UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III

STATEMENT OF BASIS

LONZA, INC., RIVERSIDE PLANT

CONSHOHOCKEN, PENNSYLVANIA

EPA ID NO. PAD980550412

Prepared by
Office of Pennsylvania Remediation
Land and Chemicals Division
August 2015

Table of Contents

Section 1: Introduction

The United States Environmental Protection Agency (EPA) has prepared this Statement of Basis (SB) to solicit public comment on its proposed remedy for the Lonza, Inc. (Lonza), Riverside Plant located at 900 Schuylkill River Road, King of Prussia, Pennsylvania (hereinafter referred to as the Facility). EPA's proposed remedy for the Facility requires the continued compliance with and maintenance of the May 15, 2014 Environmental Covenant which include restrictions designed to 1) contain hazardous wastes and hazardous constituents that remain in place at the Facility and 2) control human and environmental exposure to those hazardous wastes and hazardous constituents in a non-residential land use scenario. This SB highlights key information relied upon by EPA in proposing its remedy for the Facility.

The Facility is subject to EPA's Corrective Action program under the Solid Waste Disposal Act, as amended, commonly referred to as the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901 et seq. The Corrective Action program requires that facilities subject to certain provisions of RCRA investigate and address releases of hazardous waste and hazardous constituents, usually in the form of soil or groundwater contamination, that have occurred at or from their property. Pennsylvania is not authorized for the Corrective Action Program under Section 3006 of RCRA. Therefore, EPA retains primary authority in the state for the Corrective Action Program.

EPA is providing a 30-day public comment period on this SB. EPA may modify its proposed remedy based on comments received during this period. EPA will announce its selection of a final remedy for the Facility in a Final Decision and Response to Comments (Final Decision) after the public comment period has ended.

Information on the Corrective Action program as well as a fact sheet for the Facility can be found by navigating http://www.epa.gov/reg3wcmd/correctiveaction.htm.
The Administrative Record (AR) for the Facility contains all documents, including data and quality assurance information, on which EPA's proposed remedy is based. See Section 8, Public Participation, for information on how you may review the AR.

Section 2: Facility Background

Lonza owned and operated the Facility from 1992 until 2010. The Facility is located approximately 15 miles northwest of Philadelphia, within a heavy industrial zoning district in Conshohocken, Montgomery County, Pennsylvania. On November 1, 2010, Johnson Matthey purchased the Facility from Lonza.

The Facility was previously owned by Allen Wood Steel and utilized for steel manufacturing operations. Remnants of the Allen Wood Steel operations included concrete piers, and a cooling tower foundation. Previous to the Allen Wood Steel operations, the Facility and surrounding area housed other industrial manufacturing plants, steel coking facilities, and quarrying operations. Coking process liquors from the steel manufacturing operations were deposited onsite. In 2012, contaminated wastes/soils from the steel manufacturing operations were covered with an engineered cap.

The steel manufacturing operations have historically been conducted in the Main Plant at the Facility. The Facility also houses administrative buildings, an above-ground storage tank (AST) farm, a drum storage area and a product storage area.

Located between the Schuylkill River (to the east) and River Road (to the west), the Facility consists of two industrial complexes that jointly occupy 29.2 acres. A rail line runs through the Facility property, though the Facility never used the rail line for any transportation purposes.

The Facility continues to operate under EPA ID No. PAD980550412 for its hazardous waste operations. It is a large quantity generator (LQG) of hazardous waste, operates a hazardous waste incinerator under a treatment/storage/disposal (TSD) permit and utilizes a hazardous wastewater treatment (WWT) plant under Pennsylvania Department of Environmental Protection (PADEP) permit by rule (PBR) regulations. Waste treatment operations include evaporation, stripping, liquid and gaseous (volatile organic carbon) waste incineration, bio-oxidation, clarification, and sand filtration. The facility consist of the administrative offices, the main plant operations building, the bulk storage area, the AST area, and the drum storage area.

Section 3: Summary of Environmental Investigations

The investigations were completed pursuant to PADEP's Land Recycling Program (Act 2) and sampling results were compared to Act 2 Statewide Health Standards (SHSs), otherwise known as Medium Specific Concentrations (MSCs). Unless otherwise noted, PADEP's MSC for a used-aquifer are equivalent to EPA's MCLs for individual contaminants in groundwater listed in Table 4 and PADEP's MSCs for residential and non-residential soils are equivalent to EPA Region III's RSLs for residential and

industrial soils, for each of the identified COCs listed in Table 6.

The Act 2 Final Report for the Facility was approved by PADEP on July 2, 2012. The Final Report summarized the investigations and remedial actions undertaken at the Facility as described below. EPA has reviewed and agrees with the conclusions and recommendations in the Final Report.

3.1 Areas of Investigation

Impacted Soils	A Phase II Investigation and a Remedial Investigation (RI) were performed during the 1980s. Several solid waste management units (SWMUs) and releases were identified at the Facility. Several spills, releases, and cleanup activities were reported to PADEP between 2003 and 2009. On January 21, 2011, Lonza submitted an Act 2 Combined RI Report/Risk Assessment Report (Combined RIR/RAR) to PADEP. On July 28, 2011, PADEP approved the RIR/RAR in accordance with the provisions of Act 2. On June 12 and June 30, 2010, Lonza oversaw the installations of 14 soil borings designated as (B-1 through B-13 and B-15). On September 27, 2010, Lonza oversaw the installation of sixteen (16) additional soil borings SB-17 through SB-32. The results of soil boring investigations identified the following contaminants of concern (COCs); arsenic and lead in surface soils (0-2 ft. bgs) and subsurface soils (> 2 ft. bgs) in concentrations above their respective EPA Industrial Regional Screening Levels (RSLs). Concentrations of lead were observed above the EPA Industrial Soil RSL of 800 mg/kg at the following soil boring locations: B-9 (1.5 - 2 ft. bgs) @ 1,130 mg/kg and B-12 (1.5 - 2 ft. bgs) @ 3,620 mg/kg; and B-12 (7.5 – 8 ft. bgs) @ 4,890 mg/kg. Area B-9 and B-12 are located under the engineered cap that is subject to a PADEP-approved Post-Remedial Care Plan. The engineered cap covers the areas that had contaminants in soil in concentrations greater than their applicable RSLs. The engineered cap is 6 inches in depth and made of concrete and/or gravel. Concentrations of arsenic were reported above the EPA RSL Industrial Soil values of 3 mg/kg at the following five soil boring locations: B-1 (24 – 24.5 ft. bgs) @ 85.9 mg/kg; B-7 (1.5 to 2 ft. bgs) @ 37.7 mg/kg; B-8 (1.5 - 2 ft. bgs) @ 145 mg/kg and B-8 (5-

	5.5 ft. bgs) @ 668 mg/kg; B-12 (1.5 - 2 ft. bgs) @ 106 mg/kg and B-15 (14.5 - 15 ft. bgs) @ 45.9 mg/kg. All samples but one are within the acceptable risk range of 10^{-4} to 10^{-6}. One sample taken at area B-8 had a value of 668 mg/kg. This sample was taken at 5-5.5 ft. bgs. The path for exposure is incomplete because the soil between the surface was within EPA's acceptable risk range. The RSL concentration is based on an acceptable risk. These screening values are based on a cancer risk of 10^{-6}. An acceptable exposure level is the concentration level of a contaminant to which the human population, including sensitive subgroups, may be exposed without adverse effect during a lifetime or part of a lifetime. For known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent lifetime cancer risk to an individual of between 10^{-4} (1 in 10,000) and 10^{-6} (1 in 1,000,000) using information on the relationship between the dose and response. Therefore values between 800 and 80000 mg/kg would represent an acceptable risk in an industrial soil value. The results of soil sampling indicated no VOCs or SVOCs were detected in any of the samples collected from borings B-1through B-9, B-11, and B-15, above EPA RSL values. The results of soil sampling indicated no metals above EPA RSL values in any of the samples collected from borings SB-17 through SB-32. Based on the soil characterization completed at the Facility, arsenic and lead, were detected at the industrial soil screening levels in a limited number of surface soil samples at concentrations within an acceptable risk range. All concentration of zinc were reported below the EPA Industrial Soil RSL for zinc of 350,000 mg/kg.
Facility Groundwater	Groundwater is present at a depth of 50 to 80 feet bgs within bedrock fractures, bedding planes, and solution channels. Closer to the Schuylkill River, monitoring wells screened within the overburden encountered shallower groundwater depths (less than 30 feet bgs) within the Facility area (RI, 1987). Groundwater beneath the Facility was encountered in the overburden with depths ranging from 11 to 28 feet bgs. Based on the proximity of the Facility to the Schuylkill River, the net flow is expected to be from west to east across the Facility; however, different hydro-geologic conditions can alter the groundwater flow (Roux, 2011).

	Groundwater elevation contour maps were prepared for the October and November 2010 sampling events; groundwater flow was generally to the west toward River Road at an average gradient of approximately 0.02. Groundwater usage in the vicinity of the Facility is primarily for industrial purposes such as cooling and lawn irrigation. There were no known production wells at the Facility. There are no known drinking water wells within one mile of the Facility. Potable water for the area is obtained from local water utility, which receives water from various sources such as wells, surface water, and reservoirs (RI, 1987). To characterize the groundwater at the Facility, Lonza installed monitoring wells MW 1 and 2, on June 24 and 25, 2010. MW-1 was installed east of the main plant operations and storage areas and the retention basin along the eastern Facility property boundary to the total depth of 25 ft. bgs and screened from 10 feet to 25 feet bgs. MW-2 was installed at the western edge of the Facility west of the main plant operations and storage areas to the total depth of 38 ft. bgs. On September 30 and October 1, 2010 Lonza oversaw the installation of MWs 5 and 6. MW-5 was installed within the vicinity of the main plant operations and above ground storage tank (AST) farm and in close proximity to temporary well point B-3 to the total depth of 23 ft. bgs. MW-6 was installed north of the emergency retention basin and in close proximity to temporary well point B-8. Two previously existing wells MW-3 (formerly DW-3) and MW-4 (formerly DW-4) were also included in the sampling regimen. MW-3 is located at the southeastern portion of the southeast of MW-5, and MW-4 is located east of MW-5. Well locations can be seen on Figure 1 attached to this SB. Sampling events were performed on: July 16, 2010 (MWs 1-4); October 15, 2010 (MWs 1-6) and November 22, 2010 (MWs 5 and 6). Samples were analyzed for: Volatile Organic Compounds (VOCs), Semi Volatile Organic Compounds (SVOCs), Priority Pollutant Metals (PP) metals, alcohols and ethylene glycol. Between June 30 and July 13, 2010 Lonza oversaw the installation of eleven (11) temporary well points designated as B-1through B-9, B-11 and B-15, using direct push methods. The temporary well points were installed to depths ranging between 17 to 34 ft. bgs.

	Groundwater samples were collected from the temporary well points between June 30 and July 13, 2010 and analyzed for: VOCs, PP metals, alcohols and ethylene glycol. The results of groundwater sampling indicated no VOCs were detected in any of the samples collected from the temporary well point locations above EPA RSLs. One groundwater sample contained the SVOC, Bis(2-ethylhexyl) phthalate (BEHP), at a concentration of 7.3 µg/l, slightly above its National Primary Drinking Water Standard Maximum Contaminant Level (MCL) promulgated pursuant to Section 42 U.S.C. §§ 300f et seq. of the Safe Drinking Water Act and codified at 40 C.F.R. Part 141, of 6 µg/l. This contaminant was found in only one location, and can be an artifact of the sampling and analysis procedures, and can be attributed to laboratory contamination. Therefore, EPA has determined that there is no further action for groundwater. The complete groundwater sampling results can be found in the Final Report (2015) which is included in the AR.

3.2 Human Health Risk Assessment and Evaluation of Exposure Pathways

The proposed remedy provides long-term containment of metals-impacted steel manufacturing wastes and soils on-site. All wastes and impacted soils at the three elevated level areas at the Facility have been covered by an engineered system to reduce exposure to those contaminants found above applicable RSLs. The remaining soils on-site outside of the engineered cover systems meet EPAs industrial soil levels and pose no significant risk to workers at the Facility. EPA has determined based on current and anticipated use, that exposure routes are incomplete for the surface soil exceedances. See the July 2012 Final Report for more information.

Section 4: Summary of Remedial Activities

4.1. Remedial Activities Completed

Contaminated wastes/soils from the previous steel manufacturing operations were covered with an engineered cap in 2012. The engineered cap covers the areas that had contaminants in soil in concentrations greater than their applicable RSLs.

Maintenance and locations of all engineered covers at the Facility are stipulated in the PADEP-approved Post Remediation Care Plan found in the May 2014 Environmental

Covenant. The Remedy/Corrective action consists of engineering and institutional controls (gravel/asphalt cover, and fencing) as well as property and groundwater use limitations (non-residential property use and no use of groundwater for potable or agricultural purposes). See attachment 1 for more detailed information. The Act 2 Final Report for the Facility was approved by PADEP on July 2, 2012. The Final Report summarized the investigations and remedial actions undertaken at the Facility as described directly below. EPA has reviewed and agrees with the conclusions and recommendations in the Final Report.

The July 2012 Act 2 Final Report included use restrictions and maintenance for the engineered cap. Specifically, the May 2014 Environmental Covenant (attached hereto as Attachment 1) requires that:

a. Facility property use is and will remain non-residential;
b. Facility groundwater will not be used;
c. Fencing and the engineered cap shall be maintained; and
d. Construction worker exposure will be controlled via a Health and Safety Plan.

4.2 Environmental Indicators

Under the Government Performance and Results Act (GPRA), EPA has set national goals to address RCRA corrective action facilities. Under GPRA, EPA evaluates two key environmental clean-up indicators for each Facility: (1) Current Human Exposures Under Control, and (2) Migration of Contaminated Groundwater Under Control. EPA determined the Facility met both of these indicators on June 12, 2015. The environmental indicator determinations are available at www.epa.gov/reg3wcmd/ca/pa.htm. The Facility is identified as Johnson Mathey Riverside Facility on that website.

Section 5: Corrective Action Objectives

EPA's Corrective Action Objectives for the specific environmental media at the Facility are the following:

1. Soils

EPA has determined that the EPA Region 3 RSLs for Industrial Use are protective of human health and the environment at this Facility, provided that the Facility is not used for residential purposes. There is no contaminant in Facility soils in concentrations above its industrial RSL. Therefore, EPA's Corrective Action Objective for Facility soils is to control exposure to the hazardous constituents remaining in soils.

2. Groundwater

EPA expects final remedies to return groundwater to its maximum beneficial use within a timeframe that is reasonable given the particular circumstances of the project. For projects where aquifers are either currently used for water supply or have the potential to be used for water supply, EPA will use the MCL.

The only contaminant detected in Facility groundwater above its MCL was BEHP. Given that BEHP was found in only one location, can be an artifact of the sampling and analysis procedures, and can be attributed to laboratory contamination, EPA has determined that MCLs have been met and there is no further action for Facility groundwater.

Section 6: Proposed Remedy

1. Soils

EPA's proposed remedy for the Facility is to require the continued compliance with and maintenance of the May 15, 2014 Environmental Covenant. The 2014 Environmental Covenant requires the inspection and maintenance of the existing engineered cap and fencing and restricts land use to non-residential use. The engineered cap and land use restrictions eliminate the direct contact pathway to all surface soils where non-residential direct contact RSL's were exceeded. The 2014 Environmental Covenant requires Lonza to report annually to PADEP in writing stating whether the institutional controls and the engineered cap and fencing are still in place and are in good condition.

2. Groundwater

While EPA has made a Corrective Action Complete without Controls determination for Facility groundwater, the 2014 Environmental Covenant prohibits use of groundwater for potable or agricultural purposes.

Section 7: Evaluation of Proposed Remedy

This section provides a description of the criteria EPA used to evaluate the proposed remedy consistent with EPA guidance. The criteria are applied in two phases. In the first phase, EPA evaluates three decision threshold criteria as general goals. In the second phase, for those remedies which meet the threshold criteria, EPA then evaluates seven balancing criteria.

Threshold Criteria	Evaluation
1) Protect human health and the environment	The primary human health and environmental threats posed by contaminated soils at the Facility were related to direct contact with those soils. Additional threats were related to the potential for migration of contamination in the soils via soil erosion, surface water run-off and leaching to the ground water. The containment of metals-impacted soils within the constructed engineered cap provides a physical barrier that prevents direct contact, eliminates migration pathways through soil erosion, and limits percolation through the soil and fill material to groundwater. Therefore, the proposed remedy eliminates or minimizes threats to human health and the environment provided that land use restrictions and post-remedial care are maintained
2) Achieve media cleanup objectives	The cleanup objective at the Facility is to contain the hazardous wastes that remain in place and control exposure to those wastes in a non-residential land use scenario. The proposed remedy meets this objective through the containment of metals-impacted soils within the three engineered caps and the implementation and maintenance of land use restrictions and post- remedial care.
3) Controlling the Source of Releases	The containment of metals-impacted soils within the engineered cap controls the source of potential releases at the Facility. Specifically, it provides a physical barrier that will continue to prevent direct contact, eliminate migration pathways through soil erosion, and limit percolation through the materials to groundwater. Future risks related to direct exposures will be limited by land use restrictions and post-remedial care. The engineered cap at the Facility effectively eliminates the potential for future exposures to the hazardous levels of lead and other metals contained in the fill material buried beneath the cover systems. Construction worker future exposure is addressed by the covenant which has activity and use limitations should construction workers need to disturb the soil in the future.

Balancing Criteria	Evaluation

4) Long-term effectiveness	The proposed remedy will remain protective of human health and the environment over time by controlling exposure to the hazardous constituents remaining in soils. EPA's proposed remedy requires the compliance with and maintenance of land use restrictions at the Facility, which are currently being implemented via the May 2014 Environmental Covenant. The covenant is enforceable by EPA and PADEP against current and future land owners. In addition to the activity and use limitations, the May 2014 Environmental Covenant requires maintenance of the engineered cap overlying contaminated wastes/soils, which will ensure the long-term effectiveness of the proposed remedy.
5) Reduction of toxicity, mobility, or volume of the Hazardous Constituents	The containment of the metals-contaminated soils beneath the engineered cap greatly reduces potential mobility of the encapsulated hazardous constituents.
6) Short-term effectiveness	EPA's proposed remedy does not involve any activities, such as construction or excavation that would pose short-term risks to workers, residents, and the environment. The use restrictions proposed in the remedy are already in effect at the Facility per the May 2014 Environmental Covenant.
7) Implementability	The land and groundwater use restrictions proposed in the remedy are already in effect at the Facility per the May 2014 Environmental covenant.
8) Cost	EPA's proposed decision is cost effective. The costs associated with this proposed remedy have already been incurred and the remaining costs are minimal (estimated cost of less than $10,000 per year for engineered cover inspection/maintenance, etc.).
9) Community Acceptance	EPA will evaluate community acceptance of the proposed remedy during the public comment period, and it will be described in the Final Decision.
10) State/Support Agency Acceptance	PADEP reviewed and approved the Final Report, the May 2014 Environmental Covenant, and associated remedial activities and use restrictions for the Facility. EPA, therefore, expects State acceptance of the proposed remedy.

Section 8: Financial Assurance

EPA has evaluated whether financial assurance for corrective action is necessary to implement EPA's proposed remedy at the Facility. Given that EPA's proposed remedy does not require any further engineering actions to remediate soil, groundwater or indoor air contamination at this time and given that the costs of implementing institutional controls at the Facility will be less than $10,000 per year, EPA is proposing that no financial assurance be required.

Section 9: Public Participation

Interested persons are invited to comment on EPA's proposed remedy. The public comment period will last 30 calendar days from the date that notice is published in a local newspaper. Comments may be submitted by mail, fax, e-mail, or phone to Grant Dufficy at the address listed below.

A public meeting will be held upon request. Requests for a public meeting should be made to Grant Dufficy at the address listed below. A meeting will not be scheduled unless one is requested.

The Administrative Record contains all the information considered by EPA for the proposed remedy at this Facility. The Administrative Record is available at the following location:

U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103
Contact: Grant Dufficy (3LC30)
Phone: (215) 814-3455
Fax: (215) 814 - 3113
Email: dufficy.grant@epa.gov

Attachments:
Figure 1: Map of Facility
Attachment 1: Recorded Covenant

Section 10: Signature

Date: 8.24.15

John A. Armstead, Director
Land and Chemicals Division
US EPA, Region III

Section 11: Index to Administrative Record

Environmental Covenant, Impacted Soils and Goundwater, Johnson Matthey (Lonza), Inc., Conshohocken, PA, (prepared by Roux Associates, August 28, 2014)

Environmental Indications Inspection Report for Lonza Inc., Michael Baker Jr., Inc., prepared for EPA and PADEP, October 2012

PADEP Cleanup Final Report, Lonza Inc., approved on July 2, 2012

Combined RI/RA/Final Report, Lonza Inc., - Groundwater Characterization – Temporary Well Installations June 24 and 25, 2010 - (Roux Associates)

Combined RI/RA/Final Report, Lonza Inc., - Soil Characterization – Soil Boring Installations June 12 and June 30 2010 - (Roux Associates)

Risk Assessment Protocol for Human Health Risk Assessment - PADEP, January 21, 2003 - (prepared by the Center for Toxicology and Environmental Health)

Legend

- Property Boundary
- Monitoring Well Location
- Soil Boring Location

100 0 100 200 Feet

N

Notes:

1. Soil Boring Locations located in the field by Roux Associates, Inc. using a GPS.
2. Monitoring Well Locations locations were surveyed by Dennis Sklar in July and October 2010.
3. 2005 Aerial photography provided by the Delaware Valley Regional Planning Commission, published June 29, 2007.

Title:

SITE FEATURES MAP

900 River Road
Conshohocken, Pennsylvania

Prepared For:

Lonza Inc.

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: EP	Date: 12/29/2010	PLATE
Prepared by: ST	Scale: 1:1,200	
Project Mgr: EP	Office: NJ	2
File No: 1001.F2(CP)	Project: 1912.0001J003	

G:\PROJECTS-08\1912 - Lonza Inc - Conshohocken, PA - LON\0001 W Conshohocken, PA\PROJECT DATABASE\GIS\1001 Act 2 RIR\Site Features Map.mxd