present in the soil within a 300-foot radius of the discharge point is considered. The 300 feet-criterion is a recommended minimum separation distance for siting new cribs at the Hanford Site. It is considered a conservative distance based on collective experience at the Hanford Site from borehole drilling in the vicinity of liquid effluent disposal sites. Lateral spreading from adjacent liquid disposal sites greater than 300 feet apart has not been observed to impact either disposal stream. This will include streams discharging directly to a surface contaminated area.
3. Does the discharge have potential for contaminants? The acceptable effluent quality is based on evaluating the potential for constituents listed in the Ground Water Quality Standards (Table 1 of WAC 173-200) to enter the source water and cause the criteria to be exceeded. Miscellaneous Streams originating from sources with physical and/or administrative barriers to prevent contaminants from entering the stream are not considered to have a potential for contaminants. Raw or sanitary wastewater unaltered except for temperature, which consists of a large portion of the inventory (i.e., steam condensate, uncontaminated stormwater, noncontact cooling water) is not considered to have the potential for contaminants.

No permit or registration required

The Miscellaneous Stream is not required to be permitted under the State Waste Discharge Program (WAC 173-216) provided that the Miscellaneous Stream meets the de minimus criteria, does not discharge to a contaminated area and does not have the potential for contaminants to enter the stream. If the discharge is to an injection well, the registration of that well under WAC 173-218 is also not required. This determination is based on promulgating the exclusion of liquid effluents meeting a de minimus discharge rate and the "clean criteria" presented in Figure 5-1, from the requirements for the submittal of State Waste Discharge Permit applications or other compliance documentation under WAC 173-

216, 173-218 and/or 173-226. This determination is consistent with the intent of the Tri-Party Agreement that only "those waste water streams currently discharged to the soil column or any future waste water streams (excluding discharges that are exempt from permitting under Section 121 of CERCLA) discharged to the soil column, which affect ground water or have the potential to affect ground water, . . ." be subject to the provisions of the State Waste Discharge Permit Program.

#### Evaluate and Implement Best Management Practices (BMP)

Miscellaneous Streams with the potential to affect ground water, (e.g., those discharges identified through the decision tree analysis in Figure 5-1 to have the potential to effect migration of contaminants from surface-contaminated areas, cribs, ditches, and trenches to the ground water, or have the potential for contaminants to enter the stream) require the selection and implementation of best management practices (BMP). Selection of the proper BMPs will address and identify contaminant sources and identify practices and procedures that will satisfy the "clean" criteria of the decision tree analysis in Figure 5-1. BMPs as defined in WAC 173-200 are schedules of activities, prohibition of practices, maintenance of procedures, and other management practices, to prevent or reduce the pollution of ground waters of the state. BMPs also include treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or water disposal, or drainage from raw material storage. Baseline BMPs that should at minimum be implemented for these streams include good housekeeping, preventative maintenance, visual inspections, employee training, and recordkeeping and reporting.

For those Miscellaneous Streams that cannot satisfy the "clean" criteria of the decision tree analysis, even after implementation of BMPs, a decision is required to either eliminate the discharge or pursue a State Waste Discharge Permit for the individual Miscellaneous Stream under WAC 173-216.

### **5.3 CLARIFICATION AND JUSTIFICATION - FIGURE 5-1, PAGE 3**

Miscellaneous Streams exceeding the de minimus discharge rate or volume, but satisfying the "clean" criteria, are subject to resolution of the questions in the decision tree (page three of Figure 5-1) to determine the necessary actions for regulatory compliance.

#### Does effluent discharge to an injection well?

As defined in WAC 173-218-030 (11, 18), an injection well is a bored, drilled, or driven shaft or dug hole whose depth is greater than the largest surface dimension, used for the subsurface emplacement of fluids.

The injection wells receiving Miscellaneous Streams at the Hanford Site are Class V injection wells. Per WAC 173-218-090, all persons operating an existing Class V injection well that inject industrial, commercial, or municipal waste fluids into or above an Underground Source of Drinking Water (USDW), must apply to Ecology for approval to operate within one year of the effective date of the regulation (WAC 173-218). RL and

Ecology agreed through the Tri-Party Agreement negotiations and the subsequent Consent Order that the liquid effluents discharged to soil at Hanford would be best addressed through WAC 173-216/218 (where applicable). The Hanford Site is required to meet the schedules for compliance with the applicable regulations set forth in the Consent Order. The schedules are considered to supersede the applicable dates promulgated within the regulations. Therefore, the effective date for the Hanford Site to submit applications for operating existing Class V injection wells (receiving Miscellaneous Streams) is considered to be the schedule defined within this document.

In WAC 173-218-030, "waste fluids" are defined as discarded, abandoned, unwanted, or unrecovered material or substance that flows or moves whether in a semisolid, liquid, sludge, gas, or any other form or state except discharges into the ground or ground water of groundwater heat pump return flow (unaltered except for temperature), and discharges of storm water not contaminated or potentially contaminated by industrial or commercial sources.

Is the effluent uncontaminated stormwater, or is the effluent ground water heat pump return flow (unaltered except for temperature) or "like"?

Uncontaminated stormwater and ground water heat pump return flow are not considered "waste fluids" and therefore, Class V injection wells receiving these waste types are only required to register the well on a form prescribed by Ecology. Steam condensate from traps along a steam line is considered to be "like" groundwater heat pump return flow (unaltered except for temperature).

As stated in WAC 173-218-090(2), Class V injection wells receiving industrial, commercial or municipal "waste fluids" must apply to Ecology for operation of these wells. Ecology will accept, process, and act upon the application in accordance with the procedures and practices of the State Waste Discharge Permit Program under WAC 173-216.

Permit liquid effluents under a general state waste discharge permit

Ecology will be requested to develop a general permit under the State Waste General Discharge Permit Program (WAC 173-226), for all Miscellaneous Streams satisfying the criteria of the decision tree analysis. These include:

- Liquid effluent discharge rates or total volumes exceeding 10 gallons per minute or 14,500 gallons per day, respectively.
- Liquid effluents discharging to sites outside of a 300-foot radius from a surface contaminated area, trench, ditch or crib.
- Liquid effluent discharges that do not have the potential for contaminants to enter the stream.

In addition, Ecology would be petitioned to include in the general permit those Miscellaneous Streams determined to be waste fluids discharging to an injection well, if Ecology deemed a State Waste Discharge Permit necessary.

## **6.0 SCHEDULE FOR DISPOSITION AND REGULATORY COMPLIANCE OF MISCELLANEOUS STREAMS**

Table 6-1 identifies specific milestones that have been established for activities associated with the planned disposition of the Miscellaneous Streams. These activities correspond to actions identified as a result of performing the decision tree analysis presented in Figure 5-1. The applicability column of Table 6-1 provides reference to the category of liquid effluents requiring the specified action.

**Table 6-1. Schedule for Disposition and Regulatory Compliance of the Miscellaneous Streams**

Activity	Applicability	Schedule for Submittal
Evaluate inventory to de minimus criteria	All streams identified in quantitative and qualitative inventory except, streams to be eliminated by 6/95 or rerouted to permitted treatment facility or stream, and purge water from wells.	1 month following establishment of Ecology approved de minimus criteria
Evaluate inventory to criteria established in Figure 5-1	All streams identified in quantitative and qualitative inventory except, streams to be eliminated by 6/95 or rerouted to permitted treatment facility or stream, and purge water from wells.	3 months following establishment of Ecology approved de minimus criteria.
Petition Ecology to develop general permit under WAC 173-226	Liquid effluent discharges requiring a SWDP based on satisfying criteria from decision tree analysis, as presented in Figure 5-1.	3 months following establishment of Ecology approved de minimus criteria.
Register Class V injection wells with Ecology	Liquid effluent discharges requiring well registration based on criteria presented in Figure 5-1.	3 months following establishment of Ecology approved de minimus criteria.
Identify streams requiring selection of BMP	Liquid effluent discharges not meeting "clean" criteria of the decision tree analysis, as presented in Figure 5-1.	3 months following establishment of Ecology approved de minimus criteria.
Select and Initiate Implementation of Best Management Practices	Liquid effluent discharges not meeting "clean" criteria of the decision tree analysis, as presented in Figure 5-1.	18 months following establishment of Ecology approved de minimus criteria.
File necessary permit applications under WAC 173-216 for applicable streams	Liquid effluent discharges not meeting "clean" criteria of the decision tree analysis, as presented in Figure 5-1 and continuing to discharge after 6/95.	18 months following establishment of Ecology approved de minimus criteria.
Eliminate discharges not satisfying "clean" criteria and not applied for permit under WAC 173-216	Liquid effluent discharges not meeting "clean" criteria of the decision tree analysis, as presented in Figure 5-1 and not being permitted under WAC 173-216.	24 months following establishment of Ecology approved de minimus criteria.

## 7.0 REFERENCES

### 7.1 DOCUMENTS AND LETTERS

DOE-RL, 1987, *Plan and Schedule to Discontinue Disposal of Contaminated Liquids into the Soil Column at the Hanford Site*, DOE-065, Response to Congressional Request, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE-RL, 1990, Letter from R.D. Izatt to President, Hanford Environmental Health Foundation; General Manager, Kaiser Engineers Hanford Company; Director, Pacific Northwest Laboratory; President, Westinghouse Hanford Company, *Strategy for Handling and Disposing of Purgewater at the Hanford Site, Washington*, 90-ERB-076, August 9, 1990.

Ecology, EPA, and DOE, 1992, *Hanford Federal Facility Agreement and Consent Order*, 89-10 Rev. 2, Washington Department of Ecology, U.S. Environmental Protection Agency, an U.S. Department of Energy, Olympia Washington.

Ecology and USDOE, 1991, *Consent Order No. DE 91NM-177*, Washington Department of Ecology, U.S. Department of Energy, Olympia Washington.

Stordeur, R.T. and D.L. Flyckt, 1988, Annual Status Report of the Plan and Schedule to Discontinue Disposal of Contaminated Liquids into the Soil Column at the Hanford Site, WHC-EP-0196-1, Westinghouse Hanford Company, Richland, Washington.

WHC, 1992, *Plan and Schedule for Identification and Evaluation of All Miscellaneous Streams (September 1992)*, WHC-SD-EN-EV-017, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

### 7.2 CODE OF FEDERAL REGULATIONS AND FEDERAL REGISTER

*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 USC 9601 et seq.

### 7.3 FEDERAL AND STATE ACTS

*Water Pollution Control*, Revised Code of Washington, Chapter 90.48 et seq., Olympia, Washington.

### 7.4 WASHINGTON ADMINISTRATIVE CODE

WAC 173-216, *State Waste Discharge Program*, Washington State Department of Ecology, Olympia, Washington.

WAC 173-218, *State Underground Injection Control Regulations*, Washington State Department of Ecology, Olympia, Washington.

WAC 173-220, *National Pollutant Discharge Elimination System (NPDES) Permit Program*,  
Washington State Department of Ecology, Olympia, Washington.

WAC 173-226, *State Waste Discharge General Permit Program*, Washington State  
Department of Ecology, Olympia, Washington.

WAC 246-272, *On-Site Sewage System*, Washington State Department of Ecology, Olympia,  
Washington.

**DISTRIBUTION**

Number of Copies

ONSITE

10

U.S. Department of Energy-  
Field Office, Richland

J. D. Berwick	R3-80
D. A. Brown	K8-50
D. C. Bryson (2)	A5-21
J. M. Hennig	A5-21
J. E. Rasmussen	A5-15
J. E. Turnbaugh	A5-15
W. A. White	A7-27
Public Reading Room (2)	A1-65

3

Pacific Northwest Laboratory

Hanford Technical Library	K1-11
E. G. Damberg	P7-70
F. E. Erickson	P7-79

12

Kaiser Engineers Hanford Company

J. L. Day	L6-76
J. M. Ekstrum	S2-32
R. L. Fritz	S2-12
A. Greenburg	S2-66
R. E. Hammond	L6-75
D. R. Herman	S2-12
C. W. Johnson, Jr.	S3-55
T. J. Lazarski	G7-33
C. E. Marple	S2-34
A. D. Poor	L6-55
W. A. Retterer	S2-37
S. C. Sutton	S2-37

30

Westinghouse Hanford Company

D. J. Carrell	H6-22
A. J. Diliberto	R3-46
R. D. Gustavson	R1-51
D. L. Halgren	H6-70
M. J. Hall	T6-07
D. R. Hirzel	T5-54
G. S. Hunacheck	X0-41
M. C. Hughes	X5-55
J. E. Lessor	S6-70
G. J. Lebaron	S6-19
J. Lohrasbi	S6-19
K. J. Lueck	H6-28

**DISTRIBUTION (Cont.)**

D. J. McBride	T5-54
P. C. Miller	N2-04
M. R. Morton	X5-55
H. R. Risemay	T7-20
J. A. Seamans	N2-04
S. J. Skurla	H4-57
D. R. Speer	H6-28
D. R. Watson	X0-41
G. J. Warwick	T6-12
J. D. Williams	H6-28
B. D. Williamson	B3-06
C. D. Wollam	S6-17
K. J. Young	S6-19
Central Files	L8-04
EPIC	H6-08
Information Release Administration (3)	H4-17

63  
JULY 1991  
DATE  
RECEIVED  
LIBRARY

1991

