2015 Annual Inspection Report for the Parkersburg, West Virginia Disposal Site

1.0 Inspection Summary

The Parkersburg, West Virginia, Nuclear Waste Policy Act Section 151(c) Disposal Site was inspected on October 29, 2015. The site was in excellent condition. No evidence of erosion or slope instability on the disposal cell was noted during the inspection. A follow-up or contingency inspection is not required. No evidence of trespass was observed.

Monitoring wells at Parkersburg were last sampled in November of 2013. Results from 2013 were included in a groundwater monitoring assessment issued in June 2014. Based on the results of a Groundwater Monitoring Assessment that was issued in August 2013, and a follow up assessment that was issued in June 2014, the sampling frequency was reduced to once every 10 years. Monitoring wells at Parkersburg are therefore scheduled to be sampled again in 2023. Monitoring at Parkersburg is coordinated with monitoring at Canonsburg and Burrell to improve efficiency and decrease travel costs. All of the monitoring wells were found to be properly secured during the inspection.

2.0 Inspection Requirements

Requirements for the long-term surveillance and maintenance of the site are specified in the *Long-Term Surveillance Plan for the Parkersburg, West Virginia disposal Site,* U.S. Department of Energy [DOE], September 2014

3.0 Institutional Controls

Institutional controls at the Parkersburg site consist of federal control of the property, warning/no trespassing signs (perimeter signs) placed along the property boundary, a site perimeter fence, and locked gates at the site entrances. Institutional controls are verified during the annual inspection.

Inspectors saw no evidence for violation of any of the above stated restrictions during the site inspection.

4.0 Inspection Results

S. Smith and K. Broberg of Navarro Research and Engineering, the Legacy Management (LM) contractor at the DOE office in Grand Junction, Colorado, conducted the inspection on October 29, 2015. C. Carpenter, the DOE LM Site Manager, and S. Witkowsky with Scot's Landscape Nursery also participated in the inspection.

4.1 Site Surveillance Features

The locations of site surveillance features are shown on the attached drawing. Inspection results and recommended maintenance activities associated with site surveillance features are included in the following subsections. Photographs to support specific observations are identified in the text and on the attached drawing by photograph location (PL) number.

4.1.1 Access Route, Entrance Gates, and Entrance Signs

The Parkersburg site is immediately adjacent to land owned by the Northwest Pipe Company. Access to the site from Northwest Drive (formerly called Foster Drive) crosses a field being used for soccer. The access route is along a permanent 20-foot-wide right-of-way. The access route was in good condition.

Entrance gates were replaced in 2007 and were in excellent condition. The two personnel gates were found locked with non-DOE locks even though DOE replacement locks were secured next to the personnel gates during the 2014 inspection. The maintenance subcontractor will be tasked with removing the non-DOE locks and replacing them with the DOE approved locks in 2016.

4.1.2 Perimeter Fence and Perimeter Signs

The perimeter fence was replaced in 2007 and was in excellent condition. It was noted last year during the 2014 inspection that the vegetation-free zone along the base of the fence line needed to be improved. Inspectors this year observed the zone to be much improved (PL-1, PL-2, and PL-3).

Animal burrows are present under the west perimeter fence. A couple of the burrows are quite large (PL-4). The location of the burrows is noted on the site inspection map to alert future inspectors to potential tripping hazards.

The site has one entrance sign and fifteen perimeter signs. All the signs were in good condition.

4.1.3 Survey Monuments and Boundary Monuments

The Parkersburg site has 6 boundary monuments and one concrete survey monument. The presence of 3 of the 6 boundary monuments (Boundary Monuments 1, 2, and 5) were located during the site inspection and were in good condition (PL-5 and PL-6). Boundary Monuments 3, 4, and 6 could not be located. Efforts will be made in 2016 to locate these monuments.

4.1.4 Monitoring Wells

There are 6 groundwater monitoring wells at the Parkersburg site. All 6 wells are located inside the security fence. The wells are numbered in the chronological order in which they were drilled and installed. All 6 wells were properly locked. During the 2014 inspection it was noted that vegetation was not being properly cleared from around the monitoring wells. During the 2015 inspection the vegetation was properly cleared from around the monitoring wells (PL-7 and PL-8).

Of the 6 monitoring wells, well construction and completion records for wells 1 through 4 are incomplete; therefore, only wells 5 and 6 are routinely sampled for water quality parameters. Water levels are collected at all 6 wells. Sampling and water level measurements were last collected in November 2013 and are scheduled again in 2023. Sampling results from 2013 were reported in a Groundwater Monitoring Assessment that was issued in June 2014. Sampling at Parkersburg is coordinated with sampling at Canonsburg and Burrell to improve efficiency and decrease travel costs.

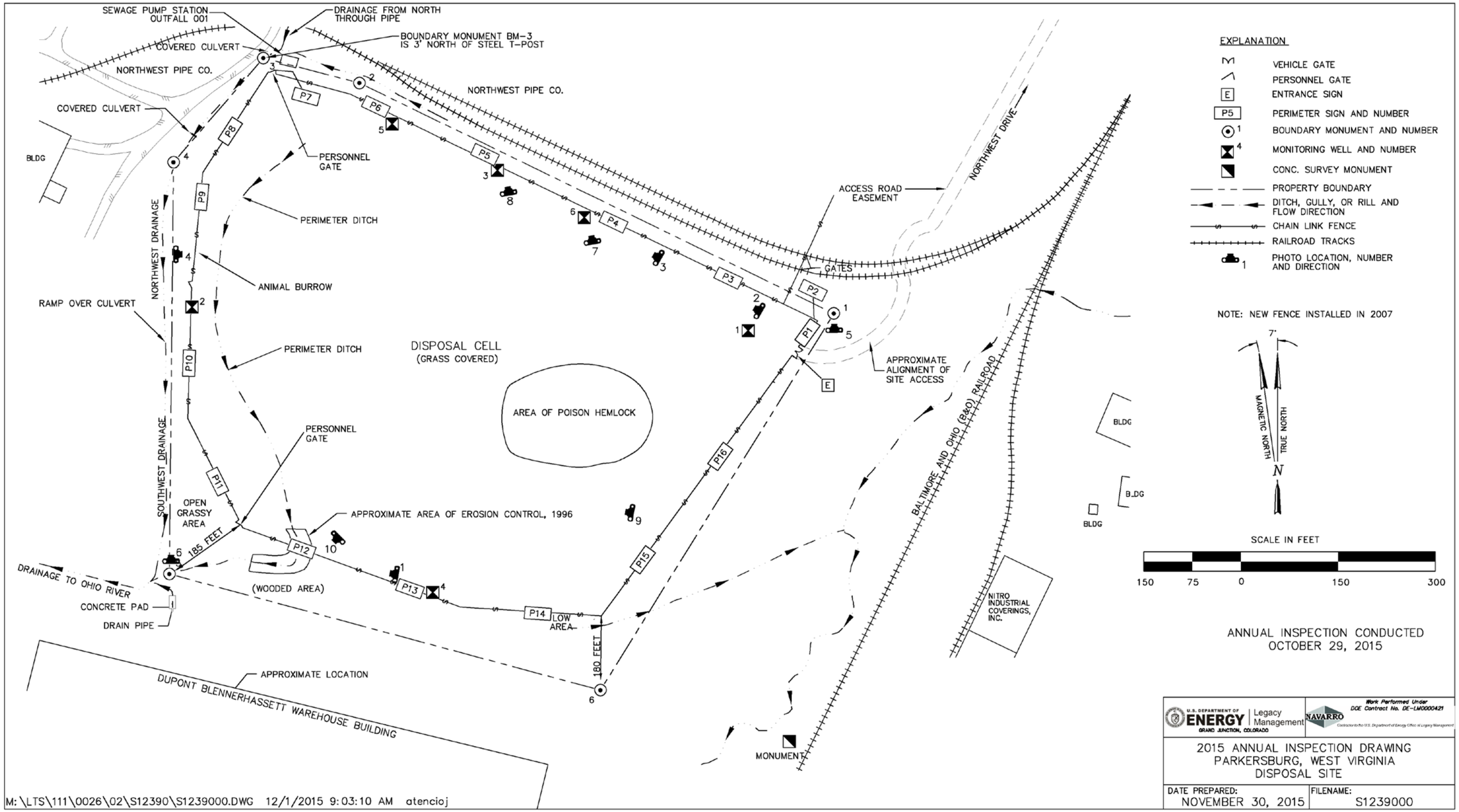

Figure 1. 2015 Annual Inspection Drawing for the Parkersburg Disposal Site

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4.2 Transects

To ensure a thorough and efficient inspection, inspectors divided the site into two areas called "transects": (1) the stabilization mound and (2) site perimeter and outlying area.

The area inside each transect was inspected by walking a series of traverses. Within each transect, the inspectors examined specific site-surveillance features, drainage structures, vegetation, and other features. Inspectors also looked for evidence of settlement, erosion, or other modifying processes that might affect site integrity or long-term performance.

4.2.1 Stabilization Mound

The grass covered disposal cell was in excellent condition (PL-9). No evidence of erosion or slope instability on the disposal cell was noted during the inspection. Dominant vegetation consists of fescue, crown vetch, and goldenrod. Poison hemlock is re-establishing itself on top of the disposal cell. The area of poison hemlock is identified on the site inspection map. The vegetation on the disposal cell cover (essentially in the area inside the security fence) appeared healthy and vigorous. Efforts will be made in 2016 to investigate using goats within the perimeter fence for the control of noxious weeds.

4.2.2 Site Perimeter and Outlying Area

The drainage channel in the southwest corner of the site, lined with HDPE honeycomb baffles and brick energy dissipation baffles in August 1996, is in good condition and functioning as designed (PL-10). Erosion in the channel appears to be unchanged from last year.

The Parkersburg site is in a developed industrial area. Inspectors observed that Northwest Pipe Company appears to remain very active. The area west of the perimeter fence, near Boundary Monument 4 had been cleared out by the Northwest Pipe Company and is being well maintained.

5.0 Follow-up or Contingency Inspections

DOE will conduct follow-up inspections if (1) an annual inspection or other site visit reveals a condition that must be reevaluated during a return to the site, or (2) a citizen or outside agency notifies DOE that conditions at the site are substantially changed.

No follow-up or contingency inspections were required in 2015.

6.0 Routine Maintenance and Repairs

- Remove non-LM approved locks and replace with LM approved locks.
- Locate Boundary Monuments 3, 4, and 6 in 2016.
- Investigate the use of goats within the perimeter fence for controlling noxious weeds.

7.0 Environmental Monitoring

Groundwater Monitoring
During site characterization, computer modeling was conducted to estimate the number of years that it would take a contaminant plume to reach monitoring wells MW-5 or MW-6, based on the assumption that the cover allowed precipitation to infiltrate and saturate the buried waste materials forming a leachate plume. The modeling provided time estimates for how long it would take a leachate plume to travel through unsaturated materials, reach the water table, and then travel in the groundwater to reach monitoring wells MW-5 or MW-6.

Three different modeling scenarios were assessed: (1) Worst Case, (2) Most Likely Case, and (3) Best Case.

- Worst Case: 15-20 years (after site closure in 1982) (i.e., between 1997 and 2002).
- Most Likely Case: 35-40 years (after site closure in 1982) (i.e., between 2017 and 2022).
- Best Case: 95-100 years (after site closure in 1982) (i.e., between 2078 and 2082).

Groundwater sampling was last conducted in 2013. Results from 2013 were reported in a Groundwater Monitoring Assessment Report that was issued in June 2014. Sampling results provide no evidence for a contaminant plume and indicate that no large changes in groundwater quality have occurred. Therefore the "Worst Case" scenario has not occurred. The next sampling round is scheduled for 2023, to correspond to the end of the "Most Likely Case" scenario.

Vegetation Management
Poisonous and noxious weed control continues. Species of poisonous or noxious weeds present at the Parkersburg site include Canada thistle, poison hemlock, Johnson grass, poison ivy, and teasel.

Canada thistle was first identified at the site in 1999, primarily along the security fence. This weed is not a listed noxious species in West Virginia, but it is considered noxious in the neighboring states of Ohio and Pennsylvania. It seemed to be out competing desirable species on the site, as it had spread to a significant portion of the cell cover and perimeter. As a best management practice to maintain plant diversity on the property, DOE added control of this species to the scope of routine maintenance activities in 2001. No large areas of Canada thistle were noted during this year's inspection.

Poison hemlock was discovered on the site in 2003. In the past, plants had grown to heights of up to 10 feet and covered approximately 4 acres on and around the cell. Poison hemlock is a listed noxious weed species in West Virginia; and it poses a safety hazard to personnel who must walk through or work in infested areas, as all parts of the plant are poisonous. Poison hemlock poses a particular hazard to children, who often play in the soccer fields adjacent to the site. Spraying for poison hemlock in 2011 allowed teasel to take hold in its place, especially in the northwest corner of the site. The spraying program was amended in 2012 to include spraying for teasel. No large areas of teasel were noted during this year's inspection. An area of poison hemlock though is re-establishing itself on the disposal cell. The area is identified on the site inspection map. Efforts will be made in 2016 to eradicate the poison hemlock in this area.

Johnson grass is a listed noxious weed species in West Virginia and was first identified at the site in 2003. It reproduces by horizontal roots and by seed and can be controlled with herbicide. No large areas of Johnson grass were noted during this year's inspection.

No large areas of poison ivy were noted during this year's inspection.

8.0 Corrective Action

Corrective action is taken to correct out-of-compliance or hazardous conditions that create a potential health and safety problem or that may affect the integrity of the disposal cell or compliance with 40 CFR 192.

No corrective action was required in 2015.

9.0 Photographs

Photo Location Number	Azimuth	Photograph Description
1	280	South fence line.
2	300	North fence line.
3	300	North fence line.
4	90	Animal burrows under fence.
5	NA	Boundary monument BM-1.
6	NA	Boundary monument BM-5.
7	350	Monitoring well 6.
8	350	Monitoring well 3.
9	280	Grass covered disposal cell.
10	225	Area of erosion control.

PKB 10/2015. PL-1. South fence line.

PKB 10/2015. PL-2. North fence line.

PKB 10/2015. PL-3. North fence line.

PKB 10/2015. PL-4. Animal burrows under fence.

PKB 10/2015. PL-5. Boundary monument BM-1.

PKB 10/2015. PL-6. Boundary monument BM-5.

PKB 10/2015. PL-7. Monitoring well 6.

PKB 10/2015. PL-8. Monitoring well 3.

PKB 10/2015. PL-9. Grass covered disposal cell.

PKB 10/2015. PL-10. Area of erosion control.