Fact Sheet for State Waste Discharge Permit ST0045514

200 West Area Evaporative Sewage Lagoon

(May 1, 2012)

Purpose of this fact sheet

This fact sheet explains and documents the decisions that the Department of Ecology (Ecology) made in drafting the proposed State Waste Discharge Permit for the 200 West Area Evaporative Sewage Lagoon. This permit will allow discharge of wastewater to two double-lined evaporative lagoons located near the 200 West Area of the Hanford Site.

State law requires any domestic wastewater facility to obtain a permit before discharging waste or chemicals to waters of the state, which includes groundwater. Although this facility is not permitted to discharge, except in the case of emergencies, a permit is being issued to oversee the operation and maintenance of the facility.

Ecology makes the draft permit and fact sheet available for public review and comment at least thirty (30) days before it issues the final permit to the facility operator. Copies of the fact sheet and draft permit for 200 West Area Evaporative Sewage Lagoon, State Waste Discharge Permit ST0045514, are available for public review and comment from May 14, 2012 until the close of business June 15, 2012. For more details on preparing and filing comments about these documents, please see **Appendix A - Public Involvement Information**.

The Permittee, the United States Department of Energy-Richland Operations Office (USDOE-RL) reviewed the draft permit and fact sheet for factual accuracy. Ecology corrected any errors or omissions regarding the facility's location, history, wastewater discharges, or receiving water prior to publishing this draft fact sheet for public notice.

After the public comment period closes, Ecology will summarize substantive comments and our responses to them. Ecology will include our summary and responses to comments to this fact sheet as **Appendix E - Response to Comments**, and publish it when we issue the final State Waste Discharge permit. Ecology will not revise the rest of the fact sheet, but the full document including all appendices will become part of the legal history contained in the facility's permit file.

Summary

The 200 West Area Evaporative Sewage Lagoon is a new domestic wastewater treatment facility located northeast of the 200 West Area of the Hanford Site. The facility consists of double-lined evaporative lagoons and is designed to have no liquid discharge to the ground. The system will provide domestic wastewater treatment for the 200 West and 600 Areas, as well as provide treatment for domestic wastewater hauled from the 200 East Area and other locations within the Hanford Site. Initially, the United States Department of Energy (USDOE) will only truck wastewater to the facility. As existing on-site systems fail and new infrastructure is needed, USDOE may consider constructing a collection system within the 200 West and 600 Areas.

USDOE constructed the 200 West Area Evaporative Sewage Lagoon, in part, to replace the existing 100-N Sewage Lagoon (State Waste Discharge Permit ST0004507) which is nearing the end of its service life. In addition, the majority of future Hanford Site cleanup activities will be centered around the 200 Area. The location of this new wastewater treatment facility will be centrally located to serve this growing population of workers.

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I. Introduction

The legislature defined Ecology's authority and obligations for the wastewater discharge permit program in the Water Pollution Control law, chapter 90.48 RCW (Revised Code of Washington).

Ecology adopted rules describing how it exercises its authority:

- State waste discharge program (chapter 173-216 WAC)
- Water quality standards for ground waters of the state of Washington (chapter 173-200 WAC)
- Discharge standards and effluent limits for domestic wastewater facilities (chapter 173–221 WAC)
- Submission of plans and reports for construction of wastewater facilities (chapter 173-240 WAC)

These rules require an operator of a domestic wastewater facility to obtain a State Waste Discharge permit before discharging wastewater to state waters. Although this facility is not permitted to discharge, except in the case of emergencies, Ecology is issuing a permit to oversee the operation and maintenance of the facility. The rules also help to define the basis for limits on each discharge and for performance requirements imposed by the permit.

Under the State Waste Discharge permit program and in response to a complete and accepted permit application, Ecology must prepare a draft permit and accompanying fact sheet, and make it available for public review before final issuance. Ecology must also publish an announcement (public notice) telling people where they can read the draft permit, and where to send their comments, during a period of thirty days. (See **Appendix A-Public Involvement Information** for more detail about the public notice and comment procedures). After the public comment period ends, Ecology may make changes to the draft State Waste Discharge permit in response to comment(s). Ecology will summarize the responses to comments and any changes to the permit in **Appendix E**.

II. Background Information

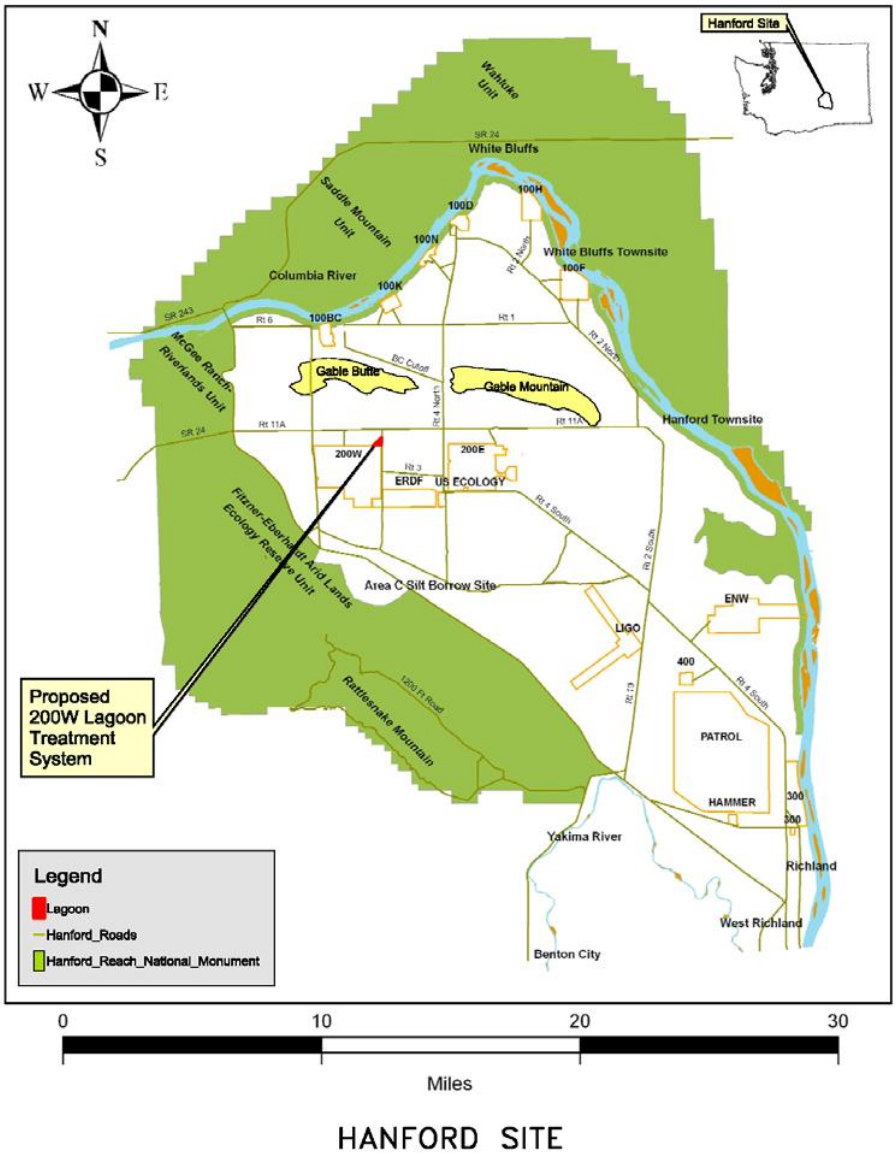
Table 1 General Facility Information

Facility Information	
Applicant:	United States Department of Energy- Richland Operations Office P.O. Box 550 Richland, Washington 99352
Facility Name and Address:	200 West Area Evaporative Sewage Lagoon
Contact at Facility	Name: Roy E. Hammond Telephone #: 509-539-3289

Facility Information	
Responsible Official	Name: Dale Jackson Clean Water Act Program Manager USDOE-RL 825 Jadwin Avenue Richland, WA 99352 Telephone #: 509-376-8086
Type of Treatment:	Aerated Lagoons with Evaporative Disposal
SIC Codes	9511
NAIC Codes	924110
Legal Description of Application Area	Section 31, Township 13N, Range 26EWM

Permit Status	
Issuance Date of Previous Permit	N/A
Application for Permit Submittal Date	March 6, 2012
Date of Ecology Acceptance of Application	March 15, 2012

Inspection Status	
Date of Last Sampling Inspection	N/A
Date of Last Non-sampling Inspection Date	December 29, 2011



Location of the 200 Area Evaporative Sewage Lagoon

Figure 1 Facility Location Map

A. Facility description

History

USDOE plans to complete the construction of the 200 Area Evaporative Sewage Lagoon in May 2012. The facility is located on the Hanford Nuclear Reservation, northeast of the 200 West Area. The Hanford site occupies approximately 586 square miles north of the city of Richland and consists of the 100, 200, 300, 400, and 600 Areas. In the past, the site was used for nuclear material production, waste storage, and waste disposal. Currently USDOE is conducting a large cleanup operation, and public access is restricted to much of the site.

Collection System Status

During initial operations, USDOE will only truck domestic waste from septic systems and holding tanks from various locations on the Hanford site. As existing on-site systems fail and new infrastructure is needed, it may construct a collection system within the 200 West and 600 Areas.

Wastewater Treatment Process

The 200 Area Evaporative Sewage Lagoon consists of preliminary and secondary treatment, a lime stabilization unit, and an evaporative lagoon in a dual train configuration. The treatment systems and evaporative lagoons are double-lined with high density polyethylene flexible membranes to provide watertight barriers with minimal potential for the migration of pollutants. The system is designed to treat 55,000 gallons per day of wastewater.

Currently, the preliminary treatment unit receives wastewater hauled from onsite systems. These hauled wastes discharge into an inlet chamber located on the unloading pad. Bar screens are used to remove solids from the influent flow. Flow then passes through a grit chamber to remove inorganic solids. A grinder, located in the flow channel, grinds inorganic solids into ¼ inch or smaller pieces.

Secondary treatment consists of biological treatment of the wastewater in aerated and settling lagoons. The aerated lagoons are designed to keep solids in suspension using mechanical aerators. The settling basins are designed to separate, stabilize, and store the solids at the floor of the basins. The floors of the settling basins are sloped to accumulate sludge. This sludge will be pumped to a mixing tank at the lime stabilization system periodically.

Waste solids received at the facility, as well as sludge from the settling basins, passes through a lime stabilization unit. Stabilization using lime helps to immobilize metallic ions, reduce odors, and kill pathogens. The lime stabilization unit consists of a liquid feed system, inline grinder pump, sludge recirculation pump, and a mixing tank. Pumps, feed controls, and pH instruments are built into the system.

After passing through the lime stabilization unit, sludge or septage from the mixing tank is pumped to a polymer addition unit. The liquid emulsion polymer injection system aids in the dewatering of sludge and septage. Dewatering occurs through the use of geotextile tubes. These tubes are filled with septage or sludge, and all water permeating through the geotextile walls is collected and returned to the diversion box at the headworks of the plant. Once the geotextile tubes are filled, the solids are allowed to dry and are disposed at Mixed Waste Trenches 31/34 on the Hanford site.

Effluent from the settling basins is discharged and stored in the evaporative lagoons, which are designed to have zero discharge. The evaporative lagoons are double-lined with high density polyethylene and equipped with a leak detection system. Surface aerators are present to promote evaporation. Aerators also help mix the liquid and prevent carbon dioxide buildup in the water, which reduces algae growth.

An operator certified for at least a Class I plant by the State of Washington is in charge of the day-to-day operation of the wastewater treatment plant. An operator certified for at least a Class I plant will be in charge during all regularly scheduled shifts.

The *200 West Area Evaporative Sewer Lagoon Engineering Report* dated November 2011 was approved by the Department of Ecology on February 1, 2012.

Emergency Drainfield

The treatment system includes an intermittent sand filter, which it will use to filter any emergency discharge from the evaporative lagoon. The sand filter has a double membrane liner and may be valved off to collect any emergency discharge and route it back to the headworks of the plant.

Solid Wastes

The treatment facility removes solids during the treatment of the wastewater at the headworks of the plant through grit chambers and bar screens. The facility drains grit, rags, scum, and screenings and disposes this solid waste at the Mixed Waste Trenches 31-34 or at other approved on-site disposal facilities.

B. Description of the groundwater

The past industrial activities at the Hanford site have affected groundwater. Currently, contaminant levels for some parameters in groundwater beneath the site are higher than drinking water standards (PNNL-19962, *Cultural Resources Review for the Installation of a New Sewage Lagoon North of the 200 West Area, Hanford Site, Benton County, Washington – HCRC# 2010-200-054*).

C. Wastewater influent characterization

USDOE-RL reported the concentration of influent pollutants in the *200 West Area Evaporative Sewer Lagoon Engineering Report* (11-EMD-0088, dated July 2011). Samples were collected from the access ports of several existing onsite systems on the Hanford Site. The influent wastewater is characterized in Table 2:

Table 2 Wastewater Influent Characterization

Parameter	Units	No. of Samples	Average Value	Maximum Value
BOD_5	mg/l	5	230	388
TDS	mg/l	5	408	455
TSS	mg/l	5	391	652

Parameter	Units	No. of Samples	Average Value	Maximum Value
Total Nitrogen (as N)	mg/l	5	116	126
Phosphorus (as P)	mg/l	5	13.11	24.00
Chlorides	mg/l	5	72	79
Sulfate	mg/l	5	52	63
Alkalinity (as $CaCO_3$)	mg/l	5	468	603
Oil & Grease	mg/l	5	25.8	44.4
Chloroform	µg/l	5	6.1	9.7
Gross Alpha Radiation	pci/l	5	Non-Detect	Non-Detect
Gross Beta Radiation	mrem/yr	5	10.06	13.30
Uranium	µg/l	5	Non-Detect	Non-Detect

Parameter	Units	No. of Samples	Monthly Geometric Mean	7- Day Geometric Mean
Fecal Coliforms	Number/100 ml	5	>2400	>2400

Parameter	Units	No. of Samples	Minimum Value	Maximum Value
pH	standard units	5	8.29	8.77

D. Wastewater effluent characterization

This is a new facility and no data exists for water treated and stored in the evaporative lagoons. Therefore, USDOE-RL is unable to report the concentration of pollutants in any potential discharges at this time. USDOE has designed the facility to meet secondary treatment standards.

E. State Environmental Policy Act (SEPA) Compliance

To meet the intent of SEPA, an existing, unpermitted discharge must undergo SEPA review during the permitting process. The facility filed a SEPA checklist with the Department of Ecology on July 20, 2011, and Ecology issued a determination of non-significance for the project on April 24, 2012. An Ecological Resources Review was completed on September 3, 2010. This review found no plant or animal species protected under the Endangered Species Act, candidates for such protection, or species listed by Washington State as threatened or endangered. The Hanford Cultural Resources Review was completed on January 4, 2011.

Based on an archaeological survey and subsurface testing performed in the area, the presence of cultural resources is not anticipated.

III. Proposed Permit Limits

State regulations require that Ecology base limits in a State Waste Discharge permit on the:

- Technology and treatment methods available to treat specific pollutants (technology-based). Dischargers must treat wastewater using all known, available, reasonable methods of prevention, control, and treatment (AKART). Ecology and the State Department of Health have adopted technology-based (AKART) criteria for municipal systems that discharge to ground; (WA. Dept. of Health, 1994).
- Operations and best management practices necessary to meet applicable water quality standards to preserve or protect beneficial uses for ground waters.
- Ground water quality standards (Ecology, 1996).
- Applicable requirements of other local, state, and federal laws.

Ecology applies the most stringent of technology and water quality-based limits to each parameter of concern and further describes the proposed limits below.

The limits in this permit reflect information received in the application and from supporting reports (engineering, monitoring, etc.). Ecology evaluated the permit application and determined the limits needed to comply with the rules adopted by the state of Washington. Ecology does not develop effluent limits for all reported pollutants. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, and are not listed in regulation.

Ecology does not usually develop permit limits for pollutants not reported in the permit application but that may be present in the discharge. The permit does not authorize the discharge of the non-reported pollutants. During the five-year permit term, the facility's effluent discharge conditions may change from those conditions reported in the permit application. The facility must notify Ecology if significant changes occur in any constituent. Until Ecology modifies the permit to reflect additional discharges of pollutants, a permitted facility could be violating its permit.

A. Design Criteria

Under WAC 173-216-110 (4), flows and waste loadings must not exceed approved design criteria. Ecology approved the design criteria for this treatment plant in the *200 West Area Evaporative Sewer Lagoon Engineering Report* dated November 2011 and in the plans and specifications dated November 2011. These documents were prepared by Jacobs Engineering. Table 3 below includes design criteria from the referenced reports.

Table 3 Design Criteria for Wastewater Treatment Facility

Parameter	Design Quantity
Annual Average Design Flow	55,000 GPD
BOD_5 Loading for Maximum Month	105 lb/day

B. Technology-based effluent limits

Waste discharge permits issued by Ecology specify conditions requiring the facility to use AKART before discharging to waters of the state (RCW 90.48). Ecology defines AKART for domestic wastewater facilities in chapter 173-221 WAC, Discharge Standards and Effluent Limits for Domestic Wastewater Facilities and in the Department of Health's design criteria (1994).

Ecology approved the engineering report titled *200 West Area Evaporative Sewer Lagoon Engineering Report*, dated November 2011. This document was prepared by Jacobs Engineering.

Ecology evaluated the report using the:

- Discharge standards and effluent limits for domestic wastewater facilities.
- *Guidelines for the Preparation of Engineering Reports for Industrial Wastewater Land Application Systems*, Ecology, May 1993.
- *Guidance on Land Treatment of Nutrients in Wastewater, with Emphasis on Nitrogen, Ecology*, November 1994 (http://www.ecy.wa.gov/biblio/0410081.html).
- *Criteria for Sewage Works Design*, Ecology, 2006).

Ecology determined that the facility meets the minimum requirements demonstrating compliance with the AKART standard if the Permittee operates the treatment and disposal system as described in the approved engineering report and any subsequent Ecology approved reports. The following permit limitations are necessary to satisfy the requirements for AKART:

There shall be no discharge to ground or surface waters of the state, except in emergency situations.

C. Ground water quality based effluent limits

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the ground water quality standards. The goal of the ground water quality standards is to maintain the highest quality of the State's ground waters and to protect existing and future beneficial uses of the ground water through the reduction or

elimination of the discharge of contaminants to groundwater [WAC 173-200-010(4)]. Ecology achieves this goal by:

- Applying all known available and reasonable methods of prevention, control and treatment (AKART) to any discharge.
- Applying the antidegradation policy of the groundwater standards.
- Establishing numeric and narrative criteria for the protection of human health and the environment in the groundwater quality standards.

Antidegradation Policy

The state of Washington's Ground Water Quality Standards (GWQS) require preservation of existing and future beneficial uses of groundwater through the antidegradation policy, which includes the two concepts of antidegradation and non-degradation.

Antidegradation

Antidegradation is not the same as non-degradation (see below). Antidegradation applies to calculation of permit limits in ground water when background (see below) contaminant concentrations are less than criteria in the GWQS. Ecology has discretion to allow the concentrations of contaminants at the point of compliance to exceed background concentrations but not exceed criteria in the GWQS. Ecology grants discretion through an approved AKART engineering analysis of treatment alternatives. If the preferred treatment alternative predicts that discharges to groundwater will result in contaminant concentrations that fall between background concentrations and the criteria, then the preferred treatment alternative should protect beneficial uses and meet the antidegradation policy. In this case, the predicted concentrations become the permit limits. If the preferred alternative will meet background contaminant concentrations, background concentrations become the permit limits. Permit limits must protect ground water quality by preventing degradation beyond the GWQS criteria. If discharges will result in exceedance of the criteria, facilities must apply additional treatment before Ecology can permit the discharge.

Non-degradation

Non-degradation applies to permit limits in ground water when background contaminant concentrations exceed criteria in the GWQS. Non-degradation means that discharges to ground water must not further degrade existing water quality. In this case, Ecology considers the background concentrations as the water quality criteria and imposes the criteria as permit limits. To meet the antidegradation policy, the facility must prepare an AKART engineering analysis that demonstrates that discharges to ground water will not result in increasing background concentrations. Ecology must review and approve the AKART engineering analysis.

You can obtain more information on antidegradation and non-degradation by referring to the *Implementation Guidance for the Ground Water Quality Standards (Implementation Guidance)*, Ecology Publication #96-02 (available at http://www.ecy.wa.gov/biblio/9602.html).

Background Water Quality

Background water quality is determined by a statistical calculation of contaminant concentrations without the impacts of the proposed activity. The calculation requires an adequate amount of groundwater quality data and determining the mean and standard deviation of the data, as described in the *Implementation Guidance*. Following the procedure in the *Implementation Guidance,* Ecology then defines background water quality for most contaminants as the 95 percent upper tolerance limit. This means that Ecology is 95 percent confident that 95 percent of future measurements will be less than the upper tolerance limit. There are a few exceptions to the use of the upper tolerance limit. For pH, Ecology will calculate both an upper and a lower tolerance limit resulting in an upper and lower bound to the background water quality. If dissolved oxygen is of interest, Ecology will calculate a lower tolerance limit without an upper tolerance limit.

The following permit limits are necessary to satisfy Ground Water Quality Criteria requirements:

- There must be no discharge to groundwaters of the state.

IV. Monitoring Requirements

Ecology requires monitoring, recording, and reporting (WAC 173-216-110) to verify that the treatment process functions correctly, the discharge meets ground water criteria and that the discharge complies with the permit's effluent limits.

A. Lab accreditation

Ecology requires that facilities must use a laboratory registered or accredited under the provisions of chapter 173-50 WAC, Accreditation of Environmental Laboratories, to prepare all monitoring data (with the exception of certain parameters). Ecology accredited the laboratory at this facility for Biochemical Oxygen Demand$_5$ (BOD_5).

B. Wastewater monitoring

Ecology details the proposed monitoring schedule under Permit Special Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, significance of pollutants, and cost of monitoring. Since this treatment facility is designed to have zero discharge, only influent monitoring will be required. However, in the event of an emergency discharge to groundwater, Ecology will require the Permittee to measure the flow and sample the effluent for parameters specified at the time of the emergency discharge.

C. Sludge monitoring

Monitoring of sludge quantity and quality is necessary to determine the appropriate uses of the sludge. Biosolids monitoring is required by the current state and local solid waste management program and also by EPA under 40 CFR 503. Currently, the facility plans to dispose dried solids as a solid waste at the Mixed Waste Trenches 31/34 located in the 200 East Area of the Hanford Site.

V. Other Permit Conditions

A. Reporting and recordkeeping

Ecology based Special Condition S3 on its authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-216-110).

B. Prevention of facility overloading

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, RCW 90.48.110 and WAC 173-216-110 require USDOE-RL to:

- Take the actions detailed in proposed permit Special Condition S4. Special Condition S4 restricts the amount of flow.
- Implement plant expansions or modifications before the treatment plant reaches existing capacity.
- Report and correct conditions that could result in new or increased discharges of pollutants.

C. Operations and maintenance

Ecology requires dischargers to take all reasonable steps to properly operate and maintain their wastewater treatment system in accordance with state regulations (WAC 173-240-080 and WAC 173-216-110). The facility must prepare and submit an Operation and Maintenance (O&M) Manual for the wastewater facility.

Implementation of the procedures in the Operation and Maintenance Manual ensures the facility's compliance with the terms and limits in the permit and ensures the facility provides AKART to the waste stream.

D. Solid wastes

To prevent water quality problems the facility is required in Special Condition S7 to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and state water quality standards.

The final use and disposal of sewage sludge from this facility is regulated by Ecology under chapter 70.95J RCW, chapter 173-308 WAC "Biosolids Management," and chapter 173-350 WAC "Solid Waste Handling Standards." The disposal of other solid waste is under the jurisdiction of the Benton County Health Department.

E. General conditions

Ecology bases the standardized general conditions on state law and regulations. They are included in all state waste discharge permits issued by Ecology.

VI. Permit Issuance Procedures

A. Permit modifications

Ecology may modify this permit to impose numerical limits, if necessary to comply with water quality standards for groundwaters, based on new information from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

Ecology may also modify this permit to comply with new or amended state regulations.

B. Proposed permit issuance

This proposed permit meets all statutory requirements for Ecology to authorize a wastewater discharge. The permit includes limits and conditions to protect human health and aquatic life, and the beneficial uses of waters of the state of Washington. Ecology proposes to issue this permit for a term of five years.

VII. References for Text and Appendices

Gavlak, R., D. Horneck , R.O. Miller, and J. Kotuby-Amacher

3rd edition 2005. *Soil, Plant and Water Reference Methods for the Western Region* http://cropandsoil.oregonstate.edu/wera103/soil_methods

Pacific Northwest National Laboratory

2010. *Cultural Resources Review for the Installation of a New Sewage Lagoon North of the 200 West Area, Hanford Site, Benton County, Washington – HCRC# 2010-200-054.*

Washington State Department of Ecology

September 2010. *State Waste Discharge Permit ST 5383, City of Sprague*.

February 2000. *Fact Sheet for State Waste Discharge Permit ST-5383, City of Sprague*.

July 2010. *Addendum to the Fact Sheet for State Waste Discharge Permit No. ST-5383*.

1993. *Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems*, Ecology Publication Number 93-36. 20 pp. http://www.ecy.wa.gov/pubs/9336.pdf

1997. *Water Reclamation and Reuse Standards*, Ecology Publication Number 97-23. 73 pp. http://www.ecy.wa.gov/biblio/97023.html

Laws and Regulations(http://www.ecy.wa.gov/laws-rules/index.html)

Permit and Wastewater Related Information (http://www.ecy.wa.gov/programs/wq/wastewater/index.html)

Revised October 2005. *Implementation Guidance for the Ground Water Quality Standards, Ecology Publication* Number 96-02. http://www.ecy.wa.gov/biblio/9602.html

Revised August 2008. *Criteria for Sewage Works Design*. Publication Number 98-37. http://www.ecy.wa.gov/biblio/9837.html

November 2010. *Permit Writer's Manual*. Publication Number 92-109 (http://www.ecy.wa.gov/biblio/92109.html)

November 2004. *Guidance on Land Treatment of Nutrients in Wastewater, with Emphasis on Nitrogen, Ecology Publication* Number 04-10-081; http://www.ecy.wa.gov/biblio/0410081.html

Washington State Department of Health

February 1994. *Design Criteria for Municipal Wastewater Land Treatment Systems for Public Health Protection*. http://www.ecy.wa.gov/programs/wq/wastewater/municipal_land_treatment_design_criteria.pdf

United States Department of Energy

July 2011. *200 West Area Evaporative Sewer Lagoon Engineering Report* (11-EMD-0088).

November 2011. *200 West Area Evaporative Sewer Lagoon Engineering Report, REV.0* (HNF-50995).

Appendix A--Public Involvement Information

Ecology proposes to issue a permit to the United States Department of Energy-Richland Operations Office. The permit includes wastewater discharge limits and other conditions. This fact sheet describes the facility and Ecology's reasons for requiring permit conditions.

Ecology placed a Public Notice of Application on April 3, 2012 and April 8, 2012 in the Tri-City Herald to inform the public about the submitted application and to invite comment on the issuance of this permit.

Ecology will place a Public Notice of Draft on May 13, 2012 in the Tri-City Herald to inform the public and to invite comment on the proposed draft State Waste Discharge permit and fact sheet.

The notice:

- Tells where copies of the draft Permit and Fact Sheet are available for public evaluation (a local public library, the closest Regional or Field Office, posted on Ecology's website).
- Offers to provide the documents in an alternate format to accommodate special needs.
- Urges people to submit their comments, in writing, before the end of the comment period
- Tells how to request a public hearing of comments about the proposed state waste discharge permit.
- Explains the next step(s) in the permitting process.

Ecology has published a document entitled *Frequently Asked Questions about Effective Public Commenting*, which is available on Ecology's website at:http://www.ecy.wa.gov/biblio/0307023.html.

You may obtain further information from Ecology by telephone, (509) 372-7950 or by writing to the address listed below.

Water Quality Permit Coordinator
Department of Ecology
Nuclear Waste Program
3100 Port of Benton Blvd.
Richland, WA 99354

The primary author of this permit and fact sheet is Stacy Nichols.

Appendix B--Your Right to Appeal

You have a right to appeal this permit to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of the final permit. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2) (see glossary).

To appeal you must do the following within 30 days of the date of receipt of this permit:

- File your appeal and a copy of this permit with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this permit on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in chapter 43.21B RCW and chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel Road SW Suite 301 Tumwater, WA 98501	**Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

Appendix C--Glossary

AKART -- The acronym for "all known, available, and reasonable methods of prevention, control and treatment." AKART is a technology-based approach to limiting pollutants from wastewater discharges, which requires an engineering judgment and an economic judgment. AKART must be applied to all wastes and contaminants prior to entry into waters of the state in accordance with RCW 90.48.010 and 520, WAC 173-200-030(2)(c)(ii), and WAC 173-216-110(1)(a).

Ambient water quality -- The existing environmental condition of the water in a receiving water body.

Annual average design flow (AADF) -- average of the daily flow volumes anticipated to occur over a calendar year.

Background water quality -- The concentrations of chemical, physical, biological or radiological constituents or other characteristics in or of groundwater at a particular point in time upgradient of an activity that has not been affected by that activity, [WAC 173-200-020(3)]. Background water quality for any parameter is statistically defined as the 95% upper tolerance interval with a 95% confidence based on at least eight hydraulically upgradient water quality samples. The eight samples are collected over a period of at least one year, with no more than one sample collected during any month in a single calendar year.

Best management practices (BMPs) -- Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural, and/or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5 -- Determining the five-day Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in receiving waters after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD_5 is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass -- The intentional diversion of waste streams from any portion of a treatment facility.

Clean water act (CWA -- The federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance inspection-without sampling -- A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance inspection-with sampling -- A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations. In addition it includes as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for

municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Ecology may conduct additional sampling.

Composite sample -- A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Continuous monitoring -- Uninterrupted, unless otherwise noted in the permit.

Date of receipt – This is defined in RCW 43.21B.001(2) as five business days after the date of mailing; or the date of actual receipt, when the actual receipt date can be proven by a preponderance of the evidence. The recipient's sworn affidavit or declaration indicating the date of receipt, which is unchallenged by the agency, constitutes sufficient evidence of actual receipt. The date of actual receipt, however, may not exceed 45 days from the date of mailing.

Detection limit -- See Method Detection Level.

Enforcement limit -- The concentration assigned to a contaminant in the ground water at the point of compliance for the purpose of regulation, [WAC 173-200-020(11)]. This limit assures that a groundwater criterion will not be exceeded and that background water quality will be protected.

Engineering report -- A document that thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report must contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Grab sample -- A single sample or measurement taken at a specific time or over as short a period of time as is feasible.

Ground water -- Water in a saturated zone or stratum beneath the surface of land or below a surface water body.

Industrial user -- A discharger of wastewater to the sanitary sewer that is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial wastewater -- Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result 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 storm water and, also, leachate from solid waste facilities.

Maximum daily discharge limit -- The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Maximum day design flow (MDDF) -- The largest volume of flow anticipated to occur during a one-day period, expressed as a daily average.

Maximum month design flow (MMDF) -- The largest volume of flow anticipated to occur during a continuous 30-day period, expressed as a daily average.

Maximum week design flow (MWDF) -- The largest volume of flow anticipated to occur during a continuous 7-day period, expressed as a daily average.

Method detection level (MDL) -- The minimum concentration of a substance that can be measured and reported with 99 percent confidence that the pollutant concentration is above zero and is determined from analysis of a sample in a given matrix containing the pollutant.

pH -- The pH of a liquid measures its acidity or alkalinity. It is the negative logarithm of the hydrogen ion concentration. A pH of 7 is defined as neutral and large variations above or below this value are considered harmful to most aquatic life.

Peak hour design flow (PHDF) -- The largest volume of flow anticipated to occur during a one-hour period, expressed as a daily or hourly average.

Peak instantaneous design flow (PIDF) -- The maximum anticipated instantaneous flow.

Quantitation level (QL) -- Also known as Minimum Level of Quantitation (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that the lab has used all method-specified sample weights, volumes, and cleanup procedures. The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to (1,2, or 5) x 10^n, where n is an integer. (64 FR 30417).
ALSO GIVEN AS:
The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency December 2007).

Reasonable potential -- A reasonable potential to cause a water quality violation, or loss of sensitive and/or important habitat.

Responsible corporate officer -- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Solid waste -- All putrescible and non-putrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials.

State waters -- Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based effluent limit -- A permit limit based on the ability of a treatment method to reduce the pollutant.

Upset -- An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limits because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water quality-based effluent limit -- A limit imposed on the concentration of an effluent parameter to prevent the concentration of that parameter from exceeding its water quality criterion after discharge into receiving waters.

Appendix D--Technical Calculations

The Biological Oxygen Demand (BOD) on the plant will be 105 lbs/day as determined using the equation below:

$$Flow\,\frac{MG}{day}\,x\,BOD\,\frac{mg}{l}\,x\,8.34 = BOD\,\frac{lbs}{day}\,Loading\ on\ the\ Plant$$

Where MG/day is million gallons per day, mg/l is milligrams per liter, and lbs/day is pounds per day.

The number 8.34 in the formula above is a conversion factor to get from pounds per million gallons to milligrams per liter.

Population Estimates for Wastewater Service Area

YEAR	AREA			TOTALS
	200 East	200 West	600	
2010	2,109	2,184	647	4,940
2011	2,298	2,308	614	5,220
2012	2,171	2,047	540	4,758
2013	2,298	1,358	393	4,049
2014	2,273	1,149	325	3,747
2015	2,470	1,065	325	3,860
2016	2,746	1,004	325	4,075
2017	2,925	938	325	4,188
2018	3,126	874	325	4,325
2019	3,799	827	325	4,951
2020	3,436	812	325	4,573

From *200 West Area Evaporative Sewer Lagoon Engineering Report* (11-EMD-0088, July 2011).

Estimate of Wastewater Flows in Sanitary Sewer System

Year	Area			200W and 600 Area Totals[2]	All Areas Total[3]
	200 East[1]	200 West	600		
2010	44,300	45,850	13,600	59,450	103,750
2011	48,250	48,500	12,900	61,400	109,650
2012	45,600	43,000	11,350	54,350	99,950
2013	48,250	28,500	8,250	36,750	85,000
2014	47,700	24,150	6,850	31,000	78,700
2015	51,900	22,400	6,850	29,250	81,150
2016	57,700	21,100	6,850	27,950	85,650
2017	61,400	19,700	6,850	26,550	87,950
2018	65,650	18,350	6,850	25,200	90,850
2019	79,800	17,400	6,850	24,250	104,050
2020	72,150	17,050	6,850	23,900	96,050

Flow estimates are based on 21 gallons per day per person.

[1] Excluding construction personnel at Waste Treatment Plant

[2] Service Area included in the current planning report

[3] All numbers (excluding the Year column) represent gallons per day

From *200 West Area Evaporative Sewer Lagoon Engineering Report* (11-EMD-0088, July 2011).

Appendix E--Response to Comments

DEPARTMENT OF
ECOLOGY
State of Washington

Response to Comments

200 West Area Evaporative Sewage Lagoon

May 14 – June 15, 2012

Summary of a public comment period and responses to comments

June 2012
Publication no. 12-05-013

Publication and Contact Information

This publication is available on the Department of Ecology's website at
http://www.ecy.wa.gov/biblio/nwp.html

For more information contact:

Stacy Nichols
Nuclear Waste Program
3100 Port of Benton Boulevard
Richland, WA 99354

Phone: 509-372-7950
Hanford Cleanup Line: 800-321-2008
Email: Hanford@ecy.wa.gov

Washington State Department of Ecology - www.ecy.wa.gov

Headquarters, Lacey	360-407-6000
Northwest Regional Office, Bellevue	425-649-7000
Southwest Regional Office, Lacey	360-407-6300
Central Regional Office, Yakima	509-575-2490
Eastern Regional Office, Spokane	509-329-3400

Ecology publishes this document to meet the requirements of Washington Administrative Code 173-303-840 (9).

If you need this document in a format for the visually impaired, call the Nuclear Waste Program at 509-372-7950. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Response to Public Comments

Waste Water Discharge Permit for Hanford's 200 West Area Evaporative Sewage Lagoon

May 14 – June 15, 2012

Department of Ecology
Nuclear Waste Program
3100 Port of Benton Boulevard
Richland, Washington 99354

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Introduction

The Washington State Department of Ecology (Ecology) requires industrial facilities in the state to have a permit before discharging waste or chemicals to the waters of the state, including groundwater.

When a new permit or a significant change to an existing permit is proposed, we hold a public comment period to allow the public to review the change and provide formal feedback.

The Response to Comments is the last step before issuing the final permit. Its purpose is to:

1. Specify which provisions, if any, of a permit will become effective upon issuance of the final permit, providing reasons for those changes.
2. Describe and document public involvement actions.
3. List and respond to all significant comments received during the public comment period and any related public hearings.

This Response to Comments is prepared for:

Comment period:	Waste Water Discharge permit for Hanford's 200 West Area Evaporative Sewage Lagoon
Permit:	ST0045514
Original issuance date:	2012
Draft effective date:	July 1, 2012

To see more information related to the Hanford Site or nuclear waste in Washington, please visit our website: www.ecy.wa.gov/programs/nwp.

Reasons for Issuing the Permit

State waste discharge permits protect groundwater by regulating how wastewater is discharged to the ground. However, this facility, consisting of double-lined evaporative lagoons, is not expected to discharge any effluent.

Ecology proposes to issue a state waste discharge permit to the 200 West Area Evaporative Sewage Lagoon to help regulate the facility's operation and maintenance. The permit will also ensure we have the facility's full history, should there ever be an emergency discharge.

The Permittee is the United States Department of Energy, Richland Operations Office (USDOE).

The 200 West Area Evaporative Sewage Lagoon is a new domestic wastewater treatment facility northeast of the 200 West Area of the Hanford Site. The facility consists of double-lined evaporative lagoons and is designed to have no liquid discharge to the ground. The system will provide domestic wastewater treatment for the 200 West and 600 Areas, as well as provide treatment for domestic wastewater hauled from the 200 East Area and other locations within the Hanford Site. At first, only wastewater will be trucked to the facility. As existing on-site systems fail and new infrastructure is needed, USDOE may construct a collection system within the 200 West and 600 Areas.

USDOE constructed the 200 West Area Evaporative Sewage Lagoon, in part, to replace the existing 100-N Sewage Lagoon (State Waste Discharge Permit ST0004507), which is nearing the end of its service life. In addition, most future Hanford Site cleanup activities will be around the 200 Area. This new wastewater treatment facility will be centrally located to serve a growing population of workers.

Ecology reviewed the permitting of the disposal facility under Washington's State Environmental Policy Act (SEPA) in April 2012. The Permittee completed an environmental checklist at that time. We made a determination of nonsignificance under SEPA. No one submitted comments during the public comment period.

Public Involvement Actions

Ecology strives to make its decisions transparent and accessible to the people we work for. We encouraged public comment on the proposed permit, and held a 30-day comment period from May 14 through June 15, 2012 (33 days).

For this permit, Ecology carried out the following activities:

1. Notified regional stakeholders via the public involvement calendar prepared for the Hanford Advisory Board's Public Involvement Committee.
2. Posted, emailed, and mailed a public notice of Application, as required by Washington Administrative Code (WAC) 173-216-090.
3. Gave advance notification on Ecology's Nuclear Waste Program website.
4. Sent advance notification to the HanfordInfo email list, which had 818 subscribers then, on March 9, 2012, and to the Water Quality email list, which has about 488 subscribers.
5. Mailed public notice to Hanford's postal list and emailed it to the HanfordInfo listserv.
6. Put copies of the public notice in Ecology's Nuclear Waste Program office lobby.
7. Published public notice as a legal classified ad in the *Tri-City Herald* on Thursday, May 17, and Sunday, May 20.
8. Posted comment period on Ecology's public events online calendar.
9. Sent public notice and disk with the permit and fact sheet to Hanford's four repositories two reading rooms, and the Richland Public Library.

The public information repositories located in Richland, Spokane, and Seattle, Washington, and Portland, Oregon, received the following

- Public notice of Application
- Public notice for the permit
- Transmittal letter.
- Statement of Basis for the proposed waste discharge permit.
- Draft state waste discharge permit.

The following public notices for this comment period are in Appendix A of this document:

1. Public notices.
2. Classified advertisement in the *Tri-City Herald*.
3. Notice sent to the Hanford-Info and Water Quality email lists.
4. Event posted on Ecology Hanford Education & Outreach Facebook page.

Responses to Comments

Ecology accepted comments from May 14 through June 15, 2012. No members of the public requested a meeting. This section lists comments received and our responses, as required by RCW 34.05.325(6)(a)(iii).

March 30, 2012
Alex Amonette

Comment: *I received a Public Notice of Application for the Sanitary Sewage Lagoon for Hanford's Central Plateau. Why not use composting toilets? I observe much waste of energy at 200 East. People do not turn off the lights and turn off their computers.*

Response: Composting toilets can be a great solution in many applications. However composting toilets would be cost-prohibitive in this case for a number of reasons.

- The Hanford site is projected to have over 10,000 workers throughout the designed service life of the sewage lagoon (for example, the Engineering Report estimates there will be 12,500 personnel on site by 2020). Based on population estimates and past experience, it is expected that about 30,000 gallons of domestic water will be generated per day. An unreasonably massive number of composting toilets would be required to handle the expected flow volumes.
- Composting toilets are, on average, considerably more expensive up front than flush toilet systems.
- Installing composting toilets would require replacing the existing flush toilets and septic systems already in place.
- Composting toilets are typically designed to handle little to no water. However, existing plumbing on site co-mingles water from showers and kitchen sinks with sanitary excreta, generating a mixed, highly liquid, sewage-like effluent that preclude the dry aerobic decomposition process.

As for energy efficiency on site, we thank you for being proactive about energy conservation. We hope you might find our "Enviro-Tips: What you can do" web page (http://www.ecy.wa.gov/news/envirotips/tips_main.htm) helpful. Please feel free to share it with others as a gentle way to encourage those around you to participate in conserving resources.

June 14, 2012
Curt Clement on behalf of the Permittees

Comments: The following comments on the May 2012 Fact Sheet and draft State Waste Discharge Permit Number ST0045514 are from a coordinated review by the United States Department of Energy (DOE), Richland Operations Office (RL), Mission Support Alliance, and affected Hanford Site contractors.

Draft Permit Comments

1. Page 4. We should not have to submit a separate letter confirming we reviewed the Operations and Maintenance Manual. Change the "First Submittal Date" to be "NA-Review of Operations and Maintenance Manual every 365 days. Update, if necessary, within 60 days following review."

Response: This is standard language required in all State Waste Discharge Permits, including Hanford Permits. The confirmation can be included as a statement in a Discharge Monitoring Report (DMR) cover letter. An electronic confirmation with electronic DMRs is also acceptable. This will be clarified in the permit language.

2. Page 4. The application for permit renewal should be submitted at least sixty days prior to the expiration date of the permit per WAC 173-216-070. Change to read: "At least 60 days prior to expiration of the permit." Alternatively, the date could be placed in the column once the expiration date is known.

Response: Ecology will change the date of December 2017 to a date of 60 days prior to expiration date of current permit (once effective date is established).

3. Page 5 and following pages. The header is not correct. Change to read "Permit No. ST00045514"

Response: Ecology corrected the headers.

4. Page 5, S1.A. Please make sure the dates June 1 and May 31, 2017 correspond to the effective date and expiration date, respectively.

Response: Ecology will update these dates when the effective date of the permit is established.

5. Page 5 and 6, S1.A and S2.A. The facility is designed as a zero discharge facility with the permit being issued only to accommodate emergency discharges into the waters of the state, which are not expected to occur. There should be no sampling parameters for "discharges" to the basins. (Order No. DE12NWP-001 for air emissions already requires influent wastewater sampling and analysis.)

The proposed parameters for BOD, TSS, and PH are not appropriate and no monitoring frequencies should be set for them. The specific permit limitations placed on the parameters do not appear to have any apparent basis and the suggested sampling locations are not located at a representative discharge point for this type of facility even if a sampling location was relevant (i.e. sampling location and limitations placed on an internal point within a treatment train is inappropriate even for a facility that has a discharge). The limitations do not even reflect concentrations for influent or effluent sewage parameters.

Response: Ecology removed effluent monitoring requirements. However, monitoring will be required in the event of an emergency discharge, as stated in Special Condition S2.A.

6. Page 7, S2.A. For note "b" it should read "quarterly" instead of "monthly." Change to read "quarterly."

Response: Ecology changed the footnote to "quarterly."

7. Page 7, S2.A. For the reasons explained above, footnote "f" should be deleted. Delete the row that begins with "f."

Response: Ecology removed footnote "f" because it related specifically to monitoring of the effluent. This monitoring requirement has been removed from the permit, so the footnote is no longer applicable.

8. Page 9, S3.A.4.b. For consistence suggest referring to the lagoons as "evaporative" lagoons.

Response: Ecology added the word "evaporative" to describe the lagoons in this section.

9. Page 17, S5.G.a.2. As discussed above, a separate letter to Ecology is unnecessary and the requirement could be clearer. Change to read as follows: Review the O&M Manual at least every 365 days. Update, if necessary, within 60 days following the review.

Response: This is standard language required in all State Waste Discharge Permits, including Hanford Permits. The confirmation can be included as a statement in a Discharge Monitoring Report (DMR) cover letter. An electronic confirmation with electronic DMRs is also acceptable. This will be clarified in the permit language.

10. Page 17, S5.G.a.5. Editorial: Change "this" to "the."

Response: Ecology made this change.

11. The application for permit renewal should be submitted at least sixty days prior to the expiration of the permit per WAC 173-216-070. Change both "180"s to read "60."

Response: In accordance with WAC 173-216-070, Ecology changed the submittal dates to 60 days

12. Page 20, G5. This requirement is unnecessary and not in accordance with WAC 173-240. Any new facility would be subject to the regulations – not this permit. Delete section. If you want to have a requirement for modifications, that would be appropriate, but it should be a specific requirement for modifying the evaporative lagoon with a timeframe of 60 days in accordance with WAC 173-240-030.

Response: This section cannot be deleted. However, in accordance with WAC 173-240-300, Ecology changed the timeframe to 60 days.

13. There is no "Section A." Correct the reference.

Response: Ecology made this correction.

List of Commenters

The table below lists the names of organizations or individuals who submitted a comment on the permit for the 200 West Area Evaporative Sewage Lagoon and where you can find Ecology's response to the comment(s).

Commenter	Where the comment is addressed in this summary
Alex Amonette	Page 4
Curt Clement	Page 5 – 7

Appendix A: Copies of all public notices

Public notices for this comment period:

1. Public notice of application
2. Public comment period announcement.
3. Classified advertisements in the *Tri-City Herald*.
4. Notices sent to the Hanford-Info email list.

PUBLIC NOTICE OF APPLICATION

DEPARTMENT OF ECOLOGY State of Washington

Nuclear Waste Program **March 2012**

Sanitary Sewage Lagoon for Hanford's Central Plateau

The U.S. Department of Energy (USDOE) has applied for a state waste discharge permit for a new sewage treatment lagoon system in Hanford's 200 West Area. The permit application is available for your review.

Background

Thousands of employees work in the center of the Hanford Site. Today, the waste from the workers' bathrooms, kitchens, and showers go to septic tanks. Some is trucked to a lagoon several miles away near the N Reactor, but that lagoon's service life is ending. The USDOE does not plan to replace the septic tanks. Instead, it is building a new sewer lagoon system for those wastes, closer to where most of the workers are located.

The lagoon treatment system will use a grit chamber and settling lagoons to separate solids from liquids. The sludge and solids will go to Hanford's permitted disposal trenches in 200 West Area. The system will use an aerated lagoon to biologically treat and remediate the influent. Finally, treated water will be stored in the evaporative lagoons.

Unlike most wastewater treatment plants, the lagoons are not expected to discharge any effluent. Instead, they are designed to evaporate the effluent.

The lagoons are lined and will not discharge to the ground. The discharge permit is to help Ecology regulate the facility's operation and maintenance, and to ensure we have the facility's full history, should there ever be an emergency discharge.

The lagoon treatment system will have the following:

- A state waste discharge permit.
- An evaluation under the State Environmental Policy Act (SEPA).
- An air permit.

WHY IT MATTERS

Though Hanford has many more complex and dangerous wastes to manage, even the sanitary wastes must be managed in a way that protects the environment.

Public Comment Period:

We expect the comment period will be in the Spring of 2012.

Questions? Contact:

Stacy Nichols
3100 Port of Benton Blvd
Richland, WA 99354
hanford@ecy.wa.gov

Document Review Location:

Ecology's Nuclear Waste Program website
www.ecy.wa.gov/programs/nwp/commentperiods.htm

Special accommodations
If you need this publication in an alternate format, call 509-372-7950. Persons with hearing loss, call 711 for Washington Relay Service. Persons with speech disability call 877-833-6341.

Publication Number: 12-05-003

Figure 1. Public Notice of Application page 1 of 2.

DEPARTMENT OF
ECOLOGY
State of Washington

3100 Port of Benton Blvd
Richland, WA 99354

Public Notice of Application
200 West Area
Sewage Lagoon

You can comment on the SEPA checklist and the water discharge permit when the comment period begins.

The air permit does not require a comment period because the air emissions will be too low to trigger one.

What's next?

This is *NOT* a comment period – yet.

When we have prepared a draft permit, we will make it available for public comment. We will provide links to the other decision documents as well.

Figure 1. Public Notice of Application page 2 of 2.

PUBLIC COMMENT PERIOD

DEPARTMENT OF ECOLOGY State of Washington

Nuclear Waste Program **April 2012**

Sanitary Sewer Lagoon for Hanford's Central Plateau

Washington's Department of Ecology invites you to comment on a proposed state waste discharge permit for a new sewage treatment lagoon system in Hanford's 200 West Area. The draft permit is available for your review.

Background

Thousands of employees work in the center of the Hanford Site. Today, the waste from the workers' bathrooms, kitchens, and showers go to septic tanks. Some is trucked to a lagoon several miles away near the N Reactor, but that lagoon's service life is ending. The permittee, US Department of Energy Richland Operations Office (USDOE) does not plan to replace the septic tanks. Instead, it is building a new sewer lagoon system for those wastes, closer to where most of the workers are located.

The lagoon treatment system will use a grit chamber and settling lagoons to separate solids from liquids. The sludge and solids will go to Hanford's permitted disposal trenches in the 200 West Area. The system will use an aerated lagoon to biologically treat and remediate the influent. Finally, treated water will be stored in the evaporative lagoons.

Unlike most wastewater treatment plants, the lagoons are not expected to discharge any effluent. Instead, they are designed to evaporate the effluent.

The lagoons are lined and will not discharge to the ground. The discharge permit is to help Ecology regulate the facility's operation and maintenance, and to ensure we have the facility's full history, should there ever be an emergency discharge.

USDOE submitted an environmental checklist in July 2011, and we issued a determination of nonsignificance under the State Environmental Policy Act.

WHY IT MATTERS

Though Hanford has many more complex and dangerous wastes to manage, even the sanitary wastes must be managed in a way that protects the environment.

Public Comment Period:

May 14 – June 15, 2012

Questions? Request a Public Hearing? Contact (in writing):

Stacy Nichols
3100 Port of Benton Blvd
Richland, WA 99354
hanford@ecy.wa.gov

Document Review Location:

Ecology's Nuclear Waste Program website

www.ecy.wa.gov/programs/nwp/commentperiods.htm

Public Information Repositories
(see reverse)

Tips on Effective Commenting?

Visit http://www.ecy.wa.gov/biblio/0307023.html

Special accommodations
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Publication Number: 12-05-007

Figure 2. Public notice for Permit page 1 of 2.

DEPARTMENT OF
ECOLOGY
State of Washington

3100 Port of Benton Blvd
Richland, WA 99354

Public Comment Period
200 West Area
Sewer Lagoon Permit
May 14 – June 15, 2012

Will there be a public hearing? It's possible. We don't have one scheduled but if we get requests (see sidebar), we may reconsider.

What's next? When the comment period closes, we will consider the comments we've received and revise the permit if needed. Then we will issue the final permit and responsiveness summary. The permit's fact sheet describes the appeal process. The permit will be in effect for five years.

Hanford's Public Information Repositories

University of Washington
Suzzallo Library, Govt Pubs Dept
Seattle, WA 98195
Hilary Reinert (206) 543-5597
Reinerth@uw.edu

Portland State University
Government Information
Branford Price Millar Library
1875 SW Park Avenue
Portland, OR 97207-1151
Liz Paulus (503) 725-4542
paulus@pdx.edu

Gonzaga University
Foley Center Library
East 502 Boone Ave.
Spokane, WA 99258
John S. Spencer (509) 313-6110
spencer@gonzaga.edu

Washington State University
Consolidated Information Center
Room 101L
Richland, WA 99352
Janice Parthree (509) 375-3308
Janice.parthree@pnnl.gov

Department of Ecology
Nuclear Waste Program
Resource Center
3100 Port of Benton Boulevard
Richland, WA 99354
Valarie Peery (509) 372-7920
Valarie.Peery@ecy.wa.gov

Department of Energy
Administrative Record
2440 Stevens Drive, room 1101
Richland, WA 99354
Heather Childers (509) 376-2530
Heather_M_Childers@rl.gov

Figure 2. Public Notice of Permit page 2 of 2.

C6 TRI-CITY HERALD | THURSDAY, MAY 17, 2012

Tri-City Herald

Tri-City Herald

Classified Legals

Washington's Department of Ecology invites you to comment on a proposed state waste discharge permit for a new sewage treatment lagoon system in Hanford's 200 West Area. The draft permit is available for your review. The public comment period is May 14, 2012 through June 15, 2012. Though Hanford has many more complex and dangerous wastes to manage, even the sanitary wastes must be managed in a way that protects the environment.

Thousands of employees work in the center of the Hanford Site. Today, the waste from the workers' bathrooms, kitchens, and showers go to septic tanks. Some is trucked to a lagoon several miles away near the N Reactor, but that lagoon's service life is ending. The permittee, US Department of Energy Richland Operations Office (USDOE) does not plan to replace the septic tanks. Instead, it is building a new sewer lagoon system for those wastes, closer to where most of the workers are located.

The lagoon treatment system will use a grit chamber and settling lagoons to separate solids from liquids. The sludge and solids will go to Hanford's permitted disposal trenches in the 200 West Area. The system will use an aerated lagoon to biologically treat and remediate the influent. Finally, treated water will be stored in the evaporative lagoons.

Unlike most wastewater treatment plants, the lagoons are not expected to discharge any effluent. Instead, they are designed to evaporate the effluent.

The lagoons are lined and will not discharge to the ground. The discharge permit is to help Ecology regulate the facility's operation and maintenance, and to ensure we have the facility's full history, should there ever be an emergency discharge.

USDOE submitted an environmental checklist in July 2011, and we issued a determination of non-significance under the State Environmental Policy Act.

You can find the proposed permit and supporting documents at the Department of Ecology.s Nuclear Waste Program website, www.ecy.gov/programs/nwp/commentperiods.htm. You also can find the materials at the public information repositories listed below.

Will there be a public hearing?

It's possible. We don't have one scheduled but if we get requests, we may reconsider.

If you have questions or would like to request a hearing, contact Stacy Nichols at Hanford@ecy.wa.gov, or in writing to 3100 Port of Benton Blvd, Richland, WA, 99354.

What's next?

When the comment period closes, we will consider the comments we've received and revise the permit if needed. Then we will issue the final permit and responsiveness summary. The permit's fact sheet describes the appeal process. The permit will be in effect for five years.

Hanford's Public Information Repositories

University of Washington
Suzzallo Library,
Govt Pubs Dept
Seattle, WA 98195
Hilary Reinert
(206) 543-5597
Reinerth@uw.edu

Portland State University
Government Information
Branford Price Millar Library
1875 SW Park Avenue
Portland, OR 97207-1151
Liz Paulus
(503) 725-4542
paulus@pdx.edu

Gonzaga University
Foley Center Library
East 502 Boone Ave.
Spokane, WA 99258
John S. Spencer
(509) 313-6110
spencer@gonzaga.edu

Washington State
University Consolidated
Information Center
Room 101L
Richland, WA 99352
Janice Parthree
(509) 375-3308
Janice.parthree@pnnl.gov

Department of Ecology
Nuclear Waste Program
Resource Center
3100 Port of Benton
Boulevard
Richland, WA 99354
Valarie Peery
(509) 372-7920
Valarie.Peery@ecy.wa.gov

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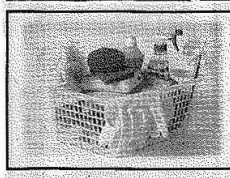
#12-3883, 5/17, 5/20/2012

Figure 3. First legal classified ad.

Help Wanted 530 Help Wanted 530 Help Wanted 530 Help Wanted 530 Help Wanted 530 Help Wanted 530



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careerbuilder.com

Classified Legals

ATTENTION

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#12-3883, 5/17, 5/20/2012

Figure 4. Second legal classified ad.

Brown, Madeleine (ECY)

From:	Brown, Madeleine (ECY)
Sent:	Thursday, March 08, 2012 3:53 PM
To:	hanford-Info@listserv.wa.gov
Subject:	Hanford plans a new sewage treatment plant for the Central Plateau

This is a message from Washington's Department of Ecology

Advance Notice - a comment period will come for this in the Spring!

The U.S. Department of Energy (USDOE) has applied for a state waste discharge permit for a new sewage treatment lagoon in Hanford's 200 West Area. The permit application will be available for your review. I will send you an email when we post the permit application. Though Hanford has many more complex and dangerous wastes to manage, even the sanitary wastes must be managed in a way that protects the environment.

Unlike most wastewater treatment plants, this lagoon is not expected to discharge any effluent. Instead, it is designed to evaporate the effluent. The lagoons are lined and will not discharge to the ground. The discharge permit is to help Ecology regulate the facility's operation and maintenance, and to ensure we have the facility's full history, should there ever be an emergency discharge.

The lagoon treatment system will have the following:

- A state waste discharge permit.
- An evaluation under the State Environmental Policy Act (SEPA).
- An air permit.

This is NOT a comment period – yet. When we have prepared a draft permit, we will make it available for public comment. We will provide links to the other decision documents as well.

Madeleine C. Brown
Washington Department of Ecology
Nuclear Waste Program
Mabr461@ecy.wa.gov
(509) 372-7936

1

Figure 5. Advance email notification.

Brown, Madeleine (ECY)

From: Brown, Madeleine (ECY)
Sent: Monday, May 14, 2012 4:47 PM
To: hanford-Info@listserv.wa.gov
Subject: Comment period starts today!

This is a message from the Washington Department of Ecology

Comment period starts today!

Washington's Department of Ecology invites you to comment on a proposed state waste discharge permit for a new sewage treatment lagoon system in Hanford's 200 West Area. The draft permit is available for your review. Though Hanford has many more complex and dangerous wastes to manage, even the sanitary wastes must be managed in a way that protects the environment.

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USDOE submitted an environmental checklist in July 2011, and we issued a determination of nonsignificance under the State Environmental Policy Act.

The comment period is May 14 through June 15, 2012. You can review the proposed permit and supporting materials on our website, www.ecy.wa.gov/programs/nwp/commentperiods.htm. You can also find it at the following locations:

1

Figure 6. Email notification for comment period start page 1 of 3.

University of Washington
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2

Figure 6. Email notification for comment period start page 2 of 3.

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(509) 372-7936

3

Figure 6. Email notification for comment period start page 3 of 3.

Appendix B: Copies of all written comments

From: Alex Amonette <abamonette@gmail.com>
Sent: Friday, March 30, 2012 6:03 AM
To: Hanford@ecy.wa.gov
Subject: Sanitary Sewage Lagoon

Follow Up Flag: Follow up
Flag Status: Completed

To Whom It May Concern:

I received a Public Notice of Application for the Sanitary Sewage Lagoon for Hanford's Central Plateau. Why not use composting toilets? I observe much waste of energy at 200 East. People do not turn off the lights and turn off their computers.

Thank you.

Sincerely,
Alex Amonette
Richland, WA

From: Hanford (ECY)
Sent: Thursday, June 14, 2012 3:24 PM
To: Palomarez, Adam (ECY); Holmes, Erika (ECY); Bohrmann, Dieter (ECY)
Subject: FW: 200 West Evaporative Sewer Lagoon
Attachments: comments on draft ST0045514final (Recovered).docx

---

From: Clement, Curt J
Sent: Thursday, June 14, 2012 3:23:58 PM (UTC-08:00) Pacific Time (US & Canada)
To: Hanford (ECY)
Cc: Rasmussen, James; Jackson, Dale E; Weil, Stephen R; Hahn, Sheila; Beam, Thomas G
Subject: 200 West Evaporative Sewer Lagoon

Ms. Nichols:

Attached for your consideration are comments on Ecology's Draft State Waste Discharge Permit ST0045514 (200 West Area Evaporative Sewer Lagoon). Mission Support Alliance (MSA) is submitting these comments in cooperation with the U.S. Department of Energy (DOE).

We look forward to receiving Ecology's responses to our comments. If you have questions or would like to discuss any of them further, please contact me at 509-376-6223 or via email at curt_j_clement@rl.gov. Thanks.

Sincerely,

Curt Clement
MSA Environmental Integration

PS. Reply confirmation of your receipt of these comments to meet Ecology's 06/15/2012 deadline would be much appreciated. Thanks.

Hanford Site Comments—Draft State Waste Discharge Permit Number ST0045514

Comment Number	Section/Citation	Comment	Recommended Action(s)/ Requested Change(s) *(Proposed text additions; proposed text ~~deletions~~)*
Hanford-01	Page 4	We should not have to submit a separate letter confirming we reviewed the Operations and Maintenance Manual.	Change the "First Submittal Date" to be "NA-Review of Operations and Maintenance Manual every 365 days. Update, if necessary, within 60 days following review."
Hanford-02	Page 4	The application for permit renewal should be submitted at least sixty days prior to the expiration of the permit per WAC 173-216-070.	Change to read: "At least 60 days prior to expiration of the permit." Alternatively, the date could be placed in the column once the expiration date is known.
Hanford-03	Page 5 and following pages.	The header is not correct.	Change to read: "Permit No. ST0045514."
Hanford-04	Page 5, S1.A	Please make sure the dates June 1, 2012 and May 31, 2017 correspond to the effective date and expiration date, respectively.	
Hanford-05	Page 5 and 6, S1.A and S2.A	The facility is designed as a zero discharge facility with the permit being issued only to accommodate emergency discharges into the waters of the state, which are not expected to occur. There should be no sampling parameters for "discharges" to the basins. (Order No. DE12NWP-001 for air emissions already requires influent wastewater sampling and analysis.) The proposed parameters for BOD, TSS, and PH are not appropriate and no monitoring frequencies should be set for them. The specific permit limitations placed on the parameters do not appear to have any apparent basis and the suggested sampling locations are not located at a representative discharge point for this type of facility even if a sampling location was relevant (i.e. sampling location and limitations placed on an internal point within a treatment train is inappropriate even for a facility that has a discharge). The limitations do not even reflect concentrations for influent or effluent sewage parameters.	Delete parameters and any sampling requirements.
Hanford-06	Page 7, S2.A	For note "b" it should read "quarterly" instead of "monthly."	Change to read "quarterly."
Hanford-07	Page 7, S2.A	For the reasons explained above, footnote "f" should be deleted.	Delete the row that begins with "f."

Hanford Site Comments—Draft State Waste Discharge Permit Number ST0045514

Comment Number	Section/Citation	Comment	Recommended Action(s)/ Requested Change(s) *(Proposed text additions; proposed text ~~deletions~~)*
Hanford-08	Page 9, S3.A.4.b	For consistency suggest referring to the lagoons as "evaporative" lagoons.	Change to read: Submit the measured sludge depth in ~~all~~the evaporative lagoons no later than May 31, 2017.
Hanford-09	Page 17, S5.G.a.2.	As discussed above, a separate letter to Ecology is unnecessary and the requirement could be clearer.	Suggest changing to read as follows: Review the O&M Manual at least ~~annually~~every 365 days. ~~and confirm this review by letter to Ecology by September 1 of each year~~Update, if necessary, within 60 days following the review.
Hanford-10	Page 17, S5.G.a.5		Editorial: Change "this" to "the."
Hanford-11	Page 18, S7	The application for permit renewal should be submitted at least sixty days prior to the expiration of the permit per WAC 173-216-070.	Change both "180"s to read "60."
Hanford-12	Page 20, G5	This requirement is unnecessary and not in accordance with WAC 173-240. Any new facility would be subject to the regulations – not this permit.	Delete section. If you want to have a requirement for modifications, that would be appropriate, but it should be a specific requirement for modifying the evaporative lagoon with a timeframe of 60 days in accordance with WAC 173-240-030.
Hanford-13	Page 20, G7.3	There is no "Section A."	Correct the reference.