MON VALLEY AIR POLLUTION MITIGATION PLAN
FINAL REVISION 1

RiverLift Industries, Inc.
West Elizabeth, Pennsylvania

Prepared for:

RiverLift Industries, Inc.
1000 Madison Avenue
West Elizabeth, Pennsylvania

Prepared by:

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March 2, 2022

Wood Project No. 3487210106

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This report was prepared by the staff of Wood Environment & Infrastructure Solutions, Inc. under the supervision of whose signature(s) appear hereon.

Christopher Dunay
Senior Associate Scientist

Robert Romansik
Principal Engineer

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LIST OF ACRONYMS

ACHD Allegheny County Health Department
PM Particulate Matter
ESP Electrostatic Precipitator
RACM Reasonably Available Control Measure
WRAP Western Regional Air Partners
TCEQ Texas Commission on Environmental Quality
O&M Operation and Maintenance

1.0 REGULATORY OVERVIEW AND CERTIFICATION BY OWNER

This revised Mon Valley Air Pollution Mitigation Plan has been prepared for RiverLift Industries, Inc. (RiverLift), located at 1000 Madison Avenue, West Elizabeth, Pennsylvania, in accordance with the Allegheny County Health Department (ACHD) – Rules Rules and Regulations, Article XXI, Air Pollution Control, §2106.06, Mon Valley Air Pollution Episode and the Notice and Order received by RiverLift on January 31, 2022. This new section of Article XXI, named the Mon Valley Air Pollution Episode Rule, was added to respond to weather-related inversions that occur in the Mon Valley that result in high levels of small particulate matter pollution (PM2.5 pollution - particles measuring 2.5 micro-meters or less). It applies to the following sources located in one or more of the municipalities identified in Subsection d of §2106.06: 1) major and synthetic minor sources of $PM_{2.5}$; 2) all sources that have combined allowable emissions from all emission units of 6.5 tons or more per year of $PM_{2.5}$; and 3) all sources that have combined allowable emissions from all emission units of 10 tons or more per year of PM_{10}.

Below is a table based on ACHD's Air Quality Annual Report, 2015-2019 which shows the number of times / days that the PM2.5 24-hr standard was exceeded at the Liberty monitor, which is proximate to West Elizabeth.

	PM2.5 24-hr Standard = 35 ug/m3				
Monitoring Site	**2019 24-hr Exceedances**	**2018 24-hr Exceedances**	**2017 24-hr Exceedances**	**2016 24-hr Exceedances**	**2015 24-hr Exceedances**
Liberty	9	2	10	13	7

On average, there have been approximately 8 PM2.5 exceedance "events" per year from 2015-2019 in the Mon Valley.

RiverLift is subject to the Mon Valley Air Pollution Episode Rule based on its location in the Borough of West Elizabeth and permitted facility allowable PM10 emissions of 41.5 tons/yr. Note that this allowable emission level is conservative, as potential emission calculations were wood.

based on worst-case continuous operations for batch-type equipment. Actual PM10/PM2.5 are significantly lower than allowable emissions, as detailed in this plan.

This document meets the requirements of §2106.06e.1 and e.2 with respect to the development and submittal of the requisite mitigation plan during a watch phase and warning phase, respectively.

Certification by Owner

AFFIDAVIT

I certify that, subject to the penalties of Title 18Pa. C.S.A. Section 4904 and 35 P.S. Section 4009(b)(2), I am the responsible official having primary responsibility for the operation of the facilities to which this air pollution mitigation plan applies and that the information provided in this mitigation plan is true, accurate and complete to the best of my knowledge, information and belief formed after reasonable inquiry.

Signature: [signature]

Printed Name: Ross Schiefe

Title: President

Date: March 1, 2022

2.0 FACILITY DESCRIPTION

RiverLift is comprised of two properties approximately ½ mile apart on Route 837 in West Elizabeth, PA. The main facility includes bulk material handling activities, bulk storage of highway deicing salt, coal, coke, and other materials. It is at an elevation of 760 feet above sea level and covers approximately 23 acres. The site terrain has relatively level topography, with gradual sloping towards the Monongahela River. Operations conducted at the secondary facility strictly involve stockpiling and handling of one of the road salt piles.

A Site Location Map of the main facility is contained herein as Figure 1. Figure 2 shows a Google Earth aerial view.

RiverLift operates under Minor Source Operating Permit #0034, which expired on October 23, 2021. RiverLift submitted a renewal application on April 22, 2001, six months in advance of expiration as prescribed and, therefore, can operate under the current operating permit via an application shield. Normal operations at the facility are 10 hrs/day, 5 days/week, 52 weeks/year, with occasional operations on weekends.

Permitted processes / equipment that emit PM10 and/or PM2.5 are as follows:

- P002 Barge Unloading Operation
- P003 Barge Loading Operation
- P004 Railcar Unloading Operation
- P005 Railcar Loading Operation
- F001 Storage Piles
- F002 Paved Roadways

Materials primarily handled and stored by RiverLift include highway salt, coal, and coke. The facility may also handle / store a variety of other materials, as identified in Minor Source Operating Permit #0034, including steel wire, gravel, magnesite, distiller's grain, cotton seed hulls, lime, manganese ore, bauxite, bark mulch, manganese ore, manufactured sand, steel scrap, limestone, river sand, and fertilizer.

Facility contact information is as follows:

Responsible Official / Environmental Contact:	Bob Schaefer
Title:	President
E-mail address:	bob@riverliftindustries.com
Phone:	412-384-8420

3.0 EMISSION UNIT AND BASELINE CONTROL INFORMATION

Barge Unloading Operation (P002), Barge Loading Operations (P003), Railcar Unloading Operations (P004), and Railcar Loading Operations (P005)

These material handling operations primarily involve coke, coal, and highway salt.

Estimates for fugitive particulate emissions from these materials handling operations are based on AP-42, Chapter 11.19.2, Crushed Stone Processing, Table 11.19.2-2 and AP 42, Chapter 12.5, Iron and Steel Production, Table 12.5-4, as previously established. Note that the conveyor transfer emission factors from AP-42's Crushed Stone Processing section are overstated, as these factors are representative of dustier product types than those handled by RiverLift. Minor Source Operating Permit #0034 does not require control measures for these emission units.

Storage Piles (F001) and Paved Roads (F002)

Materials stored outdoors at RiverLift include coke, coal, and highway salt.

Estimates for particulate emissions from the storage piles are based on AP 42, Chapter 13.2.4 - Aggregate Handling and Storage Piles. Estimates for fugitive particulate emissions from the roadways are based on AP 42, Chapter 13.2.1 - Paved Roads.

Some storage piles are located indoors. For outdoor storage piles, the operating permit requires RiverLift to take reasonable actions to minimize the potential for fugitive dust emissions by using canvas tarps for highway road salt (where not being worked), periodic vacuum sweeping, the use of water sprays, and/or proper maintenance, in accordance with Article XXI, §2105.49a. Fugitive particulate emissions from the paved roadways are controlled with a sweeping and watering program. RiverLift is required to utilize water suppression on roadways utilized for this process on a daily basis when the temperature is above 32 degrees Fahrenheit.

3.1 BASELINE ACTUAL PM10/PM2.5 EMISSIONS (2017-2020)

As prescribed by ACHD's Guidance on Article XXI §2106.06 (Mon Valley Air Pollution Episode), RiverLift has determined and summarized average actual hourly and daily PM10 and PM2.5 emissions based on 2017 – 2020 operations for each permitted process and for the facility. These actual emissions serve as a baseline average used to estimate maximum expected daily reduction of PM10 and PM2.5 and corresponding percentage decrease resulting from RiverLift's proposed Mon Valley Air Pollution Mitigation Plan.

Table 1 shows a summary of average actual annual, hourly, and daily PM10/PM2.5 emissions for the period of 2017-2020. Table 2 indicates a summary of actual annual PM10/PM2.5 emissions for 2017-2020. Appendix A contains a detailed particulate emissions calculation spreadsheet for each of these four years of interest, the results of which feed Table 2. Riverlift's production data for 2017-2020 operations are shown in Appendix B.

Relative to control measures, these baseline emissions reflect RiverLift's roadway watering and sweeping program, estimated at a control efficiency of 80%. As a work practice standard, the highway salt storage piles are tarped where not being worked and water sprays are utilized on coal piles on an as needed basis when the potential exists for fugitive particulates to become airborne, in accordance with Article XXI, §2105.49.a. Because these control measures do not provide full coverage in the case of tarping and otherwise are not applied on a regular schedule, 2017-2020 actual emission estimates conservatively do not include control efficiencies for storage piles. RiverLift's operating permit does not require emissions control for any other emission units.

Referencing Table 1, average actual annual PM10/PM2.5 facility emissions over the 4 yr. time period from 2017-2020 were 4.23 tons/yr and 3.82 tons/yr, respectively. Note that actual average PM10 emissions represent approximately 10% of potential emissions (i.e., permitted allowable emission limit) previously established in a conservative manner. Average daily PM10/PM2. 5 facility emissions during the same time period were estimated at 32.5 lbs/day and 30.0 lbs/day, respectively, with barge loading being the highest contributor, followed by barge unloading.

4.0 EVALUATION OF PM10/PM2.5 EMISSIONS REDUCTION

As prescribed by ACHD's Guidance on Article XXI §2106.06 (Mon Valley Air Pollution Episode), applicable facilities are required to: 1) list and describe all available methods to reduce PM10/PM2.5 emissions for each process, 2) evaluate feasibility of each method and provide justification for those methods which are not deemed feasible in the context of the Mon Valley Air Pollution Episode Rule, and 3) develop a mitigation plan based on feasible methods (which are not already being implemented). The following subsections discuss available methods and feasibility.

4.1 AVAILABLE METHODS TO REDUCE PM10/PM2.5

There are several available methods for the control of PM10/PM2.5 emissions from the types of emission units permitted at RiverLIft – material handling operations (i.e., incoming and outgoing batch drops via barge and rail), storage piles, and paved roadways. These control methods are presented below by emission unit:

<u>Material Handling (i.e., Material Batch Drops)</u>

- Ventilation system / fabric filtration (baghouse) system (consideration of stationary and portable systems)
- Ventilation system / ESP (for stationary applications)
- Ventilation system / wet scrubber (for stationary applications)
- Wet suppression system (consideration of stationary and portable systems)
- Source reduction (e.g., drop height reduction, enclosures / enhancement of enclosures, moisture retention)

Storage Piles (F001)

- Wet Suppression Systems
- Source Reduction (e.g., tarping, use of less dusty raw materials)

Paved Roadways (F002)

- Sweeping / watering program
- Source reduction (e.g., limit speed of vehicles, maintenance)

The following discussion provides an overview and technical description of the compilation of PM / PM_{10} control methods listed above. The feasibility of each control technique is discussed below in section 4.2.

4.1.1 Fabric Filtration

A baghouse is commonly applied to control particulate emissions from material handling operations due to its capability to achieve high control efficiencies and toleration of high and varied particulate and temperature loads. The baghouse design employs long cylindrical bags that contain felted fabric cloth as the filtering medium. The cloth can be supported at the top and bottom of the bag by metal rings or clasps; or by an internal cage that completely supports the entire bag. Dust is collected on either the inside or outside of the fabric material depending on the baghouse design. The baghouse is constructed of compartmental units and are used in continuous operating processes with large exhaust volume. The units can have a compartment off-line for bag cleaning and maintenance while the remaining compartments continue to filter. The particulate matter passes through the filter bags before leaving the unit through the collection hoppers which are used to store the collected dust before it is disposed in a landfill or reused in the process. For applications pertaining to material handling operations, portable truck or trailer-mounted fabric filtration units represent a feasible consideration. A baghouse can consistently achieve removal efficiencies of 98% and greater for total PM and approximately 95% for PM2.5.

4.1.2 Electrostatic Precipitators

An electrostatic precipitator (ESP) uses a generated electrical field to charge incoming particulates that are subsequently collected on plates of opposite charge. ESPs are commonly applied to, and very effective for, the control of fly ash from many industrial and utility boilers, with removal efficiencies of 98% and greater for total PM. However, they are more effective in higher particulate concentrated applications, as a whole, due to the inter-related activity of the charged particles. This is why coal-based utility and boiler systems normally employ them, since the size of the PM is usually rather large. For smaller sized PM emissions, an ESP is not as effective, and efficiency of control can drop off dramatically, down to reduction efficiencies in the 70-90% range.

4.1.3 Wet Scrubbers

Scrubbers are also very effective in removing particulates from a wide variety of industrial sources, depending on a few important design features such as pressure drop, throat versus packing set-up, and liquor type and recirculation rate. For PM control that is not influenced by acids, sulfates, and some other contaminants, packed or venturi units can be used, and the liquor is typically water. In these applications a wet scrubber can be designed to achieve 90%+ removal efficiency for particulate matter greater than 10 microns. For particulates less than 10 microns in size, significant energy (pressure drop) and water saturation may be needed to achieve high efficiency removal. This control technology also requires handling of process waters, which may lend to precipitated solids, pH changes, etc. and possibly require wastewater treatment operations.

4.1.4 Mechanical Separation (Cyclone System)

Cyclones or multi-clones use centrifugal (mechanical) force generated by a spinning gas stream to separate the particulate matter (solid or liquid) from the carrier gas. Centrifugal force acts on the particles in the gas by forcing them towards the wall. Cyclones are not typically efficient for removal of fine particles and are usually employed for removing larger particles. Depending on the size, density, and state of the particulates, a cyclone could achieve up to an approximately 85% control efficiency for total PM. Multi-cyclones on the other hand are better for removal of smaller particles, but still significantly lower in efficiency than the other technologies described above and essentially not effective for PM2.5. Mechanical separation is primarily used as a pre-treatment technology to remove large particles from the gas stream, reducing the loading on primary control devices, such as baghouses and scrubbers.

4.1.5 Wet Suppression Systems

A variety of wet systems have been specifically developed and applied in the mineral processing and handling industry to suppress dust generation. Wet suppression, generally, is a technology that uses liquid sprays or foam to suppress the formation of airborne dust. The primary control mechanism is through agglomerate formation by combining small dust particles with larger aggregate or with liquid droplets. There are generally two types of wet suppression systems – liquid sprays which use water, water/surfactant mixtures, or water/compressed air mixtures as the wetting agent and systems which supply foams as the wetting agent. Water / compressed air mixtures are referred to as air atomizing spray systems or fog systems. A literature review suggests a control efficiency of up to 90% when chemical surfactants are employed. With respect to road dust, wet suppression systems are in the form of watering programs (in conjunction with vacuum sweeping). Control efficiency of roadway watering is estimated by Ohio EPA's Reasonably Available Control Measure (RACM) document at 80%, with vacuum sweeping estimated by the same reference at 75%.

Wet suppression systems are generally applied to the types of emission units permitted at RiverLift, with the caveat that the issues of product quality, product specifications, and safety raise a concern with respect to the use of wet suppression systems.

4.1.6 Building Enclosures

Partial or full enclosures are widely used methods to passively capture / control fugitive particulate emissions from mineral processing and handling operations. Passive control efficiency defined by building enclosure is estimated at 60%, which is characteristic of the minimum control efficiency identified via available literature review for windscreens/barriers. Windscreens/barriers are included in the category of partial enclosures within USEPA's Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures (1992). Also, effectiveness of building enclosures is derived from concepts within the Western Regional Air Partners (WRAP) Fugitive Dust Handbook for material handling (i.e., 3-sided enclosure = 75% control efficiency) and Texas Commission on Environmental Quality's (TCEQ's) Mechanical Sources BACT Guidelines (November 2006), which is listed as 50% - 90%, dependent upon the ratio of openings in enclosure.

4.1.7 Source Reduction

Reducing particulate emissions at the source of generation is a viable control measure to consider for any industry type or operation. Optimization of equipment and operation to allow for source reduction may include: 1) limiting the amount of dust available for emissions, 2) improving the arrangement of materials that generate dust, 3) optimizing the process so that less dusty material is used, generated, or made vulnerable to air contact, 4) preventing or minimizing leaks, and 5) other good operation & maintenance (O&M) procedures that reduce PM emissions. The level of emission control effectiveness will be dependent on the nature of source reduction / optimization.

4.2 FEASIBILITY EVALUATION FOR EACH PM10/PM2.5 REDUCTION METHOD

Feasibility evaluation of PM10/PM2.5 reduction methods by emission unit is presented as follows:

4.2.1 Material Handling Emission Units (i.e., Barge and Rail)

Fabric Filtration, ESPs, Wet Scrubbers, Mechanical Separation (Cyclone System)

These traditional PM control methods are considered infeasible for barge and rail material handling for several reasons. First, the capital and operating costs for such control equipment, including portable fabric filtration units, would be economically infeasible for control of such a low mass of PM10/PM2.5 for a limited number of days per year, given the context of the Mon Valley Air Pollution Episode Rule. Referencing Table 1, actual average daily baseline PM10/PM2.5 emissions of barge loading is 22.3 lbs/day, while barge unloading is estimated at 6.0 lbs/day. Daily average baseline emissions of railcar unloading, and railcar loading (which use the same conveyor equipment) is estimated at 1.1 lbs/day and 0.0 lbs/day (i.e., no railcar loading 2017-2020), respectively, and represent a minor and infrequent aspect of overall actual operations. Second, the use of stationary air pollution control equipment is infeasible as applied to barge unloading based on variable activity locations. There is not a fixed swing location for the excavator to a waiting truck. The excavator and receiving truck must be mobile / portable as material is scooped across the length of a 200 ft. long barge. Third, upon review, ESPs and wet scrubbers have no known approved or implemented application for sources similar in nature to RiverLIft's material handling operations. Lastly, mechanical separation technology is generally used as a pre-treatment technology to knock-down larger particles in advance of a baghouse, ESP, or scrubber so that these primary devices can function more effectively. Cyclones have limited efficiency with smaller particles such as the target PM10/PM2.5 for this application, but this comes with a price of higher operating costs associated with larger pressure drops.

Wet Suppression Systems

Wet suppression systems are considered feasible for application to RiverLift's barge and railcar handling operations.

For barge loading at the Spar Barge Loadout, the transfer point from hopper to conveyor is equipped with wet suppression, which is not required for full time use by the operating permit. It is currently utilized on an as needed basis for dusty materials. Moving forward, RiverLift will utilize wet suppression at this transfer point during a Warning Phase when the Spar Barge Loadout is operating. Control efficiency is estimated at 80% at this transfer point, based on U.S. EPA literature review. Note that the bulk of barge loading occurs at the Spar Barge Loadout, compared to the #1 Dock.

Railcar unloading / loading activities represent an infrequent activity at RiverLift, as demonstrated by the low baseline actual average emissions estimate of 1.1 lbs PM10/PM2.5/ day. As such, RiverLift will add wet suppression capabilities at the transfer point from hopper to conveyor prior if future business dictates meaningful actual reductions in PM10/PM2.5. If implemented, wet suppression would be applied conditionally to bulk material based on observation of product type and product moisture, as well as customer specifications, as some products cannot be wetted beyond a certain threshold. As with barge loading, RiverLift estimates a control efficiency of 80% at this single transfer point. RiverLift tracks throughput for all railcar and barge activities on monthly basis and reports this data semi-annually to the ACHD under our Minor Source Operating Permit. During each Warning Phase day, RiverLift will record daily throughput for each rail and barge activity. If no activity / production occurs, that will be noted as well. These records will be compiled and submitted to the ACHD within 30 days at the end of each Warning Phase. Through this reporting, RiverLift will notify ACHD if future business activity is expected to change at Railcar Unloading / Railcar Loading and will comply with the proposed plan for these processes.

For barge unloading activities, RiverLift will implement wet suppression in the form of adding water directly to material in a barge via a clamshell bucket prior to unloading. This mitigation is conditional upon observation of incoming product type, product moisture, and consideration of customer specifications. A control efficiency of 50% (minimum end of range per literature review) is applied for application of this form of wet suppression.

Overall, compared to baseline daily average PM10/PM2.5 emissions from material handling of 28.3 lbs/day, application of wet suppression as discussed above is estimated to potentially reduce daily average PM10/PM2.5 emissions by 7.9 lbs/day, or 28.0%.

Building Enclosures

Building enclosures for barge unloading operations are viewed as technically infeasible and impractical for the same reasons discussed above for stationary fabric filtration (i.e., operational constraints). For barge unloading, there is not a fixed swing location for the excavator to a waiting truck. The excavator and receiving truck must be mobile / portable as material is scooped from a 200 ft. long barge. A large building would be required with several openings along its length to accommodate a mobile excavator.

As a baseline existing condition, both barge loading areas (#1 Dock and Spar Barge Loadout) maintain a partial enclosure at the initial transfer point from front end loader or truck to hopper. Also, RiverLift utilizes covered conveyors. A building enclosure at the last transfer point from conveyor to barge is considered technically infeasible, as incoming / outgoing barges are not owned by RiverLift and only are docked on a temporary basis. To this end, a permanent structure extending from the dock over a barge would be impractical and infeasible.

Considering the low baseline quantity of PM10/PM2.5 at railcar loading / unloading (1.1 lbs/day) and the limited number of days per year of application, given the context of the Mon Valley Air Pollution Episode Rule, the construction of a building enclosure adjacent to the rail spur at RiverLift is impractical and economically infeasible.

<u>Source Reduction</u>

Source reduction is generally considered feasible for application to RiverLift's barge and railcar handling operations. Such source reduction techniques are baseline, ongoing practices at RiverLift and not part of a mitigation plan, including:

- Railcar bottom dumping (unloading)
- Minimizing drop heights from front end-loaders/trucks to hoppers
- Use of covered conveyors or chutes
- Suspend unloading and loading operations during high wind conditions that could, otherwise, increase blowing dust.
- Use of less dust raw materials
- Tarping of highway salt piles

Note that tarping of coal piles is infeasible, as these piles are smaller than highway salt piles with regular occurrence of transfers (i.e., additions and retrievals). The logistics, therefore, of managing a tarp system for coal are prohibitive.

4.2.2 Storage Piles

<u>Wet Suppression Systems</u>

Wet suppression systems are considered feasible for application to RiverLift's outdoor storage piles, which include highway salt and coal. RiverLift is not presently required by permit to apply wet suppression to storage piles on a regular basis.

For active stocking/destocking coal piles during a Warning Phase, RiverLift will apply dust Chemical Dust Control DC-661 (38% concentration) solution or spray water with side sprayer from water truck (or via hand wand) on the pile. Control efficiency is estimated at 90% for storage pile watering, based on Section 9 of the Fugitive Dust Handbook.

Overall, compared to baseline daily average PM10 emissions from storage piles of 1.8 lbs/day, application of wet suppression as discussed above is estimated to reduce daily average PM10 emissions by 1.33 lbs/day, or 72.8%.

Source Reduction

Source reduction is generally considered feasible for application to RiverLift's activities associated with storage piles. Such source reduction techniques are baseline, ongoing practices and are not part of a mitigation plan, including:

- Use of canvas tarps for highway salt piles (where not being worked)
- Minimize the distance between the working face and trucks being loaded to reduce the area to be swept/cleaned.
- Regularly inspect dry bulk storage piles, facilities, and handling equipment to ensure proper operation is maintained.
- Remove accumulation of materials at storage areas to prevent windblown dust.

4.2.3 Paved Roadways

Sweeping / Watering Program

The top control candidate in terms of potential removal efficiency for paved roadways is a fugitive dust control program consisting of a combination of watering / vacuum sweeping measures. This measure represents a demonstrated, feasible technology in the mineral products industry and a variety of other industries with respect to particulate control.

RiverLift maintains a robust watering / vacuum sweeping program, which is implemented daily when the temperature is above 32 F, as required by Minor Source Operating Permit #0034. Control efficiency applied for baseline emissions is based on the maximum of watering and sweeping activities (i.e., 80%) from Ohio EPA's RACM document (75% for sweeping/vacuum, 80% for watering).

As an enhancement to the watering / vacuum sweeping program, RiverLift will apply Chemical Dust Control DC-661 (38% concentration) solution on the roadways during Warning Phase events. It is estimated that application of this dust suppressant will increase PM10/PM2.5 control efficiency from the paved roadways to approximately 90%, representing a percent reduction of 50% from baseline conditions.

<u>Source Reduction</u>

Source reduction is generally considered feasible for application to RiverLift's activities associated with facility paved roadways and vehicular traffic. Such source reduction techniques are baseline, ongoing practices at RiverLift contained within RiverLift's operating permit and are not part of a mitigation plan, including:

- Limit truck and equipment speed in the yard to less than 10 mph.
- Upon exiting the facility property, wash the undercarriage, wheels, chassis, and tailgates of all vehicles used to transport soil, stone, or other materials to prevent carryout onto roadways.
- Tarp all loaded trucks containing material with the potential to emit fugitive dust at all times.

- Do not allow any vehicles or engines to be idle for more than five consecutive minutes on-site.

RiverLift also contracted out significant maintenance paving in the recent past on the roadways, around stockpiles, and at docks.

5.0 PRPOSED AIR POLLUTION MITIGATION PLAN

Based, in part, on the discussion within Section 4.0 above, RiverLift proposes the following air pollution mitigation plan at its West Elizabeth, PA facility, when the facility is operating during weekdays and occasional weekends.

5.1 WATCH PHASE

Staff Related

- Conduct a shift meeting(s) or other form of communication to remind employees to prioritize the environmental impact of their operations to reduce emissions in accordance with this plan.
- Share / review procedures which would help ensure sufficient staff levels and available resources to implement a warning phase.
- Review procedures with employees to ensure all equipment is properly operating in a way to minimize air emissions.

Equipment Related

- Inspect dry bulk storage piles, roadways, and material handling equipment to ensure proper operation and good housekeeping is maintained.
- Ensure street sweeping equipment and water truck is in good working order before operating.
- Review / evaluate current procedures for proper operation and maintenance of wet suppression systems.
- Ensure the source is following the idling requirements under Act 124 of the PA Department of Environmental Protection regulations.

For the Watch Phase, RiverLift has developed a general checklist and inspection checklists for each process / activity associated with a mitigation practice, serving as a procedure to ensure good engineering practices, in preparation for a Warning Phase. These checklists, provided in Appendix C, will be completed and maintained for each Watch Phase and will be provided to ACHD as part of the reporting required after each Warning Phase.

5.2 WARNING PHASE

Barge Unloading Operation (P002)

- Commit to the addition of water via a water spray from the water truck or other means directly to material in barge prior to unloading (bulk materials – salt, coal, coke), conditionally for products requiring dust suppression based on observation of incoming product moisture and consideration of customer specifications.

Barge Loading Operation (P003)

- Commit to application of water sprays / wet suppression at hopper to conveyor transfer point at Spar Barge Loadout.

Railcar Unloading Operation (P004) / Railcar Loading Operation (P005)

- If future business activity at these operations dictate, RiverLift will commit to wet suppression capability at the transfer point to conveyor belt (following bottom unload) when the ambient temperature is greater than 32 degrees Fahrenheit for products requiring dust suppression based on observation of product moisture and customer specifications. No mitigation is currently being proposed based on lack of meaningful reduction.

Storage Piles (F001)

- Highway salt → salt is not generally dusty, as it develops crust from humidity; if open working face has potential to emit dust based on observations / weather conditions, RiverLift will dampen down or treat.

- Coal → spraying with side sprayer from water truck or hand wand (i.e., firehose) or use of Chemical Dust Control DC-661 (38% concentration); baseline is once or twice a week on piles but will be used during Warning Phase events as well.

Roads / Vehicular Traffic (F002)

- Apply dust Chemical Dust Control DC-661 (38% concentration) solution on roadways during Warning Phase events.

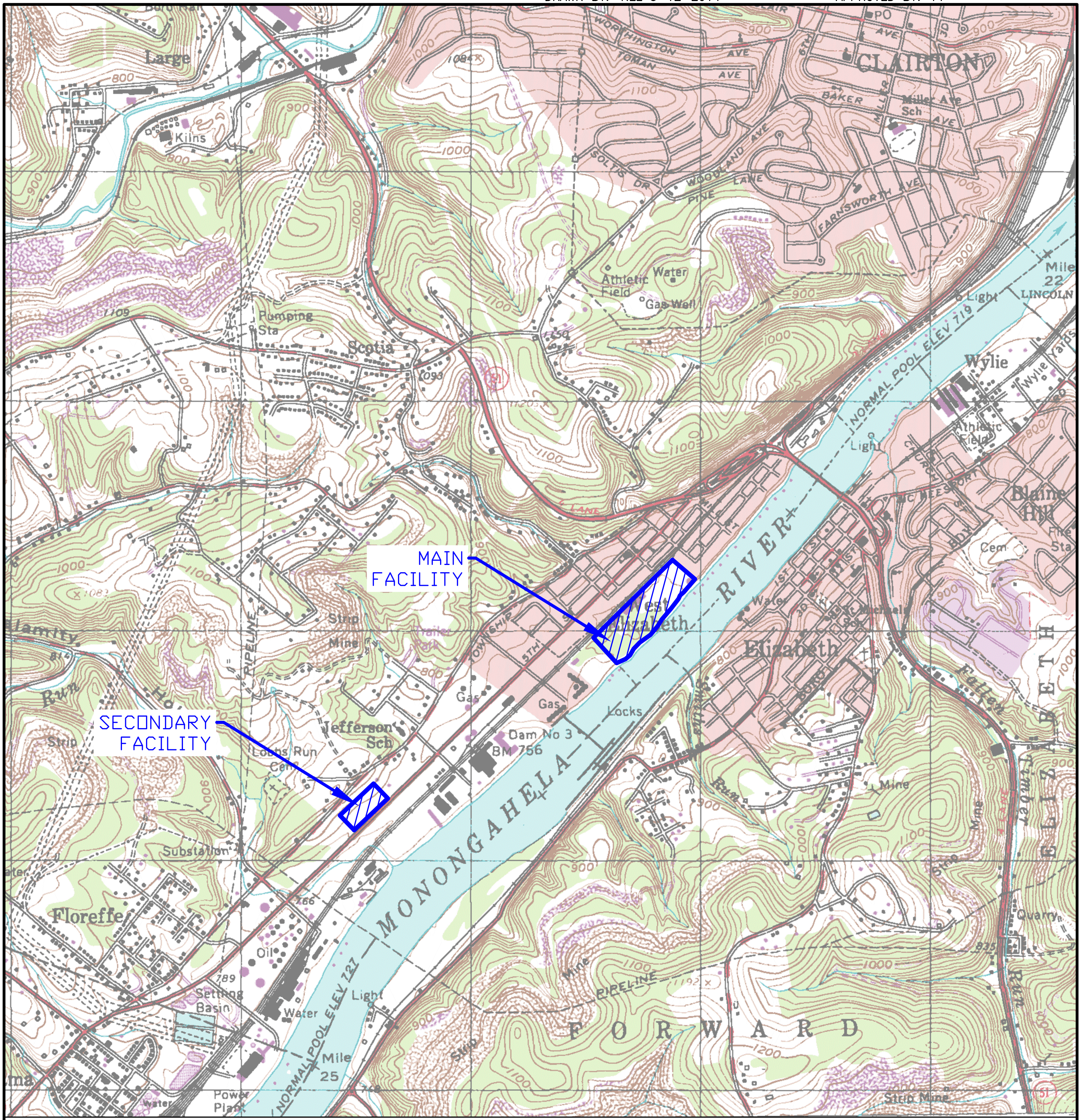
When the facility is operating (i.e., weekdays or occasional weekends), RiverLift can fully implement each of these mitigation practices within approximately 1 – 2 hours and 4 – 6 hours cumulatively after notification to the source of a Mon Valley Air Pollution Watch, but certainly no worse than the 24-hour time period prescribed by the Mon Valley Air Pollution Episode Rule at 2106.06(e). If notification of a Watch Phase occurs on a Friday or Saturday, and the facility is not operating on that weekend, preparation for implementation would not apply. In these instances, and if a notification of a Watch Phase notification occurs on a Sunday, RiverLIft will conduct Watch Phase practices and implement the Warning Phase mitigation practices prior to the operation of each process on a Monday, assuming a Warning Phase is in effect.

For a Warning Phase, RiverLift has developed recordkeeping forms at each process / activity to capture/record the mitigation actions taken during the length of a particular episode. Production throughput at rail and barge handling will also be recorded. Blank recordkeeping forms to be utilized during a Warning Phase are included as Appendix D. Documentation during a Warning Phase will be provided to the ACHD in the form of a report within 30 days after each Warning Phase has ended. As stated above, RiverLift will notify ACHD as part of this reporting (or otherwise) if future business activity is expected to change at Railcar Unloading / Railcar Loading and will comply accordingly with the proposed plan for these processes.

RiverLift's Operations Manager and upper management (President) will be responsible for ensuring that mitigation practices are implemented during a Warning Phase and associated records will be maintained.

FIGURES

DRAWN BY: NEL 3-12-2014 APPROVED BY: PP



SCALE 1:24000

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CONTOUR INTERVAL 20 FEET

PENNSYLVANIA

GLASSPORT QUADRANGLE

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RiverLift Industries, Inc. West Elizabeth, Pennsylvania Project No.: 3410191186	wood. Environment & Infrastructure Solutions, Inc. 4600 J Barry Court, Suite 210 Canonsburg, PA 15317	Site Location Map Figure: 1	1

P:\PROJECTS\RiverLift Industries, Inc\3410191186 Tank Permitting\CADD\DRAFT\Site Location Map 1.dwg Thu, 10 Jan 2019 - 3:51pm Steve.Mazza


837
5th St
Madison St
Viola St
Burnett
6th St
Robinson
Grant St
Alley
Pennsylvania 837
4th St
3rd St
Madison Ave
Border St
1st St
Lock and Dam No.3
© 2016 Google
Google earth
Tour Guide
1993
Imagery Date: 4/17/2016
40°16'07.60" N 79°53'53.53" W elev 745 ft eye alt 3643 ft

TABLES

TABLE 1
RIVERLIFT INDUSTRIES, INC.
West Elizabeth, Pennsylvania

SUMMARY OF AVERAGE ACTUAL ANNUAL, HOURLY, AND DAILY PM10/PM2.5 EMISSIONS (2017-2020)

Emission Unit	Emissions Unit ID	Average Actual Emissions (tons/yr) (2017 - 2020)		Average Annual Operating Hours (hrs/yr)	Average Hourly Emissions (lbs/hr) (2017 - 2020)		Average Daily Operating Hours (hrs/day)	Average Daily Emissions (lbs/day) (2017 - 2020)	
		PM10	PM2.5		PM10	PM2.5		PM10	PM2.5
Barge Unloading	P002	0.79	0.79	2,600	0.6047	0.6047	10	6.0	6.0
Barge Loading	P003	2.89	2.89	2,600	2.23	2.23	10	22.3	22.3
Railcar Unloading	P004	0.05	0.05	1,000	0.11	0.11	10	1.1	1.1
Railcar Loading	P005	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Storage Piles & Handling	F001	0.33	0.05	8,760	0.08	0.01	24	1.8	0.28
Roadways	F002	0.17	0.04	2,600	0.13	0.03	10	1.3	0.32
TOTAL		**4.23**	**3.82**		**3.14**	**2.98**		**32.5**	**30.0**

TABLE 2
RIVERLIFT INDUSTRIES, INC.
West Elizabeth, Pennsylvania

SUMMARY OF ACTUAL ANNUAL PM10/PM2.5 EMISSIONS (2017-2020)

Emission Unit	Emissions Unit ID	Actual Emissions (tons/yr)								Average Actual Emissions (tons/yr) (2017 - 2020)	
		2017		2018		2019		2020			
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Barge Unloading	P002	0.59	0.59	0.94	0.94	1.01	1.01	0.61	0.61	0.79	0.79
Barge Loading	P003	3.05	3.05	4.32	4.32	2.47	2.47	1.73	1.73	2.89	2.89
Railcar Unloading	P004	0.046	0.046	0.00	0.00	0.15	0.15	0.02	0.02	0.05	0.05
Railcar Loading	P005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Storage Piles & Handling	F001	0.36	0.05	0.46	0.07	0.31	0.05	0.20	0.03	0.33	0.05
Roadways	F002	0.16	0.04	0.22	0.05	0.17	0.04	0.13	0.03	0.17	0.04
TOTAL		**4.21**	**3.78**	**5.93**	**5.38**	**4.12**	**3.72**	**2.68**	**2.42**	**4.23**	**3.82**

TABLE 3
RIVERLIFT INDUSTRIES, INC.
West Elizabeth, Pennsylvania

SUMMARY OF POTENTIAL PM10/PM2.5 EMISSIONS REDUCTIONS FROM AVERAGE HOURLY BASELINE EMISSIONS

Emission Unit	Emissions Unit ID	Average Hourly Emissions (lbs/hr) (2017 - 2020)		Mitigation Plan Control Measure / Control Efficiency	Post Mitigation Average Hourly Emissions (lbs/hr)		% Reduction from Baseline		Average Hourly Reduction (lbs/hr)	
		PM10	PM2.5		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Barge Unloading	P002	0.60	0.60	Wet suppression (as required) / 50%	0.30	0.30	50.0%	50.0%	0.30	0.30
Barge Loading	P003	2.23	2.23	Wet suppression (Spar Barge Loadout) / 80%	1.74	1.74	22.0%	22.0%	0.49	0.49
Railcar Unloading	P004	0.11	0.11	NA	0.11	0.11	-	-	-	-
Railcar Loading	P005	0.00	0.00	NA	0.00	0.00	-	-	-	-
Storage Piles & Handling	F001	0.08	0.012	Wet suppression / Dust Suppressant / 90%	0.021	0.003	72.8%	72.8%	0.06	0.01
Roadways	F002	0.13	0.03	Dust Suppressant / 90%	0.065	0.016	50.0%	50.0%	0.06	0.016
TOTAL		**3.14**	**2.98**		**2.23**	**2.17**			**0.91**	**0.82**

Notes:

1. Baseline and post-mitigation emissions are summed as if the emission units are concurrent, continuous operations, which is a conservative representation.
2. Basis for post mitigation average hourly emissions are as follows:
   a. Barge Unloading (as required): 50% control efficiency from water addition via clamshell bucket
   b. Barge Loading: 80% control efficiency from direct wet suppression at hopper to belt conveyor transfer point and similar effectiveness at downstream belt conveyor to barge transfer point; no change at initial transfer point (i.e., front end loader to hopper)
   c. Storage Piles & Handling: 90% control efficiency at coal piles via water spray or Chemical Dust Control DC-661 (38% concentration); no committed change for highway salt piles (i.e., conditional only)
   d. Roadways: enhanced control efficiency to 90% for application of Chemical Dust Control DC-661 (38% concentration) solution on roadways; 80% control efficiency applied for baseline based on watering / vacuum sweeping program

APPENDIX A

Appendix A
RiverLift Industries, Inc.
2017 Actual Particulate Emissions Inventory

Process ID	Process / Segment Description	Drop Point Description	2017 Throughput (units/yr)	Units	Mean Wind Speed U (mph)	Moisture Content (%)	PM 2.5 Emission Factor (lbs/unit)	PM 10 Emission Factor (lbs/unit)	PM Emission Factor (lbs/unit)	PM 2.5 Emissions (TPY)	PM 10 Emissions (TPY)	PM Emissions (TPY)
P002	Barge Unloading		202,500	tons	NA	NA	0.0058	0.0058	0.0088	0.5873	0.5873	0.8910
	Storage Pile #1 Bauxite		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #2 Bark Mulch		0	tons	10	8	0.00006	0.00040	0.00084	0.0000	0.0000	0.0000
	Stg. Pile #3 Manganese Ore		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #4 Hwy Salt #1		19,700	tons	10	5	0.00012	0.00076	0.00162	0.0011	0.0075	0.0159
	Stg. Pile #5 Hwy Salt #2		25,500	tons	10	5	0.00012	0.00076	0.00162	0.0015	0.0097	0.0206
	Stg. Pile #6 Manf. Sand		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #7 Steel Scrap		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #8 Shot Gravel		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #9 #8 Limestone		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #10 #57 Limestone		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #11 River Sand		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #12 #3 Limestone		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Coal Storage Piles		903,000	tons	10	5	0.00012	0.00076	0.00162	0.0523	0.3452	0.7299
	Stg. Pile #13 2A Limestone		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
		Subtotal Storage Piles								**0.0549**	**0.3625**	**0.7664**
	Paved Roads	Front-End Loaders	750	miles traveled	NA	NA	0.12	0.50	2.51	0.0092	0.0376	0.1879
		Articulated Rock Trucks	2,070	miles traveled	NA	NA	0.15	0.60	2.99	0.0304	0.1239	0.6194
		Subtotal Paved Roads								**0.0396**	**0.1615**	**0.8073**
P003	Barge Loading	Front End Loader to Hopper	763,500	tons	NA	NA	0.0058	0.0058	0.0088	2.2142	2.2142	3.3594
		Hopper to Belt Conveyor	763,500	tons	NA	NA	0.0011	0.0011	0.0030	0.4199	0.4199	1.1453
		Conveyor Transfer to Barge	763,500	tons	NA	NA	0.0011	0.0011	0.0030	0.4199	0.4199	1.1453
		Subtotal Barge Loading								**3.0540**	**3.0540**	**5.6499**
P004	Railcar Unloading	Railcar Dump to Hopper	10,000	tons	NA	NA	0.0058	0.0058	0.0088	0.0290	0.0290	0.0440
		Hopper Transfer to Belt Conveyor	10,000	tons	NA	NA	0.0011	0.0011	0.0030	0.0055	0.0055	0.0150
		Belt Conveyor to Stacker	10,000	tons	NA	NA	0.0011	0.0011	0.0030	0.0055	0.0055	0.0150
		Stacker Transfer to Trucks	10,000	tons	NA	NA	0.0011	0.0011	0.0030	0.0055	0.0055	0.0150
		Subtotal Railcar Unloading								**0.0455**	**0.0455**	**0.0890**
P005	Railcar Loading	Front end loader dump to hopper	0	tons	NA	NA	0.0058	0.0058	0.0088	0.0000	0.0000	0.0000
		Hopper transfer to belt conveyor	0	tons	NA	NA	0.0011	0.0011	0.0030	0.0000	0.0000	0.0000
		Conveyor belt transfer to railcar	0	tons	NA	NA	0.0011	0.0011	0.0030	0.0000	0.0000	0.0000
		Subtotal Railcar Loading								**0.0000**	**0.0000**	**0.0000**
									Total	**3.78**	**4.21**	**8.20**

Appendix A-1 Notes:

1. TSP and PM10 emission factors for Crane Unloading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2. The PM2.5 emission factor is assumed to be equivalent to PM10.
2. Emission factors for Storage Piles are based upon AP-42, Section 13.2.4 (November 2006), with application of the appropriate size multiplier, and assuming a wind speed of 10 mph and a variable pile-specific moisture content, as follows:

$$E = k\,(0.0032)\,(U/5)^{1.3} / (M/2)^{1.4}$$

where, k = particle size multiplier (TSP - 0.74, PM10 - 0.35, PM2.5 - 0.053)
U = mean wind speed (mph) = 10 mph
M = moisture content (%)
E = emission factor (lbs/ton)

3. Particulate emission factors for Paved Roads are based on AP-42, Chapter 13.2.1 (Paved Roads), Equation 2 (January 2011), as follows:

$$E = [k\,(sL)^{0.91} \times (W)^{1.02}]\,(1 - P/4N)$$

where, E = particulate emission factor (lbs/VMT)
k = particle size multiplier for particle size range (PM - 0.011, PM10 - 0.0022, PM2.5 - 0.00054)
sL = road surface silt loading (g/m2) = 9.7 (AP-42, Table 13.2.1-3 for Iron and Steel Production)
W = average weight of vehicles travelling road (tons) = 30
P = number of "wet" days with at least 0.01 in. of precipitation during the averaging period = 150
N = number of days in the averaging period = 365

Vehicle miles traveled based on 750 miles for dedicated front-end loaders + 3 miles traveled per barge (i.e., 1,500 tons) associated with barge unloading or barge loading (i.e., 1,035,000 tons/yr x 3 miles / 1,500 tons = 2,070 miles/yr)
Control efficiency based on maximum of watering and sweeping activities from OEPA RACM document (75% for sweeping/vacuum, 80% for watering)

4. TSP and PM10 emission factors for Barge Loading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2 for conveyor transfer and AP-42, Chapter 12.5 (Iron and Steel Production), Table 12.5-4 for front-end loader batch drops, with no application of a 80% control efficiency for dust suppression via water sprays (occurs as needed). The PM2.5 emission factor is assumed to be equivalent to PM10.
5. TSP and PM10 emission factors for Railcar Unloading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2 for conveyor transfer and AP-42, Chapter 12.5 (Iron and Steel Production), Table 12.5-4 for batch drops. The PM2.5 emission factor is assumed to be equivalent to PM10.
6. TSP and PM10 emission factors for Railcar Loading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2 for conveyor transfer and AP-42, Chapter 12.5 (Iron and Steel Production), Table 12.5-4 for batch drops. The PM2.5 emission factor is assumed to be equivalent to PM10.
7. NA = not applicable

Appendix A
RiverLift Industries, Inc.
2018 Actual Particulate Emissions Inventory

Process ID	Process / Segment Description	Drop Point Description	2018 Throughput (units/yr)	Units	Mean Wind Speed U (mph)	Moisture Content (%)	PM 2.5 Emission Factor (lbs/unit)	PM 10 Emission Factor (lbs/unit)	PM Emission Factor (lbs/unit)	PM 2.5 Emissions (TPY)	PM 10 Emissions (TPY)	PM Emissions (TPY)
P002	Barge Unloading		322,500	tons	NA	NA	0.0058	0.0058	0.0088	0.9353	0.9353	1.4190
	Storage Pile #1 Bauxite		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #2 Bark Mulch		0	tons	10	8	0.00006	0.00040	0.00084	0.0000	0.0000	0.0000
	Stg. Pile #3 Manganese Ore		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #4 Hwy Salt #1		118,500	tons	10	5	0.00012	0.00076	0.00162	0.0069	0.0453	0.0958
	Stg. Pile #5 Hwy Salt #2		58,500	tons	10	5	0.00012	0.00076	0.00162	0.0034	0.0224	0.0473
	Stg. Pile #6 Manf. Sand		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #7 Steel Scrap		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #8 Shot Gravel		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #9 #8 Limestone		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #10 #57 Limestone		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #11 River Sand		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #12 #3 Limestone		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Coal Storage Piles		1,013,500	tons	10	5	0.00012	0.00076	0.00162	0.0587	0.3875	0.8192
	Stg. Pile #13 2A Limestone		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
		Subtotal Storage Piles								**0.0689**	**0.4551**	**0.9623**
	Paved Roads	Front-End Loaders	750	miles traveled	NA	NA	0.12	0.50	2.51	0.0092	0.0376	0.1879
		Articulated Rock Trucks	2,999	miles traveled	NA	NA	0.15	0.60	2.99	0.0441	0.1795	0.8974
		Subtotal Paved Roads								**0.0533**	**0.2171**	**1.0853**
P003	Barge Loading	Front End Loader to Hopper	1,079,500	tons	NA	NA	0.0058	0.0058	0.0088	3.1306	3.1306	4.7498
		Hopper to Belt Conveyor	1,079,500	tons	NA	NA	0.0011	0.0011	0.0030	0.5937	0.5937	1.6193
		Conveyor Transfer to Barge	1,079,500	tons	NA	NA	0.0011	0.0011	0.0030	0.5937	0.5937	1.6193
		Subtotal Barge Loading								**4.3180**	**4.3180**	**7.9883**
P004	Railcar Unloading	Railcar Dump to Hopper	0	tons	NA	NA	0.0058	0.0058	0.0088	0.0000	0.0000	0.0000
		Hopper Transfer to Belt Conveyor	0	tons	NA	NA	0.0011	0.0011	0.0030	0.0000	0.0000	0.0000
		Belt Conveyor to Stacker	0	tons	NA	NA	0.0011	0.0011	0.0030	0.0000	0.0000	0.0000
		Stacker Transfer to Trucks	0	tons	NA	NA	0.0011	0.0011	0.0030	0.0000	0.0000	0.0000
		Subtotal Railcar Unloading								**0.0000**	**0.0000**	**0.0000**
P005	Railcar Loading	Front end loader dump to hopper	0	tons	NA	NA	0.0058	0.0058	0.0088	0.0000	0.0000	0.0000
		Hopper transfer to belt conveyor	0	tons	NA	NA	0.0011	0.0011	0.0030	0.0000	0.0000	0.0000
		Conveyor belt transfer to railcar	0	tons	NA	NA	0.0011	0.0011	0.0030	0.0000	0.0000	0.0000
		Subtotal Railcar Loading								**0.0000**	**0.0000**	**0.0000**
									Total	**5.38**	**5.93**	**11.45**

Appendix A-2 Notes:

1. TSP and PM10 emission factors for Crane Unloading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2. The PM2.5 emission factor is assumed to be equivalent to PM10.
2. Emission factors for Storage Piles are based upon AP-42, Section 13.2.4 (November 2006), with application of the appropriate size multiplier, and assuming a wind speed of 10 mph and a variable pile-specific moisture content, as follows:

$$E = k\,(0.0032)\,(U/5)^{1.3} / (M/2)^{1.4}$$

where, k = particle size multiplier (TSP - 0.74, PM10 - 0.35, PM2.5 - 0.053)
U = mean wind speed (mph) = 10 mph
M = moisture content (%)
E = emission factor (lbs/ton)

3. Particulate emission factors for Paved Roads are based on AP-42, Chapter 13.2.1 (Paved Roads), Equation 2 (January 2011), as follows:

$$E = [k\,(sL)^{0.91} \times (W)^{1.02}]\,(1 - P/4N)$$

where, E = particulate emission factor (lbs/VMT)
k = particle size multiplier for particle size range (PM - 0.011, PM10 - 0.0022, PM2.5 - 0.00054)
sL = road surface silt loading (g/m2) = 9.7 (AP-42, Table 13.2.1-3 for Iron and Steel Production)
W = average weight of vehicles travelling road (tons) = 30
P = number of "wet" days with at least 0.01 in. of precipitation during the averaging period = 150
N = number of days in the averaging period = 365

Vehicle miles traveled based on 750 miles for dedicated front-end loaders + 3 miles traveled per barge (i.e., 1,500 tons) associated with barge unloading or barge loading (i.e., 1,499,500 tons/yr x 3 miles / 1,500 tons = 2,999 miles/yr)
Control efficiency based on maximum of watering and sweeping activities from OEPA RACM document (75% for sweeping/vacuum, 80% for watering)

4. TSP and PM10 emission factors for Barge Loading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2 for conveyor transfer and AP-42, Chapter 12.5 (Iron and Steel Production), Table 12.5-4 for front-end loader batch drops, with no application of a 80% control efficiency for dust suppression via water sprays (occurs as needed). The PM2.5 emission factor is assumed to be equivalent to PM10.
5. TSP and PM10 emission factors for Railcar Unloading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2 for conveyor transfer and AP-42, Chapter 12.5 (Iron and Steel Production), Table 12.5-4 for batch drops. The PM2.5 emission factor is assumed to be equivalent to PM10.
6. TSP and PM10 emission factors for Railcar Loading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2 for conveyor transfer and AP-42, Chapter 12.5 (Iron and Steel Production), Table 12.5-4 for batch drops. The PM2.5 emission factor is assumed to be equivalent to PM10.
7. NA = not applicable

Appendix A
RiverLift Industries, Inc.
2019 Actual Particulate Emissions Inventory

Process ID	Process / Segment Description	Drop Point Description	2019 Throughput (units/yr)	Units	Mean Wind Speed U (mph)	Moisture Content (%)	PM 2.5 Emission Factor (lbs/unit)	PM 10 Emission Factor (lbs/unit)	PM Emission Factor (lbs/unit)	PM 2.5 Emissions (TPY)	PM 10 Emissions (TPY)	PM Emissions (TPY)
P002	Barge Unloading		349,200	tons	NA	NA	0.0058	0.0058	0.0088	1.0127	1.0127	1.5365
	Storage Pile #1 Bauxite		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #2 Bark Mulch		0	tons	10	8	0.00006	0.00040	0.00084	0.0000	0.0000	0.0000
	Stg. Pile #3 Manganese Ore		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #4 Hwy Salt #1		190,100	tons	10	5	0.00012	0.00076	0.00162	0.0110	0.0727	0.1537
	Stg. Pile #5 Hwy Salt #2		88,500	tons	10	5	0.00012	0.00076	0.00162	0.0051	0.0338	0.0715
	Stg. Pile #6 Manf. Sand		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #7 Steel Scrap		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #8 Shot Gravel		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #9 #8 Limestone		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #10 #57 Limestone		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #11 River Sand		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #12 #3 Limestone		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Coal Storage Piles		540,700	tons	10	5	0.00012	0.00076	0.00162	0.0313	0.2067	0.4370
	Stg. Pile #13 2A Limestone		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
		Subtotal Storage Piles								**0.0474**	**0.3132**	**0.6622**
	Paved Roads	Front-End Loaders	750	miles traveled	NA	NA	0.12	0.50	2.51	0.0092	0.0376	0.1879
		Articulated Rock Trucks	2,152	miles traveled	NA	NA	0.15	0.60	2.99	0.0316	0.1288	0.6440
		Subtotal Paved Roads								**0.0408**	**0.1664**	**0.8320**
P003	Barge Loading	Front End Loader to Hopper	617,500	tons	NA	NA	0.0058	0.0058	0.0088	1.7908	1.7908	2.7170
		Hopper to Belt Conveyor	617,500	tons	NA	NA	0.0011	0.0011	0.0030	0.3396	0.3396	0.9263
		Conveyor Transfer to Barge	617,500	tons	NA	NA	0.0011	0.0011	0.0030	0.3396	0.3396	0.9263
		Subtotal Barge Loading								**2.4700**	**2.4700**	**4.5695**
P004	Railcar Unloading	Railcar Dump to Hopper	33,700	tons	NA	NA	0.0058	0.0058	0.0088	0.0977	0.0977	0.1483
		Hopper Transfer to Belt Conveyor	33,700	tons	NA	NA	0.0011	0.0011	0.0030	0.0185	0.0185	0.0506
		Belt Conveyor to Stacker	33,700	tons	NA	NA	0.0011	0.0011	0.0030	0.0185	0.0185	0.0506
		Stacker Transfer to Trucks	33,700	tons	NA	NA	0.0011	0.0011	0.0030	0.0185	0.0185	0.0506
		Subtotal Railcar Unloading								**0.1533**	**0.1533**	**0.2999**
P005	Railcar Loading	Front end loader dump to hopper	0	tons	NA	NA	0.0058	0.0058	0.0088	0.0000	0.0000	0.0000
		Hopper transfer to belt conveyor	0	tons	NA	NA	0.0011	0.0011	0.0030	0.0000	0.0000	0.0000
		Conveyor belt transfer to railcar	0	tons	NA	NA	0.0011	0.0011	0.0030	0.0000	0.0000	0.0000
		Subtotal Railcar Loading								**0.0000**	**0.0000**	**0.0000**
									Total	**3.72**	**4.12**	**7.90**

Appendix A-3 Notes:

1. TSP and PM10 emission factors for Crane Unloading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2. The PM2.5 emission factor is assumed to be equivalent to PM10.
2. Emission factors for Storage Piles are based upon AP-42, Section 13.2.4 (November 2006), with application of the appropriate size multiplier, and assuming a wind speed of 10 mph and a variable pile-specific moisture content, as follows:

$$E = k\,(0.0032)\,(U/5)^{1.3} / (M/2)^{1.4}$$

where, k = particle size multiplier (TSP - 0.74, PM10 - 0.35, PM2.5 - 0.053)
U = mean wind speed (mph) = 10 mph
M = moisture content (%)
E = emission factor (lbs/ton)

3. Particulate emission factors for Paved Roads are based on AP-42, Chapter 13.2.1 (Paved Roads), Equation 2 (January 2011), as follows:

$$E = [k\,(sL)^{0.91} \times (W)^{1.02}]\,(1 - P/4N)$$

where, E = particulate emission factor (lbs/VMT)
k = particle size multiplier for particle size range (PM - 0.011, PM10 - 0.0022, PM2.5 - 0.00054)
sL = road surface silt loading (g/m2) = 9.7 (AP-42, Table 13.2.1-3 for Iron and Steel Production)
W = average weight of vehicles travelling road (tons) = 30
P = number of "wet" days with at least 0.01 in. of precipitation during the averaging period = 150
N = number of days in the averaging period = 365

Vehicle miles traveled based on 750 miles for dedicated front-end loaders + 3 miles traveled per barge (i.e., 1,500 tons) associated with barge unloading or barge loading (i.e., 1,076,200 tons/yr x 3 miles / 1,500 tons = 2,152.4 miles/yr)
Control efficiency based on maximum of watering and sweeping activities from OEPA RACM document (75% for sweeping/vacuum, 80% for watering)

4. TSP and PM10 emission factors for Barge Loading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2 for conveyor transfer and AP-42, Chapter 12.5 (Iron and Steel Production), Table 12.5-4 for front-end loader batch drops, with no application of a 80% control efficiency for dust suppression via water sprays (occurs as needed). The PM2.5 emission factor is assumed to be equivalent to PM10.
5. TSP and PM10 emission factors for Railcar Unloading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2 for conveyor transfer and AP-42, Chapter 12.5 (Iron and Steel Production), Table 12.5-4 for batch drops. The PM2.5 emission factor is assumed to be equivalent to PM10.
6. TSP and PM10 emission factors for Railcar Loading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2 for conveyor transfer and AP-42, Chapter 12.5 (Iron and Steel Production), Table 12.5-4 for batch drops. The PM2.5 emission factor is assumed to be equivalent to PM10.
7. NA = not applicable

Appendix A
RiverLift Industries, Inc.
2020 Actual Particulate Emissions Inventory

Process ID	Process / Segment Description	Drop Point Description	2020 Throughput (units/yr)	Units	Mean Wind Speed U (mph)	Moisture Content (%)	PM 2.5 Emission Factor (lbs/unit)	PM 10 Emission Factor (lbs/unit)	PM Emission Factor (lbs/unit)	PM 2.5 Emissions (TPY)	PM 10 Emissions (TPY)	PM Emissions (TPY)
P002	Barge Unloading		210,000	tons	NA	NA	0.0058	0.0058	0.0088	0.6090	0.6090	0.9240
	Storage Pile #1 Bauxite		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #2 Bark Mulch		0	tons	10	8	0.00006	0.00040	0.00084	0.0000	0.0000	0.0000
	Stg. Pile #3 Manganese Ore		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #4 Hwy Salt #1		155,600	tons	10	5	0.00012	0.00076	0.00162	0.0090	0.0595	0.1258
	Stg. Pile #5 Hwy Salt #2		7,500	tons	10	5	0.00012	0.00076	0.00162	0.0004	0.0029	0.0061
	Stg. Pile #6 Manf. Sand		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #7 Steel Scrap		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #8 Shot Gravel		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Stg. Pile #9 #8 Limestone		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #10 #57 Limestone		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #11 River Sand		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
	Stg. Pile #12 #3 Limestone		0	tons	10	5	0.00012	0.00076	0.00162	0.0000	0.0000	0.0000
	Coal Storage Piles		360,000	tons	10	5	0.00012	0.00076	0.00162	0.0208	0.1376	0.2910
	Stg. Pile #13 2A Limestone		0	tons	10	6	0.00009	0.00059	0.00125	0.0000	0.0000	0.0000
		Subtotal Storage Piles								**0.0303**	**0.2000**	**0.4228**
	Paved Roads	Front-End Loaders	750	miles traveled	NA	NA	0.12	0.50	2.51	0.0092	0.0376	0.1879
		Articulated Rock Trucks	1,497	miles traveled	NA	NA	0.15	0.60	2.99	0.0220	0.0896	0.4479
		Subtotal Paved Roads								**0.0312**	**0.1272**	**0.6359**
P003	Barge Loading	Front End Loader to Hopper	432,000	tons	NA	NA	0.0058	0.0058	0.0088	1.2528	1.2528	1.9008
		Hopper to Belt Conveyor	432,000	tons	NA	NA	0.0011	0.0011	0.0030	0.2376	0.2376	0.6480
		Conveyor Transfer to Barge	432,000	tons	NA	NA	0.0011	0.0011	0.0030	0.2376	0.2376	0.6480
		Subtotal Barge Loading								**1.7280**	**1.7280**	**3.1968**
P004	Railcar Unloading	Railcar Dump to Hopper	4,100	tons	NA	NA	0.0058	0.0058	0.0088	0.0119	0.0119	0.0180
		Hopper Transfer to Belt Conveyor	4,100	tons	NA	NA	0.0011	0.0011	0.0030	0.0023	0.0023	0.0062
		Belt Conveyor to Stacker	4,100	tons	NA	NA	0.0011	0.0011	0.0030	0.0023	0.0023	0.0062
		Stacker Transfer to Trucks	4,100	tons	NA	NA	0.0011	0.0011	0.0030	0.0023	0.0023	0.0062
		Subtotal Railcar Unloading								**0.0187**	**0.0187**	**0.0365**
P005	Railcar Loading	Front end loader dump to hopper	0	tons	NA	NA	0.0058	0.0058	0.0088	0.0000	0.0000	0.0000
		Hopper transfer to belt conveyor	0	tons	NA	NA	0.0011	0.0011	0.0030	0.0000	0.0000	0.0000
		Conveyor belt transfer to railcar	0	tons	NA	NA	0.0011	0.0011	0.0030	0.0000	0.0000	0.0000
		Subtotal Railcar Loading								**0.0000**	**0.0000**	**0.0000**
									Total	**2.42**	**2.68**	**5.22**

Appendix A-4 Notes:

1. TSP and PM10 emission factors for Crane Unloading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2. The PM2.5 emission factor is assumed to be equivalent to PM10.
2. Emission factors for Storage Piles are based upon AP-42, Section 13.2.4 (November 2006), with application of the appropriate size multiplier, and assuming a wind speed of 10 mph and a variable pile-specific moisture content, as follows:

$$E = k\,(0.0032)\,(U/5)^{1.3} / (M/2)^{1.4}$$

where, k = particle size multiplier (TSP - 0.74, PM10 - 0.35, PM2.5 - 0.053)
U = mean wind speed (mph) = 10 mph
M = moisture content (%)
E = emission factor (lbs/ton)

3. Particulate emission factors for Paved Roads are based on AP-42, Chapter 13.2.1 (Paved Roads), Equation 2 (January 2011), as follows:

$$E = [k\,(sL)^{0.91} \times (W)^{1.02}]\,(1 - P/4N)$$

where, E = particulate emission factor (lbs/VMT)
k = particle size multiplier for particle size range (PM - 0.011, PM10 - 0.0022, PM2.5 - 0.00054)
sL = road surface silt loading (g/m2) = 9.7 (AP-42, Table 13.2.1-3 for Iron and Steel Production)
W = average weight of vehicles travelling road (tons) = 30
P = number of "wet" days with at least 0.01 in. of precipitation during the averaging period = 150
N = number of days in the averaging period = 365

Vehicle miles traveled based on 750 miles for dedicated front-end loaders + 3 miles traveled per barge (i.e., 1,500 tons) associated with barge unloading or barge loading (i.e., 748,500 tons/yr x 3 miles / 1,500 tons = 1,497 miles/yr)
Control efficiency based on maximum of watering and sweeping activities from OEPA RACM document (75% for sweeping/vacuum, 80% for watering)

4. TSP and PM10 emission factors for Barge Loading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2 for conveyor transfer and AP-42, Chapter 12.5 (Iron and Steel Production), Table 12.5-4 for front-end loader batch drops, with no application of a 80% control efficiency for dust suppression via water sprays (occurs as needed). The PM2.5 emission factor is assumed to be equivalent to PM10.
5. TSP and PM10 emission factors for Railcar Unloading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2 for conveyor transfer and AP-42, Chapter 12.5 (Iron and Steel Production), Table 12.5-4 for batch drops. The PM2.5 emission factor is assumed to be equivalent to PM10.
6. TSP and PM10 emission factors for Railcar Loading are based on AP-42, Chapter 11.19.2 (Crushed Stone Processing), Table 11.19.2-2 for conveyor transfer and AP-42, Chapter 12.5 (Iron and Steel Production), Table 12.5-4 for batch drops. The PM2.5 emission factor is assumed to be equivalent to PM10.
7. NA = not applicable

APPENDIX B

Appendix B
RiverLift Industries, Inc.
Jan-Dec 2017- RL Air Inventory Report

Jan-Dec 2017- RL Air Inventory Report																**Outside**
Barge Handling- Unloading	**Jan**	**Feb**	**March**	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**totals**	**Mode**	**Storage**	**avg stck pl sz**
Distiller Dried Grain	-												-	barge unloading	inside	
Aggregate - Gravel													-	barge unloading	none - direct transferred from barge to truck	
Sand-Barge													-	barge unloading	inside	
Steel Wire													-	barge unloading	outside	-
Steel Pipe													-	barge unloading	outside	-
Concrete Sand													-	barge unloading	outside	-
Coal-barge	15,000	12,000	22,500	13,500	12,000	-	15,000	9,000	9,000	10,500	10,500	10,500	139,500	barge unloading	outside	8,000
Cotton Seed Hulls													-	barge unloading	inside	
Salt 1 - Barge Unloading	1,500										7,500	9,000	18,000	barge unloading	outside	150,000
Lime													-	barge unloading	none - direct transferred from barge to truck	
Salt 2 - Barge Unloading	1,500	15,000	9,000										25,500	barge unloading	outside	35,000
Salt 3 - Barge Unloading													-	barge unloading	none - direct transferred from barge to truck	
Salt 4- Barge unloading													-	barge unloading	none - direct transferred from barge to truck	
Feed Salt - Barge unloading													-	barge unloading	inside	
Stainless Steel Scrap													-	barge unloading	none - direct transferred from barge to truck	
Manufactured Sand - Barge													-	barge unloading	outside	-
Magnetite													-	barge unloading	inside storage	
Fertilizer1 Potash from Barge													-	barge unloading	inside	
2A limestone													-	barge unloading	outside	-
Chrome Ore	1,500						4,500	6,000			1,500		13,500	barge unloading	inside storage	-
B Scrape											3,000	3,000	6,000	barge unloading	none - direct transferred from barge to truck	
Bricketts													-	barge unloading	none - direct transferred from truck to barge	
HBI		-			-								-	barge unloading	none - direct transferred from barge to truck	
total barge unloading	**19,500**	**27,000**	**31,500**	**13,500**	**12,000**	**-**	**19,500**	**15,000**	**9,000**	**10,500**	**22,500**	**22,500**	**202,500**			
Barge Handling- Loading													-			
Steel Coils	4,500	4,500	6,000	9,000	7,500	4,500	4,500	7,500	1,500	6,000	4,500	4,500	64,500	barge loading	none - direct transferred from truck to barge	
Shredder-Scrap Iron									1,500	1,500	1,500		4,500	barge loading	none - direct transferred from truck to barge	
Magnesite													-	barge loading	truck delivery - out-loaded to barge	
Coke	18,000	4,500	7,500	4,500	4,500	4,500	3,000	16,500	22,500	7,500	4,500	15,000	112,500	barge loading	none - direct transferred from truck to barge	
Coal-1	63,000	54,000	49,500	51,000	58,500	58,500	48,000	63,000	39,000	58,500	55,500	52,500	651,000	barge loading	outside truck delivery - out-loaded to barge	8,000
Coal-2													-	barge loading	outside truck delivery - out-loaded to barge	2,500
	85,500	**63,000**	**63,000**	**64,500**	**70,500**	**67,500**	**55,500**	**87,000**	**64,500**	**73,500**	**66,000**	**72,000**	**832,500**			
Rail Handling	No activity															
Fertilizer2 Potash from Rail													-	rail unloading	inside	
Bauxite										300			300	rail unloading	none - direct transferred from rail to truck	
Salt 5 Rail Unloading													-	rail unloading	none - direct transferred from rail to truck	
Salt 1 - Rail Car Unloading	1,000	600	100										1,700	rail unloading	outside	incled in S1 above
Coke Rail Unloading													-	rail unloading	none - direct transferred from rail to truck	
Sand-Rail Unloading													-	rail unloading	inside	
Scrap - Shredder					200	300	100	400	1,300	2,000	3,500	200	8,000	rail unloading	none - direct transferred from rail to truck	
Total Rail Handling	**1,000**	**600**	**100**	**-**	**200**	**300**	**100**	**400**	**1,300**	**2,300**	**3,500**	**200**	**10,000**			

Outside Stock Piles	Add	Takes
Steel Wire	-	-
Steel Pipe	-	-
Steel Plate		
HW Salt - 1	19,700	19,700
HW Salt - 2	25,500	25,500
Coal-1	651,000	651,000
Coal-2	-	-
Manganese Ore	-	-

Vehicle Emissions- mobile equipment, front-end loaders & cranes													
Diesel Fuel Purchased	7,840	7,532	8,004	5,582	4,971	5,213	4,595	5,648	4,413	5,967	7,259	7,316	74,340
Roadway Sweeping	90	76	88	79	85	64	80	20	95	68	80	67	892
Roadway Water	67	57	66	59	64	48	80	20	96	68	80	55	760

Appendix B
RiverLift Industries, Inc.
Jan-Dec 2018- RL Air Inventory Report

Jan-Dec 2018- RL Air Inventory Report																**Outside**
Barge Handling- Unloading	**Jan**	**Feb**	**March**	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**totals**	**Mode**	**Storage**	**avg stck pl sz**
Distiller Dried Grain													-	barge unloading	inside	
Aggregate - Gravel													-	barge unloading	none - direct transferred from barge to truck	
Sand-Barge													-	barge unloading	inside	
Steel Wire													-	barge unloading	outside	-
Steel Pipe													-	barge unloading	outside	-
Concrete Sand													-	barge unloading	outside	-
Coal-barge	3,000	4,500	9,000	4,500	6,000	10,500	6,000	13,500	12,000	16,500	10,500	16,500	112,500	barge unloading	outside	8,000
Cotton Seed Hulls													-	barge unloading	inside	
Salt 1 - Barge Unloading	6,000	7,500	18,000	7,500	22,500	16,500	3,000		1,500	4,500	24,000	7,500	118,500	barge unloading	outside	150,000
Lime													-	barge unloading	none - direct transferred from barge to truck	
Salt 2 - Barge Unloading	4,500	4,500	16,500	6,000	1,500				7,500	3,000	3,000	12,000	58,500	barge unloading	outside	35,000
Salt 3 - Barge Unloading													-	barge unloading	none - direct transferred from barge to truck	
Salt 4- Barge unloading													-	barge unloading	none - direct transferred from barge to truck	
Treated Salt - Barge unloading											1,500	3,000	4,500	barge unloading	inside	
Stainless Steel Scrap													-	barge unloading	none - direct transferred from barge to truck	
Manufactured Sand - Barge													-	barge unloading	outside	-
Magnetite			1,500					3,000	3,000	1,500		1,500	10,500	barge unloading	inside storage	
Fertilizer1 Potash from Barge													-	barge unloading	inside	
2A limestone													-	barge unloading	outside	-
Chrome Ore	1,500					3,000							4,500	barge unloading	inside storage	-
B Scrape													-	barge unloading	none - direct transferred from barge to truck	
Bricketts			1,500	1,500	1,500						1,500		6,000	barge unloading	none - direct transferred from truck to barge	
HBI	3,000	-		1,500	-	3,000							7,500	barge unloading	none - direct transferred from barge to truck	
total barge unloading	**18,000**	**16,500**	**46,500**	**21,000**	**31,500**	**33,000**	**9,000**	**16,500**	**24,000**	**25,500**	**40,500**	**40,500**	**322,500**			
Barge Handling- Loading													-			
Steel Coils	6,000	4,500	7,500	4,500	10,500	12,000	9,000	10,500	10,500	12,000	6,000	4,500	97,500	barge loading	none - direct transferred from truck to barge	
Shredder-Scrap Iron													-	barge loading	none - direct transferred from truck to barge	
Magnesite													-	barge loading	truck delivery - out-loaded to barge	
Coke	3,000	3,000	3,000	6,000	12,000	4,500	24,000	22,500	19,500	19,500	28,500	33,000	178,500	barge loading	none - direct transferred from truck to barge	
Coal-1	49,500	53,500	57,500	52,500	48,000	40,500	39,000	50,500	369,000	43,500	43,500	42,000	889,000	barge loading	outside truck delivery - out-loaded to barge	8,000
Coal-2	3,000	1,500	3,000	1,500	1,500	1,500							12,000	barge loading	outside truck delivery - out-loaded to barge	2,500
	61,500	**62,500**	**71,000**	**64,500**	**72,000**	**58,500**	**72,000**	**83,500**	**399,000**	**75,000**	**78,000**	**79,500**	**1,177,000**			

Rail Handling	No activity															
Fertilizer2 Potash from Rail													-	rail unloading	inside	
Bauxite														rail unloading	none - direct transferred from rail to truck	
Salt 5 Rail Unloading														rail unloading	none - direct transferred from rail to truck	
Salt 1 - Rail Car Unloading														rail unloading	outside	incled in S1 above
Coke Rail Unloading													-	rail unloading	none - direct transferred from rail to truck	
Sand-Rail Unloading													-	rail unloading	inside	
Scrap - Shredder													-	rail unloading	none - direct transferred from rail to truck	
Total Rail Handling	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**			

Outside Stock Piles	Add	Takes
Steel Wire	-	-
Steel Pipe	-	-
Steel Plate		
HW Salt - 1	118,500	118,500
HW Salt - 2	58,500	58,500
Coal-1	889,000	889,000
Coal-2	12,000	12,000
Manganese Ore	-	-

Vehicle Emissions- mobile equipment, front-end loaders & cranes													
Diesel Fuel Purchased	10,805	7,262	8,569	5,882	5,459	6,604	5,823	6,489	6,500	8,620	8,970	8,152	89,135
Roadway Sweeping	93	75	76	81	79	70	89	87	68	88	73	71	950
Roadway Water	18	23	62	61	75	65	18	31	57	89	76	75	650

Appendix B
RiverLift Industries, Inc.
Jan-Dec 2019- RL Air Inventory Report

Jan-Dec 2019- RL Air Inventory Report																**Outside**
Barge Handling- Unloading	**Jan**	**Feb**	**March**	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**totals**	**Mode**	**Storage**	**avg stck pl sz**
Distiller Dried Grain													-	barge unloading	inside	
Aggregate - Gravel													-	barge unloading	none - direct transferred from barge to truck	
Sand-Barge													-	barge unloading	inside	
Steel Wire													-	barge unloading	outside	-
Steel Pipe													-	barge unloading	outside	-
Concrete Sand													-	barge unloading	outside	-
Coal-barge	1,200	7,500	9,000	10,500	4,500	12,000	7,500	12,000	4,500	7,500	6,000	1,500	83,700	barge unloading	outside	8,000
Cotton Seed Hulls													-	barge unloading	inside	
Salt 1 - Barge Unloading	27,000	21,000	10,500	25,500	10,500	28,500	15,000				12,000	12,000	162,000	barge unloading	outside	150,000
Lime													-	barge unloading	none - direct transferred from barge to truck	
Salt 2 - Barge Unloading	9,000	15,000	22,500	6,000	1,500	3,000	16,500	9,000			1,500	4,500	88,500	barge unloading	outside	35,000
Salt 3 - Barge Unloading													-	barge unloading	none - direct transferred from barge to truck	
Salt 4- Barge unloading													-	barge unloading	none - direct transferred from barge to truck	
Feed Salt - Barge unloading													-	barge unloading	inside	
Stainless Steel Scrap													-	barge unloading	none - direct transferred from barge to truck	
Manufactured Sand - Barge													-	barge unloading	outside	-
Magnetite													-	barge unloading	inside storage	
Fertilizer1 Potash from Barge													-	barge unloading	inside	
2A limestone													-	barge unloading	outside	-
Chrome Ore							1,500					1,500	3,000	barge unloading	inside storage	-
B Scrape													-	barge unloading	none - direct transferred from barge to truck	
Bricketts													-	barge unloading	none - direct transferred from truck to barge	
HBI					1,500	3,000	7,500						12,000	barge unloading	none - direct transferred from barge to truck	
total barge unloading	**37,200**	**43,500**	**42,000**	**42,000**	**18,000**	**46,500**	**48,000**	**21,000**	**4,500**	**7,500**	**19,500**	**19,500**	**349,200**			
Barge Handling- Loading													-			
Steel Coils	9,000	10,500	10,500	12,000	12,000	10,500	9,000	9,000	6,000	7,500	7,500	6,000	109,500	barge loading	none - direct transferred from truck to barge	
Shredder-Scrap Iron													-	barge loading	none - direct transferred from truck to barge	
Magnesite													-	barge loading	truck delivery - out-loaded to barge	
Coke	19,500	15,000	16,500	18,000	10,500	18,000	18,000	15,000	19,500	4,500	1,500	4,500	160,500	barge loading	none - direct transferred from truck to barge	
Coal-1	39,000	31,500	33,000	40,500	37,500	33,000	34,500	31,500	36,000	34,000	37,500	39,000	427,000	barge loading	outside truck delivery - out-loaded to barge	8,000
Coal-2	1,500	3,000	1,500	3,000	1,500	-	4,500	1,500	1,500	1,500	1,500	9,000	30,000	barge loading	outside truck delivery - out-loaded to barge	2,500
	69,000	**60,000**	**61,500**	**73,500**	**61,500**	**61,500**	**66,000**	**57,000**	**63,000**	**47,500**	**48,000**	**58,500**	**727,000**			
Rail Handling	No activity															
Fertilizer2 Potash from Rail													-	rail unloading	inside	
Bauxite														rail unloading	none - direct transferred from rail to truck	
Salt 5 Rail Unloading														rail unloading	none - direct transferred from rail to truck	
Salt 1 - Rail Car Unloading		7,400	8,000					6,300	3,900	2,500			28,100	rail unloading	outside	incled in S1 above
Coke Rail Unloading													-	rail unloading	none - direct transferred from rail to truck	
Sand-Rail Unloading													-	rail unloading	inside	
Scrap - Shredder				2,100	1,500	2,000							5,600	rail unloading	none - direct transferred from rail to truck	
Total Rail Handling	**-**	**7,400**	**8,000**	**2,100**	**1,500**	**2,000**	**-**	**6,300**	**3,900**	**2,500**	**-**	**-**	**33,700**			

Outside Stock Piles	Add	Takes
Steel Wire	-	-
Steel Pipe	-	-
Steel Plate		
HW Salt - 1	190,100	190,100
HW Salt - 2	88,500	88,500
Coal-1	427,000	427,000
Coal-2	30,000	30,000
Manganese Ore	-	-

Vehicle Emissions- mobile equipment, front-end loaders & cranes													
Diesel Fuel Purchased	4,868	9,676	8,498	7,867	5,562	4,011	9,122	6,608	4,695	3,753	5,469	6,654	76,783
Roadway Sweeping	89	80	82	83	87	76	83	80	76	79	69	70	954
Roadway Water	65	57	83	80	88	75	85	78	76	77	59	69	892

Appendix B
RiverLift Industries, Inc.
Jan-Dec 2020- RL Air Inventory Report

July-December 2020- RL Air Inventory Report																Outside
Barge Handling- Unloading	**Jan**	**Feb**	**March**	**April**	**May**	**June**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**totals**	**Mode**	**Storage**	**avg stck pl sz**
Distiller Dried Grain													-	barge unloading	inside	
Aggregate - Gravel													-	barge unloading	none - direct transferred from barge to truck	
Sand-Barge													-	barge unloading	inside	
Steel Wire													-	barge unloading	outside	-
Steel Pipe													-	barge unloading	outside	-
Concrete Sand													-	barge unloading	outside	-
Coal-barge	6,000	4,500	3,000	3,000	3,000	4,500	3,000	6,000	1,500	4,500	4,500	3,000	46,500	barge unloading	outside	8,000
Cotton Seed Hulls													-	barge unloading	inside	
Salt 1 - Barge Unloading	30,000	12,000	15,000	12,000	7,500	10,500	4,500	10,500	22,500	18,000	3,000	6,000	151,500	barge unloading	outside	150,000
Lime													-	barge unloading	none - direct transferred from barge to truck	
Salt 2 - Barge Unloading	3,000	4,500											7,500	barge unloading	outside	35,000
Salt 3 - Barge Unloading													-	barge unloading	none - direct transferred from barge to truck	
Salt 4- Barge unloading													-	barge unloading	none - direct transferred from barge to truck	
Feed Salt - Barge unloading													-	barge unloading	inside	
Stainless Steel Scrap													-	barge unloading	none - direct transferred from barge to truck	
Manufactured Sand - Barge													-	barge unloading	outside	-
Magnetite													-	barge unloading	inside storage	
Fertilizer1 Potash from Barge													-	barge unloading	inside	
2A limestone													-	barge unloading	outside	-
Chrome Ore			1,500					1,500				1,500	4,500	barge unloading	inside storage	-
B Scrape													-	barge unloading	none - direct transferred from barge to truck	
Bricketts													-	barge unloading	none - direct transferred from truck to barge	
HBI													-	barge unloading	none - direct transferred from barge to truck	
total barge unloading	**39,000**	**21,000**	**19,500**	**15,000**	**10,500**	**15,000**	**7,500**	**18,000**	**24,000**	**22,500**	**7,500**	**10,500**	**210,000**			
Barge Handling- Loading																
Steel Coils	12,000	7,500	7,500	12,000	10,500	7,500	6,000	7,500	9,000	9,000	9,000	7,500	105,000	barge loading	none - direct transferred from truck to barge	
Shredder-Scrap Iron		1,500											1,500	barge loading	none - direct transferred from truck to barge	
Magnesite													-	barge loading	truck delivery - out-loaded to barge	
Coke	15,000	16,500	19,500	4,500	3,000	3,000	1,500	1,500	1,500	3,000	13,500	36,000	118,500	barge loading	none - direct transferred from truck to barge	
Coal-1	19,500	15,000	15,000	13,500	12,000	12,000	10,500	1,500	15,000	12,000	12,000	10,500	148,500	barge loading	outside truck delivery - out-loaded to barge	8,000
Coal-2	21,000	28,500	24,000	16,500	16,500	9,000	6,000	7,500	10,500	7,500	12,000	6,000	165,000	barge loading	outside truck delivery - out-loaded to barge	2,500
	67,500	**69,000**	**66,000**	**46,500**	**42,000**	**31,500**	**24,000**	**18,000**	**36,000**	**31,500**	**46,500**	**60,000**	**538,500**			
															360,000	
Rail Handling	No activity	0.36			0.29			0.14			0.21					
Fertilizer2 Potash from Rail							no activity						-	rail unloading	inside	
Bauxite														rail unloading	none - direct transferred from rail to truck	
Salt 5 Rail Unloading														rail unloading	none - direct transferred from rail to truck	
Salt 1 - Rail Car Unloading						4,100							4,100	rail unloading	outside	included in S1 above
Coke Rail Unloading													-	rail unloading	none - direct transferred from rail to truck	
Sand-Rail Unloading													-	rail unloading	inside	
Scrap - Shredder				2,100	1,500	2,000							5,600	rail unloading	none - direct transferred from rail to truck	
Total Rail Handling	**-**	**0**	**-**	**2,100**	**1,500**	**6,100**	**-**	**0**	**-**	**-**	**0**	**-**	**9,700**			
					0.37			0.63								

Outside Stock Piles	Add	Takes
Steel Wire	-	-
Steel Pipe	-	-
Steel Plate		
HW Salt - 1	155,600	155,600
HW Salt - 2	7,500	7,500
Coal-1	148,500	148,500
Coal-2	165,000	165,000
Manganese Ore	-	-

Vehicle Emissions- mobile equipment, front-end loaders & cranes	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	totals
Diesel Fuel Purchased	7,633	8,074	5,512	5,213	4,578	4,502	3,405	10,484	4,849	7,133	3,174	4,058	68,615
Roadway Sweeping	66	60	54	59	58	79	74	65	13	51	58	67	704
Roadway Water	68	54	55	56	57	73	70	63	12	48	57	64	677

APPENDIX C

RiverLift Industries, Inc.
Mon Valley Air Pollution Mitigation Plan
Effective Date: December 27, 2021

General Checklist for Watch Phase Action Items

Date of Watch Phase: ________________ **Conducted By:**________________

Mitigation Plan Action Item	Completed?		Comments
	YES	NO	
STAFF RELATED			
Conduct a shift meeting(s) or other form of communication to remind employees to prioritize the environmental impact of their operations to reduce emissions in accordance with this plan	☐	☐	
Share / review procedures which would help ensure sufficient staff levels and available resources to implement a warning phase	☐	☐	
Review procedures with employees to ensure all equipment is properly operating in a way to minimize air emissions	☐	☐	
EQUIPMENT RELATED			
Inspect dry bulk storage piles, roadways, and material handling equipment to ensure proper operation and good housekeeping is maintained	☐	☐	
Ensure street sweeping equipment and water truck is in good working order before operating	☐	☐	

Mitigation Plan Action Item	**Completed?**		**Comments**
	YES	**NO**	
Review / evaluate current procedures for proper operation and maintenance of wet suppression systems	☐	☐	
Ensure the source is following the idling requirements under Act 124 of the PA Department of Environmental Protection regulations	☐	☐	

Notes:

1. Refer to specific checklists for equipment related action items

RiverLift Industries, Inc.
Mon Valley Air Pollution Mitigation Plan
Effective Date: December 27, 2021

Watch Phase Inspection Checklist – Material Handling and Control Equipment (Barge Unloading, Barge Loading)

Date of Watch Phase: ________________ **Inspected By:**____________

Material Handling Equipment Inspection Item	YES	NO	Comments / Corrective Measures
Are drop heights being minimized at barge unloading & barge loading?	☐	☐	
Is wet suppression operating properly at barge loading – Spar Barge Loadout?	☐	☐	
Is there accumulation of materials at either dock?	☐	☐	
For barge loading areas, are conveyor belts and other handling equipment in good working order?	☐	☐	
For barge loading areas, are conveyor belt covers in good working order?	☐	☐	

RiverLift Industries, Inc.
Mon Valley Air Pollution Mitigation Plan
Effective Date: December 27, 2021

Watch Phase Inspection Checklist – Outside Bulk Storage Piles

Date of Watch Phase: ________________ **Inspected By:**____________

Storage Pile Inspection Item	YES	NO	Comments / Corrective Measures
Is there any accumulation of materials in the area near bulk storage piles?	☐	☐	
Are canvas tarps in place at highway salt piles where not being worked?	☐	☐	
Is crust developed at open working face of highway salt piles due to humidity, prior watering, and/or sub-freezing temperatures?	☐	☐	
Is distance minimized between the working face and trucks being loaded to reduce the area required to being swept / cleaned?	☐	☐	
Plans to actively work piles in the following day(s) during potential Warning Phase?	☐	☐	

RiverLift Industries, Inc.
Mon Valley Air Pollution Mitigation Plan
Effective Date: December 27, 2021

Watch Phase Inspection Checklist – Paved Roadways

Date of Watch Phase: ________________ **Inspected By:____________**

Paved Roadways Inspection Item	YES	NO	Comments / Corrective Measures
Is truck and equipment speed in the yard limited to less than 10 mph?	☐	☐	
Did routine mechanized sweeping of the dock, bulk storage, and access/egress areas occur on this Watch Phase?	☐	☐	
Was wet brush method used when cleaning with sweeper during this Watch Phase?	☐	☐	
Was water truck utilized to wet down roadways, stockpile areas, and dock areas?	☐	☐	
Is wheel wash station operating properly?	☐	☐	

Is there any accumulation of materials on roadways?	☐	☐	
All loaded trucks containing material with the potential to emit fugitive dust tarped at all times?	☐	☐	

RiverLift Industries, Inc.
Mon Valley Air Pollution Mitigation Plan
Effective Date: December 27, 2021

Watch Phase Inspection Checklist – Roadway Dust Mitigation Equipment (Sweepers, Water Truck)

Date of Watch Phase: ________________ **Inspected By:**____________

Roadway Dust Mitigation Equipment Inspection Item	YES	NO	Comments / Corrective Measures
Is preventative maintenance routinely conducted on the water truck and sweepers?	☐	☐	Date of last preventative maintenance: Next scheduled preventative maintenance:
Have water truck and sweepers been inspected for leaks or other problems during this Watch Phase?	☐	☐	
Are street sweepers and water truck in good working order?	☐	☐	
Is sufficient supply of Chemical Dust Control DC-661 on hand and ready for use?	☐	☐	

Are pertinent personnel properly trained and qualified to conduct street sweeper operations?	☐	☐	
Are pertinent personnel properly trained and qualified to operate the water truck, including the side sprayer and the hand wand?	☐	☐	

APPENDIX D

RIVERLIFT INDUSTRIES, INC.
WEST ELIZABETH, PA

MON VALLEY AIR POLLUTION MITIGATION PLAN

COAL STORAGE PILES - RECORDS DURING WARNING PHASE

							Weather		Watered with Water Truck Side Sprayer?	Watered with Water Truck Hand Wand?	Treated with Chemical Dust Suppressant?	Suspension			
Warning Phase Date	Storage Pile Location(s)	Active or Inactive?	Operation Start Time (if active)	Operation Stop Time (if active)	Observer Time	Observer Initials	Temp	Wind >15 mph?	Y/N	Y/N	Y/N	Operation Suspended? (Y/N)	Reason	Date/Time Operations Suspended	Comments

Notes:

1. Dust suppressant consists of Chemical Dust Control DC-661 (38% concentration) solution

RIVERLIFT INDUSTRIES, INC.
WEST ELIZABETH, PA

MON VALLEY AIR POLLUTION MITIGATION PLAN

HIGHWAY SALT STORAGE PILES - RECORDS DURING WARNING PHASE

							Weather		Crust Developed?	Watered with Water Truck Side Sprayer?	Watered with Water Truck Hand Wand?	Treated with Chemical Dust Suppressant?	Suspension			
Warning Phase Date	Storage Pile Location(s)	Active or Inactive?	Operation Start Time (if active)	Operation Stop Time (if active)	Observer Time	Observer Initials	Temp	Wind >15 mph?	Y/N	Y/N	Y/N	Y/N	Operation Suspended? (Y/N)	Reason	Date/Time Operations Suspended	Comments

Notes:

1. If crust is developed and storage pile is inactive, application of wet suppression / dust suppressant is not required
2. Dust suppressant consists of Chemical Dust Control DC-661 (38% concentration) solution

RIVERLIFT INDUSTRIES, INC.
WEST ELIZABETH, PA

MON VALLEY AIR POLLUTION MITIGATION PLAN

BULK BARGE UNLOADING - RECORDS DURING WARNING PHASE

									Weather		Water Addition via Clamshell Bucket?	Water Spray via Water Truck?		Suspension			
Date of Warning Phase	Active or Inactive?	Operation Start Time (if active)	Operation Stop Time (if active)	Observation Time	Observer Initials	Material Processed	Visual Condition of Material in Barge (e.g., Wet, Dry)	Special Customer Specifications	Temp	Wind >15 mph?	Y/N	Y/N	Reason for Non-Application of Wet Suppression	Operation Suspended? (Y/N)	Reason	Date/Time Operations Suspended	Comments

RIVERLIFT INDUSTRIES, INC.
WEST ELIZABETH, PA

MON VALLEY AIR POLLUTION MITIGATION PLAN

BULK BARGE LOADING AT SPAR BARGE LOADOUT - RECORDS DURING WARNING PHASE

							Weather		Wet Suppression at Hopper to Conveyor Transfer Point	Suspension			
Date of Warning Phase	Active or Inactive?	Operation Start Time (if active)	Operation Stop Time (if active)	Observation Time	Observer Initials	Material Processed	Temp	Wind >15 mph?	Y/N	Operation Suspended? (Y/N)	Reason	Date/Time Operations Suspended	Comments

RIVERLIFT INDUSTRIES, INC.
WEST ELIZABETH, PA

MON VALLEY AIR POLLUTION MITIGATION PLAN

ROADWAYS DUST SUPPRESSANT APPLICATION - RECORDS DURING WARNING PHASE

					Weather Conditions				
Date of Warning Phase	Start Time	End Time	Location(s) Where Dust Suppressant Applied	Operator Initials	Temp	Conditions (wet, rainy, snow, freezing, etc.)	Water Applied in Addition to Dust Suppressant? (Y/N)	Number of Passes or Quantity Used (gal)	Comments

Notes:

1. Dust suppressant consists of Chemical Dust Control DC-661 (38% concentration) solution