2012 Annual Inspection Report for the Parkersburg, West Virginia, Disposal Site

1.0 Compliance Summary

The Parkersburg, West Virginia, Nuclear Waste Policy Act Section 151(c) Disposal Site was inspected on October 16, 2012. The disposal cell 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.

During the 2011 inspection it was observed that spraying for poison hemlock had allowed teasel to take hold in its place. The spraying program was amended in 2012 to include spraying for teasel, effectively decreasing the amount of teasel observed at the site during this year's inspection

All site monuments (with the exception of boundary monument BM–5) were located. All located site monuments were in good condition. Vegetation around boundary monument BM–5 was too dense to allow inspectors to find it. Vegetation was also very dense around boundary monuments BM–4 and BM–6. It is recommended that greater efforts be made by the site maintenance crew to clear vegetation from around the boundary monuments prior to inspections.

Monitoring wells at Parkersburg are sampled once every five years. They were last sampled in 2008 and are scheduled to be sampled next in 2013. All of the monitoring wells encountered during the inspection were found to be properly secured. Monitoring at Parkersburg is being coordinated with monitoring at Canonsburg and Burrell to improve efficiency and decrease travel costs.

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 1995; LTSP).

3.0 Institutional Controls

Institutional controls at the Parkersburg, West Virginia, 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

M. Miller and K. Broberg of S.M. Stoller Corporation, the Legacy Management (LM) contractor conducted the inspection on October 16, 2012. C. Carpenter, the DOE LM Site Manager, attended 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. All entrance gates were locked with non-DOE locks. All non-DOE locks were replaced with DOE locks during the inspection.

4.1.2 Perimeter Fence and Perimeter Signs

The perimeter fence was replaced in 2007 and was in excellent condition. Vegetation management efforts along the fence are improved from last year. A vegetation-free zone is being maintained along the base of the fence (PL–1).

Animal burrows are present under the west perimeter fence. A couple of the burrows are quite large. 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 of 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. Five of the six boundary monuments were located during the site inspection and found to be in good condition (PL-2). The presence of dense vegetation around boundary monument BM–5 kept inspectors from finding it. Vegetation was also dense around boundary monuments BM–4 (PL–3) and BM–6 (PL–4). It is recommended that that greater effort be made by the site maintenance crew to clear vegetation from around the boundary monuments prior to inspections. Inspectors did not check the concrete survey monument during this year's inspection.

4.1.4 Monitoring Wells

There are six groundwater monitoring wells at the Parkersburg site. All six wells are located inside the security fence. The wells are numbered in the chronological order in which they were drilled and installed.

Of the six monitoring wells, well construction and completion records for wells 1 through 4 are incomplete; therefore only wells 5 and 6 are routinely sampled every five years for water quality

parameters. Water levels are collected every five years at all 6 wells. Sampling and water level measurements were last collected in 2008 and are scheduled again in 2013. Sampling at Parkersburg is being coordinated with sampling at Canonsburg and Burrell to improve efficiency and decrease travel costs.

4.2 Transects

To ensure a thorough and efficient inspection, the site is divided into three areas called "transects": (1) the disposal cell and area inside the security fence, (2) area between the security fence and property boundary, (3) the 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 Disposal Cell and Area Inside the Security Fence

The grass covered disposal cell was in excellent condition (PL–5). 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. The vegetation on the disposal cell cover (essentially in the area inside the security fence) appeared healthy and vigorous. More attention needs to be given to cutting weeds and grass around some of the monitoring wells (PL–6).

4.2.2 Area Between Security Fence and Property Boundary

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. Erosion in the channel appears to be unchanged from last year.

4.2.3 Outlying Area

The Parkersburg site is in a developed industrial area. Inspectors observed that a pipe lay-down area next to the site has increased in size since last year's inspection (PL–7).

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 2012.

6.0 Routine Maintenance and Repairs

No maintenance needs were identified during the inspection.

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 scenario: 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 2008. The data collected provided no evidence of a contaminant plume and that no large changes in groundwater quality had occurred.

Vegetation Management
Poisonous and noxious weed control continues. Species of poisonous or noxious weeds present at the Parkersburg site include Canada thistle, poison hemlock, Johnsongrass, 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. Inspectors found the condition much improved during this year's inspection.

Johnsongrass 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 Johnsongrass 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 2012.

9.0 Photographs

Photo Location Number	Azimuth	Photograph Description
1	315	View down northeast fence line.
2	NA	Boundary monument BM–2.
3	270	Vegetative growth around boundary monument BM–4.
4	180	Vegetative growth around boundary monument BM–6.
5	135	Looking southwest across the disposal cell.
6	315	Vegetative growth around monitoring well 5.
7	330	Northwest Pipe Company lay down area next to site.

PKB 10/2012. PL–1. View down northeast fence line.

PKB 10/2012. PL–2. Boundary monument BM–2.

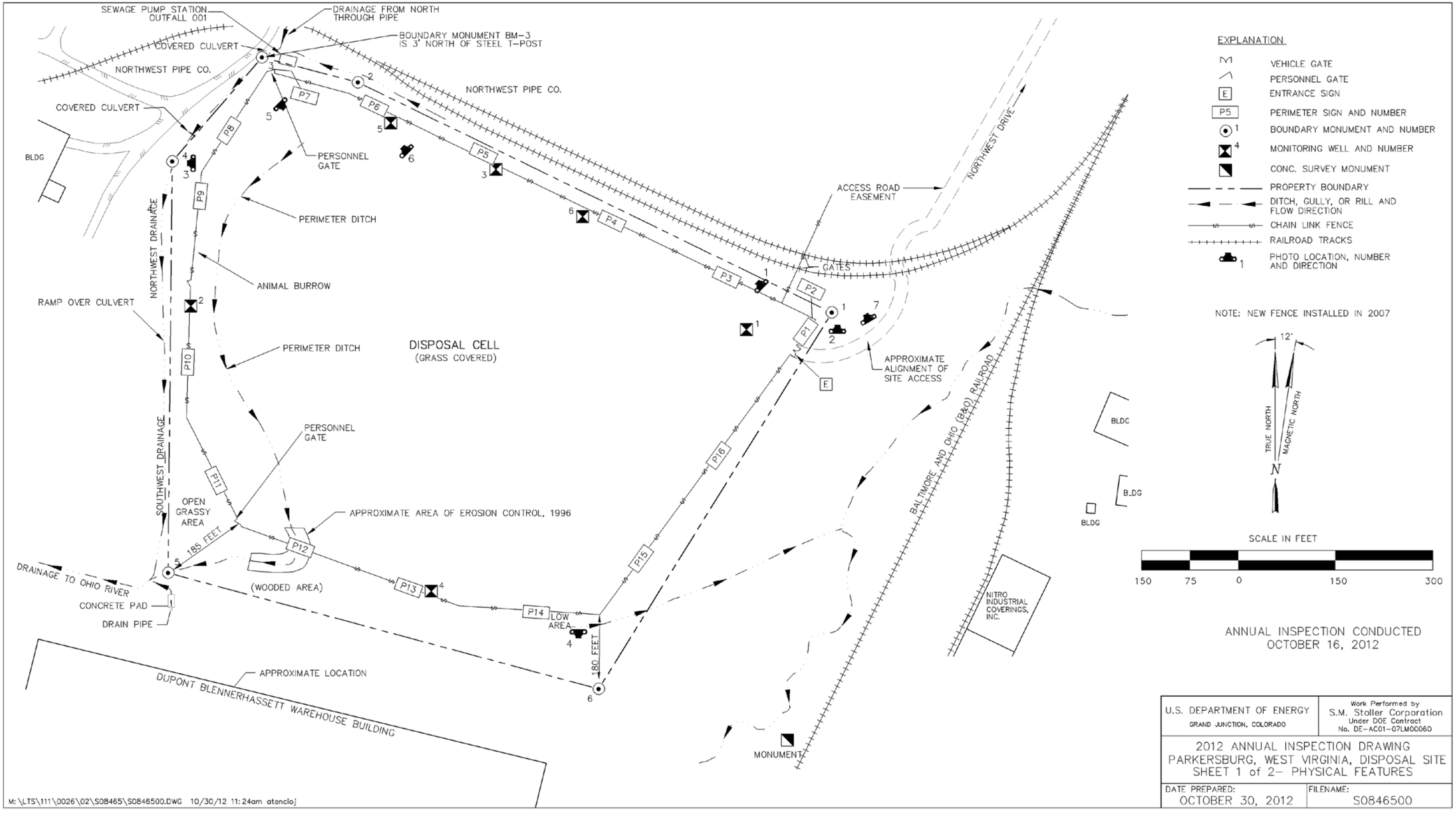
PKB 10/2012. PL–3. Vegetative growth around boundary monument BM–4.

PKB 10/2012. PL–4. Vegetative growth around boundary monument BM–6.

PKB 10/2012. PL–5. Looking southwest across the disposal cell.

PKB 10/2012. PL–6. Vegetative growth around monitoring well MW–5.

PKB 10/2012. PL–7. Northwest Pipe Company lay-down area next to site.



EXPLANATION

- VEHICLE GATE
- PERSONNEL GATE
- E — ENTRANCE SIGN
- P5 — PERIMETER SIGN AND NUMBER
- 1 — BOUNDARY MONUMENT AND NUMBER
- 4 — MONITORING WELL AND NUMBER
- CONC. SURVEY MONUMENT
- PROPERTY BOUNDARY
- DITCH, GULLY, OR RILL AND FLOW DIRECTION
- CHAIN LINK FENCE
- RAILROAD TRACKS
- 1 — PHOTO LOCATION, NUMBER AND DIRECTION

NOTE: NEW FENCE INSTALLED IN 2007

SCALE IN FEET

150 75 0 150 300

ANNUAL INSPECTION CONDUCTED
OCTOBER 16, 2012

U.S. DEPARTMENT OF ENERGY GRAND JUNCTION, COLORADO	Work Performed by S.M. Stoller Corporation Under DOE Contract No. DE-AC01-07LM00060
2012 ANNUAL INSPECTION DRAWING PARKERSBURG, WEST VIRGINIA, DISPOSAL SITE SHEET 1 of 2- PHYSICAL FEATURES	
DATE PREPARED: OCTOBER 30, 2012	FILENAME: S0846500

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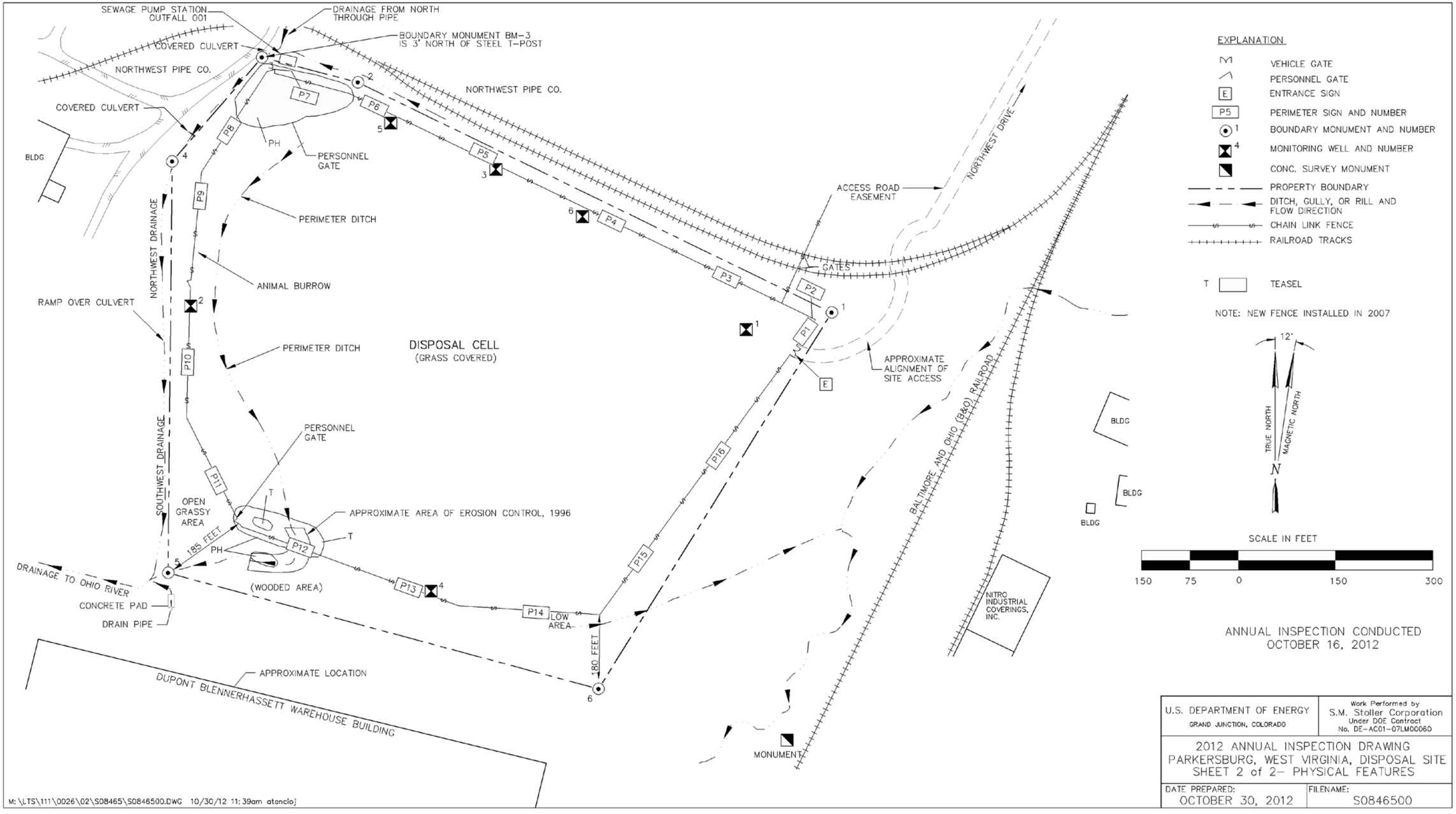

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2012 ANNUAL INSPECTION DRAWING PARKERSBURG, WEST VIRGINIA, DISPOSAL SITE SHEET 2 of 2- PHYSICAL FEATURES	
DATE PREPARED: OCTOBER 30, 2012	FILENAME: S0846500

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