STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
3100 Port of Benton Blvd • Richland, WA 99354 • (509) 372-7950
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September 1, 2020 20-NWP-109

Brian T. Vance, Manager
Richland Operations Office
United States Department of Energy
PO Box 550, MSIN: H5-20
Richland, Washington 99352

Ty Blackford, President and CEO
CH2M HILL Plateau Remediation Company
PO Box 1600, MSIN: A7-01
Richland, Washington 99352

Re: Dangerous Waste Compliance Inspection on March 11, 2020, at the Non-Radioactive Dangerous Waste Landfill, RCRA Site ID: WA7890008967, Nuclear Waste Program (NWP) Compliance Index No.: 20.696.

Dear Brian T. Vance and Ty Blackford:

Thank you for your staff's time during the Non-Radioactive Dangerous Waste Landfill inspection on March 11, 2020. The Department of Ecology's (Ecology) compliance report of this inspection is enclosed. The report cites three areas of non-compliance.

To return to compliance, complete the actions required in the compliance problems section of the report and respond to Ecology within the timeframes specified. Include all supporting documentation in your response, (such as photographs, records, and statements explaining the actions taken and dates completed). Submit this information to Phillip Buser at 3100 Port of Benton Boulevard, Richland, Washington 99354.

Failure to correct the deficiencies may result in an administrative order, a penalty, or both, as provided by the Hazardous Waste Management Act (Revised Code of Washington 70.105.080 and .095). Persons who fail to comply with any provision of this chapter are subject to penalties of up to $10,000 per day per violation.

Specific deficiencies or violations not listed in the enclosed compliance report do not relieve your facility from having to comply with all applicable regulations.

In my original records request, I requested the Recovery Package for the subsidence at the Non-Radioactive Dangerous Waste Landfill. I was provided the following response: "*The recovery plan is not approved and there is not an estimated time of completion. The facility is locked and secured and does not pose any risk to human health or the environment. Completion of the recovery plan will be dependent on facility returning to normal operations.*
Future Action: The facility will provide a copy to the regulator as soon as the recovery plan is complete." Please provide this document with your response.

If you have questions or need further information, please contact me at (509) 372-7943 or phillip.busser@ecy.wa.gov.

Sincerely,

Buser, Phillip (ECY) Digitally signed by Buser, Phillip (ECY) Date: 2020.09.01 13:13:29 -07'00'

Phillip Buser
Dangerous Waste Compliance Inspector
Nuclear Waste Program

pb/tla
Enclosure

cc electronic w/enc:

Dave Bartus, EPA
Dave Einan, EPA
Cheryl Williams, EPA
Ben Harp, USDOE ORP
Duane Carter, USDOE-RL
Kathy Higgins, USDOE-RL
Tony McKarns, USDOE-RL
Brian Stetter, USDOE-RL
Allison Wright, USDOE-RL
Danielle Collins, CHPRC
Darrin Corriell, CHPRC
Mitch Marrott, CHPRC
Linda Petersen, CHPRC
Jon Perry, MSA
Steve Szendre, MSA
ERWM Staff, YN
Susan Leckband, HAB
Ken Niles, ODOE
Shawna Berven, WDOH
John Martell, WDOH
Al Farabee, USDOE-RL
Michael Cline, USDOE-RL
Doug Hildebrand, USDOE-RL
Phillip Buser, Ecology
Kathy Conaway, Ecology
Kelly Elsethagen, Ecology
Jared Mathey, Ecology
Seana Mortensen, Ecology
John Price, Ecology
Jonathan Rogers, NWP Compliance Index File: 20.696
Stephanie Schleif, Ecology
Alex Smith, Ecology
NWP RIM Coordinators, Ecology
Environmental Portal
Hanford Facility Operating Record
CHPRC Correspondence Control
MSA Correspondence Control
TPA Administrative Record
USDOE-ORP Correspondence Control
USDOE-RL Correspondence Control
USEPA Region 10 Hanford Field Office Correspondence Control

cc w/o enc:

Mason Murphy, CTUIR
Jack Bell, NPT
Laurene Contrer

Washington Department of Ecology
Nuclear Waste Program
Compliance Report

Site:	**Non-Radioactive Dangerous Waste Landfill**		
RCRA Site ID:	**WA7890008967**		
Inspection Date:	March 11, 2020		
Site Contacts:	Kathy Higgins, United States Department of Energy – Richland Operations Office (USDOE-RL) Linda Petersen, CH2M Hill Plateau Remediation Company (CHPRC)		
Site Location:	Hanford Site		
At This Site Since:	1943	NAICS#: 562211, 562910, 541715, and 924110	
Current Site Status:	Large Quantity Generator		

Ecology

Lead Contact:	Phillip Buser	Phone: (509) 372-7943	
Other Representatives:	Jared Mathey (Support Inspector) Teresa Alldredge (Inspection Observer)		
Report Date:	September 1, 2020		
Index #:	20.696		
Report By:	Phillip Buser	Buser, Phillip (ECY) Digitally signed by Buser, Phillip (ECY) Date: 2020.09.01 15:28:50 -07'00'	
		(Signed)	(Date)

Site Location

The Hanford Site was assigned a single United States Environmental Protection Agency (EPA) identification number, and is considered a single *Resource Conservation and Recovery Act (RCRA) of 1976*, as amended, facility even though the Hanford Site contains numerous processing areas spread over a large geographic area. The Hanford Site is a tract of land approximately 580 square miles and is located in Benton County, Washington. This site is divided into distinct Dangerous Waste Management Units (DWMUs) which are administratively organized into "unit groups." A unit group may contain only one DWMU or many; currently, there are 30 unit groups at the Hanford Site. Individual DWMUs make up a small portion of the Hanford Site. Additional descriptive information on the individual DWMUs is contained in unit group permit applications and in Parts III, V, and VI of the *Hanford Facility RCRA Permit, Dangerous Waste Portion*, WA7890008967, Revision 8C (hereafter referred to as the Permit).

Owner and Operator Information

According to the *Dangerous Waste Permit Application Part A Form*, the Non-Radioactive Dangerous Waste Landfill (NRDWL) is owned/operated by the US Department of Energy (USDOE). CHPRC is contracted by the USDOE to co-operate this unit.

Facility Background

In 2019, the USDOE Hanford Site reported as a Large Quantity Generator of hazardous waste on their Dangerous Waste Annual Report.

The 600 Area Central Non-Radioactive Dangerous Waste Landfill, otherwise referred to as the NRDWL, and the Solid Waste Landfill (SWL) was operated as one unit between 1973 and 1975. The units received waste from the Hanford Site. In 1975, the 600 Area landfill was divided into two separate units because of the nature of the waste disposed at the NRDWL and SWL. The NRDWL hazardous waste is regulated under Chapter 173-303 WAC. The SWL received non-dangerous solid waste, which is regulated under Chapter 173-350 WAC.

The NRDWL is a 10-acre land disposal unit that consists of 19 unlined trenches approximately 400 feet long, 16 feet wide at the base, and 15 feet deep. Six trenches (Trenches 19N, 26, 28, 31, 33, and 34) were used for disposal of dangerous waste. The NRDWL was used from January 1975 through May 1985 for the disposal of dangerous waste generated from various Hanford Site operations. Asbestos was disposed in nine trenches (Trenches 2N, 20, 21, 22, 23, 25, 27, 29, and 30). Nonhazardous waste was disposed in Trench 1N. The NRDWL is an inactive landfill and ceased receiving non-radioactive dangerous waste for disposal in May 1985. The disposal of dangerous waste ceased at the NRDWL in May 1985, but it continued to receive asbestos waste until 1988. In 1988, the NRDWL ceased operations completely. When the NRDWL ceased accepting waste, the area was final graded and the operational cover became the interim cover that is currently in place. This waste consists of listed waste, waste from nonspecific sources, characteristic waste, and state only waste. The NRDWL provided disposal of dangerous wastes generated from process operations, research and development laboratories, maintenance activities, and transportation functions located throughout the Hanford Facility.

Compliance Background

Previous inspections are summarized below:

On June 27, 2018, Ecology conducted an Operation and Maintenance Groundwater Compliance Inspection, #18.645. This inspection cited no areas of non-compliance.

On June 20, 2019, Ecology conducted an Operation and Maintenance Groundwater Compliance Inspection, #19.671. This inspection cited no areas of non-compliance.

Inspection Summary

At 8:50 a.m., Jared Mathey (support inspector), Teresa Alldredge (inspection observer), and I arrived at Building MO-2264. We introduced ourselves and began the inspection with an in-briefing. An attendance roster was passed around for participants to sign. The following persons were in attendance:

Danielle Collins – Inspection Coordinator, CHPRC
Mitch Marrott – Inspection Coordinator, CHPRC
Ryan Fisher – Environmental Compliance Officer, CHPRC
Linda Petersen – Inspection Coordinator, CHPRC
Justin Roberts – Radiation Area Remedial Action (RARA) Manager, CHPRC
Brian Stetter – Project Engineer, USDOE
Duane Carter – Environmental Specialist, USDOE
Bob Cathel – Environmental Project Manager, CHPRC
Jaime Garcia – Field Support Administration, CHPRC
Kathy Higgins – RL Project Manager, USDOE

Sean Sexton – Environmental Compliance Officer, CHPRC

Scot Fitzgerald – Chemist, CHPRC

Darin Corriell – Operations Director, CHPRC

Daniel Turlington – Environmental Compliance Officer, CHPRC, CPRM

John Lopez – Project Technical Services, CHPRC

Kyle Stiles – Groundwater Technician, CHPRC

Bill Faught – Groundwater Manager, CHPRC

I began the meeting by explaining my intentions for the inspection. I said that I wanted to ask the bulk of my questions and document review at the beginning of the inspection, and prior to the walk-through.

This was followed up with a safety briefing by Mr. Darin Corriell. He said the building we were currently in was a take-cover facility. Mr. Corriell added that if a fire occurred, we would stage outside in the parking lot. Mr. Corriell continued with discussing on-site hazards. He said we should expect typical desert hazards such as sandy and uneven surfaces. He added that substantial footwear and safety glasses were required. Mr. Corriell continued that we should carpool to the site and drivers should park along the road to avoid hitting obstacles. He added that if a take-cover incident occurred while we were at NRDWL, the closest take cover facility is the Waste Treatment Vitrification Plant.

Subsidence

I began my questions and document review with the occurrence report for the latest subsidence event at NRDWL. I said I noticed a reference to Work Package SM-18-0799/Y. I asked if they have a work package ready to address the subsidence. Mr. Corriell said they are developing a recovery plan. He said this subsidence event is big enough to warrant its own work package. He continued that the work package is currently being evaluated by Engineering and they should have a path forward in a few months. I then asked if I could see the previously mentioned Work Package SM-18-0799/Y. Mr. Justin Roberts said that work package has been suspended and is being reevaluated as a result of the worker safety incident caused by the subsidence. He said they have a new work package. Mr. Ryan Fisher handed me a hard copy of Work Package SM-20-01647. I observed the work change notice had directions for facility inspections and the work record had notes from the facility inspections. It appeared that the notes were consistent with what was described in the occurrence report of the incident.

I asked what the history of subsidence has been at NRDWL. Mr. Corriell said not much and that in all the years he has worked on-site, this is the first occurrence of subsidence at NRDWL that he is aware of. I mentioned that Ecology has been notified in the past for subsidence issues on the adjacent SWL. I also mentioned that the subsidence events in the past (along with this event) occurred in the asbestos trenches. I asked if they had any explanation for this correlation. Mr. Corriell said asbestos trenches tend to have mostly building materials like wood and over time the wood degrades causing subsidence.

I asked if there is a separate procedure for identifying and addressing subsidence at NRDWL. Mr. Corriell said their new process is to develop a recovery plan for evaluating the issue. He reiterated that Work Package SM-20-01647 is a work-in-progress as a maintenance package for multiple sites, and that a recovery package is being developed specific to this event.

Preparedness and Prevention

I asked what facility emergency plan they are currently operating under for the NRDWL. Mr. Fisher said they have a Facility Response Plan (FRP). He then handed me a copy of HNF-IP-0603-NDWL, Revision 9, C*entral Plateau Surveillance and Maintenance Facility Response Plan for the Non Radioactive Dangerous Waste Landfill*, dated May 30, 2018. I asked where hard copies of this plan are kept. Mr. Corriell said it is available in the CH Intranet and the incident command post, which is located in Building MO-294.

I asked what preparedness and prevention equipment staff carry during inspections, in case of an emergency. Mr. Roberts said all employees have a radio and a cell phone for communications. He added they also wear hard hats, safety vests and safety glasses. Mr. Roberts continued that employees carry fire extinguishers and shovels in the work vehicles. I asked if they carry any kind of spill response kit in the vehicles. Mr. Roberts said no and Mr. Corriell added that if any kind of spill occurred, they would contact the shift office and an appropriate response would be developed. I mentioned that according to WAC 173-303-340, a spill response kit is required equipment unless proven to Ecology that it is not necessary. I continued that waivers were being developed for other facilities at Hanford and asked if they were going to request a waiver for NRDWL. Mr. Duane Carter said NRDWL is not currently being considered at this time, but it may get added to the list at a later date.

I then asked if they implemented their contingency plan in the last two years for the NRDWL. Everyone said no.

Personnel Training

I asked if I could see training records of staff that performed or approved facility inspections during 2019. Mr. Fisher handed me a stack of Training History Reports. As I began to look through the stack, Mr. Corriell said those persons are Decontamination & Decommissioning (D&D) Workers and Field Work Supervisors (FWS). He added that Mr. Roberts training history report is included, but he has recently taken a new role as the Radiation Area Remedial Action (RARA) manager. I made a note of the first two workers (Isidoro Mata, Jr. and Leslie Splatstoesser) for later records request and additional review. I asked about training records of employees that conducted subsidence surveillance in 2019. Mr. Corriell said that is the same group of employees I just looked at.

Next, I asked for training records of persons conducting groundwater monitoring in 2019. Mr. Sean Sexton provided another stack of training records. This consisted of well maintenance workers and Nuclear Chemical Operators (NCO). Again, I noted the first two workers (Justin England and Sergio Flores, Jr.) for later records request and additional review.

I asked if they are using the training plan last updated in 2017. Mr. Sexton said they have a revised training plan. He showed me SGRP-STD-TQ-54227, *Groundwater Well Sampling, Inspection and Maintenance Supplemental Dangerous Waste Training Plan*, Revision 2, dated April 24, 2019.

Groundwater Monitoring

I asked to see pre-trip inspection records for groundwater monitoring from 2019. Mr. Sexton showed me their records on a computer projector. He said all of these records are organized by month. Next, I asked for well maintenance records. Mr. Sexton showed me a Groundwater Well Concern Report from September 17, 2019. Then Mr. Sexton added that a Well Maintenance

Report shows what was done to address the concern from the previous report. Then I asked about Well Pump Check Inspection Records and Depth to Water Measurements. Mr. Sexton replied that both of these are recorded in a Groundwater Sample Report. He then showed me the list of these reports for 2019. Next, I asked for Groundwater Well Monitoring Records. Mr. Sexton showed me the most recent Hanford Environmental Information System (HEIS) Report. He added that these are reported to Ecology quarterly. I asked what their current procedures were for collecting these records. Mr. Sexton showed me their procedure SGRP-PRO-SMP-50043, *Operational Monitoring Groundwater Sampling*, Revision 4, Change 4, dated November 8, 2019.

I asked if any plans existed for conducting soil gas monitoring at NRDWL. Mr. Bill Faught said nothing is planned. He added that if any soil gas monitoring was being planned, it would come from Mission Support Alliance.

Closure

I asked how this subsidence event, and any other potential subsidence, would effect the closure of NRDWL. Mr. Corriell said they are working with Jay Decker on their closure plan. He continued that there could be issues between subsidence and runoff. Mr. Corriell added that this might affect the landfill cap design and would need additional compaction.

General Inspections

I asked if I could see the quarterly inspection records for 2018 and 2019. Mr. Marrott showed me 2CP-SUR-R-03001, *Quarterly TSD's Waste Site Surveillance*, Revision 3, Change 0, dated January 22, 2019. He also provided CPSM-PRO-OP-52153, Appendix A, *RARA TSD Sites*, dated July 3, 2019. I said I heard Mr. Corriell mention RARA earlier and I now see it on these documents. I asked if they could explain what RARA is. Mr. Corriell said it is Radiation Area

Remedial Action and it is a team that specifically addresses the need for repairs or remedial actions in facilities or radiation areas.

Walk Through

At 10:30 a.m., everyone carpooled from MO-2264 to NRDWL. We reconvened at the entrance gate. Mr. Corriell mentioned that recent wind storms have caused an unusually large number of tumbleweeds to collect along the fence. He added that special work crews have been on-site attempting to remove the tumbleweeds, but are not finished.

I began my site inspection with the gate. I observed the gate had a large amount of tumbleweeds in front of it and took the following picture. I attempted to get around enough tumbleweeds for a visual of the gate lock and signs. However, I was not able to see the lock and I was not able to read the signs on the gate.

DSC# 02691 - Tumbleweeds in front of the access gate at NRDWL.

DSC# 02690 - Tumbleweeds blocking view of security signs and the gate lock at NRDWL.

From the gate I could see some of the wells and that the tumbleweeds had been cleared away from them. I walked over and identified wells 699-25-34B, 699-25-34F and 699-25-33A. I also observed that each well was capped, locked and tagged. I took a picture of the wells. I also took a picture of the signs hung on the fence. The signs I observed said "Caution, Asbestos Waste Disposal Site, Do not create dust". I did not observe any sign stating "Danger, Unauthorized Personnel Keep Out" (or equivalent).

DSC# 02692 - Well Number 699-25-33A with tumbleweeds surrounding 699-25-34F and 699-25-34A.

DSC# 02693 - Observed signage hung on the fence at NRDWL.

I asked if it was possible to get to a place where we could observe the subsidence. Mr. Corriell said we might be able to walk around on the north side of NRDWL and see it from the fence. We proceeded to do so. I also took an additional picture of signs hung on the fence. We found three different locations to observe the subsidence and I took a picture at each location. We then walked back toward the vehicles. I took one more picture of the northeast corner of NRDWL for documenting the amount of tumbleweeds the facility had to remove.

DSC# 02694 - The general location of the subsidence at NRDWL.

DSC# 02695 - Flags marking the exact location of the subsidence at NRDWL.

DSC# 02696 - Flags marking the location of the subsidence at NRDWL, and tumbleweeds along the fence line.

DSC# 02697 - A large pile of tumbleweeds collected near the northeast corner of NRDWL.

We returned to driveway where the vehicles were parked for an inspection out-briefing. Ms. Petersen asked what my current thoughts were of the inspection. I replied that they were good overall. I mentioned that my only current concern was the new signs on the fence identified "Caution, Asbestos Waste Disposal Site, Do not create dust". I said that there should be additional signs to address the danger of the facility according to WAC 173-303-310. I asked if anyone else had any questions or comments. Ms. Petersen said that when I make my formal records request, I may want to be specific with what I ask for, as some documents are quite large. I concluded my field inspection and we left the facility at 11:30 am.

Records Review

Subsidence

I requested and received Work Package SM-20-01647, *Perform Routine Work at Central Plateau Risk Management (CPRM) RARA WIDS Sites*, as related to the February 10, 2020, subsidence issue at NRDWL. I observed instructions on performing maintenance and routine

activities at RARA and Waste Information Data System (WIDS) sites. I observed information related to known and unknown subsidence, identifying new subsidence, and safety precautions for all work activities.

I requested the Recovery Package for the subsidence at NRDWL. I was provided a response stating:

> *The recovery plan is not approved and there is not an estimated time of completion. The facility is locked and secured and does not pose any risk to human health or the environment. Completion of the recovery plan will be dependent on facility returning to normal operations.*
>
> *Future Action: The facility will provide a copy to the regulator as soon as the recovery plan is complete.*

Closure

Stated in 40 CFR 265.310, Closure and post-closure care, Subpart N:

> *(a) At final closure of the landfill **or upon closure of any cell**, the owner or operator must cover the landfill or cell with a final cover designed and constructed to:*
>
> *(1) Provide long-term minimization of migration of liquids through the closed landfill;*
>
> *(2) Function with minimum maintenance;*
>
> *(3) Promote drainage and minimize erosion or abrasion of the cover;*
>
> *(4) Accommodate settling and subsidence so that the cover's integrity is maintained; and*
>
> *(5) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.*

The NRDWL ceased receiving dangerous waste in May 1985, but it continued to receive asbestos waste until 1988. In 1988, the NRDWL ceased operations completely. When the NRDWL ceased accepting waste, the area was final graded and the operational cover became the interim cover that is currently in place. This action closed all of the cells in NRDWL. A final cover design has not yet been approved by Ecology. I observed in 2CP-SUR-R-03001, Quarterly TSD's Waste Site Surveillance that facility inspections of NRDWL occur quarterly. During my site inspection on March 11, 2020, I observed subsidence within the facility. I observed in Occurrence Report EM-RL-CPRC-CENTPLAT-2020-0003 that "the lead worker was conducting surveillance by slowly driving a pickup truck crisscrossing the surface of the site planting warning flags on unmarked impediments. The front tires of the pickup truck got stuck in a subsidence deep enough that the lead worker could not back out."

Emergency Preparedness

I requested and received HNF-IP-0603-NDWL, Revision 9, *Central Plateau Surveillance and Maintenance Facility Response Plan for the Non-Radioactive Dangerous Waste Landfill*, dated May 30, 2018. I observed it stated the following:

> *The Emergency Coordinator is the Building Warden (BW) or Building Emergency Director (BED)… A current list of names and work and home telephone numbers of BWs or BEDs is maintained by the Hanford Site Emergency Preparedness Organization and can be accessed 24 hours a day by calling the Patrol Operations Center (POC) at 373-3800.*

The document also listed the location, physical description, and capabilities as the following:

- Fixed Emergency Equipment (NA).
- Portable Emergency Equipment - **Type**: Emergency Response Kits; **Location**: MO-294, 2269E; **Capability**: Boundary control, PPE for response, and other various emergency response functions.
- Communications Equipment/Warning Systems - **Type**: Two-way radio, Cellular telephone; **Location**: Nearby in vehicle or on personnel; **Capability**: Summon emergency response and emergency notification.
- Spill Control and Containment Supplies (NA).

Washington Administrative Code (WAC) 173-303-340 states:

(1) Required equipment. All facilities must be equipped with the following, unless it can be demonstrated to the department that none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below:
(a) An internal communications or alarm system capable of providing immediate emergency instruction to facility personnel;
(b) A device, such as a telephone or a hand-held, two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams;
(c) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and
(d) Water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems. I did not observe fire extinguishers or decontamination equipment listed anywhere in the plan.

I did not observe portable fire extinguishers or decontamination equipment listed in the plan, and spill kits and spill control equipment was listed as N/A. No exemption has been requested to Ecology for any of this equipment.

Personnel Training

I requested SGRP-STD-TQ-54227, Revision 2, *Groundwater Well Sampling, Inspection and Maintenance Supplemental Dangerous Waste Training Plan*, dated April 23, 2019.

I requested and received the Training History Reports for D&D workers, Isidoro Mata, Jr. and Leslie Splatstoesser and Well Maintenance Workers, Justin England and Sergio Flores, Jr. I requested the "Training History Report", not the "Training Plan" from Crystal Reports that are typically provided.

I compared the training history reports for the well maintenance workers to the SGRP-STD-TQ-54227, Revision 2, *Groundwater Well Sampling, Inspection and Maintenance Supplemental Dangerous Waste Training Plan*, dated April 23, 2019. I observed each employee was current with their training requirements at the time of my field inspection.

I compared the training history reports for the D&D workers to the PRC-STD-TQ-40236, Revision 2, Change 2, *Central Plateau Risk Management Dangerous Waste Training Plan*, dated December 11, 2019. I observed each employee was current with their training requirements at the time of my field inspection.

Well Monitoring

I requested the Technical Procedure SGRP-PRO-SMP-50043, *Operational Monitoring Groundwater Sampling*, Revision 4, Change 4, dated November 8, 2019, for collecting groundwater well monitoring records. I observed this procedure provides general requirements and guidance for performing groundwater sampling by Soil and Groundwater Field Sampling Operations (FSO) personnel. I observed that this procedure referenced the following other procedures or records:

- Groundwater Sampling Report (GSR), Site Form A-6003-667.
- SGRP-PRO-OP-50054, Sample Storage Units.
- SGRP-PRO-PM-50079, Field Sampling Operations Controlled Field Logbooks.
- SGRP-PRO-SMP-50047, Sample Packaging, Transporting and Shipping.
- SGRP-PRO-SMP-50050, Bottle Preservation.

I requested and reviewed records of all 2019 groundwater monitoring well inspection records (i.e. Groundwater pre-trip inspections, pump check inspections on Groundwater Sample Reports (GSRs) and associated well concern reports) for RCRA groundwater wells at NRDWL. I examined records for the following well numbers, and groundwater pre-trip inspections on these dates.

Well Number	Groundwater Well Pump Pre-Trip Inspection Record Dates			
699-25-33A	1/2/19	3/29/19	6/25/19	9/26/19
699-25-34B	1/2/19	3/29/19	6/25/19	9/26/19
699-25-34F	1/2/19	3/29/19	6/25/19	9/26/19
699-26-33A	1/2/19	3/29/19	6/25/19	9/26/19
699-26-34A	1/2/19	3/29/19	6/25/19	9/26/19
699-26-34B	1/2/19	3/29/19	6/25/19	9/26/19
699-26-35A	1/2/19	3/29/19	6/25/19	9/26/19
699-26-35C	1/2/19	3/29/19	6/25/19	9/26/19
699-26-38	1/2/19	3/29/19	6/25/19	9/26/19
699-25-34D	1/7/19	4/9/19	7/9/19	10/3/19

I observed the following notes on the Inspection record dated June 25, 2019.

- Well 699-25-33A had cracked cement on well pad, cap is not secured, and no bullards "grandfathered complaint built prior to '88".
- Well 699-25-34B had cracked cement on well pad and no bullards "grandfathered compliant built prior to '88".
- Well 699-25-34F had cap that is not secured.
- Well 699-26-33A had cap that is not secured.

- Well 699-26-34A had cracked cement on well pad, cap is not secured, and no bullards "grandfathered compliant built prior to '88".
- Well 699-26-35A had cracked cement on well pad and no bullards "grandfathered compliant built prior to '88".
- Well 699-26-35C had cracked cement on well pad and no bullards "grandfathered compliant built prior to '88".

I observed the following notes on the Inspection record dated September 26, 2019.

- Well 699-25-33A had lid which comes off when locked, No pad, "grandfathered compliant built prior to '88.
- Well 699-25-34B had no pad, cracks in pad, and "grandfathered compliant built prior to '88.
- Well 699-26-34A had no bullards, cracks in pad, and "grandfathered compliant built prior to '88.
- Well 699-26-35A had no bullards, cracks in pad, and "grandfathered compliant built prior to '88.
- Well 699-26-35C had no bullards, cracks in pad, and "grandfathered compliant built prior to '88.

I observed that each inspection record contained the printed name and handwritten signature of the inspector, the date and time of the inspection, and notations of the observations made.

I requested all 2019 RCRA groundwater well monitoring records for groundwater monitoring wells at NRDWL. For each well, I received the quarterly Groundwater Sample Reports from calendar year 2019. I observed the pump type, total purge volume pumped, pump check inspection date, pH, temperature, depth to water measurement, conductivity and turbidity for each sample. I observed the Lot numbers of each sample for testing. I observed that each report contained the printed name and handwritten signature of the worker, the date and time of the sampling, and notations of the observations made.

Well Number	Groundwater Well Pump Check Inspection and Depth to Water Measurement Dates			
699-25-33A	1/7/19	4/9/19	7/10/19	10/3/19
699-25-34B	1/8/19	4/5/19	7/10/19	10/3/19
699-25-34F	1/8/19	4/5/19	7/10/19	10/3/19
699-26-33A	1/8/19	4/5/19	7/10/19	10/3/19
699-26-34A	1/7/19	4/5/19	7/10/19	10/2/19
699-26-34B	1/7/19	4/5/19	7/10/19	10/2/19
699-26-35A	1/8/19	4/5/19	7/10/19	10/2/19
699-26-35C	1/8/19	4/5/19	7/10/19	10/2/19
699-26-38	1/8/19	4/5/19	7/10/19	10/2/19
699-25-34D	1/7/19	4/9/19	7/9/19	10/3/19

I observed the following notes from the groundwater sample reports,

- On July 10, 2019, Well 699-26-34A noted no bullards, cracked well pad.
- On October 2, 2019, Well 699-26-34B noted hydrostar in well operates "real rough".

- On July 10, 2019, Well 699-26-35A noted no bullards, cracked well pad.
- On July 10,2019, Well 699-26-35C noted no bullards.

I requested and received all 2019 maintenance records and records of repair or service for all the RCRA groundwater wells at NRDWL.

- For well 699-25-33A, I received a Groundwater Well Concern Report dated September 17, 2019. The report had two concerns: the well cap not secure, and a large crack in the concrete pad. I also received a Well Maintenance Report dated October 2, 2019. I observed notes stating an aluminum cap was installed, and the cracks in the pad were sealed.
- For well 699-25-34B, I received a Groundwater Well Concern Report dated September 17, 2019. The report had one concern: a large crack in the concrete pad. I also received a Well Maintenance Report dated October 2, 2019. I observed notes stating the cracks in the pad were sealed.
- For well 699-25-34F, I received a Groundwater Well Concern Report dated September 17, 2019. The report had one concern: the well cap not secure. I also received a Well Maintenance Report dated September 30, 2019. I observed notes stating the lock was replaced with a short shank lock.
- For well 699-26-33A, I received a Groundwater Well Concern Report dated September 17, 2019. The report had one concern: the well cap not secure. I also received a Well Maintenance Report dated September 30, 2019. I observed notes stating the lock was replaced with a short shank lock.
- For well 699-26-34A, I received a Groundwater Well Concern Report dated September 17, 2019. The report had one concern: a large crack in the concrete pad. I also received a Well Maintenance Report dated October 2, 2019. I observed notes stating the cracks in the pad were sealed.
- For well 699-26-34B, I received a Groundwater Well Concern Report dated October 2, 2019. The report had one concern: troubleshoot pump, water at the surface is intermittent/cutting out and may need replacing. I also received a Well Maintenance.
- Report dated December 6, 2019. I observed notes stating the Hydrostar failed and removed for ez-reel access.
- For well 699-26-35A, I received a Groundwater Well Concern Report dated September 17, 2019. The report had one concern: a large crack in the concrete pad. I also received a Well Maintenance Report dated October 2, 2019. I observed notes stating the cracks in the pad were sealed.
- For well 699-26-35C, I received a Groundwater Well Concern Report dated September 17, 2019. The report had one concern: a large crack in the concrete pad. I also received a Well Maintenance Report dated October 2, 2019. I observed notes stating the cracks in the pad were sealed.

I requested all 2019 groundwater well monitoring records for NRDWL. I compared the groundwater monitoring records to requirements in DOE/RL-2017-19 Rev. 0, Groundwater Quality Assessment Plan for the Nonradioactive Dangerous Waste Landfill, Hanford Site, dated February 13, 2017.

I observed Wells 699-25-33A, 699-25-34B, 699-25-34D, 699-25-34F, 699-26-33A, 699-26-34A, 699-26-34B, 699-26-35A, 699-26-35C, and 699-26-38 were sampled quarterly in 2019 for alkalinity, calcium, chloride, chromium, iron, magnesium, manganese, nickel, nitrate, potassium, sodium, sulfate, total organic carbon, and total organic halides, as well as pH, specific conductance, temperature, and turbidity.

To verify quarterly sampling during 2019, I randomly selected a subset of anions, metals, volatile organic compounds, semi-volatile organic compounds, pesticides, herbicides, and dioxin constituents from Table 3-1 of DOE/RL-2017-19 Rev. 0, Groundwater Quality Assessment Plan for the Nonradioactive Dangerous Waste Landfill, Hanford Site, dated February 13, 2017. I observed sampling was performed quarterly at the wells listed above for cyanide, cadmium, benzene, ketone, endrin, 2,4,5-TPSilver, and2,3,7,8-Tetrachlorodibenzofuran.

Facility Inspections

I requested and reviewed inspection procedure CPSM-PRO-OP-52153, *Quarterly TSD's Waste Site Surveillance*, Rev. 3, Change 0, dated January 22, 2019; and Appendix B NRDWL TSD#D-6-1. I observed it required surveillance of the TSD sites on a quarterly basis. The procedure required the following to be checked as a part of the inspection:

- Signage – *Criteria*: No missing or fallen signs or postings (e.g., restricted access, radiological, etc.). Signs are legible and unobstructed. Signs with the "Danger-Unauthorized Personnel Keep Out" or equivalent shall be used. Signs on fence lines should be placed on more than 250 feet apart.
- Barriers – *Criteria*: Concrete marker posts, steel posts, fences, chains, etc., are in place and functional.
- Animal/Pest Intrusion – *Criteria:* There is no evidence of animal issues/intrusion, e.g., anthills, termite nests, animal burrows, bird nests, etc.
- Vegetation – *Criteria*: No evidence of tumbleweeds.
- Ground Subsidence – *Criteria*: There are no indications of ground subsidence, depressions, degradation, etc.
- Containers – *Criteria*: There are no unlabeled or unidentified containers of hazardous materials observed.

I requested and reviewed all 2018 and 2019 quarterly inspection records conducted for NRDWL, including all associated corrective actions noted on inspection logs. I observed the following comments:

- On the January, 29, 2019, I observed comments regarding tumbleweed build up.
- On the April 4, 2019 inspection, I observed comments regarding tumbleweed build up, and a comment stating "Could use more signage".
- On the July 3, 2019 inspection, I observed a comment "Needs new (unauthorized personnel) signs. Legible but very faded." I observed a second comment "Signage met and corrected under SM-18-07699 RARA routine maintenance".

I observed that each inspection record contained the printed name and handwritten signature of the inspector, the date and time of the inspection, and notations of the observations made.

Compliance Problems

The Dangerous Waste inspection on March 11, 2020, found the following compliance problems.

Each problem is covered in three parts:
(1) **Citation from the regulations**
(2) **Specific observations** from the inspection that highlight the problem
(3) **Required actions** needed to fix the problem and achieve compliance

The problems listed below must be corrected to comply with Washington Dangerous Waste Regulations (Chapter 173-303 WAC), or other environmental laws or regulations. Complete the required actions listed below and respond to Ecology at the following address within the times specified below. Include all supporting documentation such as photographs, records, and statements explaining the actions taken and dates completed to return to compliance.

Attention: Phillip Buser
Washington Department of Ecology
Nuclear Waste Program
3100 Port of Benton Blvd
Richland, WA 99354

You may request an extension of the deadlines to achieve compliance. Make the request in writing, including the reasons an extension is necessary and proposed date(s) for completion, and send it to Phillip Buser before the date specified above. Ecology will provide a written approval or denial of your request.

If you have any questions about information in this Compliance Report, please call:
Phillip Buser at (509) 316-6323

This does not relieve you of your continuing responsibility to comply with the regulations at all times.

1) **WAC 173-303-400(3), as referenced by the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion Revision 8C - Condition I.A Effect of Permit.**

   WAC 173-303-310 Security (2) A facility must have: (a) Signs posted at each entrance to the active portion, and at other locations, in sufficient numbers to be seen from any approach to the active portion. Signs must bear the legend, "Danger-unauthorized personnel keep out," or an equivalent legend, written in English, and must be legible from a distance of twenty-five feet or more;

Observations: During the inspection, I walked along the east and north fence lines of the Non-Radioactive Dangerous Waste Landfill. The east fence line is over four hundred feet long, and the north fence line is over nine hundred feet long. I took a picture of the signs I observed hung on the fence between the corners of the landfill. The signs I observed said "Caution, Asbestos Waste Disposal Site, Do not create dust". I did not observe any sign stating "Danger,

Unauthorized Personnel Keep Out" (or equivalent). Signs are required to be posted at each entrance to the active portion, and at other locations, in sufficient numbers to be seen from any approach to the active portion. I did not observe any of the designated security signs as required in WAC 173-303-310(2)(a) during my inspection.

Action Required: Within 60-days of receipt of this compliance report, submit to Ecology photographic evidence to Ecology that additional required signs are posted in sufficient numbers to be seen from any approach to the active portion at the Non-Radioactive Dangerous Waste Landfill in accordance with WAC 173-303-310(2)(a).

2) WAC 173-303-400(3), as referenced by the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion Revision 8C - Condition I.A Effect of Permit.

40 CFR 265.310 Closure and post-closure care.

(a) At final closure of the landfill or upon closure of any cell, the owner or operator must cover the landfill or cell with a final cover designed and constructed to:

(1) Provide long-term minimization of migration of liquids through the closed landfill;

(2) Function with minimum maintenance;

(3) Promote drainage and minimize erosion or abrasion of the cover;

(4) Accommodate settling and subsidence so that the cover's integrity is maintained; and

(5) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

Observations: The NRDWL ceased receiving dangerous waste in May 1985, but it continued to receive asbestos waste until 1988. In 1988, the NRDWL ceased operations completely. When the NRDWL ceased accepting waste, the area was final graded and the operational cover became the interim cover that is currently in place. This action closed all of the cells in NRDWL. A final cover design has not yet been approved by Ecology. I observed in 2CP-SUR-R-03001, Quarterly TSD's Waste Site Surveillance that facility inspections of NRDWL occur quarterly.

During my site inspection on March 11, 2020, I observed subsidence within the facility. I observed in Occurrence Report EM-RL-CPRC-CENTPLAT-2020-0003 that "the lead worker was conducting surveillance by slowly driving a pickup truck crisscrossing the surface of the site planting warning flags on unmarked impediments. The front tires of the pickup truck got stuck in a subsidence deep enough that the lead worker could not back out."

Actions Required: Within 60 days of receipt of this compliance report, USDOE and CHPRC must submit to Ecology a complete schedule for review and approval that provides a final cover design (90% design) and construction quality assurance plan for closing the NRDWL. A 90% design is a design that is adequate to issue for bid and proposal (including schedule) for construction.

3) WAC 173-303-400(3), as referenced by the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion Revision 8C - Condition I.A Effect of Permit.

WAC 173-303-340 (1) Required equipment. All facilities must be equipped with the following, unless it can be demonstrated to the department that none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below: (c) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment;

Observations: I asked if they carry any kind of spill response kit in the vehicles. Mr. Roberts said no and Mr. Corriell added that if any kind of spill occurred, they would contact the shift office and an appropriate response would be developed. I mentioned that according to WAC 173-303-340, a spill response kit is required equipment unless proven to Ecology that it is not necessary. I continued that waivers were being developed for other facilities at Hanford and asked if they were going to request a waiver for NRDWL. Mr. Duane Carter said NRDWL is not currently being considered at this time, but it may get added to the list at a later date.

Actions Required: Within 60 days of receipt of this compliance report, Submit to Ecology evidence of compliance with WAC 173-303-340. Either establish a spill kit readily available for use at NRDWL, or submit a waiver request.

Concerns

1) I observed the following notes on the Inspection record dated September 26, 2019.
   - Well 699-25-34B had no pad, cracks in pad, and "grandfathered compliant built prior to '88.

   The notes on the inspection record provided comments with numbers and symbols correlating to the well number associated with the appropriate comment. The notes indicated that this particular well had cracks in the concrete pad, but also did not have a pad. This error needs to be corrected.