



ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

**2018 VISUAL SITE INSPECTION
IPL PETERSBURG RESTRICTED WASTE TYPE III LANDFILL
SOLID WASTE FACILITY PERMIT NO. FP63-02**

IPL PETERSBURG GENERATING STATION
6925 NORTH STATE ROAD 57
PETERSBURG, INDIANA 47567

ATC PROJECT NO. 170LF00626

JANUARY 16, 2019

PREPARED FOR:

INDIANAPOLIS POWER & LIGHT COMPANY
6925 NORTH STATE ROAD 57
PETERSBURG, INDIANA 47567

ATTENTION: MR. WILL TEAGUE



January 16, 2019

Mr. Will Teague
Senior Scientist
Indianapolis Power and Light Company
6925 North State Road 57
Petersburg, Indiana 47567-0436

ATC Group Services LLC

7988 Centerpoint Dr.
Suite 100
Indianapolis, IN 46256

Phone +1 317 849 4990
Fax +1 317 849 4278

www.atcgroupservices.com

Re: 2018 Visual Site Inspection
IPL Petersburg Restricted Waste Landfill
Solid Waste Facility Permit No. FP63-02
Indianapolis Power and Light Company
Petersburg Generating Station
Petersburg, Indiana
ATC Project No. 170LF00626

Dear Mr. Teague:

ATC Group Services LLC (ATC) is pleased to present the findings of the December 4, 2018 Visual Site Inspection of the IPL Petersburg Generating Station Type III Restricted Waste Landfill. This visual inspection and report were done in accordance with guidelines established by the Coal Combustion Residuals (CCR) Rule published by the Environmental Protection Agency (EPA) on April 17, 2015.

The scope of this inspection was limited to an examination of readily observable surficial features of the landfill and its appurtenant structures, and a review of information that you provided. Please note that the inspection did not include any test drilling, testing of materials, precise physical measurements of landfill features, detailed calculations to verify slope stability or other engineering analyses. Although the inspection was conducted by competent personnel in accordance with generally accepted methods for inspecting landfills, it should not be considered as a warranty or guaranty of the future performance/safety of the landfill.

The landfill inspection was completed by David Stelzer and Juan Carrizo of ATC Group Services LLC (ATC). The weather conditions during the inspection were approximately 34°F and cloudy. Contained herein is a summary of the engineering observations of the landfill including condition of the cover soils, grading and erosion, vegetation, haul roads, perimeter ditches, down drain channels, riprap areas, culverts and other adjacent structures. The landfill system features are highlighted on the attached Site Plan shown in Figures 2 and 3 of this report.

The IPL Petersburg Generating Station Type III Restricted Waste Landfill is located about four (4) miles north of the City of Petersburg in Pike County, Indiana west of State Road 57 (Figure 1). The landfill encompasses an area of approximately 122.1 acres inside the Solid Waste Boundary (Figure 2). The Petersburg Type III RWS Landfill operates under Indiana Department of Environmental Management (IDEM) Permit Number 63-2.

The 2018 annual inspection was performed to address the standards and guidelines required by the CCR Rule instituted by the Environmental Protection Agency on April 17, 2015. As a result, CCR Landfills are now required to meet the requirements of 40 C.F.R. §257 to conduct annual inspections of the landfill in accordance with 40 C.F.R. §257.84(b). Listed below are requirements specified within the CCR Rule and the observations made by David Stelzer and Juan Carrizo during the annual inspection:

- i. Any changes in geometry of the structure since the previous annual inspection;
- ii. The approximate volume of CCR contained in the unit at the time of inspection;
- iii. Any appearances of an actual or potential structural weakness of the CCR unit;
- iv. Any other change (s) which may have affected the stability or operation of the CCR Unit since the last annual inspection.

Changes in Structural Geometry

Observed geometry changes during the 2018 Petersburg visual landfill inspection consisted mainly of small grading measures and vegetation improvements. Engineering observations were grouped into two inspection zones shown in Figure 3, 2018 Visual Site Inspection Grid Map.

The zone descriptions, observations, and recommendations are as follows:

Zone A Partial Closure Area – North and West Side-slopes

A 33.8 acre area on the northern and western slopes of the landfill have received partial closure certification from the Indiana Department of Environmental Management (IDEM). In general, this area has a good soil cover and is well-vegetated. Since the time of the 2016 inspection, additional improvements have been made to fill in ruts and over-seed sparsely vegetated areas.

1. Good vegetation exists along the majority of the west and north slopes of the partial closure area as shown in Figure 3, grid locations L23, L22, K19, M15, and M14.
2. A sapling has grown at the base of one of the riprap down chute channels along the west slope of the landfill, see grid location K19.
 - Recommendation: Remove the sapling to prevent root undermining of the soil cover. Continue an ongoing maintenance program to remove trees and shrubs from the cover system.

3. The northeast corner of the landfill, at the base of a riprap down chute channel, a washout erosion area has formed, see grid location Q13.
 - Recommendation: Install erosion control protection for this area such as erosion control mat to protect the integrity of the soil liner. Overseed the bare soil cover area.
4. At the southwest corner of the landfill, erosion has occurred along the face of the slope, exposing underlying poz-o-tec material, see grid location M23.
 - Recommendation: Repair the soil cover and regrade areas of the slope where erosion has occurred. Install erosion control mat in exposed areas and overseed areas of sparse vegetation once soil cover has been repaired.

Zone B Intermediate Cover Area – Top East and South Side slopes

In accordance with IDEM permit conditions, in 2016, the majority of the alternative intermediate cover on the top and east side slope of the landfill consisted of fixated scrubber sludge. In 2017 a soil cover was applied to this area and new vegetation added. Terrace and riprap down chute channels were added or improved to accommodate the addition of the new soil and vegetative cover.

1. Good vegetation exists along the majority of the south end of the landfill, top of landfill and east slope, where new soil cover has been installed.
2. Exposed and bare spot areas were observed on soil cover section next to the haul road, see grid location Q25.
 - Recommendation: Repair the soil cover in exposed bare area and regrade it to improve drainage flow to haul road swale.
3. Downcutting has occurred along the ditch adjacent to the haul road along the south side of the landfill, see grid locations O25, and Q25.
 - Recommendation: Repair the soil cover in the affected areas and install erosion control mat and where downcutting has occurred in the channel. Install erosion control mat and additional riprap armouring with non-woven geotextile on exposed reaches of the channel.
4. At the top of landfill erosion rills and gullies were observed at certain locations as shown in grid N23, M23, N22, O22, O21, N20, O20, N19, N18, O18, O17, N16, N15, O15, and O14.
 - Recommendation: Repair the soil cover and install erosion control mats in areas affected by erosion rills and gullies. Overseed these areas to establish a protective grass cover.

5. Along the eastern and northern side slope of the landfill, erosion rills and gullies were observed at locations as shown in grid P22, Q22, P21, Q20, Q19, Q18, Q17, P16, Q16, P15, Q15, P14, P13, O13 and N13.
 - Recommendation: Repair the soil cover and install erosion control mats in areas affected by erosion rills and erosion cavities. Overseed these areas to establish a protective grass cover.
6. Along the eastern and northern side slopes of the landfill there are areas of minor sparse vegetation cover as show in grid locations O13, P13, and Q15.
 - Recommendation: Overseed these areas to establish a fuller grass cover.

CCR Volume

There is an approved 43 acre expansion area east of the existing landfill which has been approved as a Type I landfill, this area has not been developed at this time. Currently, landfill operations are limited to the original landfill footprint.

Based on IPL surveying information at the time of the inspection, there is approximately 7,043,808 cubic yards of CCR material placed in the landfill unit.

Structural Integrity

All landfill slopes appear to be stable with no visual indications or signs of sloughing or subsidence were detected during the 2018 visual inspection.

Stability and Operation

The landfill is generally in good condition and well vegetated in most places. No significant deficiencies were noted and operation of the landfill unit at this time is not expected to be adversely affected by any items detected during the 2018 inspection.

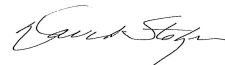
We appreciate the opportunity to assist you with this project. If you have any questions concerning information contained in this report, please do not hesitate to call either of the undersigned at 317.849.4990.

Sincerely,

ATC Group Services LLC



Juan D. Carrizo, P.E., CFM, CPM
Senior Project Engineer



David Stelzer, P.E., PhD.
Senior Project Manager

Copies: Will Teague (1)
Erwin Leidolf (1)

Attachments:

Figure 1 Vicinity Map
Figure 2 CCR Disposal Facilities
Figure 3 Visual Site Inspection Grid Map

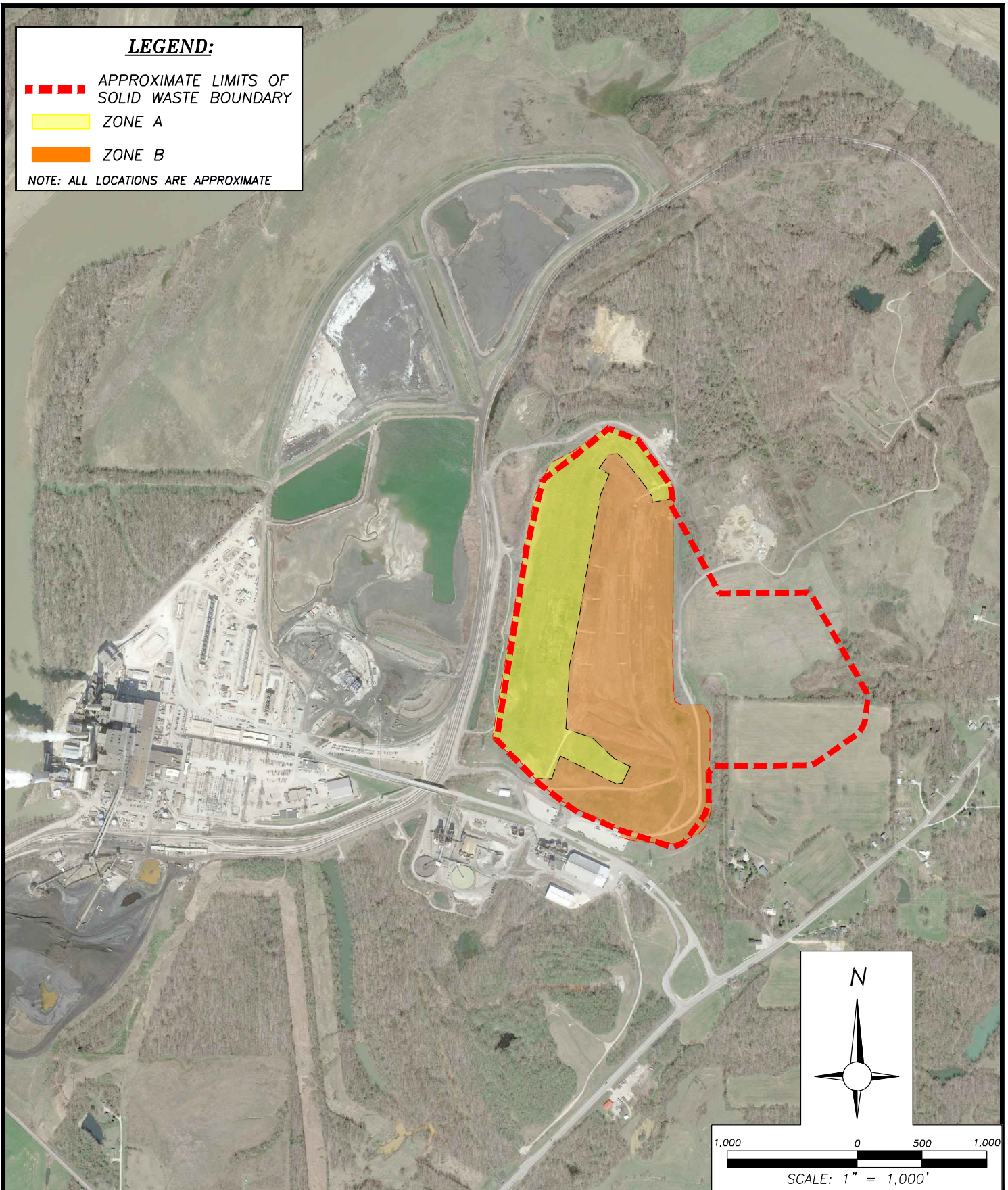
LEGEND:

APPROXIMATE LIMITS OF
SOLID WASTE BOUNDARY

ZONE A

ZONE B

NOTE: ALL LOCATIONS ARE APPROXIMATE



CCR DISPOSAL FACILITIES
CCR LANDFILL ANNUAL INSPECTION REPORT

IPL PETERSBURG RESTRICTED WASTE TYPE III LANDFILL
INDIANAPOLIS POWER AND LIGHT COMANY
6925 NORTH STATE ROAD 57
PETRSBURG, INDIANA

Project Number:
170GC00626

Drawing File:
SEE LOWER LEFT

Date:
12/18

Scale:
AS SHOWN

Drn. By:
JG

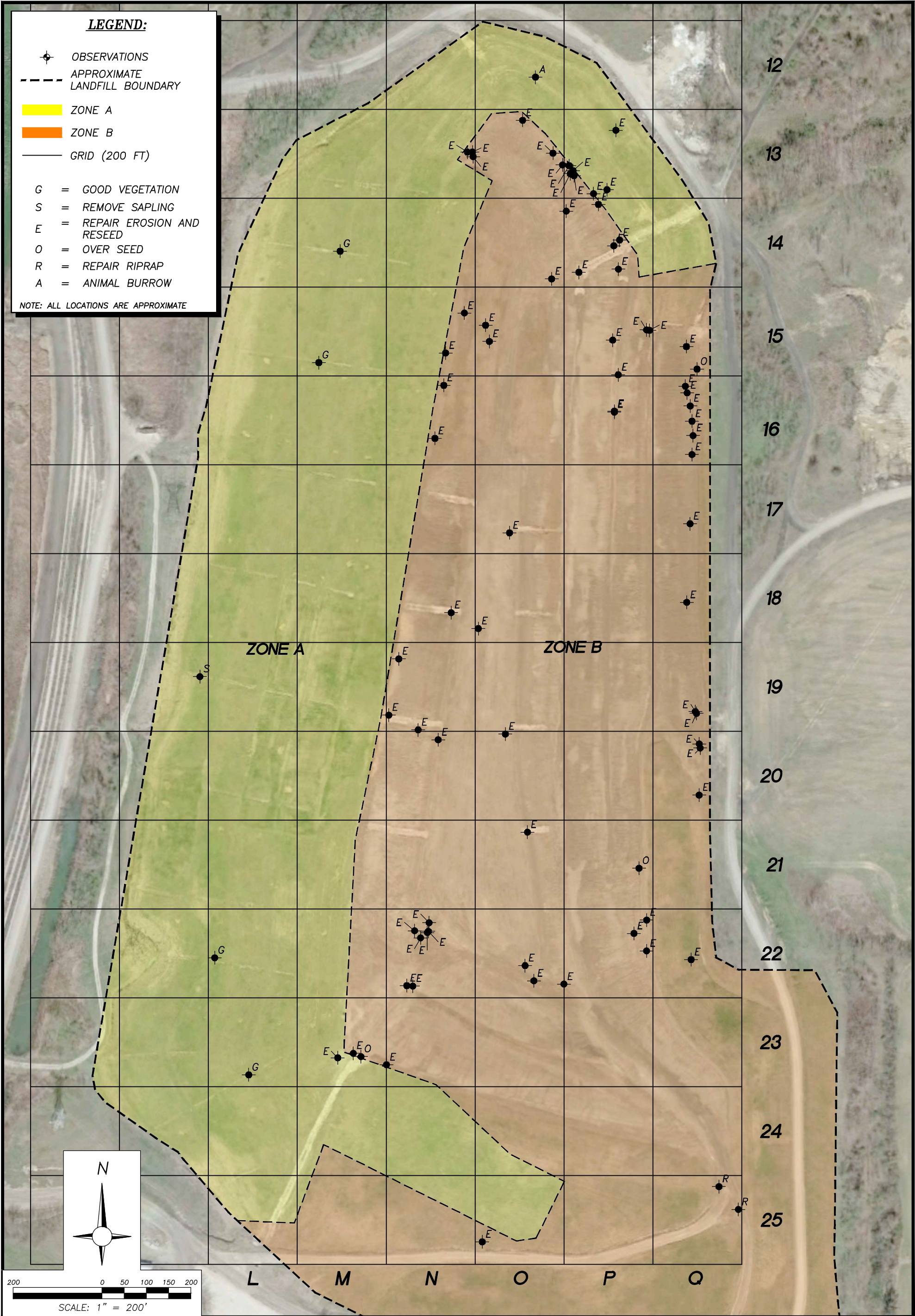
Ckd. By:
JC

App'd By:

Figure:

2





| | | | | | |
|------------------|----------|----------------|--|---|-----------|
| Figure: 3 | AS SHOWN | Date: 12/18 | 2018 VISUAL SITE INSPECTION GRID MAP IPL PETERSBURG RESTRICTED WASTE TYPE III LANDFILL INDIANAPOLIS POWER AND LIGHT COMPANY 6925 NORTH STATE ROAD 57 PETERSBURG, INDIANA | Project Number: | Drn. By: |
| | | | | 17OLF00626 | JG |
| | | | | Drawing File: | Ckd. By: |
| | | | | SEE LOWER LEFT | JC |
| | | | |  | App'd By: |
| | | | | Ckd. Date: | |