

**Periodic Review Report for Site No. V00314, Aurubis Buffalo, Inc., located @  
Military and Sayre St. Buffalo, NY 14207**

Dated July 27, 2018

**I. EXECUTIVE SUMMARY**

This 71-acre parcel has an active plant, which occupies approximately 1.2 million square feet. It has operated as a copper based alloy production facility since 1906. Previous site investigations suggested remedial action to be taken for heavy metals in 5 onsite areas designated as A, C, D, M and J (shown on attachments). Areas A, C, D and M have an asphalt or concrete pavement cover system. Approximately 0.75 acres of area J was covered with 12 inches of clean soil and demarcated with 8 bollards. The plant site, including Area J, is fenced to prevent unauthorized access. In addition, a Declaration of Covenants and Restrictions was recorded against the site (land deed). The restrictive covenants limit the use of the property, prohibit the use of groundwater and require adherence to a Site Management Plan (SMP). The SMP calls for periodic inspection and maintenance of the covers and fences that make up the remedy.

The covers and fences continue to be successful in meeting the goals of preventing exposure to and migration of material offsite. Limited areas of the “pre-existing paved or concrete roadways and parking areas” have limited wear and potholes areas and therefore possible potential for exposure as noted in the report.

The most recent inspections in June 2018 shows that the applied covers and fencing are, for the most part, intact and meeting the intent of the SMP. Minor pothole areas were identified in the paved and concrete roadways and parking areas.

The fencing along the CSX tracks, the brown field fence beside the substation, and by the ball fields are periodically inspected for breach of integrity by the plant security force. If a breach is found, maintenance is notified and the fence repaired. During the June 26, 2018 inspection an area of fence north of the ball fields was found to be cut / vandalized but has since been repaired.

**II. SITE OVERVIEW**

Attached are reproductions of maps submitted with a previous Periodic Review Report. These maps show various areas and features on the site map as well as locations and description of identified areas. The remedial history of the site is as follows:

- Ecology & Environment, Inc. completed a preliminary Site Investigation in 1989.
- A Remedial Investigation of the site, which was completed by E&E in 1991.
- McLaren/ Hart completed a supplemental Remedial Investigation in 1995; they also completed a feasibility study in 1996.

Based on the metal impacted soils found to have concentrations above background in spots over a number of areas that were mostly paved over and one small-unpaved area

that had samples showing arsenic above 30mg/kg, the following remedial measures were adopted:

- Areas A, C, D and M to have asphalt or concrete cover system.
- Areas J to have secure perimeter fencing to prevent unauthorized entry.
- A 0.75-acre subset of J to have construction of a vegetated soil cover system and to be delineated with bollards
- Implementation of an O & M program (Operation and Maintenance program) to maintain the integrity of the vegetated soil cover and security fence in area J.
- Deed restrictions associated with these measures to be filed with Erie County.

The Remedial Action Completion Report in regard to the paving of Areas A, C, D, M was submitted to the NYSDEC on May 30<sup>th</sup>, 2002. The area J interim Remedial measures requiring the secure fencing and soil cover was approved by the NYSDEC in March of 2005. A deed restriction associated with Areas A, C, D, M and J reflecting these measures was filed Aug 24, 2006 and refilled March 2, 2007.

### **III. REMEDY PERFORMANCE/ EFFECTIVENESS/ PROTECTIVENESS**

#### **Areas A, C, D, J & M:**

List below are the controls are in place for Areas A, C, D, J & M. The goals of these controls are to prevent exposure to offsite migration of residual industrial contaminants.

- The deed restrictions are in place preserving caps of contaminated areas and perimeter fencing, as well as preclusion of non-industrial occupancy or use of groundwater for wells.
- The procedures for any construction activity, maintenance activity and isolation and testing of any soils from activities in these areas are understood by the plant Maintenance Department & Environmental/Safety Department. The Maintenance & Environmental/Safety Departments are aware of the requirement to notify the New York State Department of Conservation of any activity generating soil or debris from these Areas.
- Plant site perimeter fencing only has entrances in areas that are observed by plant security. This is augmented by security cameras around the perimeter which aids in keeping unauthorized people away from the entire plant site.
- The facility has adopted a plant wide Soil and Waste Management Plan procedures for the area covered by this Site Management Plan. The Environmental/Safety Dept. has a copy of this Site Management Plan and is the only group authorized to approve movement of soils offsite or onsite. This should prevent inadvertent offsite movement of contaminated soils.
- This facility's Environmental/Safety Department has a well-established procedure for segregation and lay down on polyethylene sheeting of any excavated soils followed by inspection and testing prior to their authorizing disposition of soil.
- Specific PPE requirements are listed in the SMP's Health and Safety section which applies to all plant personnel and contractors while working on site. Additionally, PPE is addressed as part of the plant Shop and Safety Rules for plant personnel and Contractors rules for outside personnel.

- No changes have been made to the selected remedy since remedy selection.

Two separate inspections were conducted.

1. June 26, 2018: Aurubis employees Rick Rydza & Elizabeth Zurowski conducted an inspection of all Areas (A, C, D, J, & M) covered by the SMP
2. July 16, 2018: Michele Wittman (Hazard Evaluation Inc.) & Elizabeth Zurowski (Aurubis) conducted a cursory inspection for the areas previously inspected by Rick Rydza & Elizabeth Zurowski.

The asphalt and concrete covers in areas A, C, D, and M demarcated on figures 3 through 6 are intact with just a few exceptions noted below. The potential for either wind or rain driven dispersal of soils in these areas is limited.

- Area D: The substation area is a dangerous area and the inspectors did not enter the substation for further inspection. Limited areas of asphalt wear were present within the locked fence. However, access to this area is limited due to the locked fence. Repairs within this area will have to be coordinated with an electrical contractor.



- During the June 2018 inspection, potholes and deteriorating asphalt and concrete were present in the asphalt and concrete covers in areas A, C, D, and M demarcated on figures 3 through 6. Most of these areas have since been repaired. Additional minor repairs are scheduled as outlined in the “recommendation section”. As required the areas identified during the inspections were identified on Table 3 and sample pictures provided in the “supporting documentation” section.

**Area J:**

- The effectiveness of the soil cap and security measures are revealed by the complete vegetation coverage of the site with healthy cover plants that continue to prevent both wind dispersal or rain wash out.
- There is no evidence of rutting or washout of the cover that would suggest any potential breach of the cover that would foster outward migration of contaminants.

- The vegetation is very healthy.
- There are no ruts or foot print paths through the vegetation that would indicate that people or animals are entering this restricted area.
- During the June 26, 2018 inspection a hole in the fence was identified which has since been repaired.
- Within the bollard area:
  - There were no trees suggesting deep roots breaching the cap nor were there signs of any animal burrows
  - The eight original bollards defining the soil cap perimeter are all present and clearly visible.

#### **IV. IC/EC PLAN COMPLIANCE REPORT**

The purpose of institutional controls and Engineering Controls in this facility is to reduce direct contact with metal impacted soils, to reduce storm water contact with transport of metal impacted soils, reduce airborne transport of metal impacted soils and reduce leaching potential of metal impacted soils to perched water.

##### **Institutional Controls are:**

1. Ground water use restriction. Its performance is evaluated based on evidence of the filing of the deed of restriction and the lack of any evidence of wells in use on the property or its environs. The deed covenant filed March 2, 2009 is documented and date stamped by the Erie County Clerk's Office. There was no evidence of ground water use observed.
2. Land use restriction to industrial use only. This is to reduce direct contact with metal impacted soils by the public or private parties through residential use. Effectiveness of this requirement is also evaluated by means of the deed restrictions and observed use of the land.
3. Soil & Waste Management Plan: The purpose of this institutional control is to assure that routine and reasonably foreseeable O&M activities and minor construction activities that may be conducted and that could result in the disturbance of potentially contaminated soils are done in a manner consistent with the purpose of the IC/EC goals and compliance with regulatory requirements. The details of this plan are covered in Section 4.2.2. of the Site Management Plan on file with the Environmental/Safety Department and include:
  - a. Repair or replacement of deteriorated asphalt pavement or concrete over 1000 sq. ft. requires NYSDEC notification 10 calendar days in advance of conducting such activity.
  - b. Emergency O&M construction that could result in disturbance of contaminated site soils beneath a cover system will be conducted in a manner to disturb contaminated site soils as little as feasible and as outlined in the SWMP. Clean cover material will be kept separate from contaminated soils and contaminated soils should be returned to the excavation or sent for off-site treatment. NYSDEC is to be notified as soon as practical of the nature of the emergency work.

- c. If the surface of exposed underlying site soil is dry and the area of exposed soil relatively flat, it is to be wetted to control dust until the area is covered with clean material.
- d. In Areas A, C, D, M & J, if the volume of soil excavated exceeds 15 cubic yards (c.y.) and the excavated soil will not be returned to the excavation within a 12-hour period, the excavated soil will be covered with polyethylene sheeting at the end of the work shift. Any excess excavated site soil that cannot practically be returned to an excavation in any areas of the site will be sampled and tested as detailed in section 4.2.2.4 of the SMP.
- e. In the unlikely event that collection of potentially contaminated site soil that may have eroded or is otherwise disturbed from beneath the vegetated soil cover system at area J is required, such soil will be carefully excavated, either manually or using construction equipment, as appropriate to the circumstance. Clean cover material will be placed in advance of construction equipment covering the contaminated soil with clean soil and grading and re-vegetation will be conducted. This is detailed in section 4.2.2.3 of the SMP.

Evaluation of these measures is determined by:

- A review of maintenance activities;
- Observation for:
  - Damage to fencing;
  - Damage to covers, asphalt or concrete; and
  - Observation for bare spots in vegetation;
- Whether or not the SWMP was implemented

During this review period, the only work conducted, as listed on Table 5, was:

1. Mowing of Area J.
2. Paving and patching of the areas of concern noted in the June 2018 inspection report. No excavation was needed to complete the paving/patching of these areas as all paving was done over the existing pavement.
3. An emergency O&M repair to a leaking underground fire/sprinkler main July 17-18, 2018. This involved excavation work due to a sink hole (refer to attached letter dated July 23, 2018). The time frame for paving over of the sink hole is listed in the recommendation section.

**Engineering controls are:**

1. A 10-foot high chain link security fence, complete with barbed wire constructed around the boundary of Area J.

2. Cover systems at Areas A, C, D, M, and J constructed of:

| Area  | Cover   |
|---|---|
| A, C & D  | 4 inch thick asphalt pavement   |
| M   | 6 inch-thick crushed stone layer overlain by 4-inche of thick asphalt pavement  |
| J (within limits of vegetated soil cover system only (bollard)) | 6-inch thick common fill layer overlain by 6-inch thick vegetated topsoil layer |

The Institutional and Engineering Controls listed above are in place and appear effective. During this review period no additional excavation work was conducted other than as noted above.

**V. INSPECTION AND MAINTENANCE**

The components of the inspection and maintenance plan in the SMP are:

1. Scheduled inspections of the asphalt pavement and concrete surfaces at Areas A, C, D, and M; and vegetated soil cover system and fence around Area J will be performed semi-annually. One inspection to be performed in early spring. A second inspection to be performed in September. The inspections should be conducted relevant to issues cited in Tables 1 and 2 of the SMP or other items detracting from the goals of the voluntary clean up. Inspection results are to be recorded on Tables 3 and 4. The field notes from the inspection are to be retained.
2. Minor maintenance activities relating to Areas A, C, D, M, and J as described in the SMP (section 4.2.1) are to be recorded in a Site Maintenance Log, Table 5.

The results of the June 2018 inspection indicates that the engineering controls remain effective with minor exceptions as noted in section III above (refer to the attached inspection notes, tables 3 & 4 and the supporting documentation section). Additionally the maintenance department (facilities) does conduct periodic facility inspections. Any fencing issues noted are fixed by either the Aurubis maintenance department or an outside fencing company. The maintenance activities for this reporting area are listed in Table 5 (attached). The fencing is periodically inspected for integrity by the security force at Aurubis and documented in the daily activity reports as “plant rounds”. Any breaches are reported and repaired.

The facility has had a long established practice that all soils facility wide that are moved from the ground have to put on an impervious surface and protected from rain washing it away until it is either returned to the original hole or undergoes testing for determination of offsite disposal in accordance with regulatory requirements and internal good management practices. In the past year there has only been one emergency O&M activity which occurred on July 17-18, 2018 involving soil removal as noted above.

## VI. OVERALL PERIODIC REVIEW REPORT CONCLUSIONS AND RECOMMENDATIONS

### Compliance with SMP:

Site Management Plan (SMP) Required Inspection & Maintenance Activities Compliance list

| Section | Area        | Requirement   | Comments   |
|---------|-------------|---|--|
| 4.1.1   | A, C, D & M | As a minimum, soil exposed beneath the asphalt or concrete over an area greater than 1 square foot would require repair of the asphalt or concrete.   | <ul style="list-style-type: none"> <li>• Minor potholes &amp; deteriorating asphalt in the “pre-existing paved or concrete roadways &amp; parking areas” of Areas A, C, D, &amp; M.</li> <li>• Paving &amp; patching of potholes was conducted in July 2018.</li> <li>• Limited additional patching is planned to be done. Refer to the recommendation section.</li> </ul> |
| 4.1.2   | J           | Mow vegetated soil cover system to a height of approximately 6 inches at least once per year in late summer or early fall, to prevent the establishment of deep rooted woody vegetation.                      | <ul style="list-style-type: none"> <li>• The maintenance department (facilities)) started to mow this area in July 2018. They will finish the mowing in August 2018.</li> <li>• If necessary it will be mowed again in the fall.</li> </ul>  |
| 4.1.2   | J           | Vegetated soil cover <i>may</i> be fertilized every several years with a maintenance fertilizer, if the soil cover inspections indicate the grass may benefit   | <ul style="list-style-type: none"> <li>• No fertilizing done in the past year.</li> </ul>  |
| 4.1.2   | J           | As a guideline, the vegetated soil cover system will be repaired if an area of the 6-inch topsoil layer is eroded or otherwise disturbed to a depth of 6 inches.  | <ul style="list-style-type: none"> <li>• N/A</li> </ul>  |
| 4.1.3   | J           | The fence will be repaired if it is damaged or deteriorated to the extent that potential trespassers or other unauthorized personnel could pass through, over, or under the fence without significant effort. | <ul style="list-style-type: none"> <li>• The hole in area J fence was repaired.</li> </ul>   |
| 4.1.3   | J           | A demarcation bollard will be   | <ul style="list-style-type: none"> <li>• N/A</li> </ul>  |

|       |                |  |   |
|-------|----------------|--|---|
|       |                | repaired / replaced if it is damaged or deteriorated to the extent that visual reference to the limits of the vegetated soil cover system would be lost without re-establishment by survey.  |   |
| 4.2.1 | A, C, D, M & J | Semi-annual inspections, early spring & September. A comprehensive walk-over & visual inspection of the asphalt pavement & concrete surfaces at Areas A, C, D & M (Log Table 3) and the vegetated soil cover system & security fence at Area J (Log Table 4). Comply with H&S requirements (section 4.2.2.5) | <ul style="list-style-type: none"> <li>• See inspection tables 3 &amp; 4 for June 26, 2018</li> </ul>   |
| 4.2.1 | A, C, D, M & J | Minor repairs: less < 1000 sq. ft. of asphalt or concrete or vegetated soil cover < 12 inches of imported soil cover layer. (Log Table 5).   | <ul style="list-style-type: none"> <li>• Paving &amp; patching of potholes was done in July 2018.</li> <li>• Limited additional patching is planned to be done. Refer to the recommendation section.</li> </ul> |
| 5.1   | A, C, D, M & J | Completed site inspection logs & site maintenance logs (sec 4.2) will be submitted to NYSDEC within 2 weeks of completion of the scheduled field inspection. Logs will be submitted to NYSDEC electronically or by e-mail.   | <ul style="list-style-type: none"> <li>• See inspection tables 3 &amp; 4 for June 26, 2018 submitted July 6, 2018.</li> </ul>   |
| 5.1   | A, C, D, M & J | Aurubis will maintain an electronic copy of the completed Site Inspection Log & Site Maintenance Log on file for future reference.   | <ul style="list-style-type: none"> <li>• Filed electronically on Safety drive.</li> </ul>   |
| 5.2   | A, C, D, M & J | Bi-annual project evaluations will be conducted to document that all institutional & engineering controls at the site are in place & effective, and confirm the remedy continues to be protective of public health & the environment.  | <ul style="list-style-type: none"> <li>• See inspection tables 3 &amp; 4 for June 26, 2018.</li> <li>• All O&amp;M activities that took place are recorded on Table 5.</li> </ul>                               |

**1. IE/EC controls:**



IE/EC controls were generally compliant during this one year period. The capping systems applied at this location are doing the job that was intended. The public is protected from wind and water dispersal of contaminants and all persons; public, contractors and employees in the facility are responsibly protected.

**2. Inspections & Maintenance:**

- Please refer to the inspection reports, tables 3 & 4, and maintenance log, table 5, from the SMP.
- The semi-annual inspections & reporting requirement have been added to the plant Environmental Compliance Calendar and reminder notices scheduled on the electronic Lotus notes calendar for Elizabeth Zurowski.
- The only maintenance activity during this reporting period is listed in table 5.

3. **SWMP:** There was only one emergency O&M excavation conducted during the past year (July 17-18, 2018) as noted above.

**Recommendations:**

The Maintenance department is responsible for the recommendations listed below.

| Item # | Recommendation   | Target Date |
|--------|--|-------------|
| 1      | Patching potholes in Areas A, C, & M.                    | Fall 2018   |
| 2      | Patch pothole in area D substation.                      | Spring 2019 |
| 3      | Patch potholes in area D that are not in the substation. | Fall 2018   |
| 4      | Mow Area J.  | Fall 2018   |

**Performance and Effectiveness of the Remedy**

Based on the June 2018 inspection the IE and EC generally appear to be effective in achieving the remedial objectives for the site except as noted in the report above.

**Future PRR submittals**

Discuss with NYSDEC the appropriate frequency of the PRR submittals.

## **SUPPORTING DOCUMENTATION**

Below is a sampling of pictures for the various area.

### **Area A**

Asphalt covering Area A in good condition.



Note: Surface repair of Area A parking lot completed Summer 2018

**Concerns** found in Area A: The paved & concrete roadways and parking lots had some minor potholes and areas for future patching.



**Area C**

Asphalt covering Area C in good condition



**Concerns found in Area C: Some asphalt needs patching**



**Area D**

Asphalt & concrete covering Area D in good condition



**Concerns found in Area D:**

Limited ruts/potholes in pavement



Within the substation there appears to be some potential for soil exposure. However, the substation is located behind a locked gate, limited exposure potential.



**Area M**

Asphalt covering Area M



**Concern** found in Area M: Vegetation growth near one utility pole.





**Area J**

Area J: Vegetation healthy and abundant with no evidence of paths from people or animals.



The hole in fence has been repaired.

