June 14, 2024

Mr. Renante Marante
City of Chicago
Department of Public Health
2160 West Ogden Avenue
Chicago, Illinois 60612

Re: City of Chicago Class V Recycling Facility Permit Renewal
Stockyards Materials, LLC
4031 South Ashland Avenue, Chicago, Illinois
CEC Project 342-204

Dear Mr. Marante:

On behalf of Stockyards Materials, LLC (Stockyard Materials) submitted herein is a revised application for permit renewal for the Stockyards Materials Class V Recycling Facility located at 4031 South Ashland Avenue in Chicago, Illinois. The original application was submitted on April 18, 2024 and a deficiency letter was received from CDPH on May 28, 2024. This submittal is in response to the deficiency letter.

Stockyards Materials operates as a Class V Recycling Facility, which was originally permitted on April 18, 2018. Stockyards Materials proposes no substantive changes to the as-permitted facility operations as part of this application outside of minor updates to the facility layout, including addition of a second scale.

The following information is attached:

- Attachment 1 – Chicago Department of Public Health Recycling Application form
- Attachment 2 - Annual Recycling Hauler/Center Report
- Attachment 3 - Current CDPH Class V Recycling Facility Operating Permit
- Attachment 4 - Renewal Application Narrative with Appendices

The renewal fee of $4,500, per Section 11-4-2550 of the Chicago Municipal Code, will be submitted upon receipt of an invoice from the Chicago Department of Public Health for the 2024–2027 operating period.

Should you have any questions regarding this renewal application, please contact the undersigned at (630) 963-6026, or via email at bschwartz@cecinc.com or bwozniak@cecinc.com.

Respectfully submitted,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Elizabeth S. Schwartz
Project Manager

Brian J. Wozniak, P.E.
Vice President

Enclosures: Recycling Application Form with Attachments

ATTACHMENT 1

CHICAGO DEPARTMENT OF PUBLIC HEALTH RECYCLING APPLICATION FORM

RECYCLING FACILITY APPLICATION

CITY OF CHICAGO
DEPARTMENT OF PUBLIC HEALTH

AS REQUIRED UNDER THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION AND CONTROL ORDINANCE (CHAPTER 11-4 OF THE MUNICIPAL CODE OF THE CITY OF CHICAGO): In order to receive a recycling facility permit from the Department of Public Health (CDPH), this application must be submitted and completed in its entirety. If further space is required, include additional sheets as attachments to this form as needed.

You must complete this form using Adobe Acrobat, version 8.0 or above. A free version of this software is available at https://acrobat.adobe.com/us/en/acrobat/pdf-reader.html. Failure to answer all questions will result in the rejection of this application.

Date of Application: Apr 8, 2024

Facility Address: 4031 South Ashland, Chicago, IL 60609

Type of Permit Requested: *(check one)*

- ○ Permit for New Site
- ◉ Renewal for Existing Site
- ○ Permit Modification

Facility Class for which you are applying: *(check one)*

- ○ Class I Recycler
- Class II Recycler (click a rate below)
  - ○ < 500 tons /daily
  - ○ 500-1000 tons/daily
  - ○ >1000 tons/daily
- ○ Class III Recycler
- ○ Class IVA Recycler
- ○ Class IVB Recycler
- ◉ Class V Recycler

Please supply the following contact information:

Contact	Full Name	Address	City, State	ZIP	Phone
1. Property Owner[1]	James Bracken	2300 W. 167th St.	Markham, IL	60428	+1 (773) 983-2463
2. Facility Owner[2]	James Bracken	2300 W. 167th St.	Markham, IL	60428	+1 (773) 983-2463
3. Site Manager	Dennis Shaughnessy	2300 W. 167th St.	Markham, IL	60428	+1 (708) 600-0502

[1]If Title of Property is held in trust, attach to this form the names and addresses of all beneficiaries and other persons authorized to deal with the property.
[2]If the facility owners are a partnership or corporation, include as an attachment to this form the names, addresses, phone numbers and social security numbers of all persons holding a share in the partnership or corporation.

Date Received by CDPH: For CDPH Use Only **Received By:** For CDPH Use Only

RECYCLING FACILITY APPLICATION

CITY OF CHICAGO
DEPARTMENT OF PUBLIC HEALTH

4. Zoning Information

A. Please list the zoning district in which the facility is located. PMD-8A

B. Nature of proposed use (check one).
- ○ Permitted Use
- ○ Special Use

C. ZBA Calendar Number - CAL No. (Attach copy of final resolution)

5. Zoning Review Stamp[3] (for new permits only)

Affix Zoning Review Stamp Here

[3] Print completed application and take to the Zoning Administrator for review.

6. Applicant Information

A. List all owners of the facility. If the owners are themselves corporations or partnerships, list the natural persons who have an ownership interest:

Name	Address	Phone	Email
James Bracken	2300 W. 167th St. Markham, IL 60428	+1 (773) 983-2463	bracken708@gmail.com

Add
Remove

B. If the applicant is a corporation or partnership, please list all owners/shareholders of the corporation and their shares of ownership. If owners are themselves corporation or partnerships, list the natural persons who have an ownership interest.

Name	Address	Phone	Percent Share

Add
Remove

C. Please attach an annual report.

Check here if no report is attached and explain why. ☐

D. Who (natural persons) will be managing operations at the site? What hours will they be on-site?

Dennis Shaughnessy will be managing on-site operations during operational hours.

E. In the past three years, has the applicant, or any owner or officer of the applicant, or any person[4] having control of applicant or any of its operations, including the person(s) listed in question D above, been cited for violations of any federal, state, or local laws, regulations, standards, or ordinances in the operation of any junk facility, recycling facility, or any other type of waste or recyclable materials handling facility or site, including, but not limited to, the operation of a junk, recycling, or waste handling facility without required permits?

[4]For purposes of this application, "person" means any natural person, corporation, general partnership, limited partnership, or any officer, partner, general partner, managing member or owner of 25% or more of any of such entity, including entities under common ownership with the applicant.

○ Yes
◉ No

If yes and explain circumstances.

F. In the past 3 years, has the applicant, or any person in control of the applicant, had a recycling facility permit revoked? If yes, please explain the circumstances.

○ Yes
◉ No

If yes and explain circumstances.

G. Has the applicant paid all fees required by the Municipal Code and any outstanding debts owed to the City? If not, please explain.

◉ Yes
○ No

If yes and explain circumstances.

The applicant has paid all required fees.

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7. Site Plan: Drawings of the site must accompany the application form. All objects on the site plans must be named. The maximum site plan allowed is 11" x 17". Blueprints are not acceptable. For new permits only, the site plan must be drawn to scale. For all permits, the site plan must identify the following items: (Check off items and fill in all blanks.)

- [x] A. Location of all buildings and structures
- [x] B. Location of all surrounding fences and screens. Indicate approximate height:
- [x] C. Location of all employee and customer parking areas. Clearly indicate the number of parking spaces.
- [x] D. Location of all customer queuing areas
- [x] E. Location where customers will unload their recyclable materials for purchase
- [x] F. Location where facility vehicles will load recyclable materials for transport off site
- [ ] G. Location of parking area for facility vehicles used to transport materials from the facility
- [x] H. Location of all scales
- [x] J. Location of recyclable material storage areas
- [x] K. Location where facility equipment will be staged and used
- [x] I. Location of recyclable material processing areas
- [x] L. Traffic flow for customer vehicles
- [x] M. Traffic flow for walk-in customers
- [x] N. Traffic flow for facility vehicles used to transport recyclable materials from the facility
- [x] O. Location of any other facility operation not already identified in this question
- [x] P. Location of water sources for fire protection and dust control
- [x] Q. Location of all fire extinguishers. Indicate type, i.e. water, chemical, etc
- [x] R. Location of covered material storage area
- [ ] S. Location of liquid waste storage area
- [x] T. Location of surrounding streets and avenues
- [x] U. Location of sewers
- [x] V. Location of all paved surfaces and type of paving
- [x] W. Location of required records
- [x] X. Does the facility have a proper signage per ordinance and regulations? Show location of signage.
- [x] Y. Location of recyclable material storage areas
- [x] Z. Is the facility adequately lighted after dark? Show location of all exterior light fixtures.

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8. Accepted Materials: Check and/or list all the materials proposed to be accepted at the facility:

Type A Recyclables	Type A Recyclables (Continued)	Type B Recyclables
☐ Aluminum Cans	☐ Polyethylene Terepthalate (PET)	☐ Landscape Waste
☐ Bimetal or Tin Cans	☐ High Density Polyethylene (HDPE)	☐ Food Scraps (**with** meat, dairy, or cooked fruits/vegetables)
☐ Aluminum Scraps	☐ Low Density Polyethylene (LDPE)	☐ Food Scraps (**without** meat, dairy, or cooked fruits/vegetables)
☐ Ferrous Metal Scrap (non-vehicle Sources)	☐ Polystyrene	☐ Livestock Waste
☐ Non-Ferrous Metal Scrap (non-vehicle sources)	☐ Polypropylene	**Type C Recyclables**
☐ Other Metal Scrap (List all below*)	☐ Wheels	☐ Motor Vehicles
☐ Glass containers	☐ Batteries	☐ Vehicle Parts (other than batteries and wheels)
☐ Textiles	☐ Propane Tanks/Cylinder Tanks	**Type D Recyclables**
☐ Corrugated Cardboard	☐ Refrigerators and Air Conditioners	☒ Commingled Construction and Demolition Debris
☐ Newsprint	☐ Computers, Tablets, Mobile Phones	☐ Untreated Wood and Lumber
☐ Office Paper	☐ Other Electronics	☒ Stone, Brick, Asphalt, Concrete
☐ Other Paper		☒ Uncontaminated Dirt

☒ Other Materials: (Please list all)

wood, metals, paper and cardboard, plastics, glass, drywall, carpeting, brick, concrete, rock, asphalt, and roofing materials

For Class IV applications, please describe how vehicles and vehicle parts will be handled, processes, and disposed:

RECYCLING FACILITY APPLICATION

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9. Operations: Please answer the following questions. An answer must be provided for each question or the application will be deemed incomplete. The phrase "not applicable" or "N/A" is not a complete answer.

A. Days and Hours of Operation*: *(*Normal facility hours are 7:00 a.m. until 9:00 p.m. Monday through Saturday or Sunday through Friday. If you plan to operate outside of these hours, you must submit a noise abatement plan along with your permit application.)*

Monday - Saturday 7:00 AM - 5:00 PM

B. Total material handling capacity (tons/day): 1,250

C. Number of full-time employee positions: 3

D. Number of part-time employee positions: 1

E. How will incoming materials be monitored?

Incoming loads are visually inspected prior to dumping to ensure they do not contain any unacceptable materials.

F. From which sources will materials be accepted *(public, businesses, scavenged materials, alleyways, etc.)*?

Demolition contractors, waste generators, and local citizens.

G. How will materials be separated and stored?

Materials are separated by excavator or loader and stored in designated bins.

H. How often will material be transported from the facility? (Indicate the average size of each out-going load, including weight and vehicle type.):

Material is removed from site daily in full legal load semi dump trucks.

I. Are any additional methods used to process the materials *(including heat processes, bailing, shredding, crushing, etc.)*?

J. List all other equipment and/or machinery that will be used:

K. How will odor, noise and dust emissions be handled?

Accepted materials will not have any odor. Any potential odorous materials can be identified during the load inspection process and be rejected from the facility prior to acceptance.
Noise is controlled by operating within operating hours. All equipment designated for operations at the facility will be

equipped with mufflers or other sound dissipative devices required for compliance with 35 Illinois Administrative Code (Ill. Adm. Code) 901.101 through 901.103. Fences and natural barriers (earthen berms and trees) also exist to dampen noise emanating from the recycling facility.
Dust control measures will be implemented to minimize the creation of dust and include a safe operating speed not in excess of 15 MPH. Dust is controlled by watering paved/non-paved areas and use of a sweeper truck to manage dust on site.

L. Describe daily cleaning/housekeeping activities, including parking lots, staging areas and adjacent public ways:

Areas that discharge stormwater will be maintained in a clean and orderly fashion to minimize the possibility of pollutant discharge. Operational areas and material handling areas will be inspected on regular intervals and cleaned when necessary.

M. Where and how will incidental solid waste be handled *(unloaded, processed, loaded out)*?

Incidental solid waste will be unloaded, processed and loaded out within the offloading area in accordance with the Loading Checking Program (Section 4.4 of the original application).

N. Please describe how you will screen for unauthorized materials including, but not limited to, municipal solid waste, hazardous materials and stolen goods. (*Include information pertaining to the schedule for removal of materials.)*

All vehicles entering the C&D facility with material for recycling will be counted and inspected in accordance with the Loading Checking Program (Section 4.4 of the original application).
Unauthorized materials will be rejected prior to dumping when visible. Any unauthorized waste that is received unintentionally will be removed immediately by a properly licensed hauler to an appropriate disposal facility and CDPH will be notified of the situation.

O. Where and how will liquid waste be handled?

Liquid waste handling is not applicable for Stockyards Materials facility.

10. Liquid Waste Handling Information: Please list the name of the company with whom you contract to remove/handle liquid waste. *Required for all facilities accepting motor vehicles and other materials likely to contain liquid waste.*

Company	Address	Phone
N/A	N/A	N/A

11. Recordkeeping: Please describe the facility's system for maintaining required records, including records of regulated and prohibited materials and records of regular customer accounts.

The facility's record keeping program is described in section 4.3 of the original application.

12. Facility Description: Provide a detailed description of the operations that take place at the facility.

Site will accept Type D recyclable materials consisting of uncontaminated soil, and clean construction/demolition debris

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consisting of stone, rock, brick, concrete and asphalt.
Site will supply recycled and virgin stone, topsoil, sand and mulch.

13. Certification

☑ **I certify that I have personally examined and am familiar with all the information submitted in response to the questions contained in this application and the attached document(s), and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that all information submitted is true, accurate and complete.**

Name:	James Bracken		
Title:	President		
Company Name:	Stockyards Materials		
Mailing Address:	4031 S. Ashland Ave., Chicago, IL 60609		
Phone Number:	(773) 983-2463	Fax Number:	(708) 331-4212
Email:	bracken708@gmail.com		

Signature: _____

Print and send the completed form to the address below.

Chicago Department of Public Health
333 S State Street
Room 200
Chicago, Illinois 60604
Attn: Recyling Permits

ATTACHMENT 2

ANNUAL RECYCLING / HAULER CENTER REPORT

Submit by Email | Print Form

WASTE HANDLING FACILITY REPORT

Chicago Department of Public Health

AS REQUIRED UNDER THE PROVISIONS OF THE CHICAGO ENVIRONMENTAL PROTECTION AND CONTROL ORDINANCE (MCC 11-4-2535): Waste Handling Facilities shall submit to the Commissioner a written annual report summarizing all waste and recyclable material disposition, handling and treatment activities occurring at the facility during each calendar year. The annual report shall contain the following data and information:

(1) the full name and business address of the permitted facility;

(2) the full name, business telephone number and e-mail address of a responsible person to contact regarding the content of any written report submitted under this section;

(3) if applicable, the tonnage of all recyclable material, per material type or category, collected by the permittee during the applicable reporting period; the name and location of the facility to which each type or category of recyclable material was delivered; and the approximate percentage of each type or category of recyclable material delivered to each named facility;

(4) if applicable, the tonnage of all municipal solid waste collected by the permittee during the applicable reporting period; the name and location to which the municipal solid waste was delivered; and the approximate percentage of municipal solid waste delivered to each named location;

(5) if applicable, the tonnage of all construction and demolition debris, per material type or category, collected by the permittee during the applicable reporting period; the name and location to which the construction and demolition debris was delivered; and the approximate percentage of construction and demolition debris delivered to each named location; and

(6) any other information that the Commissioner may require to implement the requirements of this chapter and Chapter 11-5 of this Code.

Penalties imposed for violations of this section shall be as provided in Section 11-4-030 of this Code.

Any Waste Handling Facility operating within the boundaries of the City of Chicago shall submit an annual Waste Handling Facility Report to the Chicago Department of Public Health. This report must be completed and submitted in its entirety. If a permittee under this section fails to submit in a timely manner the annual recycling report required under subsection (b) of this section or submits an incomplete annual recycling report, such permittee's permit under this section shall not be renewed by the department until such time that the annual recycling report required under subsection (b) of this section is submitted and is complete. If further space is required, please include, as needed, additional sheets as attachments to this Form.

Facility Name: STOCKYARDS MATERIALS

Facility Business Address: 4015 S. ASHLAND AVE. CHICAGO IL 60609

Name of Contact Person(s) Responsible for responding to Departmental inquiries ("Responsible Contact Person"): KIM CONERTY

Responsible Contact Person(s) Telephone Number: 708-339-4100 EXT 133

Responsible Contact Person(s) E-mail Address: KIM@UTILITYTRANS.COM

Percentage of Private Hauler's Customers that are:

X **Residential** X **Commercial** _____ **Industrial** _____ **Institutional** _____ **Establishments**

Reporting Period: January 1 - December 31 (Due Feb 28) 2023 Year

Materials Collected by Category	**Quantity**
(1) Recyclables (Not including materials listed below)	0 tons
(2) Municipal Solid Waste (MSW)	0 tons
(3) Yard Waste	0 tons
(4) Food Scraps	0 tons
(5) Electronics	0 tons
(6) White Goods[1]	0 tons
(7) Construction and Demolition Debris	106,096.87 tons
(8) Other_____	_____ tons

Percentage of Recyclable Materials Collected per Facility

Name of Facility	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6
STOCKYARDS MATERIALS						100% (7)

Approximate Percentage of Construction and Demolition Debris Collected and the Receiving Facility

Name of Receiving Facility	Brick	Soil	Rock	Wood	Wall Coverings	Plaster
119TH ST MATERIALS		57.5%				
MORRIS DIRT		1%				

Name of Receiving Facility	Drywall	Plumbing Fixtures	Non-Asbestos Insulation	Roofing Shingles and Other Roof Coverings	Reclaimed Asphalt Pavement	Glass

Name of Receiving Facility	Plastics	Electric Wiring	Piping	Stone	Concrete	Other: SAND
RIVERDALE MATERIALS					26.5%	9%
VULCAN					6%	

Approximate Percentage of Waste delivered to Each Facility

Facility Name	Percentage
1. N/A	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Certification

As an authorized representative ("Representative") of the company named below, I hereby certify that I have personally examined and am familiar with the information submitted in this Report; and that, based on my inquiry of those individuals immediately responsible for obtaining that information, I believe, to the best of my knowledge, that all the information submitted here is true, accurate and complete.

Representative's Name:
JAMES BRACKEN

Representative's Title:
PRESIDENT

Company Name: STOCKYARDS MATERIALS

Representative's Mailing Address 4015 S ASHLAND AVE. CHICAGO IL 60609

Representative's Phone Number: 773-983-2463

Representative's Fax Number: 708-333-5466

Representative's E-mail Address: BRACKEN708@GMAIL.COM

Representative's Signature: _____ Date: 2/22/24

Submit this Form electronically by e-mail to:

Email: envwastepermits@cityofchicago.org

For further questions and information, please contact:

Direction of Environmental Health and Safety Compliance

Department of Public Health

Email: envwastepermits@cityofchicago.org

ATTACHMENT 3

CURRENT CDPH CLASS V RECYCLING FACILITY OPERATING PERMIT

DEPARTMENT OF PUBLIC HEALTH

CITY OF CHICAGO

June 13, 2022

Mr. Jim Bracken
Stockyards Materials
4031 S Ashland Avenue
Chicago, Illinois 60609

Subject: City of Chicago Class V Recycling Facility Permit (ENVREC934539)
Stockyards Materials– 4031 S Ashland Avenue
Permit Modification and Approval of Supplemental Dust Plan

Dear Mr. Bracken,

This letter hereby modifies Stockyard Materials' ("the Permittee's") class V recycling facility permit dated September 30, 2021 ("the Permit"). Specifically, in accordance with Special Condition No. 31 of the Permit, the Chicago Department of Public Health ("CDPH") received and approves of the Dust Monitoring Plan dated January 28, 2022. In addition, CDPH extends the implementation date of Special Condition No. 30 of the Permit to August 12, 2022. Approval of the said dust plan is subject to the following conditions:

1. The proposed weather station and dust-monitoring instrumentation must be capable of producing an annual data completeness rate of at least 90%. CDPH may require additional measures, including the use of FEM-grade instrumentation, if the applicant fails to achieve and maintain the data completeness requirement.

2. The weather station shall be installed a minimum height of 10 meters from grade surface, and at least 7 feet taller than the building it is installed on.

This permit modification is effective immediately and shall be attached to the Permit. This letter does not release the Permittee from complying with all applicable laws and regulations.

If you have any questions, please call me at (312) 745-3136.

Sincerely,

Renante Marante
Environmental Engineer III
Permitting and Inspections Program

enc. 2021–2024 Permit

DEPARTMENT OF PUBLIC HEALTH
CITY OF CHICAGO

September 30, 2021

Mr. Jim Bracken
Stockyards Materials
4031 S Ashland Avenue
Chicago, Illinois 60609

Subject: **City of Chicago Class V Recycling Facility Permit (ENVREC934539)**
Stockyards Materials– 4031 S Ashland Avenue
Effective Date: April 19, 2021 to April 18, 2024

Dear Mr. Bracken,

A permit is hereby granted by the City of Chicago Department of Public Health ("CDPH") to Stockyard Materials ("the Permittee") to operate a Class V Recycling Facility located within the corporate limits of the City of Chicago at 4031 S Ashland Avenue ("the Facility").

Please carefully review all conditions outlined in this permit. Incorporated into this permit by reference are the following: 1) the application dated April 16, 2021 ("the Application"); and 2) all other supplemental information submitted as part of the Application. In the event of a conflict between the Application and this permit, the terms and conditions of this permit shall prevail.

The Permittee shall fully comply with Article XX, Chapter 11-4 of the Municipal Code of Chicago ("the Ordinance"), the Recycling Facility Rules and Regulations ("the Regulations"), the Rules for Large Recycling Facilities ("Large Recycling Rules"), the Standard Conditions of this permit set forth in Attachment A, and the Special Conditions of this permit set forth in Attachment B.

The permit allows for the operation of the Facility from April 19, 2021, through April 18, 2024, upon which time the permit shall terminate by its own terms. On or before April 18, 2024, the Permittee may apply to the CDPH for a new operating permit for the following year. If a subsequent operating permit is applied for on or before April 18, 2024, this permit shall remain in effect until the CDPH acts on the subsequent permit application. If you have any questions concerning this permit, please contact me at (312) 745-3136.

Sincerely,

Renante Marante
Environmental Engineer III

ATTACHMENT A
STANDARD CONDITIONS

The Permittee shall comply with all applicable local, State, and Federal regulations and standards regarding the construction, operation, maintenance, and closure of the subject Facility.

1. Construction, operation, maintenance, and closure of the Facility shall be in accordance with the plans, drawings, and specifications referenced by this permit and included in these Standard Conditions and the Special Conditions.

2. Construction, operation, maintenance, and closure of the Facility shall be in accordance with the plans, drawings, and specifications referenced by this permit and included in these Standard Conditions and the Special Conditions.

3. Any changes, modifications, and additions to the Facility's permit or the approved plans and documentation shall be submitted to the CDPH for review and approval. Such a request shall be made in writing to the CDPH.

4. Issuance of this permit shall not transfer, assign, or otherwise affect any liability to the City of Chicago, the CDPH, their employees, or agents as a result of the construction, operation, maintenance, and closure of this Facility.

5. Issuance of this permit does not relieve the Permittee of any liability with regards to the subject Facility.

6. The CDPH or its authorized representatives may inspect the Facility and the Facility records at any reasonable time to ensure compliance with this permit and all applicable rules, regulations, and standards, as well as all conditions necessary to protect the public health and safety.

7. The CDPH may revoke this permit on the basis of any of the grounds set forth in the City of Chicago, CDPH, Article XX Recycling Facility Permits Rules and Regulations.

8. The Permittee shall notify the CDPH of any notices of violations or administrative, civil or criminal citations received by the Facility or any of its operators relating to any alleged violation of any federal, state, or local laws, regulations, standards, or ordinances in the operation of any junk facility, recycling facility, or any other type of waste or recyclable materials handling facility or site. Such notifications shall be provided by email to EnvWastePermits@cityofchicago.org.

9. The Permittee shall provide the CDPH, if so requested, with copies of all correspondence to or from the IEPA and USEPA pertaining to the Facility, including, but not limited to notices of violation, letters, permit applications, reports, groundwater monitoring reports, and annual reports.

10. The Permittee shall comply with all requirements and conditions set forth in this permit. Should any portion of this permit be declared illegal or non-binding, the conditions of the remainder of the permit shall remain in effect

ATTACHMENT B
SPECIAL CONDITIONS

The following Special Conditions are attached to the operating permit for the Stockyards Materials Class V Recycling Facility located at 4031 S Ashland Avenue:

1. The Permittee may operate 7:00 a.m. until 5:00 p.m. Monday through Saturday. CDPH reserves the right to amend the Permittee's operating hours and days of operation if the facility operation causes a nuisance to neighborhood uses.

MATERIAL HANDLING AND STORAGE

2. The Facility is permitted to accept and handle Type D recyclable materials consisting of uncontaminated soil, and clean construction or demolition debris consisting of stone, rock, brick, concrete, and asphalt. For purposes of this permit, the term "uncontaminated soil" and "clean construction or demolition debris" shall have the meanings ascribed to them in 415 ILCS 5/3.160 of the Environmental Protection Act. The Facility is not permitted to accept loads commingled with wood, metal, paper and cardboard, plastic, glass, drywall, carpeting, brick, and roofing material.

3. Prior to accepting materials from any source, the Permittee shall obtain from the generator the appropriate IEPA forms, either an LPC-662 or an LPC-633 (or similar forms), that ensure materials intended to be delivered to the Facility is uncontaminated soil or clean construction and demolition debris.

4. Under no circumstances shall the Facility accept waste, special waste, hazardous waste, potentially infectious medical waste, lead-acid batteries, regulated asbestos-containing materials, and non-hazardous special waste. If such unauthorized waste is received at the Facility, the Permittee shall immediately isolate and containerize the waste and arrange for its immediate removal by a properly licensed waste hauler to a disposal facility which has obtained all necessary local, State, and Federal authorization to accept such waste.

   Further, the Permittee shall follow the procedures in Special Condition No. 6**Error! Reference source not found.**, and shall notify the CDPH of the situation immediately. Such notification shall be provided by email to EnvWastePermits@cityofchicago.org.

5. The Permittee shall inspect all vehicles entering the Facility for unauthorized wastes, and for loads containing greater than 25%, by volume, of non-recyclable or unauthorized construction or demolition debris. Vehicles containing unauthorized materials or have excessive amounts of non-recyclable or unauthorized construction or demolition debris, shall not be allowed to unload at this Facility.

6. The Permittee shall handle all unauthorized waste inadvertently accepted at the Facility as follows:

   a. The Permittee shall remove lead-acid batteries the same day and transport these batteries either to a drop-off center handling such waste or to a lead-acid battery retailer in accordance with the Illinois Environmental Protection Act, Title V, Section 22.23.

b. The Permittee shall separately containerize special waste, including hazardous waste, non-hazardous special waste, PCB waste, and potentially infectious medical waste, and arrange for the immediate removal of such waste by a properly permitted waste hauler to a properly permitted facility which has obtained all necessary federal, state and local authorization to accept such waste. The Facility shall develop and maintain an Emergency Action Plan for such occurrences as well as contracts with properly licensed and permitted haulers to ensure the immediate removal of the waste.

c. The Permittee shall remove and manage tires in accordance with the Illinois Environmental Protection Act, Title XIV, Section 55;

d. The Permittee shall remove and manage white goods and white goods components in accordance with the Illinois Environmental Protection Act, Title V, Section 22.28.

e. The Permittee shall remove and manage asbestos containing materials in accordance with the National Emission Standards for Hazardous Air Pollutants regulations.

f. The Permittee shall remove landscape waste found to be mixed with the incoming load and transport such waste to a facility that is operating in accordance with the Illinois Environmental Protection Act, Title V, Section 21 and Illinois Environmental Protection Act, Title X, Section 39.

After unauthorized waste has been removed from the Facility, the Permittee shall thoroughly clean the affected area in a manner consistent with the type of unauthorized waste managed. The Permittee shall maintain records of the acceptance of such material.

7. The Facility may accept no more than 1,250 tons per day of the recyclable materials authorized in Special Condition No. 2, so long as the Permittee strictly maintains the total amount of materials onsite at or below the storage volume specified in Special Condition No. 15.

8. If additional permitted capacity is desired, the Permittee must submit a revised application to the CDPH for approval. A revised application must demonstrate that the Facility can adequately handle the desired volume. The revised application must also provide a revised cost estimate to properly dispose of the desired volume of materials upon closure of the Facility.

9. The Permittee is not authorized under this permit to operate any crushing devices, including the proposed Sandvik QE341 Mobile Scalper.

10. The Permittee shall sort all construction and demolition debris within 48 hours of receipt at the Facility in order to separate the recyclable construction and demolition debris from the nonrecyclable construction and demolition debris to be disposed of or discarded.

11. Within 24 hours of the separation required in Special Condition No. 10, the Permittee shall transport all non-recyclable construction and demolition debris offsite for disposal, in accordance with all applicable federal, state, and local requirements.

12. The Permittee shall transport all putrescible recyclable construction and demolition debris or combustible recyclable construction and demolition debris to a properly permitted recycling or disposal facility within 45 days of its receipt at the Facility.

13. The Permittee shall transport all non-putrescible recyclable construction and demolition debris for recycling or disposal within 3 months of its receipt at the Facility.

14. The total volume of materials at the Facility shall be maintained at or below 2,500 cubic yards. This volume is inclusive of all processed and unprocessed recyclable materials, residual waste, and aggregate products stored at the Facility. The Permittee shall maintain onsite a continuous tally of the volume of these materials actively being stored on the property.

15. All material stockpiles shall be completely contained on at least three sides with concrete blocks or jersey barriers. The Permittee shall maintain the integrity of the containment partition to keep stored materials within the confines of the storage containment footprint.

16. The Permittee shall clearly mark all storage containments with the type of recyclable material stored. Letters shall not be less than three inches high, outward facing and not hidden. The Permittee shall not deposit other materials than that specified on the storage containment unit.

17. The Permittee shall ensure that all material stockpiles at the Facility are maintained at or below the maximum allowable height of 20 feet.

18. The Permittee shall maintain 30 ft. height markers, with gradations marked at one-foot intervals, adjacent to all stockpile locations. The Permittee shall paint the 20-foot and 30-foot markers red.

19. The Permittee shall provide secondary containment for all tanks, drums, or other vessels containing liquid materials including, but not limited to, fuels, motor oil, and petroleum products, in accordance with all local, state, and federal requirements.

SITE REQUIREMENTS

20. The Facility shall be entirely surrounded by a solid fence eight feet in height that obscure all material stored or kept outdoors at the Facility.

21. The Permittee shall pave all material handling areas, driveways, and access/haul roads with concrete, hot-mix-asphalt, or gravel. Gravel pavements shall be constructed and maintained in accordance with Section Three of the Federal Highway Administration's

Gravel Roads Maintenance and Design Manual (http://1.usa.gov/1Woytmg), and/or under equivalent plans and specifications prepared by a qualified pavement engineer or professional.

22. The Facility shall have a sign, clearly visible to the public, which states the name, address and telephone number of the Permittee, the type of recyclable materials accepted, the types of materials prohibited, and the Facility's operating hours.

HOUSEKEEPING, DUST CONTROL, AND MAINTENANCE

23. The Permittee shall ensure that all vehicles containing materials, entering, or exiting the Facility, are tarped to prevent windblown dust and materials. The Permittee shall post signs at the entrance and exit points of the Facility advising vehicles of this requirement.

24. The Permittee shall make a water source available at all times for purposes of Facility cleaning, dust control and fire safety.

25. The Permittee shall maintain site pavements to prevent standing water, dust, and track-out. The Permittee shall use a mechanical street sweeper equipped with a water spray and vacuum system that effectively picks up dust particulates and litter. Such street sweeping shall be sufficient so that not more than four hours elapses between each street sweeper cleaning or after every 100 vehicle material receipts or dispatches, but not less than one time daily when the facility is in operation, unless all pavements, and surfaces overlain with crushed asphalt grindings, are free and clear of any material transported to or from the Facility or emitted by Facility operation. If the Permittee cannot sweep because of an emergency or inclement weather, the date, time, and reason for the non-sweeping shall be noted in the sweeping log required under Special condition No. 38.

26. The Facility shall have dedicated personnel for patrolling the site and adjacent properties for litter and track-out.

27. The Permittee shall control and or suppress dust and other air-borne materials created by Facility activities so that off-site migration of these materials does not occur. This control and/or suppression shall include, but not be limited to:

    a. Employing watering methods as often as needed;
    b. Enforcing the internal speed limit of 10 miles per hour or slower; and
    c. Temporarily suspending material sorting and processing activities during high wind conditions.

28. The Permittee shall properly maintain and repair site screening so as to completely obscure all activities occurring within the Facility.

29. The Permittee shall retain the services of a vector control specialist to inspect the Facility each week to employ vector control measures as often as necessary. Vector control measures shall include, but not be limited to, bait stations, traps and any other measures deemed necessary by the vector control specialist.

AIR QUALITY MONITORING

30. By no later than April 1, 2022, the Permittee shall install, operate, and maintain air quality monitoring devices and a meteorological weather station in conformance with the Facility's Dust Monitoring Plan, as described in Section 3 of the Air Quality Impact Assessment dated April 9, 2021, prepared by Cardno.

31. By no later than January 31, 2022, the Facility shall provide a revised or supplemental dust monitoring plan that contain the following information:

    a. The specific make and model of the FEM or near-reference PM 10 monitors that will be installed at the Facility;

    b. The specific make and model of the weather station that will be utilized at the site. The weather station may be installed on top of one of the existing site buildings provided the weather station is not obstructed, is a minimum 10 meters high, and is not subject to the building's downwash effects.

    c. A detailed description of the technologies or procedures that will be implemented to comply with the RAL notification requirements under subsection 4.7.7.10 of the Large Recycling Rules.

32. By no later than April 1, 2022, the Permittee shall begin conducting daily observations for fugitive dust as required under 4.7.3 of the Large Recycling Rules.

33. By no later than April 1, 2022, the Permittee shall institute a quarterly opacity readings program in conformance with 4.7.5 of the Large Recycling Rules.

RECORD KEEPING

34. All logs, receipts, and other documentation required under this permit shall be kept at the Facility a minimum of three years and shall be made available to the CDPH upon request.

35. The Permittee shall maintain a written record of all vector inspections and vector control installations including date, time and a detailed description of each inspection and any installations or applications to control vectors.

36. The Permittee shall maintain a log of all vehicles entering and leaving the Facility. This log shall indicate the date, vehicle type, hauling company name, and the material type and quantity being transported. The Permittee shall maintain copies of all load ticket receipts.

37. The Permittee shall maintain a written log documenting all cleaning and maintenance activities performed at the Facility under the Housekeeping, Dust Control, and Maintenance section of this permit. Such log shall include a description of the cleaning operation or maintenance activity performed, the signature of the employee that performed it, and the date and time the employee started and completed the activity.

38. The Permittee shall maintain a street-sweeping log documenting the date and time of each street sweeping pursuant to Special Condition No. 25. If the Permittee's sweeping

frequency is based on thruput traffic, the total daily vehicle count shall be recorded in the sweeping log. The Permittee shall log the starting and ending odometer reading of the street sweeper each day the Facility is in operation.

39. The Permittee shall maintain a written record of all emergencies occurring at the Facility, including the date and time of each incident, along with a detailed description of the emergency. The Permittee shall notify the CDPH each day that the Facility is affected by the emergency. Such notification shall be sent by email to EnvWastePermits@cityofchicago.org.

40. The Permittee shall timely comply with the requirements contained in Chapter 11-5, Reduction and Recycling Program of the Chicago Municipal Code. The Permittee shall submit annual reports to the Department of Streets and Sanitation ("DSS") Recycling Coordinator, on forms provided by the DSS.

41. Beginning May 15, 2022, the Permittee shall submit quarterly reports as required under subsection 4.17 of the Large Recycling Rules. The report due on said date will be for the first quarter of 2022.

SITE SAFETY

42. The Permittee shall undertake all necessary steps to ensure that the Facility is:

    a. Secured from unauthorized entry;
    b. Sufficiently screened from the surrounding area; and
    c. Adequately lighted after dark.

43. The Permittee shall provide training to all Facility employees on fire prevention, emergency procedures and hazardous material identification and handling procedures.

44. All employees working at the Facility shall wear appropriate personal protection equipment in compliance with OSHA regulations. Such equipment shall include, but not be limited to, hard hats, safety glasses, safety shoes, and protective gloves.

45. The Permittee shall install and maintain fire suppressant equipment in accordance with the Municipal Code of the City of Chicago.

PERMITS

46. The Permittee shall maintain an active Certificate of Operation from the CDPH, pursuant to Section 11-4-660 of the Code, for all existing regulated equipment or areas requiring an Air Pollution Control (APC) permit. The Permittee shall obtain an APC Permit from CDPH, pursuant to Section 11-4-620 of the Code, for any new regulated equipment or area installed at the Facility.

ATTACHMENT 4

RENEWAL APPLICATION NARRATIVE WITH APPENDICES

ATTACHMENT IV TO APPLICATION FOR PERMIT RENEWAL

CLASS V - GENERAL CONSTRUCTION AND DEMOLITION DEBRIS RECYCLING FACILITY

Prepared For:
STOCKYARDS MATERIALS, LLC
4031 SOUTH ASHLAND AVENUE
CHICAGO, ILLINOIS 60609

Prepared By:
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
NAPERVILLE, ILLINOIS

CEC PROJECT 342-204

JUNE 2024

Civil & Environmental Consultants, Inc.
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1.0 INTRODUCTION

Stockyards Materials, LLC (Stockyards Materials) proposes to renew its application to operate a Class V Recycling Facility and a Reprocessable Construction and Demolition Material Facility on property located at 4031 South Ashland Avenue, Chicago, Cook County, Illinois (site). This application describes the facility and demonstrates Stockyards Materials' intent to continue to conduct the operations in compliance with the provisions of Section 22.38 of the Illinois Environmental Protection Act (Act), and applicable local, state, and federal rules.

The facility is designed to provide a valuable and environmentally responsible service by reducing the dependency on landfills for waste material that can otherwise be reused or recycled. The information provided herein demonstrates the facility's operation as a safe and environmentally friendly site, in compliance with Section 22.38 of the Act and all other applicable rules and regulations.

The Facility operates under City of Chicago Class V Recycling Facility Permit (ENVREC934539). An operating permit for a general construction and demolition debris (GCDD) recycling facility was granted to Stockyards Materials by the Illinois Environmental Protection Agency (IEPA) on May 29, 2018. A copy of the issued IEPA permit is included as Appendix A.

2.0 LOCATION INFORMATION

The facility is located on approximately 3.39 acres of property situated in Section 5, Township 38 North, Range 14 East in Chicago, Cook County, Illinois. A copy of the legal description and plat is provided as Appendix B.

Pursuant to Section 3.330(a)(13) of the Act, the portion of a site or facility accepting exclusively GCDD and operated and located in accordance with Section 22.38 of the Act is not considered a pollution control facility and is not subject to the local siting requirements of Section 39.2 of the Act.

The facility's location is shown on the most recent United States Geologic Survey (USGS) Map on Figure 1.

3.0 LARGE RECYCLING FACILITY PERMIT APPLICATION

3.1 PROFESSIONAL ENGINEER

This permit application was prepared under the direction of Mr. Brian Wozniak, P.E. in the State of Illinois. This permit renewal application has been prepared in accordance with good engineering practices, including consideration of applicable industry standards that procedures for required inspections and testing have been established and that the Plan is adequate for the facility. As no modifications are being proposed for the site at this time, a PE stamp is not being submitted.

Engineer Name:	Brian Wozniak, P.E.	
PE Registration Number:	062.061321	
State of Registration:	Illinois	
License Expiration Date:	11/30/2024	
Engineer Signature:		Date:

3.2 SUBMISSION FORMAT

This submission is being submitted in its entirety to CDPH in an electronic portable document format (.PDF) file format.

3.3 DESCRIPTION OF OPERATIONS

The GCDD facility is operated by Stockyards Materials in compliance with Section 22.38 of the Act and other applicable rules and regulations regarding GCDD processing facilities as described in the following sections.

Stockyards Materials operates as a Class V Recycling Facility, as defined by the City of Chicago. The facility accepts mixed loads of GCDD material for sorting and processing into marketable end products and raw materials. Loads of GCDD materials are delivered to the facility by the owner's affiliated roll-off service, other construction and demolition contractors, waste generators, and local citizens. This material is sorted and segregated by type on the facility's tipping floor within twenty-four hours of being received.

Construction materials such as brick, rock, concrete, and asphalt are processed for reuse in construction activities such as paving, brick laying, and building. Wood products are stripped of nails and other metals before being sent to a mulching facility. Paper, cardboard, plastics, metals, and glass are segregated on-site and shipped to their appropriate recyclers. Drywall products are stripped of contaminants and shipped to a drywall manufacturer. Carpeting is segregated and

shipped to a carpet manufacturer for reuse. Recyclables are shipped off to their appropriate end user when a full load has accumulated.

3.4 APPLICANT SUMMARY

The Applicant for this permit is Stockyards Materials, LLC, whose corporate office is located at 2300 West 167th Street, Markham, IL 60428. The contact person for Stockyards Materials, LLC is Mr. Jim Bracken, President of the company, who can be contacted at (773) 983-2463.

3.5 FACILITY AND PROPERTY SUMMARY

The Facility is known as:

a. Stockyards Materials, LLC
   4031 South Ashland Avenue
   Chicago, IL 60428
   (312) 858-5656
b. Property ID #20-05-101-050-0000
c. No activities are conducted on site outside of the scope of the recycling permit.
d. No other businesses operate on the property covered by the permit.

3.6 PROPERTY OWNER'S AUTHORIZATION

The property is owned by Stockyards Materials LLC's company president, Mr. James Bracken, whose main office is located at 2300 West 167th Street in Markham, Illinois 60428. A copy of the notarized Owner's Authorization is included in Appendix C

3.7 PROPERTY TAXES

The Cook County Real Estate taxes are paid to current. A copy of the 2023 First Installment Property Tax Bill as due by May 1, 2024 is included in Appendix D, which indicates a $0.00 payment due.

3.8 NATURE OF SPECIAL USE

The use of the property is appropriately zoned for a GCDD recycling and processing operation as described in this document. The facility owner has gone before and been approved by the Chicago Zoning Board of Appeals (ZBA) for a special use to operate Class V Recycler and a Reprocessable Construction and Demolition Material Facility. This zoning hearing was held on February 16, 2018, with approval being granted on February 20, 2018. The Special Use Resolution and the Proof of zoning approval (found on page 19 of the ZBA minutes), are both included as Appendix E.

3.9 DESIGN REPORT

3.9.1 Site Survey

This section is not applicable for a renewal application for an existing facility.

3.9.2 USGS Site Location Map

This section is not applicable for a renewal application for an existing facility. However, a Site Location Map is included as Figure 1.

3.9.3 Aerial Photograph

This section is not applicable for a renewal application for an existing facility.

3.9.4 Location Standards

This section is not applicable for a renewal application for an existing facility. The property is bordered by South Ashland Avenue to the west; a City of Chicago Department of Water Management facility to the north; KS Trucking Enterprise to the east; and railroad tracks followed by an industrial area to the south.

3.9.5 General Layout of the Facility

A site plan for the facility is provided as Figure 2. The site plan is to scale and shows the following information:

a) Existing boundaries of the facility;
b) Location of all main areas of the facility, including buildings, roads, fencing, gates, improved surfaces, utilities, and other features on the property pertinent to facility operations;
c) Location of all processing, loading, and unloading areas and temporary storage areas; and
d) Vehicle and equipment traffic patterns.

Areas shown for specific activities within the property may be modified slightly to accommodate fluctuations in volume or operating needs at the facility.

3.9.6 Pavements

The pavement on site will be regularly inspected by Stockyards Materials and any necessary repairs/maintenance will be performed on an as-needed basis to keep the ponding, dust, and mud

to a minimum. This inspection occurs during the day-to-day operations and any deficient pavement areas are repaired as needed.

3.9.7 Utilities

This section is not applicable for a renewal application for an existing facility.

3.9.8 Water Sources

This section is not applicable for a renewal application for an existing facility.

3.9.9 Site Security

By controlling access to the facility, security at the site is ensured. Access to the facility is currently restricted through the use of concrete block walls, fencing and gates as illustrated on Figure 2.

Stockyards Materials restricts entrance and exit of the facility to only the gated area located off of South Ashland Avenue. When the facility is not in operation, the gates remain locked with the keys secured in the site's scale house or with site personnel. Stockyards Materials utilizes a closed-circuit television system to assist in maintaining a secure facility at all times. The site is staffed with at least one security personnel or other responsible person for site access control during operating hours.

In addition to the physical barriers outlined above, a facility information sign is maintained at the site entrance containing, at a minimum, the following information regarding the GCDD processing facility:

- Facility name;
- Days and hours of operation;
- Facility telephone number;
- Restrictions on material accepted; and
- Restrictions on access to the facility.

3.9.10 Structures and Fixed Equipment

The facility has no fixed equipment currently on site. All structures are designed so that the Facility can be operated as intended and in a safe manner. Structures include:

- A scale house and two scales are located on site and are used to inspect all incoming loads to review that only permitted materials are accepted.

- Buildings are indicated on the site drawings, including the office and the garage.

3.9.11 Tipping Floor and Storage Capacity

The Facility was designed with sufficient floor and staging capacity to accommodate the inspection and unloading of peak volumes of inbound material and the staging and storage of materials. In accordance with USEPA's Waste Transfer Stations: A Manual for Decision-Making, the tipping floor should be at least 29,000 square feet to store 1,250 tons of GCDD materials. This was calculated by beginning with a base area of 4,000 square feet and adding to it 20 square feet for each ton of material received in a day (assuming the material will be temporarily piled 6 feet high on the tipping floor). Stockyards Materials' tipping floor is designed for an operating footprint of approximately 29,500 square feet.

Stockyards Materials uses an outdoor tipping area on the northeastern parcel of the property. The tipping floor is constructed of recycled asphalt pavement. Stockyards Materials operates with a maximum daily throughput of 2,500 tons per day on a 24-hour operating schedule with an on-site stockpiling capacity of 1,250 total tons for all GCDD to be recycled.

The USEPA's calculations are based on a design throughput occurring during standard daytime hours. The facility proposed twice the standard maximum daily throughput based on an anticipated 24-hour operating schedule should the facility photometric plan be implemented as proposed in the original March 7, 2018 application. An hourly throughput model is provided in Appendix F. This model illustrates how materials would be handled during the course of 24-hour operations through each step of the process — from receipt to off-site shipping.

The throughput model is broken out as follows:

- The average tonnage per load is estimated to be 20 tons.
- *Column 1 – Time Span (e.g., 7:00 AM to 8:00 AM)*
- *Column 2 – Estimated Tonnage Unloaded on Tipping Floor During that Hour*
    - Estimated as 20 tons (one load) tipped every five minutes
- *Column 3 – Estimated Tonnage Moved to Processing Area During That Hour*
    - Estimated as 20 tons (one load) moved every ten minutes
- *Column 4 – Estimated Tonnage Remaining on Tipping Floor Area at the Close of That Hour*
- *Column 5 – Estimated Tonnage Processed During That Hour*
    - Estimated as 20 tons (one load) processed every ten minutes
- *Column 6 – Estimated Tonnage Moved to Final Storage During That Hour*
    - Estimated as 20 tons (one load) processed every ten minutes
- *Column 7 – Estimated Tonnage Remaining in Material Processing Area/Stockpile Area*

- *Column 8 – Estimated Tonnage Hauled Off-site*

As illustrated by this throughput model, at no point is the capacity of either the tipping floor or processing areas exceeded during the course of 24-hour operations. Further, the estimated operations show time between 3:00 a.m. and 6:00 a.m. for operations to continue, should interruptions, such as equipment failure, occur during the day.

Stockyards Materials is operating with a daily throughput maximum of 1,250 tons per day until the lighting as shown on the photometric plan has been installed. At that time, full operations at the proposed 2,500 tons per day would commence.

3.9.12 Water Drainage

This section is not applicable for a renewal application for an existing facility.

3.9.13 Traffic

The Facility is designed and located to minimize the impact on the existing traffic flow in the surrounding area and that the points of ingress and egress are designed according to Illinois Department of Transportation (IDOT) standards.

Vehicles delivering GCDD materials access the facility from South Ashland Avenue. Upon arrival, vehicles stop at the southern (inbound) scale for an initial load inspection, ticketing, and unloading instructions at the truck scale. Vehicles then proceed to the designated staging area/tipping floor for unloading. If this is the first time a vehicle has unloaded materials at the facility, the vehicle will then proceed across the northern (outbound) scale to obtain its tare (empty) weight. Once the tare weight is stored, future visits to the facility preclude the need to be re-weighed; as such, those vehicles may bypass the scale with the bypass lane to the south of the scale and exit the facility normally back on to South Ashland Avenue.

Vehicles picking up materials for removal/recycling access the facility from South Ashland Avenue. Upon arrival, if this is the first time the vehicle has accessed the facility, the vehicle will then proceed across the southern (inbound) scale to obtain its tare (empty) weight. After the tare weight has been stored, the vehicle may bypass the scales and proceed to the loading area. All exiting vehicles pass over the northern (outbound) scale for ticketing. Vehicles then exit the facility normally back on to South Ashland Avenue.

Based on the facility's scale tickets, the average number of vehicles generated by the facility is 8.6 vehicles per hour and the maximum number of vehicles generated by the facility is 20 vehicles per hour. The average vehicles per day is 86.4. Vehicles incoming to the facility generally will bring

in a load of waste material to be managed and will take out a load of sorted materials in the same trip, thus minimizing the traffic impact. The exact number of two-way trips is not recorded; however, if it is assumed that all incoming loaded vehicles leave with an outgoing load, the average number of vehicles generated by the facility is 5.3 vehicles per hour and the maximum number of vehicles generated by the facility is 12 vehicles per hour. This information was calculated using truck-scale records from April 3, 2023 through April 28, 2024.

Stacking Plan

The site was designed to have the following traffic characteristics:

- Approximately 200 vehicles per day entering and exiting during peak production. The number of vehicles accessing the facility varies depending on the time of the year, and the maximum experienced in the past year was 168 vehicles per day.
- The large majority of trucks enter the site with mixed loads of CCDD for recycling (as part of the Class V Permit operations). Trucks exiting the facility are empty or hauling product material (recycled material from incoming loads).
- The types of vehicles accessing the facility range in size from small passenger-type vehicles to large transfer trucks and semi dump trucks. The type/size/capacity of trucks are primarily end dumps or semi-dumps hauling 40,000 to 42,000 pounds of material. These trucks generally range from 30 to 35 feet in overall length.
- The trucks enter and exit the site from Ashland Avenue for both directions.
- The peak traffic hours for the site are from 7:00 a.m. to 3:00 p.m. with the large majority of the traffic occurring during that time period.

A stacking plan showing the number of vehicles and locations of these vehicles during the maximum peak Facility traffic hours was included in the original March 7, 2018 application materials for the facility, and is included in Appendix F. With the new location of the scales, it can be seen that a minimum of four incoming trucks can queue on site without impacting traffic on Ashland Avenue and four or more outgoing trucks can queue on site at a time without impacting on-site operations. Based on the maximum hourly traffic experienced to date of 20 trucks and less than five minutes per truck for ticketing, there is sufficient space available to manage the traffic on site without impacting off-site traffic.

Idling Reduction Plan

The typical intake time for trucks entering the facility is less than five minutes and that minimizes unnecessary idling of vehicles and equipment in order to avoid contributions to poor air quality and noise. In compliance with Section 9-80-095 of the Code, incoming and outgoing diesel powered trucks are typically equipped with a three-minute shut-off to avoid idling. In the case that trucks are required to wait more than fifteen minutes, if they are not equipped with automated

anti-idling, the standard practice is for the scale house attendant to inform trucks to shut off vehicles. Vehicle pathways are depicted on Figure 2.

Impacts the processing and recycling facility has on traffic are minimal. A traffic impact study was conducted prior to development to determine the facility's effect on the surrounding area. This study was included in the March 7, 2018 original permit application for the facility.

3.9.14 Expected Waste Generation

This section is not applicable for a renewal application for an existing facility.

3.9.15 Parking

This section is not applicable for a renewal application for an existing facility.

3.9.16 Employee Facilities

This section is not applicable for a renewal application for an existing facility.

3.9.17 Perimeter Barrier

As construction and demolition materials are likely to generate dust and noise, it is important that the facility be properly screened. The site is fenced and gated along Ashland Avenue with black metal fencing conforming with the City of Chicago beautification codes. The office building also serves as screening along the west side. Chain link fencing with vegetation along it and concrete block separation walls currently exist around the majority of the perimeter of the property. There is an adjacent rail line embankment along the entire south side of the property that also serves as a screen from public view.

3.9.18 Stormwater Pollution Prevention

Operations at the facility are covered by Stockyards Materials' Stormwater Pollution Prevention Plan (SWPPP), which provides for routine inspections, best management practices, and other controls. The SWPPP was previously submitted to the Illinois EPA Bureau of Water along with a notice of intent for industrial activity. A renewal of coverage under the General NPDES Permit issued by the IEPA was issued on August 2, 2023 as NPDES Permit No. ILR007475. A copy of the SWPPP and notice of renewal is provided as Appendix G.

Stormwater runoff from the facility exits at the perimeter of the property and ultimately flows to the storm sewer network under Ashland Avenue. Because the materials recycled at the GCDD recycling facility are solids, leachate is not generated. The acceptance of liquid materials is

prohibited and is controlled through the Load Checking Program. In addition, through the implementation of best management practices identified in the SWPPP, it is unlikely that contaminated water will be generated from the facility operations. In the event leachate or other contaminated water is generated, it will be managed in accordance with the contingency plan and the spill response procedures outlined therein.

3.9.19 Noise Impact Assessment

No waiver is being requested to operate outside of the operating hours in the Design Report. Stockyards Materials' facility operates Monday through Saturday from 7:00 a.m. to 5:00 p.m. for the processing of its materials.

3.9.20 Storage Tanks

A 900-gallon diesel above ground storage tank (AST) is located over 25 feet east of the office building, and away from the heavy equipment traffic. It is double-walled for secondary containment, located on a concrete pad, and surrounded by concrete vehicle barriers as protection from accidental impacts. Tank integrity testing and inspections are performed in accordance with industry standards. The AST is filled by a vendor tanker truck, who uses their internal protocols for connection to and filling of the AST. During fuel unloading activities, the operator is constantly at the unloading location until activities are completed. Prior to departing, the tanker truck driver is required to inspect the lower most drain and outlets for leakage. If there are signs of leakage, the drains/outlets are tightened or repaired, preventing oil leakage in transit. The Facility is not subject to Spill Prevention Control and Counter Measures (SPCC) regulations under 40 CFR 112.

3.9.21 Air Quality Impact Assessment

This section is not applicable for existing facilities.

3.10 OPERATING PLAN

Stockyards Materials operates as a Class V Recycling Facility, as defined by the City of Chicago. The facility accepts mixed loads of GCDD material for sorting and processing into marketable end products and raw materials. Incoming material consists of reprocessable GCDD generated from construction or demolition activities. This material is sorted and segregated by type on the facility's tipping floor within twenty-four hours of being received. Remaining materials are trucked to a clean construction or demolition debris (CCDD) fill site.

Segregated materials considered to be reprocessable are moved from the tipping floor to the processing area on the southeast side of the facility. If an incoming load is determined to contain solely reprocessable material it may be unloaded directly into the processing area. Separation

walls around this area keep non-reprocessable materials out of the processing area. Materials considered to be reprocessable are brick, stone, concrete, and asphalt. These materials will be inventoried on-site until adequate volumes are accumulated for processing and/or redistribution.

3.10.1 Types of Recyclable Material

Each load received at the facility is required to contain predominantly recyclable construction or demolition materials. Loads of GCDD materials are delivered to the facility by the owner's affiliated roll-off service, other construction and demolition contractors, waste generators, and local citizens. These materials will include the following:

- Wood;
- Metals;
- Paper;
- Cardboard;
- Plastics;
- Glass;
- Drywall;
- Carpeting;
- Brick;
- Concrete;
- Rock;
- Asphalt; and
- Roofing materials.

Construction materials such as brick, rock, concrete, and asphalt are processed for reuse in construction activities such as paving, brick laying, and building. Wood products are stripped of nails and other metals before being sent to a mulching facility. Paper, cardboard, plastics, metals, and glass are segregated on site and shipped to their appropriate recyclers. Drywall products are stripped of contaminants and shipped to a drywall manufacturer. Carpeting is segregated and shipped to a carpet manufacturer for reuse.

A Load Checking Program is implemented to prevent the delivery of unauthorized materials to the facility. Unauthorized materials are materials not classified as GCDD by the IEPA and include the following:

- Household municipal solid waste;
- Hazardous wastes;
- Liquid wastes;

- Asbestos containing materials;
- Batteries;
- Special wastes;
- Medical wastes;
- Tires;
- White goods; and
- Landscape wastes.

The facility maintains accurate and up-to-date records of both material accepted for processing; and recyclables and waste materials shipped from the facility for further processing, sale, or disposal. Daily, monthly, and yearly summaries of recorded information for both inbound and outbound shipments are generated and maintained at the facility for inspection.

Screening Plan

Acceptance of unauthorized materials is restricted through the use of a facility Load Checking Program. The contents of each load are inspected to restrict the acceptance of non-recyclable materials collectively to less than 25% of the total GCDD material accepted at the facility and prevent the acceptance of other types of unauthorized material. This is done to ensure that 75% or more of the GCDD material accepted, as calculated per load by volume, consists of recyclable GCDD, recovered wood that is processed for off-site use as fuel or mulch, or GCDD that is processed for use at a landfill, except that GCDD processed for use at a landfill shall not exceed 35% of the GCDD accepted on a rolling twelve-month average basis.

Site personnel observe for unacceptable materials in loads and ensure that they are segregated and removed from the site. Each employee involved in the inspection of loads is trained and familiar with the list of unauthorized materials at the facility and the steps to follow in the event material is delivered to the facility. Because of the potential for asbestos-containing materials (ACM) in older building products, special attention is given to identifying possible ACMs within loads of demolition debris, including insulation, tiles, and roofing materials. Checkpoints available for load inspections include the ticketing area, off-loading area/tipping floor, and materials processing areas.

Once approved for acceptance, a recording ticket is generated for each vehicle and records are kept providing the transporter information, the source, the general content and the quantity of material being delivered, and the date of delivery. Each delivery includes a certification statement indicating the delivery is being accepted in compliance with facility rules and applicable regulations and requires the signature from the vehicle driver or transporter representative. A copy of the facility's materials ticket is provided as Appendix H.

Segregation and Removal Plan

If unacceptable materials or loads are identified during load checking, the facility will promptly notify management personnel of the company responsible for generating or transporting the material. If the load has not been unloaded, it will remain on the transport vehicle and the driver will be instructed to deliver the material to an appropriate facility permitted to accept such materials in accordance with applicable rules and regulations. If the material has already been unloaded, the transporter or generator of the material will be contacted and required to remove the material from the facility for delivery to an appropriate facility permitted to accept such material. If the transporter or generator does not promptly return to remove the material, facility personnel and equipment are utilized to remove the material as appropriate, and any cost or expense associated with the clean-up and disposal will be passed on to the original transporter or generator.

Emergency Response Plan for Hazardous or Dangerous Materials

In the event hazardous or other controlled materials are encountered that facility personnel are not qualified to remove, the services of a licensed contractor certified to handle the specific materials will be engaged to ensure proper removal and disposal. Handling of unauthorized materials will be in accordance with applicable rules and regulations.

3.10.2 Quantity of Recyclable Material

The inbound and outbound material are weighed at the scales on-site. The weights of inbound and outbound material are recorded in order to maintain records and to calculate the percentage of incoming non-recyclable and recyclable GCDD. Stockyards Materials is operating with a daily throughput maximum of 1,250 tons per day until the lighting as shown on the photometric plan has been installed. At that time, full operations at the proposed 2,500 tons per day would commence.

An hourly material throughput model, as discussed in Section 3.9.11 is provided in Appendix F. This model illustrates how materials would be handled during the course of 24-hour operations through each step of the process — from receipt to off-site shipping.

As illustrated by this throughput model, at no point is the capacity of either the tipping floor or processing areas exceeded during the course of 24-hour operations. Further, the estimated operations show time between 3:00 a.m. and 6:00 a.m. for operations to continue, should interruptions, such as equipment failure, occur during the day.

3.10.3 Devices, Apparatus and Processes

The flow of materials through the site is indicated on Figure 3. The process includes truck entry and acceptance of mixed loads of uncontaminated soils, broken concrete without protruding metal

bars, bricks, rock, stone, or reclaimed asphalt pavement generated from construction or demolition activities.

Materials are deposited onto the designated tipping floor at the northeast portion of the facility as shown on the Facility Layout provided as Figure 2. This material is sorted and segregated by type within twenty-four hours from the time it is received at the facility.

The facility has material storage bins located in the northeast and southern portions of the property. Each bin is dedicated to a single type of recyclable. Recyclables are shipped off to their appropriate end user when a full load has accumulated.

Non-recyclable material resulting from the processing of GCDD materials is collected and placed into roll-off boxes or semitrailers for shipment to a disposal facility in compliance with applicable rules and regulations. Each roll-off box or transfer trailer used for non-recyclable GCDD materials is transported to an appropriate disposal facility in a timely manner to ensure that the non-recyclable materials or non-usable general construction or demolition debris that is processed for use at a landfill are transported off-site for disposal within seventy-two hours of when it was received by the facility.

Putrescible or combustible recyclable GCDD material, as defined in Section 22.38(b)(5) of the Act, is transported off-site within forty-five days of its receipt at the facility. Non-putrescible recyclable GCDD that is processed is sold or sent for use at a municipal solid waste landfill unit within six months of its receipt.

The following is an overview of the safety program at Stockyards Materials:

- Check-in and escort procedures: signage posted in prominent locations directs all non-employees visiting the facility to check in at the trailer or office building, and any visitors on the site will be escorted at all times by facility personnel.
- Personal protective equipment, as required per the Occupational Safety and Health Administration for work activities, and as required for all visitors to the facility, will include safety glasses and a hardhat that will be worn at all times while on site.
- Potential hazards: the greatest hazard at the facility stems from the volume of truck and heavy equipment traffic. Another potential hazard is loose or slippery material on the ground surface or material sliding down the slope of a stockpile.
- Evacuation procedures: In case of an emergency evacuation, visitors will be returned to the office building, escorted to their car, and accompanied until they are safely out of harm's way.

Diesel fuel is stored in and dispensed from an approved aboveground storage tank system, the location of which is indicated on the permit drawings. Lubricants and maintenance support chemicals are stored in approved containers in the maintenance facilities and handled and dispensed in accordance with manufacturer's recommendations.

Dust that may originate from the facility is created by vehicular traffic traveling across the site. Dust control measures are implemented to minimize the creation of dust and include a safe operating speed not in excess of fifteen miles per hour. A water truck or hose may be used in extremely dry conditions. The facility is monitored daily by personnel for the presence of dust, and dust control measures will be implemented as needed. The facility's dust monitoring plan is included in Appendix I, which includes more detail regarding the dust monitoring and the activities to be taken in response to observed dust or elevated particulate levels.

3.10.4 Fire Prevention

Due to the quantity of wood and paper materials that are present in GCDD material, open burning is prohibited at the facility. The potential for "hot loads" to be delivered to the facility is minimized through the Load Checking Program. In case a fire does occur, fire-fighting measures will be implemented, including notification of the local fire department by calling 911. The facility maintains fire extinguishers in the office building, the garage building, and within the scale house along with a water truck available for use in the event that a larger fire breaks out. A fire hydrant is located on the west side of Ashland Avenue, immediately across from the facility entrance.

All employees working at the facility will be trained in the procedures for handling emergency or contingency situations, including the information described in this section. The locations of all fire-fighting equipment, including fire extinguishers and telephones to report an emergency with the local fire department, are communicated to all employees of the facility.

A 900-gallon diesel AST is located over 25 feet east of the office building, and away from the heavy equipment traffic. It is double-walled for secondary containment, located on a concrete pad, and surrounded by concrete vehicle barriers as protection from accidental impacts. Tank integrity testing and inspections are performed in accordance with industry standards. The AST is filled by a vendor tanker truck, who uses their internal protocols for connection to and filling of the AST. During fuel unloading activities, the operator is constantly at the unloading location until activities are completed.

3.10.5 Emergency Communications

The locations of all telephones to report an emergency with the local fire department, are communicated to all employees of the facility. Emergency telephone numbers are posted and

employees have been instructed in notification procedures. The facility is equipped with voice and data communication capability by the local service provider of choice. The facility also maintains a mobile phone communication network and has contact with truck drivers for dispatching purposes. The management group maintains communications via cellular and landline telephone.

A listing of emergency phone numbers is posted at various locations throughout the facility, and is maintained to include contact information for:

- Police;
- Fire;
- Emergency medical;
- Ambulance service;
- Weather reporting;
- Supervision; and
- General management.

The internal chain of command in the event of an emergency includes:

- Operator;
- On-site manager

General emergency and contingency situations that may arise at the facility, such as fires, severe weather, medical emergencies, and the like, will be managed in accordance with the procedures described in the site emergency action plan. The operator will also provide specific training to all personnel, as necessary, for handling emergencies and breakdowns, which are specific to the GCDD processing and recycling operations.

3.10.6 First Aid Equipment

First aid supplies maintained on-site include an assortment of bandaging materials, disinfectant, burn treatment, eyewash, and immobilizing devices. First aid equipment is located in the office building.

3.10.7 Rodent/Vector Control

A service contract is in place with a vector control specialist to provide a monthly service program and records are maintained as required.

The most effective means of rodent control is the elimination or minimization of available food. The inert nature of the material to be accepted minimizes potential food for vectors. Because of

the nature of construction and demolition materials, vectors historically associated with waste material such as rodents, birds, and insects are typically not a problem. If vectors are observed on the property as a result of the GCDD recycling operations, the vector control specialist will be contacted to successfully rid the site of such vectors and provide guidance on preventive measures.

3.10.8 Vehicles

Equipment utilized on-site is listed below. All site employees are qualified to operate these vehicles as needed.

Stockyards Materials Equipment On Site			
Type	**Make**	**Model**	**Attachments**
Excavator	Cat	330C	Screening Bucket & Regular Bucket
Water Truck	International	1979	
Loader	Komatsu	WA380	Bucket

Thirty-foot haul trucks capable of carrying loads of approximately 20 tons come to and from the facility. All inbound and outbound trucks carrying dirt, aggregate (including ores, minerals, sand, gravel, or other similar material susceptible to becoming windborne shall be sealed or tarped. All leaking containers and torn tarps shall be decommissioned and replaced or repaired.

In the event of a breakdown of the site equipment or transfer vehicles, the facility has the tools to accommodate routine repairs to equipment, or they may be hauled off-site. In the event the repairs are not able to be completed in time to properly maintain operations, replacement equipment will be rented or provided by the operator and delivered to the site within twenty-four hours to ensure waste materials are transferred as required. Ultimately, if replacement equipment is not obtained within these timelines, the facility will restrict or suspend acceptance of GCDD materials until appropriate repairs or replacements are made and materials will be processed at another facility.

3.10.9 Disposal Facilities

Names and locations of waste disposal facilities that are used by the site, routes used to each, with estimated travel distances and times include:

Stockyards Materials Waste Disposal Facilities					
Name	**Address**	**City**	**Distance (miles)**	**Via**	**Days/Hrs of Operation**
119th St. Materials	22957 W. 119th St.	Plainfield, IL	37	Ashland Ave to I-55 S to IL-126 W to IL-59	M-F/6a-4p, Sa/6a-12p
Morris Dirt	5501 Cemetery Rd.	Morris, IL	52.5	Ashland Ave to I-55 S to US-6 W to Cemetery Rd	M-F/9a-2p
Riverdale Materials	1201 W. 138th St.	Riverdale, IL	16.1	Pershing Rd E to I-90/94 E to S Paulina St E to 138th St	M-F/6a-4p, Sa/6a-2p
Vulcan Materials	3910 S. Racine Ave.	Chicago, IL	0.7	Ashland Ave N to Pershing Rd E to Racine	M-F/7a-2:30p

3.10.10 Daily Housekeeping and Cleaning

Daily cleaning/housekeeping activities will include stockpile maintenance and cleaning mud/dirt from roadways using the front-end loaders and/or the vacuum sweeping unit, as needed. Due to the nature of most construction products and demolition materials, the site does not anticipate the occurrence of odorous materials being delivered to the GCDD processing facility. In addition, potentially odorous materials can be identified during the load inspection process. Such loads can be rejected from the facility prior to acceptance. In the event odorous materials are accepted, the materials will be promptly processed, and odorous materials will be loaded into transport vehicles for prompt delivery to an appropriate disposal facility.

The operator walks the facility daily to check for litter accumulation. In addition, laborers patrol the facility and collect litter around the facility. The collected litter is placed into secured containers for recycling or disposal at an approved facility. The facility does not accept material from vehicles that do not utilize devices such as covers or tarpaulins to control litter, unless the nature of the material is such that it cannot cause litter during transportation to the facility.

Due to the heavy nature of most GCDD material, blowing litter is generally not created by the facility. Steps taken to minimize the occurrence of blowing litter include the use of portable wind fences, erection of portable walls as wind barriers, and temporarily suspending acceptance of loads with the potential to create blowing debris on days with high winds. These measures have not been required to date in the operation of the Facility.

Dust that may originate from the facility is created by vehicular traffic traveling across the site. Dust control measures are implemented to minimize the creation of dust and include a safe operating speed not in excess of fifteen miles per hour. A water truck or hose may be used in extremely dry conditions. The facility is monitored daily by personnel for the presence of dust, and dust control measures will be implemented as needed. The facility's dust monitoring plan is included in Appendix I, which includes more detail regarding the dust monitoring and the activities to be taken in response to observed dust or elevated particulate levels.

As the facility is either paved with asphalt or continually graded/regraded with asphalt grindings, it is unlikely that mud will develop on the wheels of the vehicles. If mud is observed on the public road at the entrance of the facility, it will be removed through the use of street sweeping services. Access drives, parking areas, storage areas, and vehicle maneuvering areas on the property are paved and watered with a 1979 International water truck as needed, but not less frequently than daily.

3.10.11 Hours of Operation

Stockyards Materials facility's operating hours are as follows:

- Load acceptance: Monday through Saturday, 7:00 a.m. to 5:00 p.m.
- Separation/cleaning/other miscellaneous site activities: Monday through Saturday, 7:00 a.m. through 5:00 p.m.

3.10.12 Closure Plan

This section of the application describes procedures that will take place at the facility when recycling activities cease.

Closure activities will be initiated within thirty days of the declaration of the acceptance of the last load of recyclable material, or within thirty days of notification of closure, whichever is less. No materials will be accepted at the facility after either of the two above-mentioned activities. The following procedures will be implemented to permanently close the facility:

1. Upon the decision to close the GCDD facility, a thirty-day notice will be sent to the Illinois Environmental Protection Agency.
2. Signs shall be posted immediately at the entrance to the facility, in lettering not less than 3 inches high, that reads:

   "THIS FACILITY IS CLOSED FOR ALL C&D RECYCLING ACTIVITIES AND RECEIPT OF ALL GENERAL C&D DEBRIS MATERIALS"

3. All incoming loads of GCDD material will be directed to other permitted facilities capable of accepting GCDD material.

Material Removal

4. All GCDD materials in the transfer area will be removed from the facility based on the material type and in accordance with Sections 22.38(b)(2), (4) and (5) of the Act.
5. All surfaces where GCDD materials were stockpiled and temporarily stored will be swept clean and loose GCDD material removed from machinery used on site. All areas will be allowed to thoroughly dry prior to sweeping, and a final inspection of the surfaces will be performed. If necessary, surfaces will be power washed to remove residue, and all wash water collected and disposed of properly.

Equipment Decommissioning

6. If necessary, machinery will be power washed to remove residue, and all wash water collected and disposed of properly.
7. After the site has been cleaned, on-site equipment (e.g., loaders, crushers, screening equipment) will be removed from the reprocessing facility for beneficial reuse or resale.

Certification

8. The verification of permanent closure will be initiated by the site after closure activities have been completed. An inspection by an independent Professional Engineer will be conducted to certify that the closure activities have been completed in accordance with the closure plan.
9. All required notifications and records will be completed, and Certification of Closure obtained from the Illinois EPA.

The estimated cost of permanent closure is itemized below:

Equipment Removal	$3,000
GCDD Materials Removal	$5,000
Completion Certification	$2,000
TOTAL CLOSURE COST	**$10,000**

Financing

Sufficient funding is required to be available to complete all closure activities. A copy of the irrevocable standby letter of credit in favor of the City of Chicago in the amount of $25,000 will be submitted separately to the CDPH upon receipt of a renewed permit.

FIGURES

REFERENCE

1. U.S.G.S. 7.5' TOPOGRAPHIC MAP, ENGLEWOOD QUADRANGLE, ILLINOIS DATED: 2021.

*HAND SIGNATURE ON FILE

SCALE IN FEET

0 2000 4000

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Naperville, IL 60563
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STOCKYARDS MATERIALS, LLC
4031 SOUTH ASHLAND AVENUE
CHICAGO, ILLINOIS

SITE LOCATION MAP

DRAWN BY:	MSK	CHECKED BY:	ESS	APPROVED BY:	BJW*	FIGURE NO.:	1
DATE:	04/16/2024	DWG SCALE:	1"=2000'	PROJECT NO:	342-204.0000		

P:\340-000\342-204\-CADD\Dwg\SW00-Class V Renewal Application\342204-SW00-S001-Site Location Map.dwg{S001} LS:(4/16/2024 - mkarpf) - LP: 4/16/2024 10:19 AM

NORTH

6 FT. CHAIN LINK FENCE

APPROXIMATE PROPERTY BOUNDARY

130.87'

73.00'

307.49'

373.57'

SEPARATED RECYCLED/PROCESSED C&D COMMODITIES

MIXED C&D LOADS TIPPING FLOOR AND SORTING AREA

SEPARATED RECYCLED/PROCESSED C&D COMMODITIES

18.20'

19.11'

EL

SERVICE GARAGE

FE

1/2

2/2

CONCRETE BLOCK SEPARATION WALLS

SCALE

FE

SCALE

TRUCK TRAVEL

SCALE HOUSE

6 FT. BLACK METAL STOCKADE FENCE

ELEC. SIGN

107.32'

38.03'

91.80'

EL

FE

OFFICE (RECORDS STORAGE)

CUSTOMER EMPLOYEE PARKING

900 GALLON DIESEL TANK

COVERED PULVERIZED DIRT BIN

SEPARATED RECYCLED/PROCESSED C&D COMMODITIES

A=416.06' R=2802.00'

110.16'

6 FT. CHAIN LINK FENCE

ASHLAND AVENUE

ONLY

1. 2. 3. 4. 5. 6. 7. 8. 9. 10.

TRUCK TRAFFIC NOTES

1. TRUCKS ENTER SITE
2. TRUCKS QUEUE PRIOR TO ACCESSING SCALE
3. TRUCKS ARE WEIGHED (FULL FOR INCOMING LOADS; EMPTY FOR OUTGOING LOADS)
4. TRUCKS DRIVE TO TIPPING FLOOR
5. TURNAROUND FOR TRUCKS TO BACK INTO TIPPING FLOOR TO OFFLOAD
6. TRUCKS EXIT TIPPING FLOOR
7. TRUCKS QUEUE TO SCALE OUT (IF NECESSARY)*
8. TRUCK SCALE BYPASS
9. TRUCKS EXIT SCALE (IF NECESSARY)*
10. TRUCKS EXIT FACILITY

* TRUCK EMPTY WEIGHTS STORED; RETURNING CUSTOMERS CAN BYPASS SCALE

LEGEND

- CONCRETE BLOCK SEPARATION WALL
- CONCRETE BLOCK STORAGE BIN
- 6 FT. BLACK METAL STOCKADE FENCE
- 6 FT. CHAIN LINK FENCE
- ASPHALT PAVING
- ASPHALT GRINDINGS
- GRASS/LAWN AREA
- EL — EXTERIOR LIGHTING
- FE — FIRE EXTINGUISHER
- W — WATER MAIN
- WATER MANHOLE
- FIRE HYDRANT
- WATER METER
- WATER VALVE BOX

REFERENCE

1. EXISTING CONDITIONS ARE BASED UPON FIELD OBSERVATIONS MADE ON JULY 13, 2023 BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

*HAND SIGNATURE ON FILE

SCALE IN FEET

0 60 120

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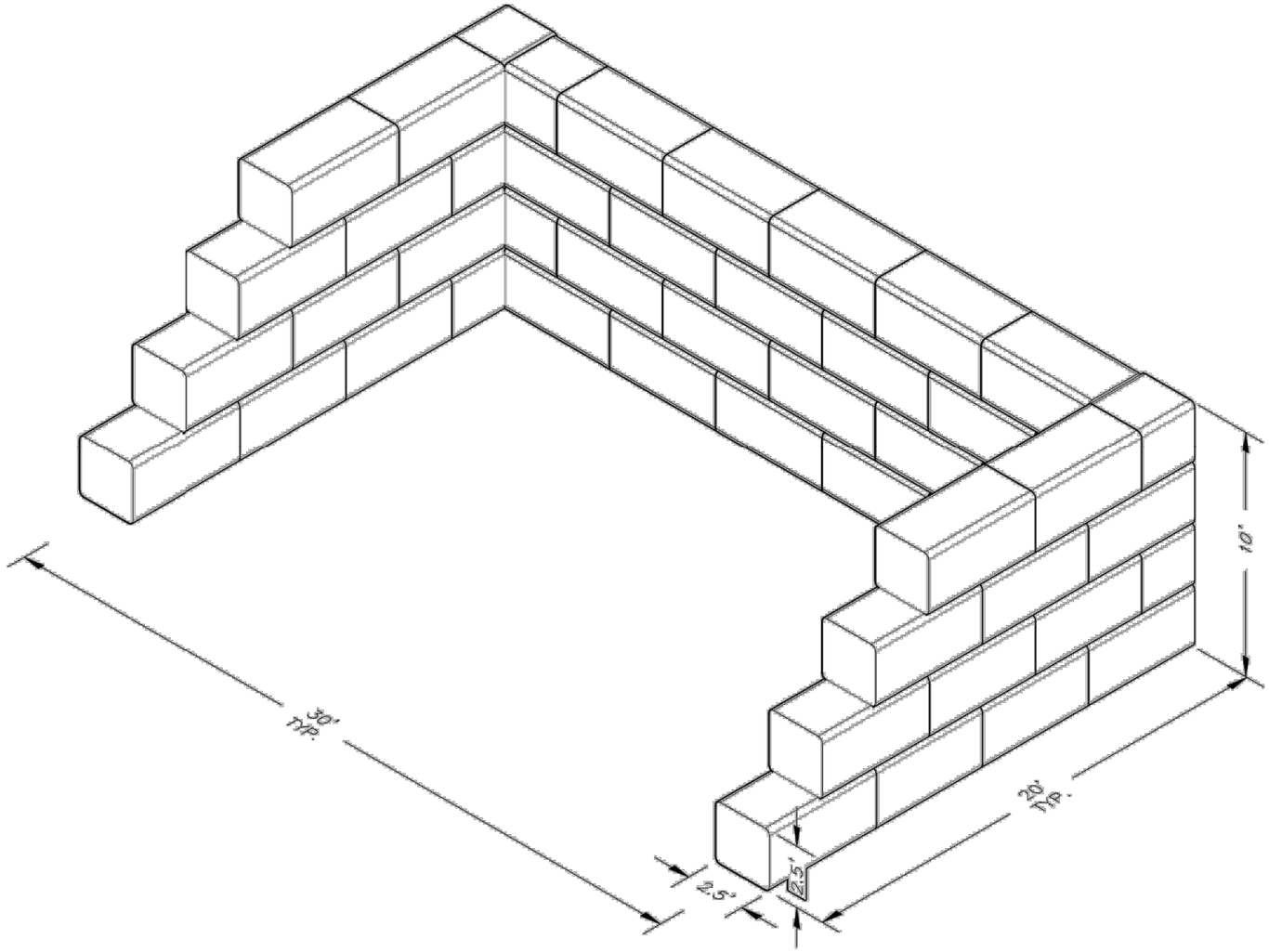
CHICAGO, ILLINOIS

FACILITY LAYOUT

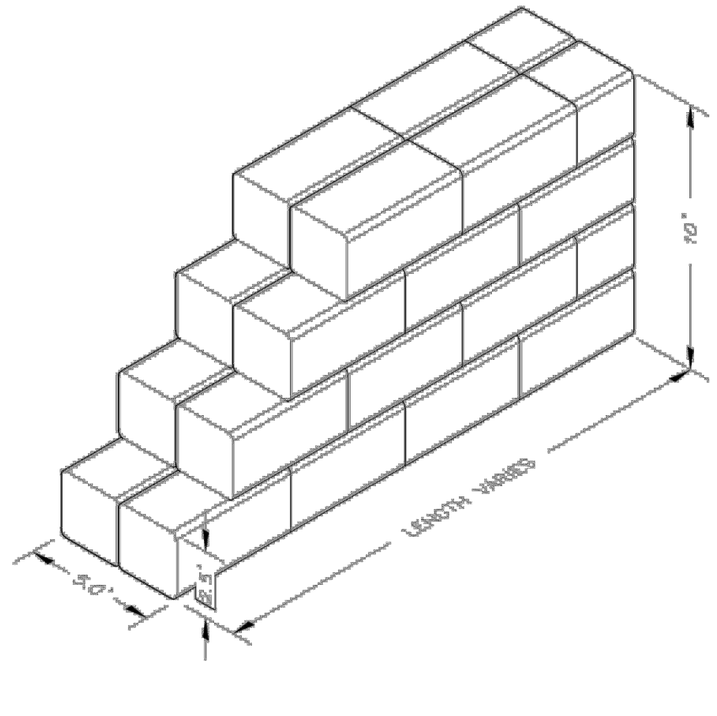
DRAWN BY:	MSK	CHECKED BY:	ESS	APPROVED BY:	BJW*
DATE:	06/14/2024	DWG SCALE:	1"=60'	PROJECT NO:	342-204.0000

FIGURE NO.: 2

P:\340-000\342-204\1-CADD\Dwg\SW00-Class V Renewal Application\342204-SW00-S002-Facility Layout.dwg[S002] LS:(4/16/2024 - mkarpf) - LP: 6/14/2024 11:19 AM



1/2 CONCRETE BLOCK STORAGE BIN
NOT TO SCALE



2/2 CONCRETE BLOCK SEPARATION WALL
NOT TO SCALE

*HAND SIGNATURE ON FILE

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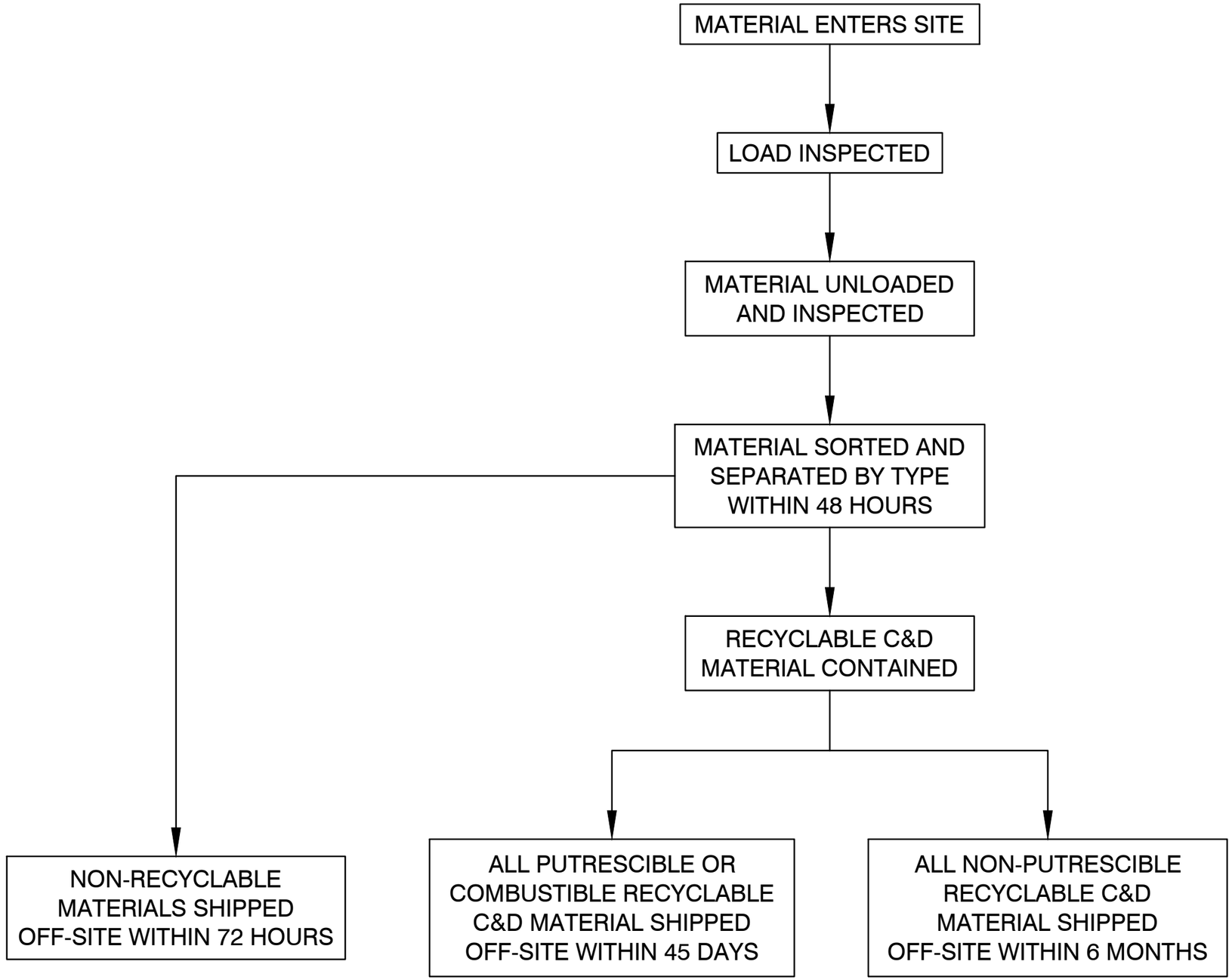
DETAILS

DRAWN BY:	MSK	CHECKED BY:	ESS	APPROVED BY:	BJW*	FIGURE NO.:	3
DATE:	04/16/2024	DWG SCALE:	NOT TO SCALE	PROJECT NO:	342-204.0000		



REFERENCE

1. C&D REPRESENTS CONSTRUCTION AND DEMOLITION DEBRIS.
2. ALL INBOUND/OUTBOUND MATERIAL WILL BE WEIGHED ON SCALE.

*HAND SIGNATURE ON FILE

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PROCESS FLOW DIAGRAM

DRAWN BY:	MSK	CHECKED BY:	ESS	APPROVED BY:	BJW*	FIGURE NO.:
DATE:	04/16/2024	DWG SCALE:	NOT TO SCALE	PROJECT NO:	342-204.0000	4

APPENDIX A

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY OPERATING PERMIT

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
BRUCE RAUNER, GOVERNOR ALEC MESSINA, DIRECTOR

217-/524-3300

May 29, 2018

Certified Mail
7014 2120 0002 3284 3924

OWNER/OPERATOR
4031 South Ashland LLC
Attn: Jim Bracken
4031 South Ashland Avenue
Chicago, IL 60609

Re: 0316616560 – Cook County
Stockyard Materials
Permit No. 2017-531-OP
Log No. 2018-160
Permit Storage/Treatment File
Permit Approval

Dear Mr. Bracken:

An operating permit is hereby granted to 4031 South Ashland LLC as owner and operator, to operate a solid waste management site to receive and transfer general construction and demolition debris, consisting of approximately 3.39 acres in Section 5, T38N, R14E, 3rd PM, pursuant to 35 Illinois Administrative Code (hereinafter IAC) Part 807 and the Illinois Environmental Protection Act (Act), and in accordance with the application and plans prepared, signed and sealed by Brian Wozniak, P.E., of Andrews Engineering, Inc., signature dated December 5th, 2017. Final plans, specifications, application and supporting documents as submitted and approved shall constitute part of this permit and are identified on the records of the Illinois Environmental Protection Agency, Bureau of Land by the permit number(s) and log number(s) designated in the heading above.

Permit No. 2017-531-OP authorizes the operation of a solid waste management site to receive and transfer general construction and demolition debris. The transfer station consists of an outdoor tipping floor, truck scale, loading and unloading areas, roll off boxes, storage bins and transfer trailers, mechanical screeners and an office building.

Pursuant to Section 39(a) of the Illinois Environmental Protection Act (Act) this permit is issued subject to the development, operating and reporting requirements for Solid Waste Facilities in Title 35 Ill. Adm. Code (hereinafter, 35 IAC), Part 807, the standard conditions attached hereto, and the following special conditions.

Permit No. 2017-531-OP allows the operation of the following units listed below:

Unit Description:	Use:
Outside tipping area (approximately 29, 500 square feet)	GCDD unloading, handling and sorting.
Truck Scale	Weighting materials entering facility
Mechanical Screener	Sorting/Sizing of GCDD
Dumpsters, Roll Off Boxes, Covered Bins, Transfer Trailers	Storage of GCDD, recyclables, and other materials

The application approved by Permit No. 2017-531-OP consists of the following documents:

DOCUMENT	DATED	DATE RECEIVED
Original Application (Log No. 2018-160)	April 18, 2018	April 19, 2018

Except as indicated below, the conditions for Permit No. 2017-531-OP are identical to the conditions of Permit No. 2017-531-DE, issued March 5, 2018.

Condition in 2017-531-DE	Condition in 2017-531-OP	Reason
2	n/a	Condition requiring the submittal of an operating permit application deleted
n/a	2	Added condition addressing the completion of the installation and use of screens/crushers
4	4	Removed phrase "upon issuance of an operating permit" from the Permit Condition
20	20	Removed phrase "After an operating permit has been issued," from the permit Condition

The permit is issued subject to the standard conditions attached hereto and incorporated herein by reference, and further subject to the following special conditions. In case of conflict between the application and plans submitted and these special conditions, the special conditions of this permit shall govern.

1. This permit does not authorize the developmental of a "Pollution Control Facility" as described in Section 3.330 of the Illinois Environmental Protection Act (Act). Prior to conducting activities which would classify this site as a "New Pollution Control Facility," the

permittee shall obtain a permit modification authorizing such activities. A permit modification for these activities cannot be granted unless the applicant submits information to adequately demonstrate compliance with Section 39.2 of the Act. The construction-demolition debris recycling facility consists of 3.39 acres located at 4301 South Ashland Avenue, Chicago, IL 60609, more particularly described in the application. The operator shall not cause or allow the modification to the design or operation of this facility or accept any type of debris for recycling except as authorized in a permit issued by the Illinois EPA.

2. Upon the completion of the installation of the screeners and/or rock crushers, the operator shall provide written notification of the completion of development to the City of Chicago, Department of Public health, Permitting and Enforcement. Upon receipt of notification, City of Chicago shall be allowed twenty (20) working days to examine construction and confirm completion of the development in accordance with the development plans. The operator may start the use of the screeners and/or rock crushers after the twenty (20) day period, if, having complied with the terms and conditions of this permit, the operator is not notified of a problem by the City of Chicago

3. The permittee shall notify the Illinois EPA of any changes from the information submitted to the Illinois EPA in its application for a development and operating permit for this site. Permittee shall notify the Illinois EPA of any changes in the names or addresses of both beneficial and legal titleholders to the herein-permitted site. Such notification shall be made in writing within fifteen (15) days of such change and shall include the name or names of any parties in interest and the address of their place of abode; or, if a corporation, the name and address of its registered agent.

4. The operator shall limit management activities at the facility to the receipt and transfer of a maximum of 2,500 tons per day of general construction and demolition.

5. The operator shall limit management activities at the facility to receipt, storage and transfer of construction or demolition debris only. This permit does not authorize land application of any material processed at this facility.

6. The permittee shall not stockpile more than 1,250 tons of general construction or demolition debris on site at any time.

7. The facility shall be designed, constructed, and maintained with roads and traffic flow patterns adequate for the volume, type and weight of traffic using the facility including, but not limited to, hauling vehicles, emergency vehicles, and on-site equipment. Sufficient area shall be maintained to minimize traffic congestion, provide for safe operation, and allow for queuing waste hauling vehicles.

8. The operator shall provide adequate parking for all vehicles and equipment used at the facility and as necessary for queued hauling vehicles.

9. Roadways and parking areas on the facility premises shall be designed, constructed, and maintained for use in all-weather considering the volume, type and weight of traffic and equipment at the facility.

10. The facility shall be designed, constructed, and maintained so that site surface drainage will be diverted around or away from the recycling and management areas. Surface drainage shall be designed and controlled so that adjacent property owners encounter no adverse effects during development, operation and after closure of the facility.

11. Run-off from roadways and parking areas shall be controlled using storm sewers or shall be compatible with natural drainage for the site. Best management practices (e.g., design features, operating procedures, maintenance procedures, prohibition of certain practices and treatment) shall be used to ensure that run-off from these areas does not carry wastes, debris or constituents thereof, fuel, oil or other residues to soil, surface water or groundwater.

12. The facility, including but not limited to, all structures, roads, parking and recycling areas, shall be designed, constructed, and maintained to prevent malodors, noise, vibrations, dust and exhaust from creating a nuisance or health hazard during development, operation and closure of the facility. Facility features (e.g., berms, buffer areas, paving, grade reduction), best available technology (e.g., mufflers, machinery enclosures, sound-absorbent materials, odor neutralizing systems, air filtering systems, misting systems), and building features (e.g., enclosed structures, building orientation) shall be among the measures to be considered to achieve compliance.

13. The facility shall be designed, constructed, and maintained to prevent litter and other debris from leaving the facility property. Facility features (e.g., windbreaks, fencing, netting, etc.) shall be among the measures considered to ensure that the debris does not become wind strewn and that no other provisions of the Act are violated.

14. The permit is issued with the expressed understanding that no air emissions will occur from these facilities, except as authorized by a permit from the Bureau of Air (BOA). This permit is issued with the expressed understanding that no process discharge to Waters of the State or to a sanitary sewer will occur from these facilities, except as authorized by a permit from the Bureau of Water (BOW).

15. The facility shall be designed, constructed, and maintained with a water supply of adequate volume, pressure, and in locations sufficient for cleaning, firefighting, personal sanitary facilities, and as otherwise necessary to satisfy operating requirements (e.g., dust suppression, wheel washing) and the contingency plan.

16. The facility shall be designed and constructed with exterior and interior lighting for roadways, and waste handling areas adequate to perform safely and effectively all necessary activities. This permittee shall install and operate lighting in accordance with the photometric plan in permit application Log No. 2017-531 prior to operating after dark.

17. The facility shall be designed, constructed, and maintained with truck wheel curbs, guard rails, bumpers, posts or equivalents to prevent backing into fuel storage tanks, equipment, and other structures.

18. The facility shall be designed, constructed, and maintained with adequate shelter, sanitary facilities, and emergency communications for employees.

19. The facility operator shall install fences and gates, as necessary to limit entry. Except during operating hours, the gates shall be securely locked to prevent unauthorized entry.

20. The facility may receive construction-demolition debris at the site 24- hours/day. Processing/grinding and screening may be conducted during daylight hours, from 6:00 am to 5:00 pm Monday through Saturday. Once the facility has installed and is operating lighting in accordance with the photometric plan, the facility can be operated before sunrise or after sunset. If it is required for the facility to be open beyond normal operating hours to respond to emergency situations, a written record of the date, time and reason the facility was open shall be maintained in facility operating records. The Illinois EPA's Regional Office – Des Plaines responsible for inspection of this facility or Emergency Response Center must be notified and must grant approval each day that the operating hours need to be extended.

21. Fire safety equipment (fire extinguishers) shall be maintained in accordance with recommended practice.

22. Non-recyclable waste may be left at the site overnight; however, it shall be in a covered container or waste collection vehicle.

23. Piles of general construction or demolition debris shall be covered or wetted to prevent air-borne dust.

24. The facility shall be designed and constructed to prevent unauthorized access to recycling areas, storage areas for unauthorized wastes, salvaged and recycled materials, and staging areas where loaded site equipment or vehicles may be parked. Facility features such as fences and gates shall be provided.

25. Waste and debris handling areas shall be designed and constructed to prevent exposure of wastes and recyclable materials to run-on and flooding.

26. The sorting areas shall be properly graded and compacted to prevent ponding from forming leachate during storms.

27. Records shall be maintained on-site at the facility office for each operating day. The operator shall record operating hours, load ticket information, load inspections, daily processing time, volume processed per day, transfer load out and waste disposition details.

28. The operator shall, within 48 hours of receipt of the general construction or demolition debris at the facility, sort the general construction or demolition debris. The operator shall separate the recyclable general construction or demolition debris from non-recyclable general construction or demolition debris and dispose of the non-recyclable general construction or demolition debris, in accordance with Section 22.38(b)(1) of the Act.

29. The operator must place wood, tires, and other unacceptable materials in covered dumpsters or vehicles adequate to prevent the release of leachate. Wood maybe savaged for grinding to make mulch, provided that it doesn't contain painted or treated wood and is not mixed with other waste.

30. The operator must separate and place all non-recyclable general construction or demolition debris and unacceptable materials in covered dumpsters. The operator shall transport all non-recyclable general construction or demolition debris, and unacceptable material offsite for disposal in accordance with all applicable federal, State, and local requirements within 72 hours of its receipt at the facility.

31. For each operating day, the operator shall limit the percentage of incoming non-recyclable general construction/demolition debris to 25% or less of the total incoming general construction/demolition debris, as calculated on a daily basis, in accordance with Section 22.38(b)(3) of the Act.

32. The operator shall transport all non-putrescible recyclable general construction or demolition debris for recycling or disposal within 6 months of its receipt at the facility, in accordance with Section 22.38(b) (4) of the Act.

33. Within 45 days of its receipt at the facility the operator must separate and place all putrescible or combustible recyclable general construction or demolition debris in covered dumpsters for recycling or disposal, and transport offsite, in accordance with Section 22.38(b)(5) of the Act.

34. In accordance with Section 22.38(b)(6) of the Act, the operator shall employ tagging and record keeping procedures to (i) demonstrate compliance with Section 22.38, and (ii) identify the source and transporter of material accepted by the facility.

35. The operator shall use load tickets to control the site activities and comply with the tagging and record keeping procedures in condition 34 above. These load tickets shall identify the source of the material delivered to the site. The operator shall use these tickets to identify the location in the yard or in the covered dumpsters and the length of time stored at the site to achieve compliance.

36. The operator is prohibited from receiving hazardous and asbestos containing materials.

37. The operator may separate clean concrete and clean soil from the general construction or demolition debris as recyclable materials for use in construction. The operator is permitted to store these recyclable materials for a maximum period of 3 months.

38. The operator may store the steel separated from concrete and other construction or demolition debris for a maximum period of 6 months. After six months, the steel must be sent offsite for disposal or recycling.

39. The operator shall ensure that site surface drainage, during development, during operation and after the site is closed, shall be such that no adverse effects are encountered by adjacent property owners.

40. The operator shall ensure that the best available technology (mufflers, berms and other sound shielding devices) shall be employed to minimize equipment noise impacts on property adjacent to the site during both development, operation and during any applicable post-closure care period.

41. Management of Unauthorized Waste by the operator

a. Landscape waste found to be mixed with CDD shall be removed the same day and transported to a facility that is operating in accordance with the Illinois Environmental Protection Act (Act), Title V, Sections 21 and 39 [415 ILCS 5/21 and 39].

b. Lead-acid batteries mixed with CDD will be removed the same day and transported either to a drop-off center handling such waste, or to a lead-acid battery retailer.

c. Special wastes including hazardous waste, non-hazardous special waste, and potentially infectious medical waste mixed with CDD shall be containerized separately and removed as soon as possible by a licensed special waste hauler. Special wastes shall be transported to a licensed special waste management facility that has obtained authorization to accept such waste. The operator shall maintain a contract with haulers so that the immediate removal is ensured. The operator shall develop an emergency response/action plan for such occurrences.

d. Asbestos debris from construction-demolition shall be managed in accordance with the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations.

e. Tires found to be mixed with CDD shall be removed and managed in accordance with Section 55 of the Act [415 ILCS 5/55].

f. White good components mixed with CDD shall be removed and managed in accordance with Section 22.28 of the Act [415 ILCS 5/22.28].

g. No person may knowingly mix liquid used oil with CDD.

h. After the unauthorized waste, has been removed from the facility, a thorough cleanup of the affected area will be made according to the type of unauthorized waste managed.

Records shall be kept for three years and will be made available to the Illinois EPA-BOL upon request.

42. The operator must maintain a contingency plan that allows for the correct management of leaky containers. This plan must include, but is not limited to, shipping and handling damaged containers first. Containers which are not open to the atmosphere and therefore minimize leachate generation must be utilized.

43. Special wastes generated at the site for disposal, storage, incineration or further treatment elsewhere shall be transported by the operator to the receiving facility utilizing the Illinois EPA's Special Waste Authorization system and manifest system.

44. The owner/operator shall submit a new 39(i) certifications and supporting documentation within 30 days of any of the following events:

a. The owner or officer of the owner, or operator, or any employee who has control over operating decisions regarding the facility has violated federal, State, or local laws, regulations, standards, or ordinances in the operation of waste management facilities or sites; or

b. The owner or operator or officer of the owner, or operator, or any employee who has control over operating decisions regarding the facility has been convicted in this or another State of any crime which is a felony under the laws of this State, or conviction of a felony in a federal court; or

c. The owner or operator or officer of the owner, or operator, or any employee who has control over operating decisions regarding this facility has committed an act of gross carelessness or incompetence in handling, storing, processing, transporting, or disposing of waste.

d. A new person is associated with the owner or operator who can sign the application form(s) or who has control over operating decisions regarding the facility, such as corporate officer or a delegated employee. The certification shall describe the violation(s), convictions, carelessness or incompetence as outlined in a, b or c above and must include the date that a new person as described in 4 above began employment with the applicant.

The 39i certification and supporting documentation shall be submitted to the address specified below:

Illinois Environmental Protection Agency
BOL #33, 39(i) Certification
Post Office Box 19276
Springfield, Illinois 62794-9276

45. The closure plan and cost estimate for closure in Application Log No. 2017-531 are hereby approved in accordance with 35 IAC, Subtitle G, Part 807, subject to the following conditions:

a. The operator shall notify the Illinois EPA within 30 days after receiving the final volume of waste. The cost estimate for closure is $4,500.00. Financial assurance is not required to be provided to the Illinois EPA.

b. The operator shall initiate implementation of the closure plan within 30 days after the site receives its final volume of waste.

c. The operator shall not file any application to modify the closure plan less than 180 days prior to receipt of the final volume of waste.

d. Upon completion of closure activities, the operator will notify the Illinois EPA that the site has been closed in accordance with the approved closure plan utilizing the Illinois EPA's "Affidavit for Certification of Completion of Closure of Non-Hazardous Waste Facilities," available online at

www.epa.state.il.us/land/regulatory-programs/permits-and-management/forms/index.html#solid-waste-forms.

Appeal Rights

The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within 35 days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed 90 days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276
217/782-5544

For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, IL 60601
312/814-3620

Work required by this permit, your application or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This permit does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with these laws. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Sincerely,

Theodore J. Dragovich by JKH

Theodore J. Dragovich, P.E. Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

Attachment: Standard Conditions

cc: Brian Wozniak, Andrews Engineering, Inc
City Of Chicago

TJD:DCR:0316616560-trans-2017-531-OP-2018-160-approval

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY BUREAU OF LAND

August 22, 2001

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

These standard conditions shall apply to all permits which the Agency issues for construction or development projects which require permits under the Bureau of Land. Special conditions may also be imposed in addition to these standard conditions.

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire two years after date of issuance unless construction or development on this project has started on or prior to that date.

2. The construction or development of facilities covered by this permit shall be done in compliance with applicable provisions of Federal laws and regulations, the Illinois Environmental Protection Act, and Rules and Regulations adopted by the Illinois Pollution Control Board.

3. There shall be no deviations from the approved plans and specifications unless a written request for modification of the project, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.

4. The permittee shall allow any agent duly authorized by the Agency upon the presentation of credentials:

    a. to enter at reasonable times the permittee's premises where actual or potential effluent, emissions or noise sources are located or where any activity is to be conducted pursuant to this permit.

    b. to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit.

    c. to inspect at reasonable times, including during any hours of operation of equipment constructed or operated under this permit, such equipment or monitoring methodology or equipment required to be kept, used, operated, calibrated and maintained under this permit.

    d. to obtain and remove at reasonable times samples of any discharge or emission of pollutants.

e. to enter at reasonable times and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:

   a. shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located;

   b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;

   c. does not release the permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;

   d. does not take into consideration or attest to the structural stability of any units or parts of the project;

   e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.

6. Unless a joint construction/operation permit has been issued, a permit for operating shall be obtained from the Agency before the facility or equipment covered by this permit is placed into operation.

7. These standard conditions shall prevail unless modified by special conditions.

8. The Agency may file a complaint with the Board for modification, suspension or revocation of a permit:

   a. upon discovery that the permit application contained misrepresentations, misinformation or false statements or that all relevant facts were not disclosed; or

   b. upon finding that any standard or special conditions have been violated; or

   c. upon any violation of the Environmental Protection Act or any Rule or Regulation effective thereunder as a result of the construction or development authorized by this permit.

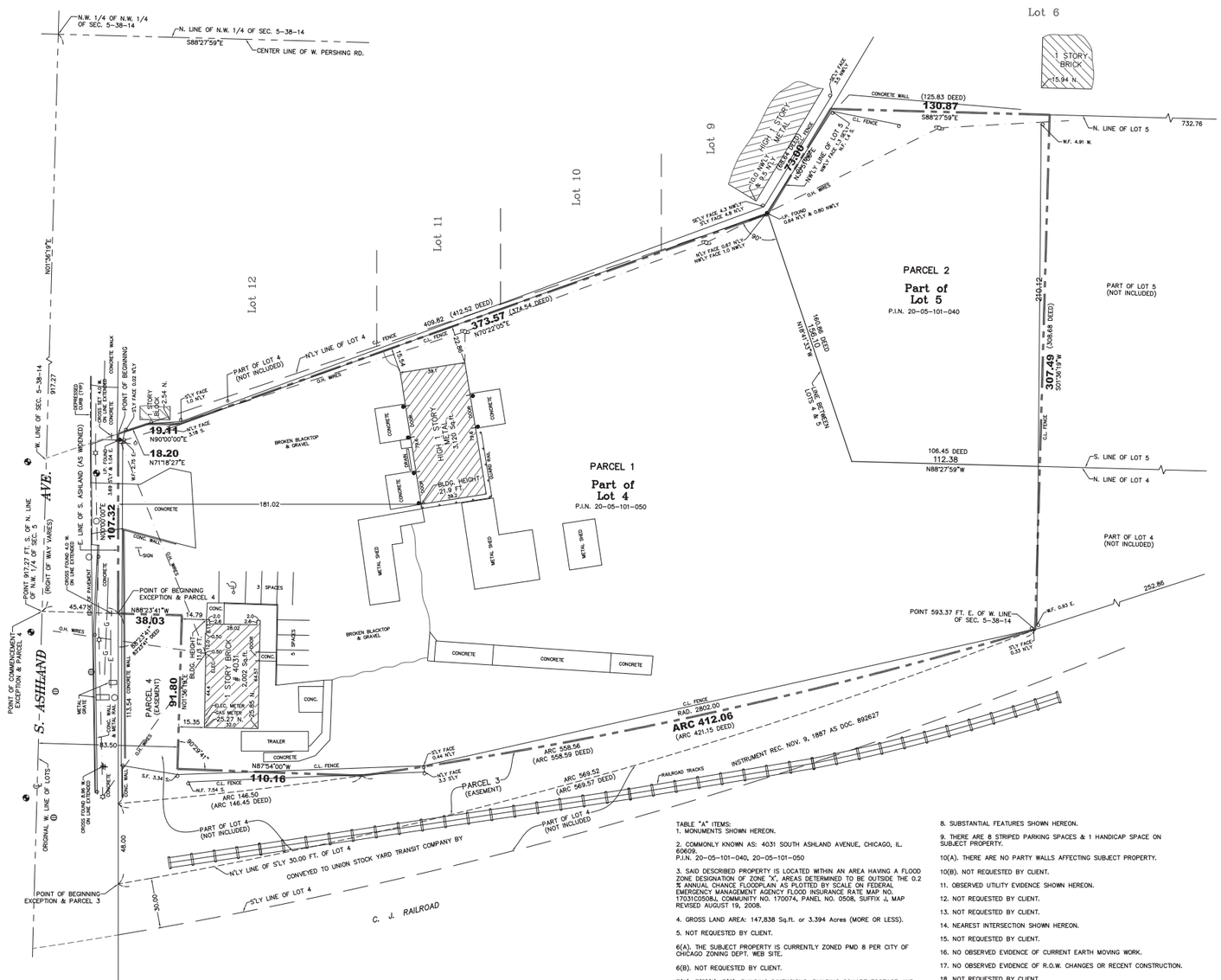
JLM\STANDARD CONDITIONS

APPENDIX B

LEGAL DESCRIPTION AND PLAT

ALTA/NSPS LAND TITLE SURVEY

LOCATION / VICINITY MAP



PARCEL 1:
LOT 4, EXCEPT THAT PART CONVEYED TO UNION STOCK YARDS AND TRANSIT COMPANY AND ALSO EXCEPT THAT PART THEREOF FALLING IN ASHLAND AVENUE AS WIDENED ALSO EXCEPT THAT PART DESCRIBED AS FOLLOWS:
BEGINNING AT THE POINT OF INTERSECTION OF THE EAST STREET LINE OF THE SOUTH ASHLAND AVENUE AS WIDENED WITH THE NORTHERLY LINE OF THE SOUTHERLY 30 FEET OF AFORESAID LOT 4; THENCE NORTHERLY ALONG SAID EAST STREET LINE A DISTANCE OF 48 FEET; THENCE NORTHEASTERLY ALONG AN ARC OF A CIRCLE CONVEXING SOUTHEASTERLY AND HAVING A RADIUS OF 2802 FEET, A DISTANCE OF 593.37 FEET EAST OF AND AT RIGHT ANGLES TO THE WEST LINE OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 5, TOWNSHIP 38 NORTH, RANGE 14 EAST OF THE THIRD PRINCIPAL MERIDIAN; THENCE SOUTHWESTERLY ALONG SAID NORTHERLY LINE OF THE SOUTHERLY 30 FEET OF LOT 4, A DISTANCE OF 569.57 FEET TO THE PLACE OF BEGINNING;
ALSO EXCEPT THAT PART DESCRIBED AS FOLLOWS:
COMMENCING AT A POINT ON THE WEST LINE OF SAID NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 5 SAID POINT BEING 917.27 FEET SOUTH OF THE NORTH LINE OF SAID NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 5 BEING 917.27 FEET SOUTH OF THE NORTH LINE OF SAID NORTHWEST QUARTER OF NORTHWEST QUARTER OF SECTION 5 MEASURED ALONG SAID WEST LINE; THENCE EAST AND AT RIGHT ANGLRS TO SAID WEST LINE A DISTANCE OF 45.47 FEET TO THE EAST STREET LINE OF SOUTH ASHLAND AVENUE AS WIDENED WHICH IS THE POINT OF BEGINNING; THENCE EAST ALONG A LINE FORMING AN ANGLE OF 88 DEGREES 23 MINUTES 41 SECONDS MEASURED FROM SOUTH TO EAST FROM EAST STREET LINE OF SOUTH ASHLAND AVENUE, A DISTANCE OF 38.03 FEET; THENCE SOUTH ALONG A LINE 83.5 FEET EAST OF AND PARALLEL TO SAID WEST LINE OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 5, A DISTANCE OF 91.80 FEET; THENCE EASTERLY ALONG A LINE FORMING AN ANGLE OF 90 DEGREES 29 MINUTES 41 SECONDS MEASURED FROM NORTH TO EAST FROM SAID PARALLEL LINE A DISTANCE OF 110.16 FEET TO AN INTERSECTION WITH THE PROPOSED NORTHERLY RIGHT-OF-WAY LINE A DISTANCE OF 146.45 FEET TO AN INTERSECTION WITH THE SAID EAST STREET LINE OF SOUTH ASHLAND AVENUE; THENCE NORTHERLY ALONG SAID EAST STREET LINE OF SOUTH ASHLAND AVENUE A DISTANCE OF 113.54 FEET TO THE PLACE OF BEGINNING; IN CIRCUIT COURT PARTITION OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 5, TOWNSHIP 38 NORTH, RANGE 14, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.
AND ALSO EXCEPT THAT PART DESCRIBED AS FOLLOWS:
ALL THAT PORTION OF LOT 4 IN THE CIRCUIT COURT PARTITION OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 5, TOWNSHIP 38 NORTH, RANGE 14 EAST OF THE THIRD PRINCIPAL MERIDIAN, LYING NORTHERLY OF A LINE DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SAID LOT 4, THENCE NORTHEASTERLY ALONG THE NORTHWESTERLY LINE OF SAID LOT 4, A DISTANCE OF 18.20 FEET TO THE POINT OF BEGINNING OF SAID LINE; THENCE EAST, ALONG THE LINE PERPENDICULAR TO THE WEST LINE OF SAID LOT 4, A DISTANCE OF 19.11 FEET; THENCE NORTHEASTERLY, A DISTANCE OF 374.54 FEET TO THE NORTHEAST CORNER OF SAID LOT 4 AND THERE TERMINATING.
AND ALSO EXCEPT THAT PART DESCRIBED AS FOLLOWS:
A PARCEL OF LAND COMPRISED OF A PART OF EACH OF LOTS 4 AND 5 IN THE CIRCUIT COURT PARTITION OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 5, TOWNSHIP 38 NORTH, RANGE 14 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS WHICH PARCEL OF LAND IS BOUNDED AND DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT ON THE NORTH LINE OF LOT 5, WHICH POINT IS 125.83 FEET, AS MEASURED ALONG SAID NORTH LINE, EAST OF THE INTERSECTION OF SAID NORTH LINE WITH THE NORTHWESTERLY LINE OF LOT 5, AND RUNNING THENCE EASTWARDLY ALONG SAID NORTH LINE OF LOT 5, A DISTANCE OF 732.76 FEET TO THE NORTHEAST CORNER OF SAID LOT 5; THENCE SOUTHWESTWARDLY ALONG THE EAST LINE OF SAID LOT 5, A DISTANCE OF 16.38 FEET (DEED DISTANCE) TO AN INTERSECTION WITH THE NORTHEASTWARD EXTENSION OF A STRAIGHT LINE WHICH IS 15.00 FEET NORTHWESTERLY OF AND PARALLEL WITH THE TANGENTIAL PORTION OF THE ORIGINAL NORTHWESTERLY RIGHT-OF-WAY LINE OF THE UNION STOCK YARD AND TRANSIT COMPANY OF CHICAGO; THENCE SOUTHWESTWARDLY ALONG SAID NORTHEASTWARD EXTENSION AND ALSO ALONG SAID PARALLEL LINE, A DISTANCE OF 495.64 FEET TO A POINT OF INTERSECTION WITH THE SOUTH LINE OF SAID LOT 5, SAID INTERSECTION BEING 15.00 FEET, MEASURED PERPENDICULARLY, NORTHWESTERLY OF SAID ORIGINAL NORTHWESTERLY RIGHT-OF-WAY LINE, THENCE WSTWARDLY ALONG SAID SOUTH LINE OF SAID LOT 5, (BEING ALSO THE NORTH LINE OF SAID LOT 4) A DISTANCE OF 38.48 FEET TO AN INTERSECTION WITH A LINE WHICH IS 30.00 FEET NORTHWESTERLY OF AND PARALLEL WITH SAID ORIGINAL NORTHWESTERLY RIGHT-OF-WAY LINE; THENCE SOUTHWESTWARDLY ALONG SAID PARALLEL LINE, SAID PARALLEL LINE BEING HERE THE NORTHWESTERLY LINE OF A PARCEL OF LAND CONVEYED TO SAID UNION STOCK YARD TRANSIT COMPANY BY INSTRUMENT RECORDED ON NOVEMBER 9, 1887 AS DOCUMENT 892627, A DISTANCE OF 252.86 FEET TO A POINT OF CURVE IN SAID NORTHWESTERLY LINE WHICH POINT OF CURVE IS 593.37 FEET, MEASURED PERPENDICULARLY, EAST OF THE WEST LINE OF SAID SECTION 5; THENCE NORTHWARDLY ALONG A STRAIGHT LINE, A DISTANCE OF 308.68 FEET, TO THE POINT OF BEGINNING.

PARCEL 2:
LOT 5, EXCEPT THAT PART LYING SOUTHEASTERLY OF THE FOLLOWING DESCRIBED LINE: COMMENCING AT A POINT ON THE LINE BETWEEN LOT 4 AND LOT 5 OF THE CIRCUIT COURT PARTITION WHICH IS DISTANCE 38.6 FEET MEASURED ALONG SAID LINE BETWEEN LOT 4 AND LOT 5, WEST OF THE ORIGINAL 66 FOOT RIGHT-OF-WAY OF THE UNION STOCK YARD AND TRANSIT COMPANY OF CHICAGO OVER AND ACROSS THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 5, RUNNING THENCE NORTHEASTERLY ON A STRAIGHT LINE A DISTANCE OF 293.8 FEET TO A POINT, SAID STRAIGHT LINE BEING PARALLEL TO AND 15 FEET MEASURED AT RIGHT ANGLES NORTHWESTERLY FROM THE NORTHWESTERLY RIGHT-OF-WAY LINE OF SAID ORIGINAL 66 FOOT LINE TO A POINT IN THE EAST LINE OF SAID LOT 5 WHICH IS DISTANCE 16.38 FEET MEASURED ALONG SAID EAST LINE OF LOT 5, SOUTH OF THE NORTHEAST CORNER OF SAID LOT 5, IN CIRCUIT COURT PARTITION OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 5, TOWNSHIP 38 NORTH, RANGE 14 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

PARCEL 3:
EASEMENT FOR THE BENEFIT OF PARCEL 1 AFORESAID RESERVED BY WARRANTY DEED FROM SUPERIOR PACKING COMPANY TO CITY OF CHICAGO DATED DECEMBER 29, 1954 AND RECORDED APRIL 20, 1955 AS DOCUMENT 16210202 DESCRIBED AS THE RIGHT AT ANY TIME IN THE FUTURE TO ERECT A LIVE STOCK AND CATTLE RUN IN THE AIR SPACE OVER AND ACROSS THE FOLLOWING DESCRIBED PROPERTY AT A LOCATION TO BE SELECTED BY THE GRANTOR THAT WILL NOT INTERFERE WITH THE RAILROAD OPERATIONS.

THE RIGHT TO HAVE ACCESS TO THE RAILROAD TRACKS PLACED ON THE FOLLOWING DESCRIBED OR ABUTTING THERETO: THAT PART OF LOT 4 IN CIRCUIT COURT PARTITION OF THE NORTHWEST QUARTE OF THE NORTHWEST QUARTER OF SECTION 5, TOWNSHIP 38 NORTH, RANGE 14 EAST OF THE THIRD PRINCIPAL MERIDIAN DESCRIBED AS FOLLOWS:
BEGINNING AT THE POINT OF INTERSECTION OF THE EAST STREET LINE OF SOUTH ASHLAND AVENUE AS WIDENED WITH THE NORTHERLY LINE OF THE SOUTHERLY 30 FEET OF AFORESAID LOT 4; THENCE NORTHERLY ALONG SAID EAST STREET LINE A DISTANCE OF 48 FEET; THENCE NORTHEASTERLY ALONG AN ARC OF A CIRCLE CONVEXING SOUTHEASTERLY AND HAVING A RADIUS OF 2802 FEET A DISTANCE OF 558.59 FEET TO A POINT ON THE NORTHERLY LINE OF THE SOUTHERLY 30 FEET OF SAID LOT 4; SAID POINT BEING 593.37 FEET EAST OF AND AT RIGHT ANGLES TO THE WEST LINE OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 5 AFORESAID; THENCE SOUTHWESTERLY ALONG SAID NORTHERLY LINE OF THE SOUTHERLY 30 FEET OF LOT 4; A DISTANCE OF 569.57 FEET TO THE PLACE OF BEGINNING.

PARCEL 4:
EASEMENT FOR THE BENEFIT OF PARCEL 1 AFORESAID RESERVED BY WARRANTY DEED FROM SUPERIOR PACKING COMPANY TO THE CITY OF CHICAGO DATED DECEMBER 29, 1954 AND RECORDED APRIL 20, 1955 AS DOCUMENT 16210202 ON AND OVER THE SURFACE OF THE FOLLOWING DESCRIBED PROPERTY FOR ACCESSIBILITY TO AND FROM ASHLAND AVENUE AND SHOULD HAVE THE USE OF THE SURFACE OF SAID PROPERTY UNTIL SUCH TIME AS NOTIFIED IN WRIGHTING BY THE COMMISSIONER OF PUBLIC WORKS THAT SAID PROPERTY IS REQUIRED FOR FURTHER USE.

ALSO

THE RIGHT TO MAKE A CONNECTION TO THE SEWER TO BE CONSTRUCTED IN SAID PROPERTY FOR USE OF THE ABUTTING PROPERTY UPON THE ISSUANCE OF A PERMIT THEREFOR BY THE CITY AND SAID CONNECTION TO BE IN THE COMPLIANCE WITH THE PROVISIONS OF THE MUNICIPAL CODE OF CHICAGO AND THE RULES AND REGULATIONS OF THE DEPARTMENT OF WATER AND SEWER OF THE CITY OF CHICAGO; THE RIGHT TO MAINTAIN AND LOCATE A DRIVEWAY AND INGRESS AND EGRESS, AS PROVIDED FOR IN AN AGREEMENT ENTERED INTO BY AND BETWEEN THE GRANTOR AND GRANTEE DATED DECEMBER 10, 1954 AND APPROVED BY ORDINANCE PASSED BY THE CITY COUNTY OF CHICAGO ON NOVEMBER 4, 1954 OVER THAT PART OF LOT 4 IN CIRCUIT COURT PARTITION OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 5, TOWNSHIP 38 NORTH, RANGE 14 EAST OF THE THIRD PRINCIPAL MERIDIAN DESCRIBED AS FOLLOWS:
COMMENCING AT A POINT ON THE WEST LINE OF SAID NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 5, SAID POINT BEING 917.27 FEET SOUTH OF THE NORTH LINE OF SAID NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 5 MEASURED ALONG SAID WEST LINE; THENCE EAST AT RIGHT ANGLES TO SAID WEST LINE A DISTANCE OF 45.47 FEET TO THE EAST STREET LINE OF SOUTH ASHLAND AVENUE AS WIDENED WHICH IS THE PLACE OF BEGINNING; THENCE EAST ALONG A LINE FORMING AN ANGLE OF 88 DEGREES 23 MINUTES 41 SECONDS MEASURED FROM SOUTH TO EAST FROM SAID EAST STREET LINE OF SOUTH ASHLAND AVENUE A DISTANCE OF 38.03 FEET; THENCE SOUTH ALONG A LINE 83.5 FEET EAST OF AND PARALLEL TO SAID WEST LINE OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 5, A DISTANCE OF 91.80 FEET THENCE EASTERLY ALONG A LINE FORMING AN ANGLE OF 90 DEGREES 29 MINUTES 41 SECONDS MEASURED FROM NORTH TO EAST FROM SAID PARALLEL LINE, A DISTANCE OF 110.16 FEET TO AN INTERSECTION WITH THE PROPOSED RIGHT-OF-WAY LINE OF THE UNION STOCK YARDS AND TRANSIT COMPANY; THENCE WSTERLY ALONG SAID PROPOSED RIGHT-OF-WAY A DISTANCE OF 146.45 FEET TO AN INTERSECTION WITH THE SAID EAST STREET LINE OF ASHLAND AVENUE; THENCE NORTHERLY ALONG SAID EAST STREET LINE OF SOUTH ASHLAND AVENUE A DISTANCE OF 113.54 FEET TO THE PLACE OF BEGINNING, ALL IN COOK COUNTY, ILLINOIS.

SCHEDULE B, SPECIAL EXCEPTION NOTES:

ITEMS 1 THROUGH 4: AFFECTS SUBJECT PROPERTY (NOT PLOTTABLE).

ITEM 5: EASEMENT FOR INGRESS AND EGRESS RECORDED SEPTEMBER 7, 2004 AS DOCUMENT 0425119002 GRANTED BY JOSEPH COZZI FOR THE BENEFIT OF PINK PANTHER.

ITEMS 6 THROUGH 14: AFFECTS SUBJECT PROPERTY (NOT PLOTTABLE).

BEARINGS ARE SHOWN FOR ANGLE REFERENCE ONLY AND ARE NOT RELATED TO GRID OR MAGNETIC NORTH.

ASSUMED

TABLE "A" ITEMS:
1. MONUMENTS SHOWN HEREON.

2. COMMONLY KNOWN AS: 4031 SOUTH ASHLAND AVENUE, CHICAGO, IL. 60609.
P.I.N. 20-05-101-040, 20-05-101-050

3. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A FLOOD ZONE DESIGNATION OF ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2 % ANNUAL CHANCE FLOODPLAIN AS PLOTTED BY SCALE ON FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP NO. 17031C0508J, COMMUNITY NO. 170074, PANEL NO. 0508, SUFFIX J, MAP REVISED AUGUST 19, 2008.

4. GROSS LAND AREA: 147,838 Sq.ft. or 3.394 Acres (MORE OR LESS).

5. NOT REQUESTED BY CLIENT.

6(A). THE SUBJECT PROPERTY IS CURRENTLY ZONED PMD 8 PER CITY OF CHICAGO ZONING DEPT. WEB SITE.

6(B). NOT REQUESTED BY CLIENT.

7(A), 7(B)(1), 7(C). BUILDING DIMENSIONS, BUILDING SQUARE FOOTAGE AND BUILDING HEIGHT SHOWN HEREON.

7(B)(2). NOT REQUESTED BY CLIENT.21. NOT REQUESTED BY CLIENT.

8. SUBSTANTIAL FEATURES SHOWN HEREON.

9. THERE ARE 8 STRIPED PARKING SPACES & 1 HANDICAP SPACE ON SUBJECT PROPERTY.

10(A). THERE ARE NO PARTY WALLS AFFECTING SUBJECT PROPERTY.

10(B). NOT REQUESTED BY CLIENT.

11. OBSERVED UTILITY EVIDENCE SHOWN HEREON.

12. NOT REQUESTED BY CLIENT.

13. NOT REQUESTED BY CLIENT.

14. NEAREST INTERSECTION SHOWN HEREON.

15. NOT REQUESTED BY CLIENT.

16. NO OBSERVED EVIDENCE OF CURRENT EARTH MOVING WORK.

17. NO OBSERVED EVIDENCE OF R.O.W. CHANGES OR RECENT CONSTRUCTION.

18. NOT REQUESTED BY CLIENT.

19. NOT AVAILABLE TO THE SURVEYOR.

20(A)(B). NOT REQUESTED BY CLIENT.

21. NOT REQUESTED BY CLIENT.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

McTIGUE & ASSOCIATES, LTD
PROFESSIONAL LAND SURVEYING COMPANY
5805 W. HIGGINS AVE. CHICAGO, IL. 60630
phone (773) 736-1349 fax (773) 736-4616
www.landsurveyorschicago.com

SURVEYED BY: JCM, RM	DRAWN BY: RB	CHECKED BY: JCM
ORDERED BY:	PAINE & WETZEL	
ORDER No.	17-008	

SCALE: 1" IS 30 FEET

SYMBOL LEGEND

CABLE TV	CTV	CABLE TV CONTROL BOX	GAS VALVE VAULT	TELEPHONE CONTROL BOX	FENCE	EXIST. GRADE/CONTOUR
ELECTRIC LINE	E	CITY ELECTRIC MANHOLE	INLET	TELEPHONE VAULT & COMMUNICATION	BUMPER GUARD	C.L. = CHAIN LINK, WL = WOOD, CONC. = CONCRETE
OVERHEAD WIRES	O.H. WIRES	COMMONWEALTH EDISON MANHOLE	CATCH BASIN	FIRE HYDRANT	GUARD RAIL	C = CURB, P = PAVEMENT, W = WALK, F = FLOW LINE
GAS MAIN	G	ELECTRIC CONTROL BOX	STORM SEWER MANHOLE	WATER METER	MAIL BOX	G = GROUND, I.P. = IRON PIPE, I.R. = IRON ROD
COMBINED SEWER (SANITARY / STORM)	S	LIGHT POLE	SANITARY SEWER MANHOLE	WATER VALVE BOX	PARKING METER	G.M. = OVERHEAD, REC. = RECORD, MEAS. = MEASURED
STORM SEWER	S	LIGHT CONTROL BOX	COMBINED SEWER MANHOLE	WATER VALVE VAULT	SIGN	N.F. = NORTH FACE, E.F. = EAST FACE, S.F. = SOUTH FACE
TELEPHONE LINE	T	UTILITY POLE	MANHOLE - NO I.D.	WATER METER VAULT	T/F SHOT	W.F. = WEST FACE, T/F = TOP OF FOUNDATION
WATERMAIN	W	TRAFFIC LIGHT	TRAFFIC CONTROL BOX	TREE DECIDUOUS/EVERGREEN	SHRUB	T/R = TOP OF SLAB, T/R = TOP OF ROOF
		GAS VALVE BOX				T/W = TOP OF WALL, F/F = FINISHED FLOOR

GENERAL NOTES
1. ALL EASEMENTS, COVENANTS AND RESTRICTIONS REFERENCED IN THE TITLE COMMITMENT ISSUED BY: STEWART TITLE GUARANTY COMPANY, FILE NO.: 01146-492OB, EFFECTIVE DATE: FEBRUARY 17, 2017 OR EASEMENTS WHICH THE UNDERSIGNED HAS BEEN ADVISED OR HAS KNOWLEDGE, HAVE BEEN PLOTTED HEREON OR OTHERWISE NOTED AS TO THEIR EFFECT ON THE SUBJECT PROPERTY.

2. THE LOCATION OF UNDERGROUND UTILITIES SHOWN HEREON IS BASED ON ABOVE GROUND EVIDENCE AND DRAWINGS PROVIDED BY UTILITY COMPANIES AND OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED.

TO:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS AND INCLUDES ITEMS 1, 2, 3, 4, 6a, 7a, 7(b1), 7(c), 8, 9, 10a, 11, & 14 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON FEBRUARY 23, 2017. DATE: 8TH DAY OF MARCH A.D. 2017

SIGNED .....
JOHN D. McTIGUE REGISTRATION No. 2230
LICENCE EXPIRES 11/30/2018

APPENDIX C

PROPERTY OWNER'S AUTHORIZATION

AUTHORIZED USE OF PROPERTY

Stockyards Materials, LLC is authorized to operate a Class V Recycling Facility at 4031 South Ashland Avenue, Chicago, Cook County, Illinois.

James Bracken
President
4031 South Ashland, LLC

04/08/2024
Date

Notary Public Stamp:

OFFICIAL SEAL
LORELEI CERECERES
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES: 5/21/2025

Notary Public

4-8-2024
Date

APPENDIX D

PROOF OF REAL ESTATE TAX PAYMENT

TOTAL PAYMENT DUE

$0.00

By 05/01/24

2023 First Installment Property Tax Bill - Cook County Electronic Bill

Property Index Number (PIN)	Volume	Code	Tax Year	(Payable In)	Township	Classification
20-05-101-050-0000	414	72022	2023	(2024)	LAKE	5-93

IF PAYING LATE, PLEASE PAY	05/02/2024 - 06/01/2024	06/02/2024 - 07/01/2024	07/02/2024 - 08/01/2024	LATE INTEREST IS 0.75% PER MONTH, BY STATE LAW
	$0.00	**$0.00**	**$0.00**	

TAXING DISTRICT DEBT AND FINANCIAL DATA

Your Taxing Districts	Money Owed by Your Taxing Districts	Pension and Healthcare Amounts Promised by Your Taxing Districts	Amount of Pension and Healthcare Shortage	% of Pension and Healthcare Costs Taxing Districts Can Pay
Metro Water Reclamation Dist of Chicago	$4,169,629,820	$3,082,006,000	$1,046,664,000	66.04%
Chicago Park District	$1,239,907,000	$2,096,450,000	$1,741,894,000	16.91%
Board of Education Chicago	$17,016,043,000	$31,405,432,081	$18,032,390,489	42.58%
Chicago Community College Dist	$495,034,220	$92,470,188	$92,470,188	0.00%
City of Chicago	$38,528,699,000	$47,194,807,974	$37,271,645,937	21.03%
Cook County Forest Preserve District	$214,441,242	$617,834,550	$382,643,760	38.07%
County of Cook	$8,693,862,550	$27,096,852,844	$12,815,325,282	52.71%
Total	$70,357,616,832	$111,585,853,637	$71,383,033,656	

For a more in-depth look at government finances and how they affect your taxes, visit *cookcountytreasurer.com*

PAY YOUR TAXES ONLINE
Pay at cookcountytreasurer.com from your bank account or credit card.

IMPORTANT MESSAGES

TAX CALCULATOR

2022 TOTAL TAX		**31,794.65**
2023 ESTIMATE	**X**	**55%**
2023 1st INSTALLMENT	**=**	**17,487.06**

The First Installment amount is 55% of last year's total taxes. All exemptions, such as homeowner and senior exemptions, will be reflected on your Second Installment tax bill.

PROPERTY LOCATION

4015 S ASHLAND AVE
CHICAGO IL 60609

MAILING ADDRESS

STOCKYARDS MATERIALS
2300 W 167TH STREET
MARKHAM IL 604285608

****** Please see 2023 First Installment Payment Coupon next page ******

2023 First Installment Property Tax Bill

Cook County Payment Coupon

Pursuant to Cook County Ordinance 07-O-68, if you are a mortgage lender, loan servicer, or agent of any entity within the meaning of 35 ILCS 200/20-12, you may not pay using a downloadable tax bill unless you pay the $5 duplicate bill fee.

DETACH & INCLUDE WITH PAYMENT

TOTAL PAYMENT DUE	IMPORTANT PAYMENT MESSAGES
$0.00 **By 05/01/24** **If paying later, refer to amounts above.**	**Cook County eBill** Click to pay online Click to update Mailing Name/Address

SN 0020230100 RTN 500001075 AN (see PIN) TC 008911

Property Index Number (PIN)
20-05-101-050-0000

T1LG
Volume
414

Amount Paid

$

00202301006200510105000009008911200000000000000000000000000000000000000000000000

This is an Official Downloadable Tax Bill Payment Coupon.
Please process this coupon along with payment presented.

COOK COUNTY TREASURER
PO BOX 805436
CHICAGO IL 60680-4116

2005101050000O/O/23/E/OOOOOOOOOO/1

APPENDIX E

SPECIAL USE ZONING APPROVAL MINUTES

ZONING BOARD OF APPEALS, CITY OF CHICAGO, CITY HALL, ROOM 905

APPLICANT: Stockyards Materials, LLC **CAL NO.:** 54-18-S

APPEARANCE FOR: Richard Toth **MINUTES OF MEETING:** February 16, 2018

APPEARANCE AGAINST: None

PREMISES AFFECTED: 3981-4031 S. Ashland Avenue

NATURE OF REQUEST: Application for a special use to establish a modified transfer station.

ACTION OF BOARD-
APPLICATION APPROVED

THE VOTE

MAR 19 2018
CITY OF CHICAGO
ZONING BOARD OF APPEALS

	AFFIRMATIVE	NEGATIVE	ABSENT
BLAKE SERCYE	X		
SHAINA DOAR	X		
SOL FLORES			X
SAM TOIA	X		
AMANDA WILLIAMS	X		

THE RESOLUTION:

WHEREAS, a public hearing was held on this application by the Zoning Board of Appeals at its regular meeting held on February 16, 2018 after due notice thereof as provided under Section 17-13-0107B and by publication in the Chicago Sun-Times on February 2, 2018; and

WHEREAS, the Zoning Board of Appeals, having reviewed the proposed finding of fact and having fully heard the testimony and arguments of the parties and being fully advised in the premises, hereby finds the following; the applicant shall be permitted to establish a modified transfer station; George Blakemore of Chicago, Illinois testified in opposition; two additional special uses were granted to the subject property in Cal. Nos. 53-18-S and 55-18-S; expert testimony was offered that the use would not have a negative impact on the surrounding community and is in character with the neighborhood; further expert testimony was offered that the use complies with all of the criteria as set forth by the code for the granting of a special use at the subject site; the Board finds the use complies with all applicable standards of this Zoning Ordinance; is in the interest of the public convenience and will not have a significant adverse impact on the general welfare of neighborhood or community; is compatible with the character of the surrounding area in terms of site planning and building scale and project design; is compatible with the character of the surrounding area in terms of operating characteristics, such as hours of operation, outdoor lighting, noise, and traffic generation; and is designed to promote pedestrian safety and comfort; it is therefore

RESOLVED, that the aforesaid special use request be and it hereby is approved and the Zoning Administrator is authorized to permit said special use subject to the following condition(s): provided the special use is issued solely to the applicant, Stockyards Materials, LLC, and the development is consistent with the design and layout of the landscape plan dated February of 2018, prepared by Andrews Engineering, Inc.

That all applicable ordinances of the City of Chicago shall be complied with before a permit is issued.

APPROVED AS TO SUBSTANCE
CHAIRMAN

ZONING BOARD OF APPEALS, CITY OF CHICAGO, CITY HALL, ROOM 905

APPLICANT: Stockyards Materials, LLC **CAL NO.:** 55-18-S

APPEARANCE FOR: Richard Toth **MINUTES OF MEETING:** February 16, 2018

APPEARANCE AGAINST: None

PREMISES AFFECTED: 3981-4031 S. Ashland Avenue

NATURE OF REQUEST: Application for a special use to establish a Class V recycling facility.

ACTION OF BOARD-
APPLICATION APPROVED

THE VOTE

MAR 19 2018

CITY OF CHICAGO
ZONING BOARD OF APPEALS

	AFFIRMATIVE	NEGATIVE	ABSENT
BLAKE SERCYE	X		
SHAINA DOAR	X		
SOL FLORES			X
SAM TOIA	X		
AMANDA WILLIAMS	X		

THE RESOLUTION:

WHEREAS, a public hearing was held on this application by the Zoning Board of Appeals at its regular meeting held on February 16, 2018 after due notice thereof as provided under Section 17-13-0107B and by publication in the Chicago Sun-Times on February 2, 2018; and

WHEREAS, the Zoning Board of Appeals, having reviewed the proposed finding of fact and having fully heard the testimony and arguments of the parties and being fully advised in the premises, hereby finds the following; the applicant shall be permitted to establish a Class V recycling facility; George Blakemore of Chicago, Illinois testified in opposition; two additional special uses were granted to the subject property in Cal. Nos. 53-18-S and 54-18-S; expert testimony was offered that the use would not have a negative impact on the surrounding community and is in character with the neighborhood; further expert testimony was offered that the use complies with all of the criteria as set forth by the code for the granting of a special use at the subject site; the Board finds the use complies with all applicable standards of this Zoning Ordinance; is in the interest of the public convenience and will not have a significant adverse impact on the general welfare of neighborhood or community; is compatible with the character of the surrounding area in terms of site planning and building scale and project design; is compatible with the character of the surrounding area in terms of operating characteristics, such as hours of operation, outdoor lighting, noise, and traffic generation; and is designed to promote pedestrian safety and comfort; it is therefore

RESOLVED, that the aforesaid special use request be and it hereby is approved and the Zoning Administrator is authorized to permit said special use subject to the following condition(s): provided the special use is issued solely to the applicant, Stockyards Materials, LLC, and the development is consistent with the design and layout of the landscape plan dated February of 2018, prepared by Andrews Engineering, Inc.

That all applicable ordinances of the City of Chicago shall be complied with before a permit is issued.

APPROVED AS TO SUBSTANCE

CHAIRMAN

ZONING BOARD OF APPEALS, CITY OF CHICAGO, CITY HALL, ROOM 905

APPLICANT: Stockyards Materials, LLC **CAL NO.:** 53-18-S

APPEARANCE FOR: Richard Toth **MINUTES OF MEETING:** February 16, 2018

APPEARANCE AGAINST: None

PREMISES AFFECTED: 3981-4031 S. Ashland Avenue

NATURE OF REQUEST: Application for a special use to establish a reprocessable construction /demolition material facility.

ACTION OF BOARD-
APPLICATION APPROVED

THE VOTE

MAR 19 2018
CITY OF CHICAGO
ZONING BOARD OF APPEALS

	AFFIRMATIVE	NEGATIVE	ABSENT
BLAKE SERCYE	X		
SHAINA DOAR	X		
SOL FLORES			X
SAM TOIA	X		
AMANDA WILLIAMS	X		

THE RESOLUTION:

WHEREAS, a public hearing was held on this application by the Zoning Board of Appeals at its regular meeting held on February 16, 2018 after due notice thereof as provided under Section 17-13-0107B and by publication in the Chicago Sun-Times on February 2, 2018; and

WHEREAS, the Zoning Board of Appeals, having reviewed the proposed finding of fact and having fully heard the testimony and arguments of the parties and being fully advised in the premises, hereby finds the following; the applicant shall be permitted to establish a reprocessable construction / demolition material facility; George Blakemore of Chicago, Illinois testified in opposition; two additional special uses were granted to the subject property in Cal. Nos. 54-18-S and 55-18-S; expert testimony was offered that the use would not have a negative impact on the surrounding community and is in character with the neighborhood; further expert testimony was offered that the use complies with all of the criteria as set forth by the code for the granting of a special use at the subject site; the Board finds the use complies with all applicable standards of this Zoning Ordinance; is in the interest of the public convenience and will not have a significant adverse impact on the general welfare of neighborhood or community; is compatible with the character of the surrounding area in terms of site planning and building scale and project design; is compatible with the character of the surrounding area in terms of operating characteristics, such as hours of operation, outdoor lighting, noise, and traffic generation; and is designed to promote pedestrian safety and comfort; it is therefore

RESOLVED, that the aforesaid special use request be and it hereby is approved and the Zoning Administrator is authorized to permit said special use subject to the following condition(s): provided the special use is issued solely to the applicant, Stockyards Materials, LLC, and the development is consistent with the design and layout of the landscape plan dated February of 2018, prepared by Andrews Engineering, Inc.

That all applicable ordinances of the City of Chicago shall be complied with before a permit is issued.

APPROVED AS TO SUBSTANCE
CHAIRMAN

CITY OF CHICAGO ZONING BOARD OF APPEALS
FRIDAY- February 16, 2018
121 N. LaSalle Street- Room 200

Approval of the minutes from the January 19, 2018 regular meeting of the Board.

Approval of the agenda for the February 16, 2018 regular meeting of the Board.

9:00 A.M.

66-18-S **ZONING DISTRICT: B3-1** **WARD: 41**
APPLICANT: Barbara Kruszewski d/b/a/ Basia's Salon Ltd.
OWNER: Higgins Management
PREMISES AFFECTED: 7114 W. Higgins Avenue
SUBJECT: Application for a special use to establish a body art service (microblading).

- **Approved**

67-18-Z **ZONING DISTRICT: DR-3** **WARD: 42**
APPLICANT: Thomas and Virginia Gohagan
OWNER: Same as applicant
PREMISES AFFECTED: 103 E. Bellevue Place
SUBJECT: Application for a variation to reduce the rear setback from the required 30.34' to zero for a proposed one-story rear addition to the existing three-story, single family residence.

- **Approved**

68-18-Z **ZONING DISTRICT: RT-4** **WARD: 1**
APPLICANT: Henry Z. Papiz, Jr.
OWNER: Same as applicant
PREMISES AFFECTED: 1103 N. Hermitage Avenue
SUBJECT: Application for a variation to reduce the rear setback from the required 38.46' to 2', north setback from 2' to zero (south to be zero), combined side setback from 5’ to zero for a proposed detached, two-car garage with a roof deck, pergola, chimney, rear porch and an unenclosed stairway accessing the roof deck at the rear of the three-story building.

- **Approved**

69-18-Z **ZONING DISTRICT: DS-3** **WARD: 27**
APPLICANT: 916 Fulton, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 916 W. Fulton Market
SUBJECT: Application for a variation to reduce the required sixty-five parking spaces by 100% to zero for a proposed two-story restaurant and retail building.

- **Approved**

70-18-Z **ZONING DISTRICT: DS-3** **WARD: 27**
APPLICANT: 916 Fulton, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 916 W. Fulton Market
SUBJECT: Application for a variation to eliminate the one required loading berth for a proposed two-story restaurant and retail building.

- **Approved**

71-18-S **ZONING DISTRICT: B3-2** **WARD: 44**
APPLICANT: C & F Building, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 950 W. Addison Street
SUBJECT: Application for a special use to establish a rooftop patio located on the fourth floor and roof top to serve an existing restaurant located on the lower level and first floor.

- **Continued to March 16, 2018 at 9:00 a.m.**

72-18-Z **ZONING DISTRICT: RS-3** **WARD: 33**
APPLICANT: Novus Real Estate, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 3112 N. Francisco Avenue
SUBJECT: Application for a variation to reduce the front setback from the required 12.14' to 7.91', north setback from 2' to 0.62' (south to be 3.5'). combined side setback from 5' to 4.12' for a proposed one-story front addition and a rear three-story addition to the existing three-story, single family residence.

- **Approved**

73-18-Z **ZONING DISTRICT: RS-3** **WARD: 47**
APPLICANT: Nathan Chamberlain
OWNER: Same as applicant
PREMISES AFFECTED: 3911 N. Hermitage Avenue
SUBJECT: Application for a variation to reduce the rear setback from the required 14' to 1.28', north setback from 2' to 0.3' for a proposed second floor addition and a rear one story addition with roof deck for the existing single family residence.

- **Continued to March 16, 2018 at 9:00 a.m.**

74-18-Z **ZONING DISTRICT: RS-3** **WARD: 47**
APPLICANT: Nathan Chamberlain
OWNER: Same as applicant
PREMISES AFFECTED: 3911 N. Hermitage Avenue
SUBJECT: Application for a variation to relocate the existing 101.11 square feet of rear yard open space to the rear roof deck which shall serve the existing single family residence.

- **Continued to March 16, 2018 at 9:00 a.m.**

75-18-Z **ZONING DISTRICT: RS-3** **WARD: 47**
APPLICANT: Nathan Chamberlain
OWNER: Same as applicant
PREMISES AFFECTED: 3911 N. Hermitage Avenue
SUBJECT: Application for a variation to increase the non-conforming floor area ratio by 59 square feet with a proposed second floor addition and a rear one story addition with roof deck for the proposed single family residence.

- **Continued to March 16, 2018 at 9:00 a.m.**

76-18-S **ZONING DISTRICT: B3-2** **WARD: 32**
APPLICANT: Jose Salamanca
OWNER: Same as applicant
PREMISES AFFECTED: 2071 N. Western Avenue
SUBJECT: Application for a special use to convert one retail store front and one rear dwelling unit into a single family residence with new second floor addition and an attached one car garage with roof deck.

- **Approved**

77-18-Z **ZONING DISTRICT: B3-2** **WARD: 32**
APPLICANT: Jose Salmanca
OWNER: Same as applicant
PREMISES AFFECTED: 2071 N. Western Avenue
SUBJECT: Application for a variation to reduce the rear setback from 30' to zero, reduce the reduce the required garage rear setback from 2' to zero for a proposed second floor addition, side open porches, a solid fence not to exceed* 6' in height and an attached garage with roof deck.

- **Approved**

78-18-S **ZONING DISTRICT: B1-2** **WARD: 43**
APPLICANT: Spa Spazio II, LLC
OWNER: Acadia 639 West Diversey, LLC
PREMISES AFFECTED: 2746 N. Clark Street
SUBJECT: Application for a special use to establish a nail salon.

- **Approved**

79-18-Z **ZONING DISTRICT: RS-3** **WARD: 30**
APPLICANT: Matthew Fisher
OWNER: Same as applicant
PREMISES AFFECTED: 3941 W. Wellington Avenue
SUBJECT: Application for a variation to convert a four dwelling unit building to a five dwelling unit building. One dwelling unit may be added with documented evidence to support the increase in density and may not exceed one dwelling unit.

- **Approved**

*****Amended at hearing

80-18-Z **ZONING DISTRICT: RS-3** **WARD: 30**
APPLICANT: Matthew Fisher
OWNER: Same as applicant
PREMISES AFFECTED: 3941 W. Wellington Avenue
SUBJECT: Application for a variation to reduce the rear yard open space from the required 1,125 square feet to zero for a proposed two-story, four dwelling unit building to be converted to a five dwelling unit building.

- **Approved**

81-18-Z **ZONING DISTRICT: RM-5.5** **WARD: 1**
APPLICANT: Scott Gray
OWNER: Same as applicant
PREMISES AFFECTED: 1824 W. Augusta Boulevard
SUBJECT: Application for a variation to reduce the required parking stalls from six to three to allow for the conversion of a three dwelling unit building with tavern to a six dwelling unit building.

- **Approved**

82-18-Z **ZONING DISTRICT: RM-5.5** **WARD: 1**
APPLICANT: Scott Gray
OWNER: Same as applicant
PREMISES AFFECTED: 1824 W. Augusta Boulevard
SUBJECT: Application for a variation to reduce the required rear yard open space from 216 square feet to 150 square feet for the conversion of a three dwelling unit building with tavern to a six dwelling unit building.

- **Approved**

83-18-Z **ZONING DISTRICT: B3-3** **WARD: 47**
APPLICANT: 3901 Lincoln Flats, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 3901 N. Lincoln Avenue
SUBJECT: Application for a variation to reduce the rear setback from the required 30' to 10.58' for a proposed four-story building with ground floor retail and twelve dwelling units above and six on-site parking spaces.

- **Approved**

84-18-S **ZONING DISTRICT: B3-2** **WARD: 31**
APPLICANT: Gloria C. Sandoval d/b/a/ Windy City Fades, Inc.
OWNER: Eddie and Gloria Sandoval
PREMISES AFFECTED: 4406 W. Diversey Avenue
SUBJECT: Application for a special use to establish a barber shop.

- **Approved**

85-18-S **ZONING DISTRICT: PMD-4A** **WARD: 27**
APPLICANT: Altitude Chicago, LLC
OWNER: CHP-DRH Portfolio, LLC
PREMISES AFFECTED: 1501-11 W. Hubbard Street / 400-36 N. Armour Street
SUBJECT: Application for a special use to establish a sports and recreation participant (children's play center) in an existing building.

- **Approved**

86-18-S **ZONING DISTRICT: PMD-4A** **WARD: 27**
APPLICANT: Altitude Chicago, LLC
OWNER: CHP-DRH Portfolio, LLC
PREMISES AFFECTED: 1512-24 W. Kinzie Street
SUBJECT: Application for a special use to establish an off-site accessory parking lot to serve a proposed sports and recreation facility (children's play center) located at 1501-11 W. Hubbard Street / 400-36 N. Armour Street.

- **Approved**

87-18-Z **ZONING DISTRICT: B2-3** **WARD: 28**
APPLICANT: 1430 W. Filmore, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 1430 W. Fillmore Street
SUBJECT: Application for a variation to reduce the front setback from the required 6.39' to 1.83', rear setback from 30' to 23.5' for a proposed open bridge to connect the existing garage roof deck to the existing three-story, six dwelling unit building with new proposed front open balconies.

- **Approved**

88-18-S **ZONING DISTRICT: B3-1** **WARD: 45**
APPLICANT: Shiv Shatki Investment, Inc. d/b/a/ Community Food and Liquor 1
OWNER: Skil Plaza, LLC
PREMISES AFFECTED: 5530 N. Milwaukee Avenue
SUBJECT: Application for a special use to establish a liquor store.

- **Continued to March 16, 2018 at 9:00 a.m.**

89-18-Z **ZONING DISTRICT: RM-5** **WARD: 44**
APPLICANT: Steven and Mary Molo
OWNER: Same as applicant
PREMISES AFFECTED: 341 W. Wellington Avenue
SUBJECT: Application for a variation to reduce the rear setback from the required 39.29' to zero, east setback from 5' to zero for a proposed 8' high wood privacy fence for the existing three-story, single family residence.

- **Approved**

90-18-Z **ZONING DISTRICT: RS-3** **WARD: 2**
APPLICANT: Yuval Degani
OWNER: Same as applicant
PREMISES AFFECTED: 1426 W. Lill Avenue
SUBJECT: Application for a variation to reduce the front setback from the required 19.02' to 6.3', west setback from 2' to 0.2' (east to be 2.6'), combined side setback from 4.8' to 2.8' for a proposed two-story, front addition and a rear open deck for the existing single family residence.

- **Approved**

91-18-Z **ZONING DISTRICT: RT-4** **WARD: 2**
APPLICANT: Glenn and Kathryn McMillan
OWNER: Same as applicant
PREMISES AFFECTED: 1648 N. Winchester Avenue
SUBJECT: Application for a variation to reduce the rear setback from the required 33.88' to zero, south setback from 3.29' to zero (north to be zero for abutting a public alley) for a proposed two story single family residence with privacy wall, rear covered walkway and a rear two car detached garage.

- **Approved**

92-18-Z **ZONING DISTRICT: B3-2** **WARD: 32**
APPLICANT: 2930 Lincoln, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 2930 N. Lincoln Avenue
SUBJECT: Application for a variation to reduce the minimum lot area from 3,000 square feet to 2,885.24 square feet for a proposed four-story, three dwelling unit building.

- **Approved**

93-18-S **ZONING DISTRICT: RM-4.5** **WARD: 44**
APPLICANT: 744 Buckingham, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 742 W. Buckingham Place
SUBJECT: Application for a special use to establish one off-site parking space to meet the parking requirement for a four, dwelling unit building located at 744 W. Buckingham Place.

- **Approved**

94-18-Z **ZONING DISTRICT: RM-4.5** **WARD: 44**
APPLICANT: 744 Buckingham Place
OWNER: Same as applicant
PREMISES AFFECTED: 744 W. Buckingham Place
SUBJECT: Application for a variation to reduce the west setback from the required 2' to 1.1' for a proposed three-car garage.

- **Approved**

95-18-Z **ZONING DISTRICT: RM-4.5** **WARD: 44**
APPLICANT: 744 Buckingham, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 744 W. Buckingham Place
SUBJECT: Application for a variation to reduce the rear yard open space from the required 279.11 square feet to zero for a proposed three car garage.

- **Approved**

96-18-Z **ZONING DISTRICT: RM-4.5** **WARD: 1**
APPLICANT: Anne Shutler
OWNER: Nikolas Agbavani
PREMISES AFFECTED: 1242-44 W. Huron Street
SUBJECT: Application for a variation to reduce the west setback at 1242 W. Huron from the required 2' to 0.37 feet to subdivide one existing zoning lots into two zoning lots. The three-story, three dwelling unit building at 1242 W. Huron shall remain.

- **Approved**

97-18-S **ZONING DISTRICT: M2-1** **WARD: 23**
APPLICANT: McDonald's Corporation
OWNER: Archland Property II, LP
PREMISES AFFECTED: 5253-59 S. Pulaski Road
SUBJECT: Application for a special use to establish a drive through lane with a double menu board to serve and existing fast food restaurant. A proposed one story addition shall also be added to the existing building.

- **Approved**

98-18-Z **ZONING DISTRICT: B3-2** **WARD: 32**
APPLICANT: 2829 Clybourn, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 2835 N. Clybourn Avenue
SUBJECT: Application for a variation to reduce the rear garage feature setback from the required 2' to zero for a proposed four-story, retail and fifteen dwelling unit building.

- **Continued to March 16, 2018 at 9:00 a.m.**

99-18-Z **ZONING DISTRICT: B3-2** **WARD: 32**
APPLICANT: 2829 Clybourn, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 2839 N. Clybourn Avenue
SUBJECT: Application for a variation to reduce the rear garage feature setback from 2' to zero for a proposed four-story, fifteen dwelling unit building.

- **Continued to March 16, 2018 at 9:00 a.m.**

100-18-S **ZONING DISTRICT: B1-2** **WARD: 1**
APPLICANT: May 1st Nail Spa Inc.,
OWNER: MRR 1054 Ashland, LLC
PREMISES AFFECTED: 1054 N. Ashland Avenue
SUBJECT: Application for a special use to establish a nail salon.

- **Approved**

101-18-Z **ZONING DISTRICT: RM-4.5** **WARD: 43**
APPLICANT: Jessica and Brian Price
OWNER: Nancy Hoyt Revocable Trust dated 9/7/95
PREMISES AFFECTED: 1953 N. Howe Street
SUBJECT: Application for a variation to reduce the front setback from the required 15' to 7', north and south setback 2' to zero each, combined side setback from 4.12' to zero, rear setback from 35' to 18.50' for a proposed front second floor infill addition, rear third floor addition, third floor roof addition, one story rear addition to connect the residence to the existing garage with a proposed roof deck with open stair and an 8' high masonry fence wall and new rear open deck.

- **Approved**

102-18-S **ZONING DISTRICT: B3-2** **WARD: 35**
APPLICANT: Jim & Carmel Carrillo DeRogatis
OWNER: Paul Sherman
PREMISES AFFECTED: 3907-15 N. Elston Avenue
SUBJECT: Application for a special use to establish an artist live / work space.

- **Approved**

103-18-Z **ZONING DISTRICT: RM-5** **WARD: 1**
APPLICANT: 1914 W Crystal, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 1914 W. Crystal Street
SUBJECT: Application for a variation to reduce the rear yard open space from the required 288 square feet to zero to convert the existing three-story, six dwelling unit building to eight dwelling units.

- **Approved**

104-18-Z **ZONING DISTRICT: RM-5** **WARD: 1**
APPLICANT: 1914 W Crystal, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 1914 W. Crystal Street
SUBJECT: Application for a variation to reduce the required parking from two spaces to zero to convert an existing three-story, six dwelling unit building to an eight dwelling unit building.

- **Approved**

105-18-S **ZONING DISTRICT: C1-1** **WARD: 47**
APPLICANT: Irving and Clark Property, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 4000 N. Clark Street
SUBJECT: Application for a special use to establish a gas station with three gas pumps, one-story accessory retail building and a car wash.

- **Continued to March 16, 2018 at 9:00 a.m.**

106-18-Z **ZONING DISTRICT: C1-2** **WARD: 30**
APPLICANT: Milridge, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 3101 N. Ridgeway Avenue
SUBJECT: Application for a variation to reduce the rear setback from the required 30' to 23' for a proposed four-story, seventeen dwelling unit building with seventeen required on-site parking spaces and seventeen non-required accessory parking spaces.

- **Approved**

107-18-Z **ZONING DISTRICT: C1-2** **WARD: 30**
APPLICANT: Milridge LLC
OWNER: Same as applicant
PREMISES AFFECTED: 3101 N. Ridgeway Avenue
SUBJECT: Application for a variation to reduce the minimum lot area by an amount not less than 90% from the existing 17,000 square feet to 15,300 square feet for a proposed four-story, retail and seventeen dwelling unit building with seventeen required parking space and seventeen non-required accessory parking spaces.

- **Approved**

108-18-Z **ZONING DISTRICT: C1-2** **WARD: 30**
APPLICANT: Milridge, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 3101 N. Ridgeway Avenue
SUBJECT: Application for a variation to reduce the ground floor commercial space by an amount not to exceed 20% from 3,121.184 square feet to 2,496.91 square feet for a proposed four-story, retail and seventeen dwelling unit building with seventeen on-site required parking spaces and seventeen non-required accessory parking spaces.

- **Approved**

109-18-Z **ZONING DISTRICT: C1-2** **WARD: 30**

APPLICANT: Milridge, LLC

OWNER: Same as applicant

PREMISES AFFECTED: 3101 N. Ridgeway Avenue

SUBJECT: Application for a variation to increase the maximum height from the allowed 45' to 46.58' which is not more than 10% for a proposed four-story, seventeen dwelling unit building with seventeen required on-site parking spaces and seventeen non-required accessory parking spaces.

- **Approved**

2:00 P.M.

110-18-Z **ZONING DISTRICT: C1-2** **WARD: 47**
APPLICANT: The Renslow, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 5015-23 N. Clark Street
SUBJECT: Application for a variation to reduce the rear setback from the required 5' to zero, the rear north east setback from 16' to zero for a proposed four-story retail and nine dwelling unit addition to an existing two-story, retail building.

- **Continued to March 16, 2018 at 9:00 a.m.**

111-18-Z **ZONING DISTRICT: RT-4** **WARD: 1**
APPLICANT: K K Court Investment, Inc.
OWNER: Same as applicant
PREMISES AFFECTED: 2430 W. Moffat Street
SUBJECT: Application for a variation to reduce the minimum lot area per unit from 3,000 square feet to 2,991.84 square feet for a proposed three-story, three dwelling unit building with a rooftop stairway enclosure.

- **Continued to March 16, 2018 at 9:00 a.m.**

112-18-S **ZONING DISTRICT: B3-5** **WARD: 27**
APPLICANT: 1553 N Wells, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 1553-55 N. Wells Street
SUBJECT: Application for a special use to reduce the required parking by more than 50% from twenty-three parking spaces to eight parking spaces for a six-story, retail and twenty-three dwelling unit building located in a transit served location.

- **Approved**

113-18-Z **ZONING DISTRICT: B3-5** **WARD: 27**
APPLICANT: 1553 N Wells, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 1553-55 N. Wells Street
SUBJECT: Application for a variation to reduce the rear setback from the required 30' to 16' for a proposed six-story, twenty-three dwelling unit building located in a transit served location.

- **Approved**

114-18-Z **ZONING DISTRICT: B3-5** **WARD: 27**
APPLICANT: 1553 N Wells, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 1553-55 N. Wells Street
SUBJECT: Application for a variation to eliminate the one required loading berth for a proposed six-story retail and twenty-three dwelling unit building located in a transit served location.

- **Approved**

115-18-Z **ZONING DISTRICT: RS-3** **WARD: 1**
APPLICANT: Lubomir Murgas
OWNER: Community Savings Bank (Trust No. 1824)
PREMISES AFFECTED: 2060 N. Bingham Street
SUBJECT: Application for a variation to reduce the minimum lot area standard from 2,500 square feet to 2,467.08 square feet for a proposed two-story, single family residence.

- **Approved**

116-18-Z **ZONING DISTRICT: RS-3** **WARD: 1**
APPLICANT: Lubomir Murgas
OWNER: Community Savings Bank (Trust No. 1824)
PREMISES AFFECTED: 2060 N. Bingham Street
SUBJECT: Application for a variation to reduce the minimum lot area per unit from 2,500 square feet to 2,467.08 square feet for a proposed two-story, single family residence.

- **Approved**

117-18-Z **ZONING DISTRICT: RS-3** **WARD: 1**
APPLICANT: Lubomir Murgas
OWNER: Community Savings Bank (Trust No. 1824)
PREMISES AFFECTED: 2060 N. Bingham Street
SUBJECT: Application for a variation to reduce the west front garage feature setback from the required 20' to zero for detached garage on a through lot to serve a proposed two-story, single family residence.

- **Approved**

118-18-Z **ZONING DISTRICT: RS-3** **WARD: 1**
APPLICANT: Lubomir Murgas
OWNER: Community Savings Bank (Trust No. 1824)
PREMISES AFFECTED: 2062 N. Bingham Street
SUBJECT: Application for a variation to reduce the minimum lot area standard from 2,500 square feet to 2,469.6 square feet for a proposed single family residence with a detached garage.

- **Approved**

119-18-Z **ZONING DISTRICT: RS-3** **WARD: 1**
APPLICANT: Lubomir Murgas
OWNER: Community Savings Bank (Trust No. 1824)
PREMISES AFFECTED: 2062 N. Bingham Street
SUBJECT: Application for a variation to reduce the minimum lot area per dwelling unit from 2,500 square feet to 2,469.6 square feet for a proposed two-story single family residence with a detached garage.

- **Approved**

120-18-Z **ZONING DISTRICT: RS-3** **WARD: 1**
APPLICANT: Lubomir Murgas
OWNER: Community Savings Bank (Trust No. 1824)
PREMISES AFFECTED: 2062 N. Bingham Street
SUBJECT: Application for a variation to reduce the west front garage feature from the required 20' to zero for a proposed detached garage to serve a propose two-story, single family residence.

- **Approved**

121-18-Z **ZONING DISTRICT: RS-3** **WARD: 44**
APPLICANT: 3144 N. Kenmore Condo Association
OWNER: Thomas Grogan (Condo Association President)
PREMISES AFFECTED: 3144 N. Kenmore Avenue
SUBJECT: Application for a variation to reduce the rear setback from the required 36' to 27' for a proposed unenclosed catwalk / walkway to access a proposed garage roof deck which shall also contain 540 square feet of relocated rear yard open space.

- **Approved**

122-18-Z **ZONING DISTRICT: RS-3** **WARD: 30**
APPLICANT: David Hapke
OWNER: Francisco Patino
PREMISES AFFECTED: 3537-39 N. Kostner Avenue
SUBJECT: Application for a variation to reduce the north setback from the required 2' to 5", south setback from 2' to 1'-10", combined side setback from 5' to 2'-3" to allow for the subdivision of a zoning lot. The existing single family residence at 3539 N. Kostner shall remain.

- **Approved**

123-18-Z **ZONING DISTRICT: RS-2** **WARD: 9**
APPLICANT: Alex Veitsman
OWNER: Same as applicant
PREMISES AFFECTED: 618 W. 129th Place
SUBJECT: Application for a variation to reduce the front setback from the required 22.82' to 14.12' for a proposed front one story addition to the existing single family residence.

- **Continued to March 16, 2018 at 9:00 a.m.**

124-18-Z **ZONING DISTRICT: RM-5** **WARD: 43**
APPLICANT: Chicago Title Land Trust Company under Trust Agreement dated October 17, 2017 Trust # 8002376138
OWNER: Same as applicant
PREMISES AFFECTED: 1830 N. Mohawk Street
SUBJECT: Application for a variation to reduce the front setback from the required 6.6' to zero, rear setback from 33.32' to zero, north setback from 2' to zero (south to be zero), combined side setback from 4.8' to zero for a proposed four-story, single family residence with roof deck, front stairs and landing, fences, and rear open patio.

- **Continued to March 16, 2018 at 9:00 a.m.**

125-18-Z **ZONING DISTRICT: RM-5** **WARD: 43**
APPLICANT: Chicago Title Land Trust Company, as Trustee under Trustee Agreement dated October 17, 2017 Trust # 8002376138
OWNER: Same as applicant
PREMISES AFFECTED: 1830 N. Mohawk Street
SUBJECT: Application for a variation to relocate the required rear yard open space on the garage roof deck which will serve a proposed four-story, single family residence with roof deck, front stairs and landing, fences, and rear open patio.

- **Continued to March 16, 2018 at 9:00 a.m.**

126-18-Z **ZONING DISTRICT: RT-4** **WARD: 32**
APPLICANT: 2247 W. Armitage Inc.
OWNER: Same as applicant
PREMISES AFFECTED: 2247 W. Armitage Avenue
SUBJECT: Application for a variation to reduce the rear setback from the required 30' to 20' for a proposed stair connection to access a garage roof deck which shall also contain the 156 square feet of relocated rear yard open space.

- **Approved**

127-18-Z **ZONING DISTRICT: RT-4** **WARD: 32**
APPLICANT: 2315 Armitage Inc.
OWNER: Same as applicant
PREMISES AFFECTED: 2315 W. Armitage Avenue
SUBJECT: Application for a variation to reduce the rear setback from the required 30' to 21.5' for a proposed bridge to access a garage roof deck which shall also contain the 155.83 square feet of relocated rear yard open space.

- **Approved**

128-18-Z **ZONING DISTRICT: RM-4.5** **WARD: 27**
APPLICANT: EZMB, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 1448 W. Erie Street
SUBJECT: Application for a variation to reduce the front setback from the required 15' to 12.5', rear setback from 37.5' to 21.17' for a proposed three-story, three dwelling unit building with front balconies, rooftop stairway enclosure, rear open porch and detached three-car garage with roof deck.

- **Approved**

129-18-S **ZONING DISTRICT: B1-1** **WARD: 31**
APPLICANT: Imagen Beauty Salon, Ltd.
OWNER: Farshad Davatgar
PREMISES AFFECTED: 5147 W. Diversey Avenue
SUBJECT: Application for a special use to establish a hair salon.

- **Approved**

130-18-S **ZONING DISTRICT: B3-1** **WARD: 10**
APPLICANT: David Chavez
OWNER: Same as applicant
PREMISES AFFECTED: 10121 S. Ewing Avenue
SUBJECT: Application for a special use to establish a beauty salon.

- **Approved**

131-18-S **ZONING DISTRICT: B3-2** **WARD: 1**
APPLICANT: Development Group, LLC Montauk
OWNER: Same as applicant
PREMISES AFFECTED: 1233 N. Paulina Street
SUBJECT: Application for a special use to establish residential use below the second floor for a proposed four-story, four dwelling unit building with four indoor parking spaces located at the rear.

- **Approved with conditions**

132-18-S **ZONING DISTRICT: B3-1** **WARD: 41**
APPLICANT: River Spa Inc.
OWNER: Lee & Jack Investments, LLC
PREMISES AFFECTED: 7222 N. Harlem Avenue
SUBJECT: Application for a special use to establish a massage establishment.

- **Approved**

133-18-S **ZONING DISTRICT: B3-1** **WARD: 16**
APPLICANT: Carter Paradise Missionary Baptist Church
OWNER: Same as applicant
PREMISES AFFECTED: 6220 S. Damen Avenue
SUBJECT: Application for a special use to establish a religious assembly facility.

- **Approved**

CONTINUANCES

637-17-S **ZONING DISTRICT: C1-3** **WARD: 33**
APPLICANT: 3280 N California, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 3280 N. California Avenue
SUBJECT: Application for a special use to establish residential use and parking below the second floor for a proposed five-story, twenty-five dwelling unit building with enclosed parking.

- **Continued to June 15, 2018 at 2:00 p.m.**

638-17-Z **ZONING DISTRICT: C1-3** **WARD: 33**
APPLICANT: 3280 N California, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 3280 N. California Avenue
SUBJECT: Application for a variation to reduce the front setback from the required 4.75' to 2', rear setback from 30' to zero on floors containing dwelling units, the enclosed garage setback from the rear property line from 2' to zero for a proposed five-story, twenty-five dwelling unit building with enclosed parking.

- **Continued to June 15, 2018 at 2:00 p.m.**

639-17-Z **ZONING DISTRICT: C1-3** **WARD: 33**
APPLICANT: 3280 N California, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 3280 N. California Avenue
SUBJECT: Application for a variation to reduce the required loading stall from one to zero for a proposed five-story, twenty-five dwelling unit building with enclosed parking.

- **Continued to June 15, 2018 at 2:00 p.m.**

668-17-S **ZONING DISTRICT: B1-1** **WARD: 39**
APPLICANT: Peterson Park Health Care Realty, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 6141 N. Pulaski Road
SUBJECT: Application for a special use to expand an existing nursing home by adding a front second floor addition and a front carport.

- **Approved**

669-17-Z **ZONING DISTRICT: B1-1** **WARD: 39**
APPLICANT: Peterson Park Health Care realty, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 6141 N. Pulaski Road
SUBJECT: Application for a variation to reduce the front setback from the required 10.06' to 4.08' for a proposed second floor addition and a front carport.

- **Approved**

672-17-Z **ZONING DISTRICT: RT-4** **WARD: 43**
APPLICANT: Lisa Cartwright
OWNER: Same as applicant
PREMISES AFFECTED: 2040 N. Fremont Street
SUBJECT: Application for a variation to reduce the rear setback from the required 35' to 23.3' for a proposed rear addition with terrace and an unenclosed stairway to access a garage roof deck.

- **Continued to March 16, 2018 at 9:00 a.m.**

673-17-Z **ZONING DISTRICT: RM-5** **WARD: 43**
APPLICANT: 1941, 1943 & 1945 Larabee, LLC
OWNER: Same as applicant
PREMISES AFFECTED: 1943 N. Larabee Street
SUBJECT: Application for a variation to reduce the rear setback from the required 38.1' to 23.5' for a rear open stair that exceeds six feet in height to access two proposed garage roof decks which shall also contain the relocated rear yard open space.

- **Withdrawn**

681-17-S **ZONING DISTRICT: C1-2** **WARD: 30**
APPLICANT: PNC Bank N. A.
OWNER: Same as applicant
PREMISES AFFECTED: 3844 W. Belmont Avenue
SUBJECT: Application for a special use to establish a two-lane drive up automatic teller machine which shall be accessory to the existing bank at 3821 W. Belmont Avenue.

- **Continued to March 16, 2018 at 9:00 a.m.**

684-17-S **ZONING DISTRICT: B3-1** **WARD: 33**
APPLICANT: Pacifico Spa, LLC
OWNER: Ramiro Barajas
PREMISES AFFECTED: 2851 W. Belmont Avenue
SUBJECT: Application for a special use to establish a massage establishment.

- **Approved**

13-18-Z **ZONING DISTRICT: RS-3** **WARD: 32**
APPLICANT: Patrick Sebring
OWNER: Same as applicant
PREMISES AFFECTED: 1803 W. Wabansia Avenue
SUBJECT: Application for a variation to reduce the rear setback from the required 2' to 0.5' for a proposed detached one-car garage with roof deck.

- **Denied**

14-18-Z **ZONING DISTRICT: RS-3** **WARD: 32**
APPLICANT: Patrick Sebring
OWNER: Same as applicant
PREMISES AFFECTED: 1803 W. Wabansia Avenue
SUBJECT: Application for a variation to relocate the required rear yard open space to the roof of a proposed one car garage with a roof deck.

- **Denied**

15-18-Z **ZONING DISTRICT: RS-3** **WARD: 32**
APPLICANT: Patrick Sebring
OWNER: Same as applicant
PREMISES AFFECTED: 1803 W. Wabansia Avenue
SUBJECT: Application for a variation to reduce the required parking spaces from two to one for a proposed one car, detached garage.

- **Denied**

29-18-Z **ZONING DISTRICT: B2-5** **WARD: 12**
APPLICANT: Mohammed Shah
OWNER: Same as applicant
PREMISES AFFECTED: 3201 S. Archer Avenue
SUBJECT: Application for a variation to reduce the required parking from two spaces to zero to allow the conversion of a seventeen single room occupancy building to a twenty-one building single room occupancy building.

- **Non-majority vote (two for and one against; three votes required for approval or denial); final decision on case will be held for review and vote by fourth Board member at regular March meeting at 2:00 p.m.**

50-18-S **ZONING DISTRICT: B3-2** **WARD: 39**
APPLICANT: Foster Shell Mart, Inc.
OWNER: Riteline Properties, LLC
PREMISES AFFECTED: 5147-49 N. Kimball Avenue / 5149-57 W. Foster Avenue
SUBJECT: Application for a special use to establish a new one-story retail building with a one lane car wash to serve the existing gas station facility.

- **Continued to March 16, 2018 at 9:00 a.m.**

51-18-S **ZONING DISTRICT: B3-1** **WARD: 21**
APPLICANT: Nail One Chicago
OWNER: 7952 S. Ashland, LLC
PREMISES AFFECTED: 7952 S. Ashland Avenue
SUBJECT: Application for a special use to establish a nail salon.

- **Approved**

53-18-S **ZONING DISTRICT: PMD-8A** **WARD: 11**
APPLICANT: Stockyards Materials, LLC
OWNER: 4031 South Ashland, LLC
PREMISES AFFECTED: 3981-4031 S. Ashland Avenue
SUBJECT: Application for a special use to establish a reprocessable construction / demolition material facility.

- **Approved**

54-18-S **ZONING DISTRICT: PMD-8A** **WARD: 11**
APPLICANT: Stockyard Materials, LLC
OWNER: 4031 South Ashland, LLC
PREMISES AFFECTED: 3981-4031 S. Ashland Avenue
SUBJECT: Application for a special use to establish a modified transfer station.

- **Approved**

55-18-S **ZONING DISTRICT: PMD-8A** **WARD: 11**
APPLICANT: Stockyards Materials, LLC
OWNER: 4031 S. Ashland, LLC
PREMISES AFFECTED: 3981-4031 S. Ashland Avenue
SUBJECT: Application for a special use to establish a Class V recycling facility.

- **Approved**

60-18-S **ZONING DISTRICT: B3-5** **WARD: 32**
APPLICANT: Camp Wiggles, LLC
OWNER: Eduardo Cabezas, Virginia Cabezas & Teresa Castillo
PREMISES AFFECTED: 2932 N. Lincoln Avenue
SUBJECT: Application for a special use to establish an animal day care and boarding facility (kennel).

- **Withdrawn**

Approval of the written resolutions containing findings of fact consistent with the votes of the Board at its regular meeting of January 19, 2018.

Adjournment.

APPENDIX F

THROUGHPUT ANALYSIS

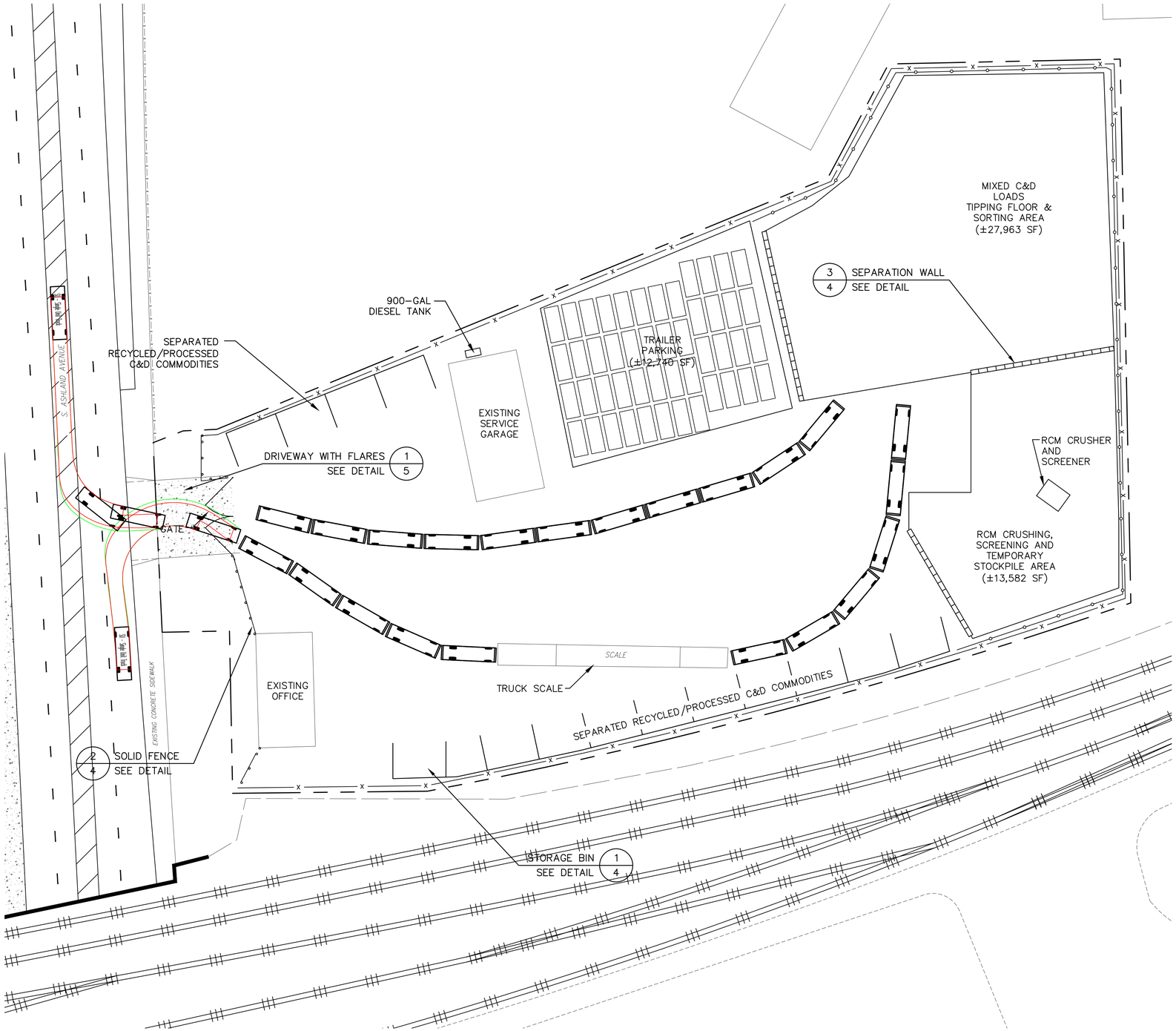
Stockyard Materials
Estimated Throughput 24-Hour Calculations

1	2	3	4	5	6	7	8
Time	Estimated Tonnage Unloaded on Tipping Floor	Estimated Tonnage Moved to Processing Area	Estimated Tonnage Remaining on Tipping Floor	Estimated Tonnage Processed	Estimated Tonnage Moved to Stockpile / Storage	Estimated Tonnage Remaining in Processing Area	Estimated Tonnage Hauled Off-site
06:00 AM - 07:00 AM	120	120	0	120	120	0	0
07:00 AM - 08:00 AM	180	120	60	120	120	0	120
08:00 AM - 09:00 AM	180	120	120	120	120	0	180
09:00 AM - 10:00 AM	240	120	240	120	120	0	180
10:00 AM - 11:00 AM	240	120	360	120	120	0	240
11:00 AM - 12:00 PM	240	120	480	120	120	0	240
12:00 PM - 01:00 PM	240	120	600	120	120	0	240
01:00 PM - 02:00 PM	240	120	720	120	120	0	240
02:00 PM - 03:00 PM	240	120	840	120	120	0	240
03:00 PM - 04:00 PM	180	120	900	120	120	0	240
04:00 PM - 05:00 PM	180	120	960	120	120	0	180
05:00 PM - 06:00 PM	120	120	960	120	120	0	180
06:00 PM - 07:00 PM	60	120	900	120	120	0	120
07:00 PM - 08:00 PM	40	120	820	120	120	0	60
08:00 PM - 09:00 PM	0	120	700	120	120	0	40
09:00 PM - 10:00 PM	0	120	580	120	120	0	0
10:00 PM - 11:00 PM	0	120	460	120	120	0	0
11:00 PM - 12:00 AM	0	120	340	120	120	0	0
12:00 AM - 01:00 AM	0	120	220	120	120	0	0
01:00 AM - 02:00 AM	0	120	100	120	120	0	0
02:00 AM - 03:00 AM	0	100	0	100	100	0	0
03:00 AM - 04:00 AM	0	0	0	0	0	0	0
04:00 AM - 05:00 AM	0	0	0	0	0	0	0
05:00 AM - 06:00 AM	0	0	0	0	0	0	0
	2,500	**2,500**		**2,500**	**2,500**		**2,500**

Time to Unload	5	minutes
Move to Processing Area	10	minutes
Time to Process	10	minutes
Move to Final Storage	10	minutes
Total Handling Time	**35**	**minutes**

1	2	3
Time	Estimated Tonnage Unloaded on Tipping Floor	Estimated Tonnage Hauled Off-site
06:00 AM - 07:00 AM	120	0
07:00 AM - 08:00 AM	180	120
08:00 AM - 09:00 AM	180	180
09:00 AM - 10:00 AM	240	180
10:00 AM - 11:00 AM	240	240
11:00 AM - 12:00 PM	240	240
12:00 PM - 01:00 PM	240	240
01:00 PM - 02:00 PM	240	240
02:00 PM - 03:00 PM	240	240
03:00 PM - 04:00 PM	180	240
04:00 PM - 05:00 PM	180	180
05:00 PM - 06:00 PM	120	180
06:00 PM - 07:00 PM	60	120
07:00 PM - 08:00 PM	40	60
08:00 PM - 09:00 PM	0	40
09:00 PM - 10:00 PM	0	0
10:00 PM - 11:00 PM	0	0
11:00 PM - 12:00 AM	0	0
12:00 AM - 01:00 AM	0	0
01:00 AM - 02:00 AM	0	0
02:00 AM - 03:00 AM	0	0
03:00 AM - 04:00 AM	0	0
04:00 AM - 05:00 AM	0	0
05:00 AM - 06:00 AM	0	0
	2,500	**2,500**

1	2	3
Time	Estimated Trucks Entering Facility	Estimated Trucks Leaving Facility
06:00 AM - 07:00 AM	6	0
07:00 AM - 08:00 AM	9	6
08:00 AM - 09:00 AM	9	9
09:00 AM - 10:00 AM	12	9
10:00 AM - 11:00 AM	12	12
11:00 AM - 12:00 PM	12	12
12:00 PM - 01:00 PM	12	12
01:00 PM - 02:00 PM	12	12
02:00 PM - 03:00 PM	12	12
03:00 PM - 04:00 PM	9	12
04:00 PM - 05:00 PM	9	9
05:00 PM - 06:00 PM	6	9
06:00 PM - 07:00 PM	3	6
07:00 PM - 08:00 PM	2	3
08:00 PM - 09:00 PM	0	2
09:00 PM - 10:00 PM	0	0
10:00 PM - 11:00 PM	0	0
11:00 PM - 12:00 AM	0	0
12:00 AM - 01:00 AM	0	0
01:00 AM - 02:00 AM	0	0
02:00 AM - 03:00 AM	0	0
03:00 AM - 04:00 AM	0	0
04:00 AM - 05:00 AM	0	0
05:00 AM - 06:00 AM	0	0
	125	125



NOTES:

1. RCM – REPROCESSABLE CONSTRUCTION MATERIAL

LEGEND

- PROPERTY BOUNDARY
- CHAIN LINK FENCE (EXISTING)
- SOLID CORRUGATED METAL FENCE
- SILT FENCE
- VEHICLE WHEEL PATH
- VEHICLE BODY PATH
- FUEL TANK

N

0 30 60 120

SCALE: IN FEET

REVISIONS

NO.	DATE	DESCRIPTION	BY

ANDREWS ENGINEERING, INC.
420 EISENHOWER LANE NORTH
LOMBARD, ILLINOIS 60148-5404
PH (630) 953-3332 FAX (217) 787-9495
SPRINGFIELD, IL • PONTIAC, IL • INDIANAPOLIS, IN • WARRENTON, MO
PROFESSIONAL DESIGN ENGINEERING AND LAND SURVEYING FIRM # 184.001541

APPROVED BY: BJW | DESIGNED BY: BJW | DRAWN BY: MPN

FACILITY CONCEPTUAL LAYOUT WITH TRUCK ENTRANCE AND STACKING

PLANS PREPARED FOR
ASHLAND AVE TRANSFER FACILITY
CHICAGO, COOK COUNTY, ILLINOIS

DATE: JANUARY 2018

PROJECT ID: 170297

SHEET NUMBER:

FIG. 2

J:\B\Brackenbox\Ashland Avenue Transfer Facility\2017 CCDD Permitting (170297)\DWG\Vehicle Turning Radii-AVT.dwg Tab: ENTRANCE AND STACKING Last Saved: February 12, 2018, by William Ulewicz Plotted: Tuesday, February 13, 2018 9:46:47 AM

APPENDIX G

SWPPP AND 2023 NPDES COVERAGE RENEWAL NOTICE

Stormwater Pollution Prevention Plan for:

Stockyards Materials
4031 South Ashland Avenue
Chicago, IL 60609
312-858-5656

SWPPP Contact(s):

4031 South Ashland, LLC.
James Bracken
4031 South Ashland Avenue
Chicago, IL 60609
773-983-2463
bracken708@gmail.com

SWPPP Preparation Date:

September 2022

Table of Contents

SECTION 1: FACILITY DESCRIPTION AND CONTACT INFORMATION

1.1 Facility Information

Facility Information

Name of Facility: Stockyards Materials

Street: 4031 South Ashland Avenue

City: Chicago State: IL ZIP Code: 60609

County or Similar Subdivision: Cook

NPDES ID (i.e., permit tracking number): ILR007475 (if covered under a previous permit)

Primary Industrial Activity SIC code, and Sector and Subsector (2021 MSGP, Appendix D and Part 8): 5093

Co-located Industrial Activity(s) SIC code(s), Sector(s) and Subsector(s) (2021 MSGP, Appendix D): _____

Latitude/Longitude

Latitude: 41.8208º N (decimal degrees)

Longitude: -87.6647º W (decimal degrees)

Method for determining latitude/longitude (check one):

☒USGS topographic map (specify scale: 7.5-minute) ☐GPS

☐Other (please specify):

Horizontal Reference Datum (check one):

☐NAD 27 ☒NAD 83 ☐WGS 84

Is the facility located in Indian country? ☐Yes ☒No

If yes, name of Reservation, or if not part of a Reservation, indicate "not applicable." _____

Are you considered a "federal operator" of the facility?

> Federal Operator – an entity that meets the definition of "operator" in this permit and is either any department, agency or instrumentality of the executive, legislative and judicial branches of the Federal government of the United States, or another entity, such as a private contractor, operating for any such department, agency, or instrumentality.

☐Yes ☒No

Estimated area of industrial activity at site exposed to stormwater: 3.0 (acres)

Discharge Information

Does this facility discharge stormwater into a municipal separate storm sewer system (MS4)? ☒Yes ☐No

If yes, name of MS4 operator: MWRD

Name(s) of surface water(s) that receive stormwater from your facility: Chicago River

Does this facility discharge industrial stormwater directly into any segment of an "impaired water" (see definition in 2021 MSGP, Appendix A)? ☐Yes ☒No

If Yes, identify name of the impaired water(s) (and segment(s), if applicable): N/A

Identify the pollutant(s) causing the impairment(s): N/A

Which of the identified pollutants may be present in industrial stormwater discharges from this facility? N/A

Has a Total Maximum Daily Load (TMDL) been completed for any of the identified pollutants? If yes, please list the TMDL pollutants: N/A

Does this facility discharge industrial stormwater into a receiving water designated as a Tier 2, Tier 2.5 or Tier 3 water (see definitions in 2021 MSGP, Appendix A)? ☐Yes ☒No

Are any of your stormwater discharges subject to effluent limitation guidelines (ELGs) (2021 MSGP Table 1-1)? ☐Yes ☒No

If Yes, which guidelines apply? N/A

1.2 Contact Information/Responsible Parties

Facility Operator(s):

Name: 4031 South Ashland Avenue, LLC.
Address: 4031 South Ashland Avenue
City, State, Zip Code: Chicago, IL 60609
Telephone Number: 312-858-5656
Email address: bracken708@gmail.com

Facility Owner(s):

Name: 4031 South Ashland Avenue, LLC
Address: 4031 South Ashland Avenue
City, State, Zip Code: Chicago, IL 60609
Telephone Number: 312-858-5656
Email address: bracken708@gmail.com

SWPPP Contact(s):

SWPPP Contact Name (Primary): James Bracken
Telephone number: 773-983-2463
Email address: bracken708@gmail.com

SWPPP Contact Name (Backup): Kim Conerty
Telephone number: 847-226-0906
Email address: kim@utilitytrans.com

1.3 Stormwater Pollution Prevention Team

Staff Names	Individual Responsibilities
James Bracken	President
Kim Conerty	Environmental Coordinator

1.4 Site Description

1.4.1 Nature of Industrial Activities Conducted at the Site

Stockyards Materials owns and operates the following permitted activities at the site:

- Clean Construction and Demolition Debris (CCDD) Recycling Facility;

The primary industrial Activities at the facility will include the handling and transfer of clean soils pursuant to the Clean Soils Act. The facility will also accept mixed loads of clean construction and demolition waste material (C&D material) for sorting and processing into marketable end products and raw materials. Interior maintenance and repair activities are performed at this facility and exterior refueling of vehicles at designated locations.

The CCDD Recycling Facility collects and recycles material that is nonhazardous, uncontaminated material resulting from construction, remodeling, repair, or demolition of utilities, structures and roads. These materials include:

- Bricks, concrete, and other masonry materials
- Soil (mixed with other C&D debris)
- Rock
- Wood, including nonhazardous painted, treated, and coated wood and wood products
- Wall Coverings
- Plaster
- Drywall
- Plumbing Fixtures
- Non-asbestos insulation
- Roofing shingles and other roof coverings
- Reclaimed asphalt pavement
- Glass
- Plastics that do not conceal waste
- Electrical wiring and components that do not contain hazardous substances
- Piping
- Metal materials incidental to any of the materials above

These materials are delivered to the site and unloaded into piles. They are then separated, consolidated, sorted and loaded for off-site delivery to recycling facilities. Materials that are co-mingled and cannot be recycled are delivered to either a permitted Clean Construction and Demolition Debris fill operation or a permitted municipal solid waste (MSW) landfill. The permitted CCDD recycling area of the site is illustrated on Figure 2 provided in Attachment B.

A metal-sided building on the property serves as a machine shop, while a small brick building is used for office/administrative activities. A single fueling area where an above ground storage tank is used to supply the owner's fleet of vehicles and equipment exists on the north side of the service garage. This is discussed in later sections of this SWPP Plan.

1.4.2 Ground Surface, Slopes, and Current Drainage Patterns

There is little exposed soil at the site. Corrugated metal fence at the entrance to the site forms a physical and visual barrier from Ashland Avenue. The ground surface of the majority of the property is paved with asphalt. A concrete apron surrounds the office and shop and is used for employee parking. A concrete driveway leads into the site from Ashland Avenue. The ground slope is relatively flat, with a slight grade from east to west across the site equal to less than 2%. The site is graded to use existing drainage inlets along Ashland Avenue, discharging the majority of its stormwater through the driveway entrance and into the existing sewer.

1.4.3 Receiving Waters

Stormwater entering the sewer will eventually discharge into the Chicago River.

1.4.4 Methods of Onsite Storage and Disposal of Significant Materials

Equipment and supplies are stored in the service garage. Materials that are encountered in the co-mingled material stockpiles that are not suitable for recycling are removed in the sorting process and these small quantities are disposed of using portable roll-off disposal containers.

Materials stored at on-site, outdoor areas are accumulated in stockpiles and sorted into individual containers according to specific recyclable material types (e.g. wood, shingles, etc.). These materials are consolidated into larger loads for transport to end users.

1.5 General Location Map

The facility is located in Cook County, Section 5, Township 38 North, Range 14 East, and encompasses approximately 3.39 acres. A site location map has been illustrated as Figure 1 provided in Attachment A.

1.6 Site Map

The site map for this facility can be found in Attachment B.

SECTION 2: POTENTIAL POLLUTANT SOURCES

2.1 Potential Pollutants Associated with Industrial Activity

The primary source of impact to stormwater at the facility will be from silt and sediment that is carried from the ground surface and from particles that wash from materials in open stockpiles. This is attributable to the continuous material recycling activities that occur on the property.

Industrial Activity	Associated Pollutants
Material unloading and handling throughout the site	Silt and Sediment
Equipment Fueling	Gasoline, Diesel, Hydraulic Oil/Fluids, Anti-freeze/Coolant
Stockpiling of CCDD	Silt, Sediment, Metals

2.2 Spills and Leaks

An enclosed metal-clad building is located on site and is used for material storage and equipment service and repair to support the various facility operations. Activities and materials stored inside the building do not create the potential for discharge and wastewater is disposed of through a sanitary sewer. Absorbent materials and spill kits are located inside the maintenance facility and will be used to prevent oil or hydraulic fluid spills and leaks from contacting stormwater and discharging to surface waters from operation at the facility.

Vehicles and equipment may be parked outdoors at the facility. Leaking fluids such as oil and antifreeze are the chief potential pollution sources from this activity. The following Aboveground Storage Tanks (ASTs) are located outdoors at the designated fueling area:

- One (1) 500-gallon diesel fuel tank

The location of above ground fueling station is identified on the site layout in Attachment B. The AST has secondary containment consisting of the tank being double walled with a concrete containment structure.

Areas of Site Where Potential Spills/Leaks Could Occur

Location	Discharge Points
Vehicle Fueling Area	Outfall 001

Description of Past Spills/Leaks

Date	Description	Discharge Points
N/A	No spills recorded to date	N/A

2.3 Unauthorized Non-stormwater Discharges Documentation

The General Permit requires certification that discharge has been evaluated for the presence of non-stormwater discharges. The certification shall consist of an inspection of the site for dry weather discharges as part of the facility's annual Site Inspection. The pollution prevention coordinator or qualified personnel should inspect the site periodically for dry weather discharges.

2.4 Salt Storage

No salt storage exists at this site.

2.5 Sampling Data Summary

The facility is in the process of collecting and evaluating benchmark sampling data. A record of monitoring results is provided in Attachment C.

SECTION 3: STORMWATER CONTROL MEASURES

3.1 Non-numeric Technology-based Effluent Limits (BPT/BAT/BCT)

3.1.1 Minimize Exposure

Management controls at the property that minimize exposure of pollutants to stormwater consist of:

- Concrete bunkers to reduce the exposed surface area of stored materials;
- Paved surfaces in heavy vehicle traffic areas to reduce exposure of erodible soil;
- Secondary containment of fuel tanks;
- Covered vehicle maintenance and material storage building;
- Prompt clean-up of spills per the facility SPCC Plan;
- Leaky vehicles and equipment are stored indoors and if stored outdoors, drip pans and absorbents are used; and
- Off-site tracking and dust are minimized by daily sweeping

Other potential management controls include:

- Tarp covers for temporary stockpile materials exposed to precipitation
- Use spill/overflow equipment
- Wash water should be collected or diverted to drain into sanitary sewer

3.1.2 Good Housekeeping

Good housekeeping practices are a practical way to maintain a clean an orderly facility. The most effective way towards preventing stormwater pollution involves using common sense to improve the facility's basic housekeeping methods.

Current good housekeeping practices include:

- Heavy equipment is repaired and serviced in work bays located in the operations building;
- Drip pans in the service bays. In the event of a spill or leak absorbent materials are available for cleaning them up;
- Mechanical sweeping of paved areas that receive heavy vehicle traffic;
- Inspection of vehicle fuel stations for leaks; and
- Absorbent materials and various oils are currently stored within the operations building and in storage containers to prevent exposure to stormwater

Additional good housekeeping practices should include:

- Keep drainage way clear of debris that may cause blockage within the flow lines
- Maintaining the general neatness of the outdoor unloading and sorting areas of the facility
- Keep materials in storage bunkers confined to within the block walls
- Daily inspection of active unloading and sorting areas to pick up, remove and dispose of particulates and non-recyclable materials
- More frequent pick-up and disposal of waste and scrap materials

3.1.3 Maintenance

Facility personnel will inspect the facility's equipment and drainage systems on a regular basis to ensure that the integrity and performance of the stormwater management controls are maintained. All vehicle and equipment cleaning should be performed indoors, under cover in the maintenance building or in bermed areas to prevent runoff.

Routine quarterly visual inspections will be conducted to ensure the BMPs are followed at the Stockyards Materials facility. Items inspected will include:

- Fuel loading and dispensing areas to ensure any spillage is cleaned up promptly and that the necessary equipment and supplies are available for spill response
- Concrete block containment structures
- Equipment parking and storage areas to identify equipment causing leaks and spills

Records of inspections, maintenance, and suggested solutions will be documents on forms kept with the SWPP Plan and maintained on site.

Maintenance documentation forms are provided in Attachment C.

3.1.4 Spill Prevention and Response

The Stockyards Materials Facility has been evaluated for an SPCC Plan in accordance with 40 CFR Section 112. The SPCC Plan has been developed and implemented for the facility.

Employees will be trained in spill response clean-up procedures, including material handling and storage requirements. The facility will ensure that employees have access to clean-up equipment. Spills resulting from the fueling and maintenance of equipment will be reduced through proper training and the conscientious effort of the facility employees. Whenever possible, maintenance and fueling of equipment will be performed under roof so that spilled materials do not have the potential to come in contact with stormwater.

If a substance is spilled during maintenance, repair, or fueling of equipment, site personnel will render assistance to prevent any threat to public health or welfare, property, and environment. The Facility Manager will make available any equipment and personnel needed to assist in the proper removal of spilled material. Also, a supply of absorbent material will be available at the facility to capture the spilled liquid. An emergency notification telephone list will be easily accessible to employees so that they will be able to notify the appropriate contacts.

Machinery and vehicles are fueled and lubricated with materials located at specific locations for these on the site. Spill kits including absorbent materials and shovels are available to handle minor spills. Any spills will be noted in the weekly and post-rainfall observation reports.

3.1.5 Erosion and Sediment Controls

The following procedures are used to maintain effective erosion and sediment control measures and other protective measures in the SWPP Plan:

- Sweeping of paved areas is performed to prevent tracking of sediment on to public streets. This is performed on pavements that receive heavy vehicular traffic to remove dust and accumulating soil particles. Sweeping occurs on an as needed basis but not less than once per day during the spring, summer and fall.

Other recommended erosion and sediment prevention and control BMPs include:

- Placement of filter sock rings or equivalent devices to slowly filter runoff into each stormwater inlet; remove and dispose of accumulated sediment at each location following storm events,
- Use of manufactured insert products at storm sewer inlets to screen objects and filter sediment before it enters the sewer system; and clean or replace when the functional capacity is compromised by accumulated material,
- Tarp coverings of erodible material stored in stockpiles at the site
- Install filter socks along the perimeter of soil stockpiles

3.1.6 Management of Runoff

The stormwater management practices at Stockyards Materials Facility will serve to divert stormwater flow around sources of potential pollutants and limit sedimentation in the stormwater runoff. The stormwater management plan for the facility will provide efficient and environmentally safe conveyance of stormwater runoff from the site and will provide water quality benefits. Stormwater management practices are described in more detail below.

All off-site run-on to the Stockyards property is diverted around the facility by its elevation relative to the adjacent properties. Run-off from the outdoor active work areas is collected and conveyed to the existing storm sewers as illustrated on Figure 2 – Attachment B.

Temporary and permanent vegetation shall be utilized as much as reasonably possible to reduce stormwater discharge associated with facility activities.

3.1.7 Salt Storage Piles or Piles Containing Salt

No salt storage exists at this site.

3.1.8 Dust Generation and Vehicle Tracking of Industrial Materials

Vehicles accessing the facility may also present the potential for pollutant sources through dust generation and tracking of contaminant materials. Vehicles delivering clean soil materials to the facility will be inspected after unloading for the presence of lingering material that might be discharged from the vehicle upon movement. Any such material found will be cleaned or removed from the vehicle before the vehicle leaves the unloading area.

Traffic within the facility will operate at safe speeds that minimize the potential for dust generation. Paved access roads and processing pads within the facility that receive vehicular traffic will inspected daily for the presence of potential pollutants. Sweeping occurs on an as needed basis but not less than once per day during the spring, summer and fall. Unpaved roads should be sprayed with water, as needed, to reduce dust generation.

3.2 Sector-Specific Non-Numeric Effluent Limits

The facility will minimize the chance of accepting materials that could be significant sources of pollutants by conducting inspections of inbound recyclables and waste materials. The facility will adhere to its load inspection program detailed in its Operations Plan.

3.3 Numeric Effluent Limitations Based on Effluent Limitations Guidelines

The facility does not fall into an industrial category discussed in Section D.2 of the general permit, however as a scrap and waste recycling facility, Stockyards Materials is subject to the benchmark requirements listed in Sector N of Attachment 1 to the permit. Parameters that are monitored for benchmarking purposes are shown in the table below.

Subsector	Parameter	Benchmark Monitoring Concentrations
Subsector N1. Scrap Recycling and Waste Recycling Facilities except those only receiving source-separate recyclable materials primarily from non-industrial and residential sources (SIC 5093)	Chemical Oxygen Demand (COD)	120 mg/L
	Total Suspended Solids (TSS)	100 mg/L
	Total Recoverable Aluminum	0.75 mg/L
	Total Copper	Hardness Dependent 0.0048 mg/L
	Total Recoverable Iron	1.0 mg/L
	Total Lead	Hardness Dependent 0.21 mg/L
	Total Zinc	Hardness Dependent 0.09 mg/L

SECTION 4: SCHEDULES AND PROCEDURES

4.1 Good Housekeeping

Good housekeeping practices are designed to maintain a clean and orderly working environment. The most effective way towards preventing pollution in stormwater from industrial sites involves using good common sense to improve the facility's basic housekeeping methods. Housekeeping procedures are to be performed on a daily basis. The minimum procedures that that shall be incorporated into a good housekeeping program are:

- Indicate proper disposal locations and procedures
- Maintain well-organized work areas
- Maintain up-to-date material inventory
- Implement careful material storage practices
- Review basic clean-up procedures
- Remind staff of good housekeeping procedures

4.2 Maintenance

Maintenance schedules and procedures were previously discussed in Section 3.1.3

4.3 Spill Prevention and Response Procedures

The site has a separate Spill Prevention Containment and Countermeasures (SPCC) Plan that was prepared by Andrews Engineering, Inc. The plan establishes the procedures and equipment required to prevent discharge of oil and hazardous substances in quantities that violate applicable water quality standards, cause a sheen upon or discoloration of the surface of navigable waters or adjoining shorelines, or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines. The SPCC Plan also establishes the activities required to mitigate such discharges should they occur. Specifically, the plan identifies the diesel and gasoline fueling activities and spill response for the site. Stormwater management responses in the event of a spill are discussed in the plan, a copy of which is kept on-site.

4.4 Employee Training

All employees should be made aware of the site's SWPP Plan and identification of BMPs specific to the facility. Stormwater runoff, a potential major source of water pollution, can be responsible for declines in fisheries, restrictions on swimming, and place limits on the public's ability to enjoy the benefits that the Waters of the United States provide. The SWPP Plan identifies sources of pollutants or contaminants at Stockyards Materials and indicates actions that can prevent or control the pollution of stormwater discharges.

BMPs are measures or practices used to reduce the amount of pollution entering the surface water, air, land, or groundwater. BMPs may take the form of a process, activity, or physical structure. The BMPs described below are specifically designed to reduce or limit pollutants in stormwater discharge at the facility. The facility's effort to control pollutants from entering stormwater is the responsibility of all employees.

Quarterly Safety meetings will be held with facility personnel on a quarterly basis or as otherwise deemed necessary and appropriate. During the meetings, Stockyards will update employees at all levels as to the components and goals of the SWPP Plan. The training program will instruct facility employees on the company's BMPs regarding handling materials onsite, as well as inspection and emergency response procedures. Records verifying employee training will be maintained at the facility.

An example of the Employee Training Record in located in Attachment C.

4.5 Inspections and Assessments

4.5.1 Routine Facility Inspections

The facility will be inspected on an at-least quarterly basis. At least one of the routine inspections must be conducted during a period when a stormwater discharge is occurring within 72 hours of the beginning of a storm event equal to or greater than 0.25 inches in 24 hours.

Inspections will include a visual observation of disturbed areas of the site; the materials unloading, sorting and storage areas exposed to precipitation; sediment and erosion control measures; paved vehicle entrance and roads; and discharge outfall locations.

The facility site plan (illustrated as Figure 2) should be used as a guide for the scope of the routing inspection locations. It is recommended that the inspection follow a sequence that corresponds to how materials arrive at the site and are stored and processed at areas exposed to stormwater. Inspectors must also consider the results of any visual and analytical monitoring for the past year when planning and conducting inspections as well as where:

a. Industrial materials, residue or trash may have or could come into contact with stormwater.
b. Leaks or spills from industrial equipment, drums, tanks and other containers may occur.
c. Offsite tracking of industrial or waste materials, or sediment may occur, such as where vehicles enter or exit the site.
d. Tracking or blowing of raw, final or waste materials may occur from both areas of no exposure and to exposed areas.
e. Control measures may need replacement, maintenance or repair.

The inspection must document all findings, including but not limited to, the following information:

a. The inspection date and time;
b. The name(s) and signature(s) of the inspector(s);
c. Weather information including flooding events;
d. All observations relating to the implementation of control measures at the facility, including:
    i. A description of any discharges occurring at the time of the inspection;
    ii. Any previously unidentified discharges and/or pollutants from the site;
    iii. Any evidence of, or the potential for, pollutants entering the drainage system; Observations regarding the physical condition of and around all outfalls including any flow dissipation devices, and evidence of pollutants in discharges and/or the receiving water; and
    iv. Any control measures needing maintenance, repairs, or replacement;

e. Any additional control measures needed to comply with the permit requirements;
f. Any incidents of noncompliance observed; and
g. Any outfall not inspected due to flooding conditions.

A sample routine facility inspection report is provided with the SWPP Plan in Attachment C. The inspector should ensure that following each inspection, he/she makes note of control measures that require maintenance or that need to be replaced before the next precipitation occurs. The inspector must also make sure that the SWPP Plan and site map are current regarding activities and potential pollutants.

4.5.2 Quarterly Visual Assessment of Stormwater Discharges

The facility shall perform and document a quarterly visual observation of any stormwater discharge associated with industrial activity from the outfall. The visual observation shall be made during daylight hours. If no storm event resulted in runoff during daylight hours in a specific quarter, the site shall document in its records that no runoff occurred. This documentation will be signed and certified.

Visual observations on samples collected shall be made as soon as practical, but within one hour of when the runoff or snowmelt begins discharging from the facility. Collected samples will be from a storm event discharge that is greater than 0.1 inch in magnitude and that occurs at least 72 hours from the previously measureable (greater than 0.1 inch rainfall) storm event. The observation will document color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution. If visual observations indicate any unnatural color, odor, turbidity, floatable material, oil sheen, or other indicators of stormwater pollution, the facility shall obtain a sample and monitor for the parameter observed or the list of potential pollutants possible at this facility.

Visual observation reports shall be maintained onsite with the SWPP Plan. Observation logs include the observation date and time, inspection personnel, nature of the discharge (such as runoff or snowmelt), visual quality of the stormwater discharge (including observations of color, odor, clarity, floating solids, settled solids, foam, oil sheen, and other obvious indicators of stormwater pollution), and probable sources of any observed stormwater contamination.

All visual observation documentation shall be made available to the Illinois EPA and the general public upon written request.

4.6 Monitoring

The facility will perform benchmark monitoring for four quarters within permit coverage. Samples must be analyzed consistent with 40 CFR Part 136 analytical methods and using test procedures with quantitation limits at or below the benchmark values for all benchmark parameters for which sampling is required.

The Stockyards Materials Facility falls under SIC Code 5093, which will require analysis for the parameters listed in Sector N of Attachment 1 to the General NPDES Permit ILR00, which contains the benchmark requirements for scrap recycling and waste recycling facilities. Samples will be collected near the storm sewer inlet on the west side of the property.

After the collection of four quarterly samples, if the average of the four monitoring values for any parameter does not exceed the benchmark, monitoring requirements for that parameter for the permit term have been fulfilled and no further monitoring will be required. If the average of the four monitoring values for any parameter exceeds the benchmark, the facility will implement corrective actions in accordance with the General Permit No. ILR00.

SECTION 5: DOCUMENTATION TO SUPPORT ELIGIBILITY CONSIDERATIONS UNDER OTHER FEDERAL LAWS

5.1 Documentation Regarding Endangered Species

The facility has received endangered species clearance via the Ecological Compliance Assessment Tool (EcoCAT). A copy of the report is included in Attachment F.

5.2 Documentation Regarding Historic Properties

The facility has received clearance from the Illinois Historical Preservation Agency (IHPA). A copy of the IHPA report is included in Attachment G.

SECTION 6: CORRECTIVE ACTIONS

6.1 Conditions Requiring SWPPP Review and Revision to Ensure Effluent Limits are Met

When any of the following conditions occur or are detected during an inspection, monitoring or other means, or the facility is notified by the EPA or MS4 operator through which the facility discharges that any of the following conditions have occurred, this plan must be reviewed and revised so that the required effluent limits are met and the pollutant discharges are minimized:

- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this or another NPDES permit to a water of the U.S.) occurs at the facility.
- A discharge violates a numeric effluent limit listed in Section 3.3.
- Control measures are not stringent enough for the discharge to meet applicable water quality standards or the non-numeric effluent limits of the general permit.
- A required control measure was never installed, was installed incorrectly, or not in accordance with the general permit, or I not being properly operated or maintained.
- Whenever a visual assessment shows evidence of stormwater pollution (e.g., color, odor, floating solids, settled solids, suspended solids, foam).

6.2 Conditions Requiring SWPPP Review to Determine if Modifications are Necessary

If any of the following conditions occur, the SWPPP must be reviewed to determine if modifications are necessary to meet the effluent limits of the general permit:

- Construction or a change in design, operation, or maintenance at your facility that significantly changes the nature of pollutants discharged in stormwater from your facility, or significantly increases the quantity of pollutants discharged.
- The average of four quarterly sampling results exceeds an applicable benchmark. If less than four benchmark samples have been taken, but the results are such that an exceedance of the four quarter average is mathematically certain (i.e., the sum of quarterly sample results to date is more than four times the benchmark level) this is considered a benchmark exceedance, triggering a review.

6.3 Corrective Actions and Deadlines

6.3.1 Immediate Actions

If corrective action is needed, the facility must immediately take all reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events.

6.3.2 Subsequent Actions

If it is determined that additional actions are necessary beyond immediate actions, the facility must complete the corrective actions (e.g., install a new modified control and make it operational, complete a repair) before the next storm event if possible, and within 14 calendar days from the time of discovery of the corrective action condition. If it is infeasible to complete the corrective action within 14 calendar days, the facility must document why it is infeasible to complete the corrective action within the 14-day timeframe. A schedule for the work must be identified, which must be as soon as practicable as but no longer than 45 days after discovery.

If the completion of corrective action with exceed the 45 day timeframe, the facility may take minimum additional time necessary to complete the action, provided that the notification is given to the EPA Regional Office. Notification must include the facility's intention to exceed 45 days, a rationale for the extension, and a completion day. Where the corrective action results in changes to any of the controls or procedures documented in the SWPPP, the facility must modify the SWPPP accordingly within 14 calendar days of completing the corrective action work.

6.4 Corrective Action Documentation

The facility must document the existence of any of the conditions listed in Sections 6.1 and 6.2 within 24 hours of becoming aware of such condition. The facility in not required to submit its corrective action documentation to the EPA, unless specifically requested to do so. However, findings must be summarized in the annual report. The facility must include the following information in the documentation:

- Description of the condition triggering the need for corrective action review. For any spills or leaks, include the following information: a description of the incident including material, date/time, amount, location, and reason for spill, and any leaks, spills, or other releases that resulted in discharges of pollutants to waters of the U.S., through stormwater or otherwise;
- Date the condition was identified;
- Description of immediate actions taken pursuant to part 6.3.1 to minimize or prevent the discharge of pollutants. For any spills or leaks, include response actions, the date/time clean-up completed, notifications made, and staff involved. Also include any measures taken to prevent the reoccurrence of such releases and;
- A statement, signed and certified in accordance with the signatory requirements of the general permit.

SECTION 7: SWPPP CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained herein, to the best of my knowledge and belief, is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

09/22/22

James Bracken
President
4031 South Ashland, LLC.

Date

Original Document Prepared By:

Douglas W. Mauntel, P.E.
Andrews Engineering, Inc.
3300 Ginger Creek Drive
Springfield, IL 62711

[Seal]

9/20/22

Douglas W. Mauntel, P.E.

Date

Expires 11/30/23

SECTION 8: SWPPP MODIFICATIONS

This SWPPP is a fluid document and is required to be modified and updated, as necessary, in response to corrective actions. If the SWPPP must be modified in response to corrective actions, then the certification statement in Section 7 must be re-signed in accordance with the signatory requirements of the general permit.

For any other SWPPP modification, the facility should keep a log with a description of the modification, the name of the person making it, and the date and signature of that person.

SWPPP ATTACHMENTS

Attachment A – Site Location Map
Attachment B – Site Layout and Topographic Map
Attachment C – Facility Forms
- *C1 – EMPOYEE TRAINING RECORD*
- *C2 – MAINTENANCE RECORD*
- *C3 – ROUTINE SITE INSPECTION*
- *C4 – QUARTERLY VISUAL ASSESMENT*
- *C5 – BENCHMARK MONITORING RESULTS*
- *C6 – DEVIATIONS FROM ASSESSMENT SCHEDULE*
- *C7 – CORRECTIVE ACTION DOCUMENTATION*
- *C8 – BENCHMARK EXCEEDANCES*
- *C9 – SWPPP AMENDMANT LOG*
- *C10 – ANNUAL FACILITY INSPECTION*

Attachment D – NOI and Notice of Coverage
Attachment E – General NPDES Permit No. ILR00
Attachment F – EcoCAT Report
Attachment G – IHPA Clearance Letter

ATTACHMENT A
SITE LOCATION MAP

NOTE:
BASE IMAGE DERIVED FROM THE 7.5 MINUTE ENGLEWOOD QUADRANGLE FROM THE ILLINOIS NATURAL RESOURCE GEOSPATIAL DATA CLEARINGHOUSE.

NO.	DATE	REVISION DESCRIPTION	BY

ANDREWS ENGINEERING
420 EISENHOWER LANE NORTH
LOMBARD, ILLINOIS 60148-5404
PH (630) 953-3332 WWW.ANDREWS-ENG.COM
SPRINGFIELD, IL • PONTIAC, IL • INDIANAPOLIS, IN • WARRENTON, MO

APPROVED BY: AB | DESIGNED BY: AB | DRAWN BY: MKN

SITE LOCATION MAP

PREPARED FOR
STOCKYARDS MATERIALS
CHICAGO, COOK COUNTY, ILLINOIS

DATE: SEPTEMBER 2022

PROJECT ID: 220186/0001

SHEET NUMBER:

FIG 1

Tab: Layout1 Last Saved: September 15, 2022, by Moni Null Plotted: Thursday, September 15, 2022 4:38:48 PM
\\and-we2\jobs\B\Brackenbox\Stockyard Materials\Site Permits & Plans\SPCC & SWPP Plans\SWPP\September 2022\DWG\Site Location Map.dwg

ATTACHMENT B
SITE LAYOUT AND TOPOGRAPHIC MAP

N

0 30 60 120

SCALE: IN FEET

LEGEND

- PROPERTY BOUNDARY
- CHAIN LINK FENCE (EXISTING)
- TRUCK TRAVEL
- STORMWATER FLOW
- SILT FENCE
- FUEL TANK

NOTES:

1. BASE IMAGE DERIVED FROM GOOGLE MAPS 4-7-2017.

NO.	DATE	REVISION DESCRIPTION	BY

ANDREWS ENGINEERING
420 EISENHOWER LANE NORTH
LOMBARD, ILLINOIS 60148-5404
PH (630) 953-3332 WWW.ANDREWSENG.COM
SPRINGFIELD, IL • PONTIAC, IL • INDIANAPOLIS, IN • WARRENTON, MO

APPROVED BY: AB | DESIGNED BY: AB | DRAWN BY: MKN

FACILITY CONCEPTUAL LAYOUT

PREPARED FOR
STOCKYARDS MATERIALS
CHICAGO, COOK COUNTY, ILLINOIS

DATE: SEPTEMBER 2022

PROJECT ID: 220186/0001

SHEET NUMBER:

FIG 2

Tab: FIGURE 2 Last Saved: September 19, 2022, by Moni Null Plotted: Monday, September 19, 2022 2:14:30 PM
K:\B\Brackenbox\Stockyard Materials\Site Permits & Plans\SPCC & SWPP Plans\SWPP\September 2022\DWG\Site plan (R).dwg

ATTACHMENT C
FACILITY FORMS

C1 - EMPLOYEE TRAINING RECORD

Employee Training & Briefing Record
SWPP Plan

General Information			
Facility Name	STOCKYARDS MATERIALS		
NPDES Tracking No.	ILR007475		
Instructor's Name(s)			
Instructor's Title(s)			
Instructor's Contact Info			
Date		**Time**	

Employee(s) Trained	
Printed Name	**Signature**

C2 - FACILITY MAINTENANCE RECORD

B. Control Measure Maintenance Record

General Information	
Facility Name	STOCKYARDS MATERIALS
NPDES Tracking No.	ILR007475

Instructions

Include in your records:

- Documentation of maintenance and repairs of control measures and industrial equipment (see part 2.1.2.3 and 6.5), including:
  - The control measure/equipment maintained
  - Date(s) of regular maintenance
  - Date(s) of discovery of areas in need of repair/replacement, and for repairs, date(s) that the control measure/equipment was returned to full function
  - The justification for any extended maintenance/repair schedules and the notification to your EPA Region that you need an extension past 45 days to complete repairs/maintenance.
- As a reminder:
  - You are required to take all reasonable steps to prevent or minimize the discharge of pollutants until the final repair or replacement is implemented.
  - Final repair/replacements of stormwater controls should be completed as soon as feasible but no later than 14 days, or if that is infeasible within 45 days.
  - If the completion of stormwater control repairs/replacement will exceed the 45 day timeframe, you may take the minimum additional time necessary to complete the maintenance, provided you notify the EPA Regional Office and document your rationale in your SWPPP.
- Provide information, as shown below, to document your maintenance activities for each control measure and industrial equipment. Repeat as necessary by copying and pasting the information below for additional control measures.

Note that maintenance documentation in this section is separate from corrective action and AIM documentation required in Part 5.3 of the 2021 MSGP. For any condition or event triggering the need for corrective action review and/or AIM response you must include documentation in section G .

Control Measure Maintenance Records	
Control Measure	
Regular Maintenance Activities	
Regular Maintenance Schedule	
Date of Maintenance Action	
Reason for Action	☐ **Regular Maintenance** ☐ **Discovery of Problem**
If Problem:	
• **Description of Action Required**	
• **Date Control Measure Returned to Full Function:**	
• **Justification for Extended Schedule, if applicable**	
Notes	

Control Measure Maintenance Records	
Control Measure	
Regular Maintenance Activities	
Regular Maintenance Schedule	
Date of Maintenance Action	
Reason for Action	☐ **Regular Maintenance** ☐ **Discovery of Problem**
If Problem:	
• **Description of Action Required**	
• **Date Control Measure Returned to Full Function:**	
• **Justification for Extended Schedule, if applicable**	
Notes	

Control Measure Maintenance Records	
Control Measure	
Regular Maintenance Activities	
Regular Maintenance Schedule	
Date of Maintenance Action	
Reason for Action	☐ **Regular Maintenance** ☐ **Discovery of Problem**
If Problem:	
• **Description of Action Required**	
• **Date Control Measure Returned to Full Function:**	
• **Justification for Extended Schedule, if applicable**	
Notes	

Control Measure Maintenance Records	
Control Measure	
Regular Maintenance Activities	
Regular Maintenance Schedule	
Date of Maintenance Action	
Reason for Action	☐ **Regular Maintenance** ☐ **Discovery of Problem**
If Problem:	
• **Description of Action Required**	
• **Date Control Measure Returned to Full Function:**	
• **Justification for Extended Schedule, if applicable**	
Notes	

Control Measure Maintenance Records	
Control Measure	
Regular Maintenance Activities	
Regular Maintenance Schedule	
Date of Maintenance Action	
Reason for Action	☐ **Regular Maintenance** ☐ **Discovery of Problem**
If Problem:	
• **Description of Action Required**	
• **Date Control Measure Returned to Full Function:**	
• **Justification for Extended Schedule, if applicable**	
Notes	

Control Measure Maintenance Records	
Control Measure	
Regular Maintenance Activities	
Regular Maintenance Schedule	
Date of Maintenance Action	
Reason for Action	☐ **Regular Maintenance** ☐ **Discovery of Problem**
If Problem:	
• **Description of Action Required**	
• **Date Control Measure Returned to Full Function:**	
• **Justification for Extended Schedule, if applicable**	
Notes	

C3 - ROUTINE FACILITY INSPECTIONS

Stormwater Industrial Routine Facility Inspection Report

General Information					
Facility Name	STOCKYARDS MATERIALS				
NPDES Tracking No.	ILR007475				
Date of Inspection		**Start Time**		**End Time**	
Inspector's Name(s)					
Inspector's Title(s)					
Inspector's Contact Info					
Inspector's Qualifications					

Weather Information							
Weather at time of this inspection?							
☐ **Clear**	☐ **Cloudy**	☐ **Rain**	☐ **Sleet**	☐ **Fog**	☐ **Snow**	☐ **High Winds**	
☐ **Other:**					**Temperature**	° F	

Have any previously unidentified discharges of pollutants occurred since the last inspection?	
☐ **Yes** ☐ **No**	**If yes, describe:**
Are there any discharges occurring at the time of inspection?	
☐ **Yes** ☐ **No**	**If yes, describe:**

Control Measures – *See Attached Site Map for Locations*				
	Structural Control Measure	**Control Measure is Operating Effectively?**	**If no, in need of maintenance, repair or replacement?**	**Maintenance* or Corrective Action** Needed and Notes**
A	**Concrete Block Containment / Berms**	**Yes No**	☐ **Maintenance** ☐ **Repair** ☐ **Replacement**	
B	**Stormwater Inlet Filters**	☐ **Yes** ☐ **No**	☐ **Maintenance** ☐ **Repair** ☐ **Replacement**	
C	**Fuel Tanks Secondary Containment**	☐ **Yes** ☐ **No**	☐ **Maintenance** ☐ **Repair** ☐ **Replacement**	
D	**Housekeeping**	☐ **Yes** ☐ **No**	☐ **Maintenance** ☐ **Repair** ☐ **Replacement**	
E		☐ **Yes** ☐ **No**	☐ **Maintenance** ☐ **Repair** ☐ **Replacement**	

** If **maintenance** is needed, fill out section B of this template*
***If **corrective action** is needed, fill out section G of this template*

Areas of Industrial Materials or Activities Exposed to Stormwater				
	Area/Activity	**Inspected?**	**Controls Adequate (appropriate, effective and operating)?**	**Maintenance* or Corrective Action** Needed and Notes**
1	**Material loading/unloading and storage areas**	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
2	**Equipment operations and maintenance areas**	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
3	**Fueling areas**	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
4	**Outdoor vehicle and equipment parking areas**	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
5	**Waste handling and disposal areas**	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
6	**Erodible areas/construction**	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
7	**Non-stormwater/ illicit connections**	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
8	**Salt storage piles or pile containing salt**	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
9	**Dust generation and vehicle tracking**	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
10	**Waste processing, sorting and storage areas**	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
11	**Areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater**	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
12	**Immediate access roads used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility**	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	
13	**Other**	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No	

** If **maintenance** is needed, fill out section B of this template*

***If **corrective action** is needed, fill out section G of this template*

Discharge Points
At discharge points, describe any evidence of, or the potential for, pollutants entering the drainage system. Also describe observations regarding the physical condition of and around al outfalls, including any flow dissipation devices, and evidence of pollutants in discharges and/or the receiving water. Identify if any corrective action is needed:

Non-Compliance
Describe any incidents of non-compliance observed and not described above:

Additional Control Measures
Describe any additional control measures needed to comply with the permit requirements:

Notes
Use this space for any additional notes or observations from the inspection:

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, include the possibility of fine or imprisonment for knowing violations."

Print Name: _____ **Title:** _____

Signature: _____ **Date:** _____

C4 - QUARTERLY VISUAL ASSESSMENTS

Quarterly Visual Assessment Form

General Information	
Facility Name	STOCKYARDS MATERIALS
NPDES Tracking No.	ILR007475
Inspector's Name(s)	
Inspector's Title(s)	
Inspector's Contact Info	

Outfall Name	001	**Substantially Identical Discharge Point?**	☐ Yes ☒ No
Date Discharge Began		**Time Discharge Began**	
Date Sample Collected		**Time Sample Collected**	
If sample collected after first 30 minutes, explain why:			
Substitute Sample?	☐ Yes ☐ No	**Quarter/year sample was originally scheduled to be collected**	
Date Sample Examined		**Time Sample Examined**	

Discharge Information			
Nature of Discharge:	☐ Rainfall ☐ Snowmelt	**If Rainfall, how much?**	"
Previous storm ended more than 72 hours before this storm?	☐ Yes ☐ No*		
If no, explain:			
**The 72-hour interval can be waived when the previous storm did not yield a measurable discharge or if you are able to document (attach applicable documentation) that less than a 72-hour interval is representative of local storm events during the sampling period.*			

Pollutants Observed		
Color	☐ None ☐ Other:	
Odor	☐ None ☐ Musty ☐ Sewage ☐ Sulfur ☐ Sour ☐ Petroleum/Gas ☐ Solvents	
	☐ Other:	
Clarity	☐ Clear ☐ Slightly Cloudy ☐ Cloudy ☐ Opaque ☐ Other:	
Floating Solids	☐ No ☐ Yes	**Describe:**
Settled Solids**	☐ No ☐ Yes	**Describe:**
Suspended Solids	☐ No ☐ Yes	**Describe:**
Foam *(gently shake sample)*	☐ No ☐ Yes	**Describe:**
Oil Sheen	☐ None ☐ Flecks ☐ Globs ☐ Sheen ☐ Slick ☐ Other:	
Other obvious indicators of pollution	No Yes	**Describe:**
***Observe for settled solids after allowing the sample to site for approximately one-half hour.*		

Additional Information
Identify probable sources of any observed stormwater contamination. Also, include any additional comments, descriptions of pictures taken, and any corrective actions necessary below (attach additional sheets as necessary):

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, include the possibility of fine or imprisonment for knowing violations."

Print Name: _____ **Title:** _____

Signature: _____ **Date:** _____

C5 – BENCHMARK MONITORING RESULTS

Stockyard Materials
Benchmark Monitoring Results

Parameter	Units	2nd QTR-20	4th QTR-20(1)	4th QTR-20(2)	1st QTR-21	2nd QTR-21
Chemical Oxygen Demand (COD)	mg/L	24	90	138	266	222
Total Suspended Solids (TSS)	mg/L	34	70	55	424	421
Total Recoverable Aluminum	ug/L	320	5820	9520	15400	16900
Total Copper	ug/L	6.4	22.2	39.7	130	68.4
Total Lead	ug/L	ND	36	66.4	181	116
Total Zinc	ug/L	11.7	108	172	376	296
Hardness	mg/L	162	106	169	451	311

Notes:
ND - Not Detected at the Reporting Limit.
(1) Sample collected on 10/23/20.
(2) Sample collected on 12/12/20.

C6 - DEVIATIONS FROM INSPECTION OR MONITORING SCHEDULE

Deviations from Assessment or Monitoring Schedule

General Information	
Facility Name	STOCKYARDS MATERIALS
NPDES Tracking No.	ILR007475

Instructions
Include in your records: • A description of any deviations from the schedule you provided in your SWPPP for visual assessments and/or monitoring (Part 6.5) • The reason for the deviations (e.g. adverse weather or it was impracticable to collect samples within the first 30 minutes of a measurable storm event) (Parts 3.2.4 and 4.1.5 of the 2021 MSGP). Use the fields below to document the deviations. Repeat as necessary for any deviations.

Deviation			
Date		☐ **Visual Assessment**	☐ **Monitoring**
Describe deviation from schedule			
Reason for deviation			

Deviation			
Date		☐ **Visual Assessment**	☐ **Monitoring**
Describe deviation from schedule			
Reason for deviation			

Deviation			
Date		☐ **Visual Assessment**	☐ **Monitoring**
Describe deviation from schedule			
Reason for deviation			

Deviation			
Date		☐ **Visual Assessment**	☐ **Monitoring**
Describe deviation from schedule			
Reason for deviation			

C7 - CORRECTIVE ACTION DOCUMENTATION

Corrective Action Documentation

General Information	
Facility Name	STOCKYARDS MATERIALS
NPDES Tracking No.	ILR007475
Inspector's Name(s)	
Inspector's Title(s)	
Inspector's Contact Info	

Instructions
Within 24 hours of becoming aware of a condition identified in Parts 5.1.1, 5.2.3, 5.2.4, or 5.2.5 of the 2021 MSGP, existence of the condition and subsequent actions. Note that this information must be summarized in the annual report (as required in Part 7.4 of the 2021 MSGP).

Description of Condition Triggering Corrective Action	
For Spills and Leaks	
Description of Incident	
Material	
Date of Incident	
Amount	
Location	
Reason for Spill	
Discharge to U.S. Waters?	☐ **Yes** ☐ **No**

Date Identified	
Immediate Actions	
Actions Taken within 14 Days	
14 Day Infeasibility*	
**If applicable, document why it is infeasible to complete necessary installations or repairs within 14-day timeframe and describe schedule*	
45 Day Extension**	
***If applicable, document rationale sent to EPA for extension of 45-day timeframe*	

C8 - BENCHMARK EXCEEDANCES

Benchmark Exceedances

Instructions:

Include in your records documentation of any annual average benchmark threshold exceedances, which AIM Level triggering event the exceedances caused, and AIM response employed per Part 5.2, including:

- The AIM triggering event;
- The AIM response taken;
- Any rationale that SWPPP/SCM changes were unnecessary; or
- Any documentation required to meet any AIM exception per Part 5.2.6.

Note: an annual average exceedance for a parameter can occur if the four-quarterly annual average for a parameter exceeds the benchmark threshold, or fewer than four quarterly samples are collected, but a single sample, or the sum of any sample results withing the sampling year exceeds the benchmark threshold by more than four times for a parameter (Part 5.2.2).

Date:
Pollutant Exceeded and Results:
Quarter 1 (Sample date:) Result:
Quarter 2 (Sample date:) Result:
Quarter 3 (Sample date:) Result:
Quarter 4 (Sample date:) Result:
Average Result:
Benchmark Value:

Document how benchmark exceedance(s) responded to:

☐ Corrective action review completed (ensure documentation is included in section G of this Template)

☐ Finding that the exceedance was due to natural background pollutant levels
Pollutant(s): Insert Pollutant
Attach data and/or studies that tie the presence of the pollutant causing the exceedance in your discharge to natural background sources in the watershed.

☐ Determination from EPA Regional Office that benchmark monitoring can be discontinued because the exceedance was due to run-on
Pollutant(s): Insert Pollutant
Attach documentation from EPA Regional Office.

☐ Finding that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice consistent with Part 6.2.1.2.
Pollutant(s): Insert Pollutant
Attach documentation supporting this finding.

C9 - SWPPP AMENDMENT LOG

SWPPP Amendment Log

Instructions:

Include in your records:

- A log of the date and description of any amendments to your SWPPP.

Fill in the appropriate columns of this table for each amendment to your SWPPP. Copy and paste additional rows into the table as necessary.

Amend. No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]
1	Change from 2015 to 2021 MSGP & Certification page	09-12-22	Aneesha Balakrishnan Environmental Scientist - Andrews Engineering Inc.
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			

C10 - ANNUAL INSPECTION FORMS

Annual Facility Inspection

General Information					
Facility Name	STOCKYARDS MATERIALS				
NPDES Tracking No.	ILR007475				
Date of Inspection		**Start Time**		**End Time**	
Inspector's Name(s)					
Inspector's Title(s)					
Inspector's Contact Info					
Inspector's Qualifications					

Complete and attach periodic reports as part of this report

Site Maps		
Site maps reflect present conditions?	☐ **Yes**	☐ **No**
If no, site maps are scheduled to be modified by:		

Potential Pollutant Sources		
Are the following still potential pollutant sources:		
• **Recycling Materials**	☐ **Yes**	☐ **No**
• **Material Loading/Unloading Areas**	☐ **Yes**	☐ **No**
• **Vehicle Maintenance**	☐ **Yes**	☐ **No**
• **Vehicle Washing**	☐ **Yes**	☐ **No**
• **Vehicle Fueling**	☐ **Yes**	☐ **No**
Are there any other potential pollutant sources that should be added to the list? If so, list:		
Changes to the potential pollutant sources scheduled to be added to the listing of potential pollutant sources by:		

Existing Structural and Non-Structural Control Measures		
Do the following accurately reflect existing structural control measures?		
• **Ditches**	☐ **Yes**	☐ **No**
• **Berms**	☐ **Yes**	☐ **No**
Do the following accurately reflect existing non-structural control measures?		
• **Vegetative Cover**	☐ **Yes**	☐ **No**
• **Rip Rap**	☐ **Yes**	☐ **No**
List any changes to the above list:		

Modifications to the SWPPP based on changes to the above list will be done by:	

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, include the possibility of fine or imprisonment for knowing violations."

Print Name: _____ **Title:** _____

Signature: _____ **Date:** _____

Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

Division of Water Pollution Control
ANNUAL FACILITY INSPECTION REPORT
for General Storm Water Discharges Associated with Industrial Site Activities

This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to the Compliance Assurance Section at the above address. Complete each section of this report. Place a NA in sections that do not apply to your operation.

Report Period: From: _____ To: _____ Permit No. ILR00 _____

OWNER/OPERATOR INFORMATION: (As it appears on the current permit)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____ Telephone: _____

Contact Person: _____ Contact Email: _____

(Person responsible for Annual Report)

FACILITY/SITE INFORMATION: (As it appears on the current permit)

Facility Name: _____ Primary SIC Code: _____

Facility Location: _____

City: _____ IL Zip: _____ County: _____

RECEIVING WATER INFORMATION:

☐ Storm Sewer Owner of Storm Sewer Systems: _____

☐ Waters of the State Closest Receiving Waters: _____

ADDITIONAL INFORMATION:

Attach information on any activity, such as leaks, spills, or flooding, that has occurred at this facility during the report period and may have resulted in pollutants being discharged in storm water runoff.

Attach information on any changes to the facility or the activity occurring at the facility that resulted in significant changes to the SWPPP.

Attach information concerning quarterly visual observations of discharges and benchmark monitoring as found in Part G and Part J.2 of the Permit.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

_____ _____

Owner Signature Date:

_____ _____

Printed Name: Title:

EMAIL COMPLETED FORM TO: epa.indannualinsp@illinois.gov

or Mail to: ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
WATER POLLUTION CONTROL
COMPLIANCE ASSURANCE SECTION #19
1021 NORTH GRAND AVENUE EAST
POST OFFICE BOX 19276
SPRINGFIELD, ILLINOIS 62794-9276

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed $50,000 for the violation and an additional civil penalty of not to exceed $10,000 for each day during which the violation continues (415 ILCS 5/42) and may also prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

ATTACHMENT D
NOI AND NOTICE OF COVERAGE

Illinois Environmental Protection Agency

Bureau of Water • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

Division of Water Pollution Control
NOTICE OF INTENT (NOI)
for General Permit to Discharge Storm Water Associated with Industrial Activity (Excluding Construction Activity)

This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to the Permit Section at the above address.

Permit No. ILR00 _____

OWNER/OPERATOR INFORMATION

Company/Owner Name: 4031 South Ashland, LLC

Owner Type: (select one) Private

Mailing Address: 4031 South Ashland Avenue Phone: 773-983-2463

City: Chicago State: IL Zip: 60609 Fax: 708-331-4212

Contact Person: Jim Bracken E-mail: bracken708@gmail.com

INDUSTRIAL SITE INFORMATION

Select One: ☑ New Permit ☐ Renewal Change of Information for ILR00 _____

Facility Name: Stockyard Materials Other NPDES Permit Numbers: _____

Facility Address: 4031 South Ashland Avenue City: Chicago IL Zip: 60609

County Cook Section: 5 Township: 38N Range: 14E

Latitude: 41 (Deg) 49 (Min) 14.81 (Sec) Longitude: -87 (Deg) 39 (Min) 50.31 (Sec) 4-Digit SIC Code: 3271

Estimated area of industrial activity at your site exposed to storm water: 3.39 (Size in Acres)

RECEIVING WATER INFORMATION

Does your storm water discharge directly to: ☐ Waters of the State or ☑ Storm Sewer

Owner of Storm Sewer System: City of Chicago

Name of Closest Receiving Water: Chicago River

Is receiving water impaired for any pollutant? ☐ Yes ☑ No

If Yes Identify Pollutants: _____

Does quantitive data currently exist which describes the concentration of pollutants in the storm water discharges?

☐ Yes ☑ No

Will facility discharge any pollutants listed as impairment of the receiving waters? ☐ Yes ☑ No If Yes provide data on an attachment.

Storm Water Pollution Prevention Plan (SWPPP) INFORMATION

Has Storm Water Pollution Prevention Plan been submitted to Agency? ☑ Yes ☐ No

Submit SWPPP electronically to: epa.indilr00swppp@illinois.gov

Provide the following information for the individual responsible for developing, implementing and revising SWPPP:

SWPPP Contact Name: James Bracken

Location of SWPPP for viewing: 4031 South Ashland Avenue, Chicago, IL 60609

E-mail Address: bracken708@gmail.com Phone: 773-983-2463

ADDITIONAL INFORMATION

Attach a list of material handling activities, raw materials, intermediate products, final products, waste materials, by-products or industrial machinery that is exposed to stormwater.

Attach a list if you have other industrial activities taking place at your facility not covered by the above SIC codes.

Form 2-F attached ☐ Yes ☑ No

ACTIVITY INFORMATION

Type a detailed description of industrial activities:

Activities at the facility will include the handling and transfer of clean soils pursuant to the Clean Soils Act. The facility will also accept mixed loads of construction and demolition waste material (C&D material) for sorting and processing into marketable end products and raw materials. Conditions at the facility that have the potential to impact storm water runoff include material collection, transportation vehicles during loading and unloading operations, and emergency repairs of equipment conducted outdoors. Therefore, the primary source of impact to storm water at the facility will be from material handling and storage activities along with heavy vehicle and equipment operation and repairs.

HISTORIC PRESERVATION AND ENDANGERED SPECIES COMPLIANCE

Has industrial facility certified compliance with the following state agencies?

Historic Preservation Agency	☑ Yes	☐ No	Illinois Historic Preservation Agency Review
Endangered Species	☑ Yes	☐ No	Illinois DNR's Ecological Compliance Assessment Tool

Mail completed form to: Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Permit Section
Post Office Box 19276
Springfield, Illinois 62794-9276
or call (217) 782-0610
FAX: (217) 782-9891

Or submit electronically to: epa.indilr00swppp@illinois.gov

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that the provisions of the permit, including the development and implementation of a storm water pollution prevention plan and a monitoring program plan, will be complied with. I also certify that, to the best of my knowledge, the storm water which is discharged from this facility/site does not contain process wastewater, domestic wastewater, or cooling water.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Owner Signature: _____ Date: 11-9-17

Printed Name: JAMES W BRACKEN Title: PRESIDENT

Instructions for completing the Notice of Intent (NOI) for Industrial Activity Form

Submit original, electronic or facsimile copies. Facsimile and/or electronic copies should be followed-up with submission of an original signature copy as soon as possible. This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Permit Section
Post Office Box 19276
Springfield, Illinois 62794-9276
or call (217) 782-0610
FAX: (217) 782-9891

Or submit electronically to: epa.indilr00swppp@illinois.gov

Reports must be typed or printed legibly and signed. Original signature must be submitted.

Any facility that is not presently covered by the ILR00 Industrial Activity Storm Water Discharge General Permit is considered a new facility.

If this is a modification of your facility information, renewal, etc., please fill in your permit number on the appropriate line.

NOTE: FACILITY LOCATION IS NOT NECESSARILY THE FACILITY MAILING ADDRESS, BUT SHOULD DESCRIBE WHERE THE FACILITY IS LOCATED.

Use the formats in the following examples for correct form completion.

	Example	Format
Section	12	1 or 2 numerical digits
Township	12N	1 or 2 numerical digits followed by "N" or "S"
Range	12W	1 or 2 numerical digits followed by "E" or "W"

The Storm Water Pollution Prevention Plan (SWPPP) must be submitted electronically for new facilities prior to the Notice of Intent being considered complete for coverage by the ILR00 General Permit. Submit the SWPPP to: epa.indilr00swppp@illinois.gov

For the Name of Closest Receiving Waters, do not use terms such as ditch or channel. For unnamed tributaries, use terms which include at least a named main tributary such as "UnnamedTributary to Sugar Creek to Sangamon River."

Existing facilities (not new) listed in the general storm water industrial permit under part D Application Requirements, 2. a-n, seeking coverage under this permit must submit a one-time 2-F form with the NOI application.

Submit a fee of $500 prior to the Notice of Intent being considered complete for coverage by the ILR00 General Permit. Please submit check payable to: Illinois EPA at the above address.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829

12/13/2017

4031 SOUTH ASHLAND LLC
JIM BRACKEN
4031 S ASHLAND AVENUE
CHICAGO, IL 60609

RE : FACILITY : STOCKYARD MATERIALS, CHICAGO, IL
COUNTY : COOK, NPDES Permit No : ILR007475
Notice of Coverage General Storm Water Permit for Industrial Site Activities

Dear NPDES Permittee:

We have reviewed your application and determined that storm water discharges associated with industrial activity (excluding construction sites) are appropriately covered by the attached General NPDES Permit issued by the Agency.

The Permit as issued covers application requirements, a Storm Water Pollution Prevention Plan, and reporting requirements. Failure to meet any portion of the Permit could result in civil and/or criminal penalties. The Agency is ready and willing to assist you in interpreting any of the conditions of the Permit as they relate specifically to your discharge.

Your discharge is covered by this permit effective as of the date of this letter. You have the right to appeal the Agency's decision to cover the discharge by the General Permit to the Illinois Pollution Control Board within a 35-day period following the date of this letter.

This letter shows your facility permit number below your facility name. Please reference this number in all future correspondence. Should you have any questions concerning the Permit, please contact the Permit Section at 217/782-0610 or at the above address.

Very truly yours,

Alan Keller

Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

CC : Records Unit, Billing System, Token Nolder-CAS, Region : DesPlaines

ATTACHMENT E
GENERAL NPDES PERMIT NO. ILR00

General NPDES Permit No. ILR00

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276
www.epa.illinois.gov

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

General NPDES Permit
For
Storm Water Discharges from Industrial Activities

Expiration Date: March 31, 2022

Issue Date: April 5, 2017

Effective Date: April 5, 2017

Discharges authorized by this General Permit: In compliance with the provisions of the Illinois Environmental Protection Act, the Illinois Pollution Control Board Rules and Regulations (35 Ill. Adm. Code, Subtitle C, Chapter 1) and the Clean Water Act, the following discharges may be authorized by this permit in accordance with the conditions herein:

Discharges of storm water associated with industrial activities, as defined and limited herein. Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage.

This general permit regulates only storm water discharges from a facility. Other discharges such as process wastewater or cooling water shall be regulated by other NPDES permits.

Receiving waters: Discharges may be authorized to any surface water of the State.

To receive authorization to discharge under this general permit, a facility operator must submit a Notice of Intent form and additional documentation as required in Part D of this permit. Authorization, if granted, will be by letter and include a copy of this permit.

Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

ATTACHMENT F
ECOCAT REPORT

EcoCAT
Ecological Compliance Assessment Tool

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Applicant: Andrews Engineering
Contact: Jeremy Lee
Address: 420 Eisenhower Ln N
Lombard, IL 60148

Project: Stockyards Materials NPDES
Address: 4031 South Ashland Avenue, Chicago

IDNR Project Number: 1800382
Date: 07/19/2017

Description: Stockyards Materials is seeking to obtain a NPDES permit for its location at 4031 South Ashland Avenue Chicago, IL 60609

Natural Resource Review Results

Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.

Consultation is terminated. This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary. Termination does not imply IDNR's authorization or endorsement.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Cook

Township, Range, Section:
38N, 14E, 5

IL Department of Natural Resources Contact
Adam Rawe
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
IL Environmental Protection Agency

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

ATTACHMENT G
IHPA CLEARANCE LETTER

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Illinois Department of **Natural Resources**

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Bruce Rauner, Governor
Wayne A. Rosenthal, Director

Cook County
Chicago
4031 South Ashland Avenue
Section:5-Township:38N-Range:14E
Andrews Eg-170297
New construction, Material screening & crushing facility - Stockyards Materials

PLEASE REFER TO: SHPO LOG #001090617

September 28, 2017

Jeremy Lee
Andrews Engineering, Inc.
420 Eisenhower Lane North
Lombard, IL 60148

Dear Mr. Lee:

The Illinois State Historic Preservation Office is required by the Illinois State Agency Historic Resources Preservation Act (20 ILCS 3420, as amended, 17 IAC 4180) to review all state funded, permitted or licensed undertakings for their effect on cultural resources. Pursuant to this, we have received information regarding the referenced project for our comment.

Our staff has reviewed the specifications under the state law and assessed the impact of the project as submitted by your office. We have determined, based on the available information, that no significant historic, architectural or archaeological resources are located within the proposed project area.

According to the information you have provided concerning your proposed project, apparently there is no federal involvement in your project. However, please note that the state law is less restrictive than the federal cultural resource laws concerning archaeology. If your project will use federal loans or grants, need federal agency permits, use federal property, or involve assistance from a federal agency, then your project must be reviewed under the National Historic Preservation Act of 1966, as amended. Please notify us immediately if such is the case.

This clearance remains in effect for two (2) years from date of issuance. It does not pertain to any discovery during construction, nor is it a clearance for purposes of the IL Human Skeletal Remains Protection Act (20 ILCS 3440).

Please retain this letter in your files as evidence of compliance with the Illinois State Agency Historic Resources Preservation Act.

If further assistance is needed please contact Joe Phillippe at 217/785-1279 or joe.phillippe@illinois.gov.

Sincerely,

Rachel Leibowitz, Ph.D.
Deputy State Historic
Preservation Officer

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
JB PRITZKER, GOVERNOR JOHN J. KIM, DIRECTOR

August 2, 2023

4031 South Ashland, LLC
Jim Bracken
4031 South Ashland Avenue
Chicago, IL 60609

RE: Notice of Renewal - General Storm Water Permit for Industrial Site Activities
Facility: Stockyard Materials-Chicago, Chicago, IL - County: Cook
NPDES Permit No: ILR007475 Bureau ID: W0316610001

Dear NPDES Permittee:

We have reviewed your renewal application and determined that storm water discharges associated with industrial activity (excluding construction sites) are appropriately covered by the General NPDES Permit Issued by the Agency.

The Permit issued covers application requirements, a Storm Water Pollution Prevention Plan, and reporting requirements. Failure to meet any portion of the Permit could result in civil and/or criminal penalties. The Agency is ready and willing to assist you in interpreting any of the conditions of the Permit as they relate specifically to your discharge. An electronic copy of your facility's SWPPP must be submitted to the Agency in accordance with Part E.2 of the ILR00 Permit.

The Permit and attachments are available through the following website address:
https://www2.illinois.gov/epa/topics/forms/water-permits/storm-water/Pages/industrial.aspx

Your discharge is covered by this permit effective as of the date of this letter. You have the right to appeal the Agency's decision to cover the discharge by the General Permit to the Illinois Pollution Control Board within a 35-day period following the date of this letter.

Your original approval date is 6/27/2017. Annual reports for your facility are required to be submitted to the Agency pursuant to Part K.2 of this permit. This letter shows your facility permit number below your facility name. Please reference this number in all future correspondence. Should you have any questions concerning the Permit, please contact the Permit Section at 217/782-0610.

Sincerely,

Darin E. LeCrone, P.E.
Manager, Permit Section
Division of Water Pollution Control

APPENDIX H

MATERIALS TICKET

STOCKYARDS MATERIALS

4031 S Ashland Ave | Chicago, IL 60609 | 312-858-5656

TICKET#	DATE	SCALE OPERATOR	
TIME IN	TIME OUT	HAULER	CONTAINER
	12:00 AM		
TRUCK# / REFERENCE			

INVOICE
INBOUND

				INTERCOMPANY
GROSS WEIGHT		lbs	Manual In	
TARE WEIGHT		lbs	Manual Out	
NET WEIGHT	0	lbs		

DESCRIPTION	QTY.	RATE	TOTAL
	0.00 tn		

TOTAL
PAID
CHANGE DUE
CHECK #

DRIVER SIGNATURE _____

COPY

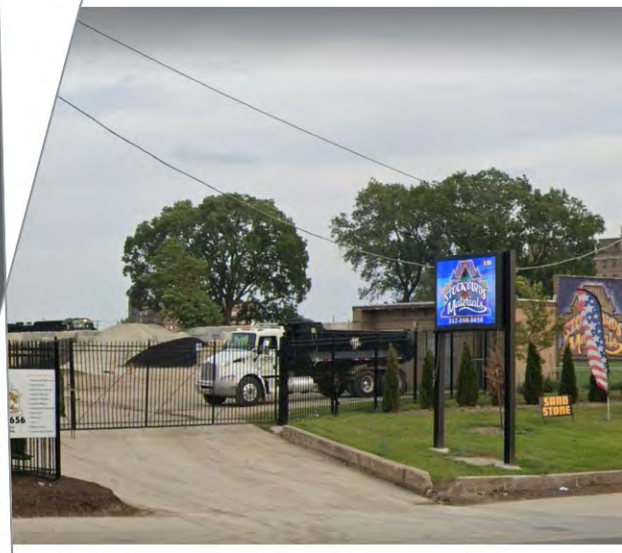
APPENDIX I

DUST MONITORING PLAN

Dust Monitoring Plan

StockYards Materials, 4031 South Ashland Avenue, Chicago, IL 60609

January 28, 2022



Cardno®

Contact Information

Cardno
6605 Steger Road
Unit A
Monee, Illinois 60449, USA
Telephone: +1 708 534 3450
www.cardno.com

Prepared for

Andrews Engineering, Inc.
420 Eisenhower Lane North
Lombard, Illinois 60148, USA

Document Information

Project Name	Dust Monitoring Plan StockYards Materials, 4031 South Ashland Avenue, Chicago, IL 60609
Project Number	821AR00884
Date	January 2022

Table of Contents

Appendices

Tables

Figures

Acronyms

CFR	Code of Federal Regulations
EPA	United States Environmental Protection Agency
FEM	Federal Equivalent Method
IAC	Illinois Administrative Code
NIOSH	National Institute for Occupational Safety and Health
PM_{10}	Particulate matter less than 10 microns (µm)
RAL	Reportable Action Level
SMS	Short Message Service

1 Introduction

This Dust Monitoring Plan has been prepared for the StockYards Materials Facility located at 4031 South Ashland Avenue, in response to and in accordance with the City of Chicago (City) Rules for Large Recycling Facilities[1] (Rules) and in response to Attachment B Special Conditions of the City Department of Public Health permit ENVREC934539 issued September 30, 2021.

The Stockyard Materials Facility (Facility) is a Class V Recycling Facility and a Reprocessable Construction & Demolition (C&D) Material Facility on approximately 3.39 acres of land. The Facility is adjacent to South Ashland Avenue to the west, the Department of Water Management facility to the north, KS Trucking Enterprise to the east, and a train yard to the south. The Facility is located approximately 660 feet north of the intersection of Ashland Avenue and West 41st Street, in an industrial area of Chicago, Illinois.

[1] City of Chicago. 2020. Rules for Large Recycling Facilities, Effective June 5, 2020. Available at: https://www.chicago.gov/content/dam/city/depts/cdph/InspectionsandPermitting/CDPH%20Rules%20for%20Large%20Recycling%20Facilities_Issued%20June%205,%202020.pdf

2 Selection and Placement of PM_{10} Monitors and Weather Station

2.1 Selection of PM_{10} Monitors and Data Logger

Section 4.7.7.1 of the Rules require PM_{10} monitors to be designated as Federal Equivalent Method (FEM) by the United States Environmental Protection Agency (EPA) or meet the requirements for Near Reference PM_{10} monitors. The Facility will utilize Met One Instruments, Inc. (Met One) ES-405 Simultaneous Particulate Profiler monitors, which are Near Reference air quality sensors that measure and record PM_{10} particulate concentrations in real time.

The ES-405 monitors are equipped with internal data loggers that will be connected to a modem to allow for remote data viewing and storage. Met One's COMET Cloud Plus+ system will be used for data viewing and management. PM_{10} readings will be recorded as averaged over a 15-minute period, consistent with the Reportable Action Level (RAL) for PM_{10}. The date, time, and data point number will also be recorded.

2.2 Placement of PM_{10} Monitors

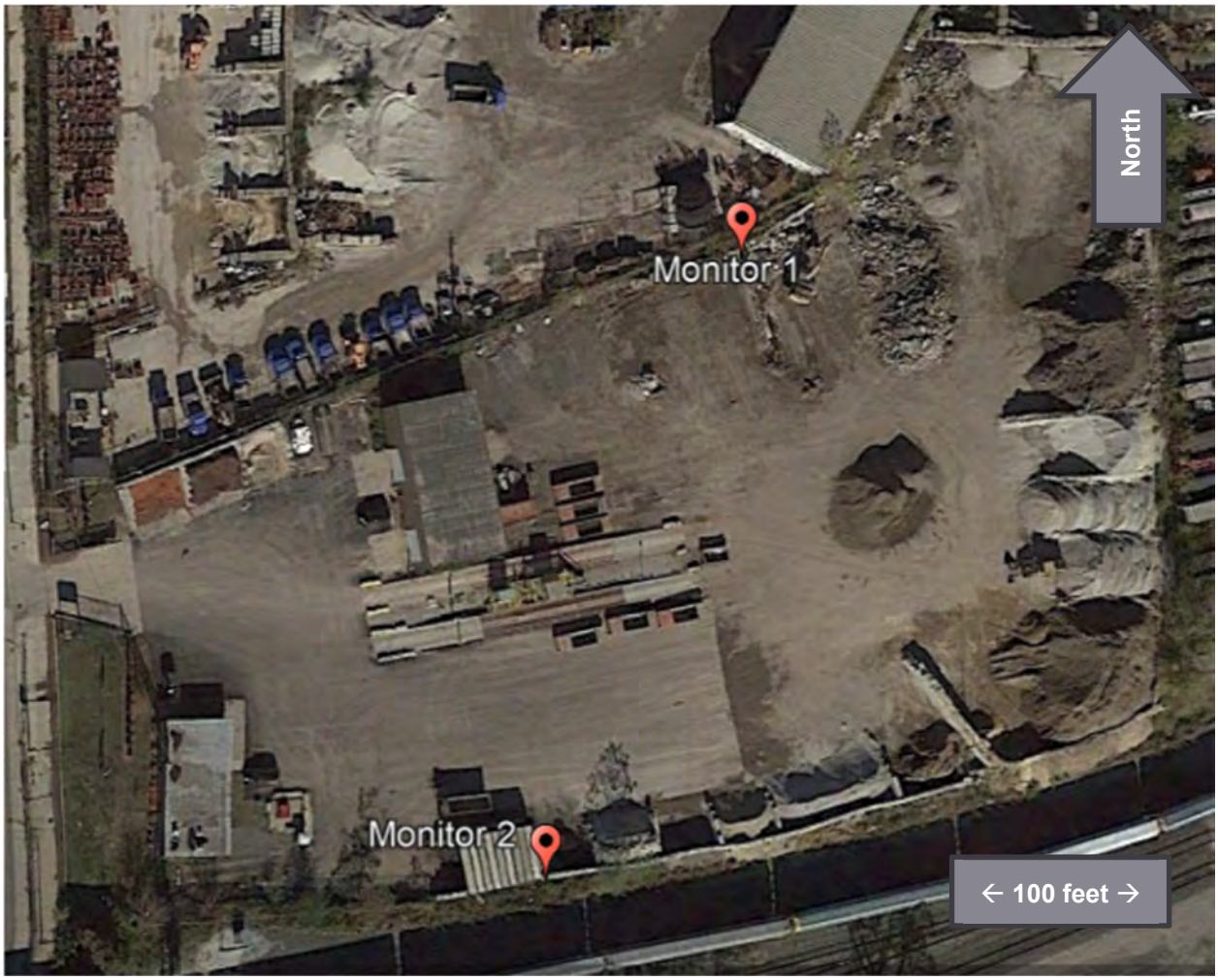
Section 3.9.21.2 of the Rules describe PM_{10} monitor placement requirements when (a) there is a Sensitive Area within 660 feet of the Facility boundary and (b) the air dispersion modeling study determines the EPA 24-hour standard for PM_{10} (150 $\mu g/m^3$) may be exceeded. The Facility is located within an industrial corridor with no Sensitive Area located within 660 feet of the Facility boundary. Further, as described in the Emissions and Air Dispersion Study of the Air Quality Impact Assessment, 24-hour maximum PM_{10} concentrations are not expected to exceed the EPA standard of 150 $\mu g/m^3$.

In situations in which neither of the above criteria are met, the Rules specify that "*at least one monitor shall be placed downwind of the prevailing wind direction*" and the monitor "*may be relocated as necessary to account for seasonal variation in wind direction*". The Facility will place two PM_{10} monitors at the locations specified in *Table 1-2* and *Figure 1-1*. The two monitors will be located upwind and downwind based on the prevailing wind directions from the five-year site-specific wind rose (Appendix A).

Table 2-1 PM_{10} Monitoring Coordinates

Monitoring Site ID	Approximate Location	
	Northing	Easting
M1	41.821304	-87.663851
M2	41.820479	-87.664199

Figure 2-1 PM_{10} Monitoring Locations



2.3 Selection and Placement of Weather Station

The Facility will install a Met One AIO 2 Sonic Weather Sensor to continuously monitor wind speed, wind direction, temperature, precipitation, and relative humidity.

Section 4.7.7.4 of the Rules describes that the weather station readings "*shall be taken at an unobstructed, unsheltered area, centrally positioned in relation to the Storage or Staging piles and dust-causing activities, and at a minimum height of 10 meters above ground level*". Because PM_{10} concentrations are not anticipated to exceed the EPA 24-hour standard of 150 µg/m^3, the weather station will be installed on top of an existing centrally located building. If the resulting height of the weather station is less than 10 meters, or if the weather station is moved to another location on site, a tower will be installed to achieve the required height.

The AIO 2 Sonic Weather Sensor is compatible with the Met One COMET data management system, which the Facility will use for management of the weather data. To correlate weather conditions with PM_{10} readings, all weather station readings will be recorded as averaged over a 15-minute period.

3 Calibration and Maintenance Plan for PM_{10} Monitors and Weather Station

3.1 PM_{10} Monitor Calibration

This section describes the calibration requirements for the PM_{10} monitors as described in Sections 3.9.21.3 of the Rules. The ES-405 monitors will be factory calibrated by Met One prior to shipment. The Facility will contract the services of CleanAir Engineering of Palatine, Illinois, (or another capable contractor) to perform initial installation and field calibration of the monitors.

Met One recommends a correlation factor, or K-factor, be established for the ES-405 monitors. Per Section 3.9.21.3 of the Rules, at the time of installation, and annually thereafter, CleanAir Engineering (or another capable contractor) will perform concurrent on-site sampling with the ES-405 monitors and by gravimetric sampling according to EPA IO 3.1 or NIOSH 0500 to establish a PM_{10} reference concentration. Per the ES-405 operation manual[2] (Appendix B), the K-factors will be calculated for each PM_{10} monitor as the reference concentration divided by the ES-405 concentration.

Met One recommends the ES-405 monitors be factory serviced and recalibrated on a 24-month basis. The Facility will have both ES-405 monitors sent to the Met One calibration facility every 24 months (2 years) for optical system cleaning, laser/detector checks, and recalibration. Monitors will be factory serviced and recalibrated on separate weeks so at least one monitor is in operation at the Facility at all times.

Met One recommends the airflow system be audited monthly and calibrated quarterly. The ES-405 operation manual specifies the procedures for performing airflow auditing and calibration. The Operator or designated employee(s) may be trained to perform the field audits and calibrations; alternatively, the Facility may contract the services of CleanAir Engineering (or another capable contractor) to perform the field audits and/or calibrations. Field calibrations require use of a traceable flow meter, which may be rented from CleanAir Engineering if the field calibrations are performed by the Operator of designated employee(s).

Hard copies of the ES-405 operation manual will be kept on-site at the Facility.

3.2 PM_{10} Monitor Maintenance

Met One recommends additional periodic maintenance of the ES-405 monitors, including inlet cleaning and annual filter replacement. Inlet cleaning is recommended to be performed at least once every three months. The Operator or designated employee(s) may perform the inlet cleaning and filter replacement per the procedures described in the ES-405 operation manual; alternatively, the Facility may contract the services of CleanAir Engineering (or another capable contractor) to perform the inlet cleanings and filter replacements.

[2] Met One Instruments, Inc. 2020. ES-405 Particulate Profiler Operation Manual. ES-405-9800 Manual Rev D. Available at: https://metone.com/wp-content/uploads/2021/08/ES-405-9800-Manual-Rev-D.pdf

3.3 Weather Station Calibration and Maintenance

The Met One AIO 2 Sonic Weather Sensor will be factory calibrated by Met One prior to shipment. Per the AIO 2 operation manual[3] (Appendix C), no field calibration or periodic factory calibration is recommended.

According to the AIO 2 operation manual, the AIO 2 has no moving parts, therefore requires no periodic maintenance of wear items. Met One recommends that the data be checked every 6-12 months to be sure there has been no failure of any electrical components. Met One also recommends the sensors be checked every 6-12 months. The Operator or designated employee(s) may perform data and sensor checks at least annually according to the instructions in the AIO 2 operation manual. Alternatively, the Facility may contract the services of CleanAir Engineering (or another capable contractor) to perform annual recertification. Recertification by CleanAir Engineering involves removal of the weather station from service for approximately one week. CleanAir Engineering will provide a rental weather station to the Facility to ensure continuous weather monitoring.

Hard copies of the AIO 2 operation manual will be kept on-site at the Facility.

[3] Met One Instruments, Inc. 2018. Model AIO 2 All In One Weather Sensor Operation Manual. Document No. AIO 2-9800 Rev. F. Available at: https://metone.com/wp-content/uploads/2020/02/AIO-2-9800-Manual-Rev-F.pdf

4 Fugitive Dust

This section describes the requirements regarding fugitive dust observations and opacity readings, as described in Sections 4.7.2 through 4.7.6 of the Rules. To comply with Section 4.7.2 of the Rules that "*neither the Owner nor Operator shall cause or allow the emission of Fugitive Dust into the atmosphere*", the Facility will implement the following Operating Program for visual dust.

4.1 Daily Observations

Per Section 4.7.3 of the Rules, the Operator or designated employee(s) will conduct, at a minimum, once daily observations of visible dust at both the point of generation for each active operation as well as the property line closest to each active operation. The intermittent nature of active operations at the facility is incompatible with a rigid schedule of observations. Therefore, more frequent inspections may be performed at outdoor activities such as truck unloading and working outdoor piles.

The visual dust emissions inspections will be made and documented by employee(s) who are certified in EPA Method 9[4] and familiar with operations and the historical associated visible emissions under normal operating conditions. Visible dust emissions at the point of generation will be observed to determine the presence or absence of fugitive dust at the source and visible emissions near the property line. If visible dust emissions are observed at the property line as determined by Method 22[5], an operator trained in EPA Method 9 will determine the opacity of the emissions; *if the opacity approaches the limit of 10% opacity as defined in 35 IAC 212.109[6], corrective actions will be implemented*. Corrective measures including additional controls will be implemented at the point of generation, and will be adjusted as needed for current conditions, including wind direction and speed.

If fugitive dust at the source is observed to be approaching the opacity limit and/or the potential for visible emissions at the property line is noted, the following will be undertaken:

- Corrective actions outlined in the Dust Monitoring Contingency section will be executed according to the "Mitigation" and "Monitoring" subsections.
- A Method 22 reading will be performed after initial corrective actions. Additional periodic visible emission observations will be made during the operation. If the Method 22 reading does not confirm

[4] EPA. 2017. Method 9 – Visual Determination of the Opacity of Emissions from Stationary Sources. August 3, 2017. Available at: https://www.epa.gov/sites/production/files/2017-08/documents/method_9.pdf

[5] EPA. 2019. Method 22 – Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares. January 14, 2019. Available at: https://www.epa.gov/sites/production/files/2019-08/documents/method_22_0.pdf

[6] Joint Committee on Administrative Codes. 1996. 35 IAC 212.109. Available at: https://www.ilga.gov/commission/jcar/admincode/035/035002120A01090R.html

the absence of visible emissions, additional controls will be instituted, or the operation will be suspended.
- If the operations are not suspended and further corrective actions are instituted, a Method 9 reading will be performed after completion of the corrective actions. Additional periodic Method 22 observations will be made during the operation.

Initiating corrective actions and any subsequent decision to increase the frequency of these observations will be dependent on discussion with the Operator or designated employee(s) and upon observed conditions and deviations from the controls scheme as illustrated in the Dust Monitoring Contingency plan. If necessary, operating procedures will be amended to reflect best management practices and/or control improvements. A copy of the daily Fugitive Dust observation results will be attached to the Operating Record.

4.2 Quarterly Opacity Measurements

Per Section 4.7.5 of the Rules, the Operator will assign an employee(s) to be trained and certified to read opacity in accordance with the measurement method specified in 35 IAC Part 212.109 (i.e., EPA Method 9). Opacity readings will be performed quarterly at each of the three source types at the Facility:

- Outdoor storage piles
- Roadway
- Material transfer point

The outdoor storage pile that contains the material present in the largest quantity at the terminal on the day of the reading and the outdoor storage pile that contains the smallest size materials will be selected as the reading locations. A roadway segment that has heavy truck vehicle traffic on the day of the reading will be selected as the representative roadway reading location. The material transfer point readings will be taken at truck unloading, front-loader unloading, and pile creation. These opacity reading locations are selected as they are anticipated to have the highest potential for dust emissions.

In general, the opacity readings will be performed on clear days or partly cloudy days to provide the appropriate background contrast for opacity readings. Per Section 4.7.5 of the Rules, readings will be taken during representative weather and operating conditions. *Quarterly opacity readings will be completed during the second or third week of the last month of each quarter (i.e., March, June, September, and December).* The specific day(s) will be selected by the certified reader(s), whose decision will be in part based on weather conditions, including temperature and wind, on previous days that opacity readings were taken, to choose reading days on which opacity readings will be conducted during a range of weather conditions. For example, during at least one of the quarterly opacity readings, the certified reader(s) will select specific day(s) with hourly average wind speeds over 10 mph.

Opacity readings will be conducted if the weather conditions are suitable for compliance with EPA Method 9 requirements. If it is raining, snowing, and/or foggy on the test date, such that it would affect the ability to follow the EPA Method 9 procedure, the readings will either be conducted later in the day or rescheduled to the next available date.

Opacity readings of the representative storage piles and transfer points will be conducted pursuant to 35 IAC 212.109, which references EPA Method 9, 40 CFR Part 60, Appendix A. In general, EPA Method 9 requires that the observation location for transfer points and piles will be the location of maximum opacity at a 4-foot elevation above the transfer point or pile surface. If no opacity is visible, the readings will be taken at the midpoint of the source. Further, in accordance with 35 IAC 212.109, opacity readings of roadways will be performed for a duration of 4 truck passings. Three readings for each truck pass will be taken at 5-second intervals. The first reading will be at the point of maximum opacity, and the second and third readings shall be made at the same point, with the observer standing at right angles to the plume at

least 15 feet away from the plume and observing 4 feet above the surface of the roadway. After four trucks have passed, the 12 readings will be averaged.

A record of the quarterly opacity readings, including location(s), date, time(s), and weather conditions, will be attached to the Facility Operating Record.

5 Contingency Plan

This section describes the RAL for PM_{10}, notification and reporting requirements if the RAL is exceeded, and additional data reporting requirements, as described in Sections 4.7.7.6 and 4.7.7.9 through 4.7.7.11 of the Rules, as well as the mitigative and response actions that will be taken in the event of an exceedance of the RAL for PM_{10}, as described in Section 4.7.7.12 of the Rules.

5.1 RAL for PM_{10}

Per Section 4.7.7.6 of the Rules, the RAL for PM_{10} will be 150 µg/m^3 averaged over a 15-minute period. According to the Rules, the RAL may be determined by subtracting the upwind PM_{10} concentration from the downwind PM_{10} concentration. To respond to potential RAL exceedance events promptly without having to determine wind direction, the Facility will define an RAL exceedance as the positive difference between the maximum PM_{10} monitor reading and the minimum PM_{10} monitor reading for a given 15-minute period. This conservative approach results in a concentration equal to or greater than the difference between upwind and downwind concentrations.

5.2 RAL Exceedance and Mitigating Actions

Per Section 4.7.7.12 of the Rules, mitigative actions or response activities should "*consist of a range of increasingly aggressive measures appropriate to different levels of exceedance and take into account whether the source is determined to be onsite or offsite*". The Facility will rely on the following hierarchy regarding reporting and mitigative actions to be taken at different PM_{10} concentration levels:

5.2.1 15-minute PM_{10} Concentration <125 µg/m^3

When the average 15-minute PM_{10} concentration, determined as the positive difference between the maximum PM_{10} monitor reading and the minimum PM_{10} monitor reading, is less than 125 µg/m^3, no response or reporting actions are required.

5.2.2 15-minute PM_{10} Concentration >125 µg/m^3 and <150 µg/m^3

When the average 15-minute PM_{10} concentration, determined as the positive difference between the maximum PM_{10} monitor reading and the minimum PM_{10} monitor reading, is greater than 125 µg/m^3 but less than 150 µg/m^3, no reporting actions are required; however, the following response actions will take place:

The Operator or designated individual(s) shall investigate to determine if an on-site source of dust can be identified. If an on-site source cannot be identified, no further response actions are required. If an on-site source is identified, the Operator or designated individual(s) will implement appropriate mitigative action(s), which may include suspension of dust-generating activities, or the source-specific actions listed in 4.2.3.

5.2.3 15-minute PM_{10} Concentration >150 µg/m^3

When the average 15-minute PM_{10} concentration, determined as the positive difference between the maximum PM_{10} monitor reading and the minimum PM_{10} monitor reading, exceeds 150 µg/m^3, an "RAL event" is triggered.

In response to an RAL event, in addition to suspension of dust-generating operations, the Operator or designated individual(s) will implement the following source-specific mitigative actions, when appropriate:

- For an outdoor pile, pile maintenance and housekeeping will be performed and/or targeted water application.
- For material transfer activities, ensure that drop height is minimized, reduce material feed rate and/or choke feeding, if possible.
- For roadways, apply targeted water and/or reduce vehicle speeds.

Mitigating actions or suspension of dust-generating activities will remain in place until PM_{10} concentrations are consistently below 125 $\mu g/m^3$ for one hour.

5.3 RAL Notifications

The Met One COMET data management system allows users to program automatic notifications, including email and SMS notifications. Per Section 4.7.7.10 of the Rules, the Facility will program the Met One COMET data management system to send email notifications to the Operator designated employee(s), as well as the City of Chicago (envwastepermits@cityofchicago.org), within 15 minutes of when the RAL is exceeded. The subject line of the emails will be “RAL Alert Condition – (Facility License Number)”. The email notification will contain the following information:

- The date and time of the RAL exceedance
- The average wind speed and wind direction recorded over a 15-minute period
- The concentrations of PM_{10} recorded by all monitors over the same 15-minute period
- The latitude and longitude coordinates in decimal degrees of all monitoring locations

Further, per Section 4.7.7.11 of the Rules, within 24 hours of an RAL event, the Operator or designated individual will record the following information in the Operating Record:

- The date and time of the exceedance
- The recorded wind speed and PM_{10} concentration(s) at the time of the RAL
- The onsite and/or offsite source(s) of the emission
- A description of the mitigative action(s) taken
- A description of any operational impact due to the RAL incident
- A description of any preventive measure(s) to reduce or eliminate future occurrence.

5.4 Monthly Data Reporting

Per Section 4.7.7.9 of the Rules, the Operator or designated employee(s) will email validated data collected by data loggers from PM_{10} monitors and the weather station to the City (envwastepermits@cityofchicago.org) within 14 days of the end of the month that the data was collected, in a format specified by the Department. Data validation will involve documentation of outlier data points, and data points effected by instrument cleaning, servicing, or calibration. Alternatively, the Facility may contract the services of CleanAir Engineering (or another capable contractor) to perform monthly data validation and reporting.

6 Record Keeping

Per Section 4.16 of the Rules, all records pertaining to this Dust Monitoring Plan will be maintained by the Facility for a minimum of three years. At a minimum, the following records will be maintained:

- Factory calibration certificates for PM_{10} monitors and weather station
- Correlation factor sampling and calculation documentation for PM_{10} monitors
- Factory service/recalibration documentation for PM_{10} monitors
- Monthly audit and quarterly calibration documentation for PM_{10} monitors
- Annual recertification documentation for weather station
- Daily fugitive dust observation results
- Record of quarterly opacity readings
- Employee training records
- Records of RAL events
- Monthly data reports

7 References

City of Chicago. 2020. Rules for Large Recycling Facilities, Effective June 5, 2020. Available at: https://www.chicago.gov/content/dam/city/depts/cdph/InspectionsandPermitting/CDPH%20Rules%20for%20Large%20Recycling%20Facilities_Issued%20June%205,%202020.pdf

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EPA. 2019. Method 22 – Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares. January 14, 2019. Available at: https://www.epa.gov/sites/production/files/2019-08/documents/method_22_0.pdf

Joint Committee on Administrative Codes. 1996. 35 IAC 212.109. Available at: https://www.ilga.gov/commission/jcar/admincode/035/035002120A01090R.html

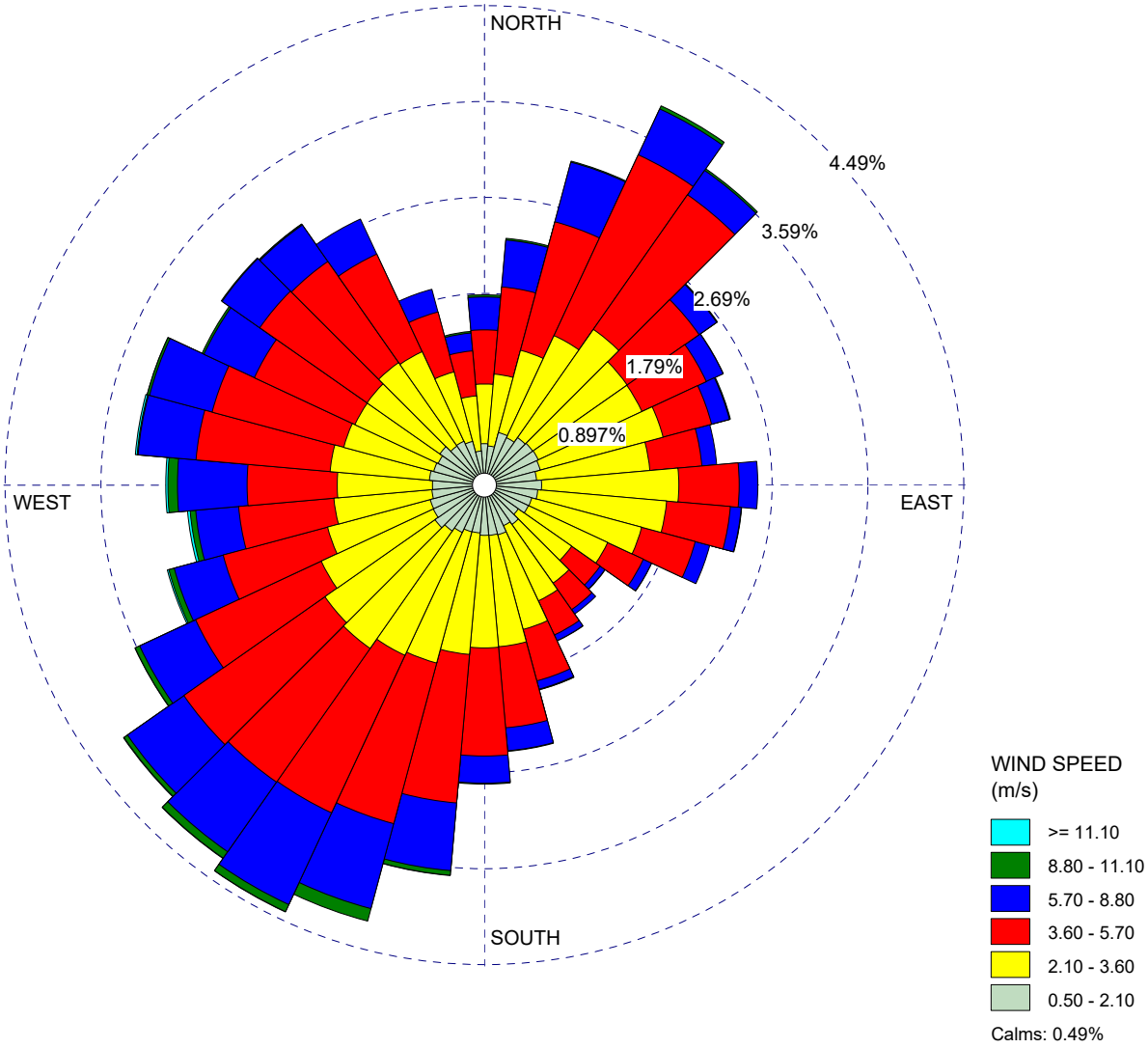
Appendix A

WIND ROSE PLOT:

Station #OS_ID: - 4015 S Ashland Ave (41.82083, -87.66411)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD: **Start Date: 1/1/2016 - 00:00** **End Date: 12/31/2020 - 23:59**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **0.49%**	TOTAL COUNT: **43848 hrs.**	
	AVG. WIND SPEED: **3.74 m/s**	DATE: **12/10/2021**	PROJECT NO.:

Appendix B

ES-405

PARTICULATE PROFILER
OPERATION MANUAL
REVISION D

Met One Instruments, Inc.
1600 NW Washington Blvd.
Grants Pass, Oregon 97526
Telephone 541-471-7111
Facsimile 541-471-7116

Table of Contents

1 INTRODUCTION

1.1 About This Manual

This document is organized with the most important information grouped together for easy reference by the user. All ES-405 owners and operators should read and understand the sections on installation, setup, and field calibrations. Other sections that provide in-depth information on subjects such as theory, diagnostics, accessories, and alternate settings provide valuable information which should be consulted as needed. An electronic version of this manual is also available.

1.2 Technical Service and Warranty

This manual is structured by customer feedback to provide the required information for setup, operation, testing, maintaining, and troubleshooting your ES-405 unit. Should you still require support after consulting your printed documentation, we encourage you to contact one of our expert Technical Service representatives during normal business hours of 7:00 a.m. to 4:00 p.m. Pacific Time, Monday through Friday. In addition, technical information and service bulletins are often posted on our website. Please contact us and obtain a Return Authorization (RA) number before sending any equipment back to the factory. This allows us to track and schedule service work and to expedite customer service.

Phone:	**(541) 471-7111**	Fax:	(541) 471-7116
E-Mail:	service@metone.com	Web:	www.metone.com
Address:	Technical Services Department Met One Instruments, Inc. 1600 NW Washington Blvd. Grants Pass, OR 97526		

1.3 About the ES-405

The Met One Instruments, Inc. model *ES-405 Particulate Profiler* is a near reference air quality sensor which automatically measures and records real-time airborne $PM_{1.0}$, $PM_{2.5}$, $PM_{4.0}$, and PM_{10} particulate concentration levels using the principle of right angle laser light scatter. Detailed descriptions of the ES-405 measurement modes can be found in Section 5.

Laser Light Scatter System
Sample air is drawn into the ES-405 detector chamber and subjected to an intense laser beam located at right angles to the flow. Particles pass through the laser beam and scatter light that is collected onto a photodiode detector. The output of the detector is analyzed to determine the number and size of the particles and mathematically processed to provide an indicative particulate mass measurement.

1.4 Laser Radiation Safety and Conformity

The ES-405, when properly installed and operated, is considered a Class I laser product. Class I products are not considered to be hazardous.

This system contains a diode laser operating at 100 mW power and 785 nm wavelength. This is not visible to the naked eye and can cause damage to the eye if directly exposed. A protective optical housing fully encapsulates the laser beam and optics system within the ES-405. Do not attempt to disassemble the optical module. Failure to comply with this instruction could cause accidental exposure to laser radiation. The manufacturer certifies that this product operates in compliance with following standards and regulations:

- **FDA / CDRH This product is tested and complies with 21 CFR, Subchapter J, of the health and Safety Act of 1968.**
- **US 21 CFR 1040.10.**

Always power down the system whenever service or repair work is being performed inside the instrument enclosure. Only trained technicians should attempt to repair the ES-405. Routine maintenance does not require removing the instrument from its weatherproof enclosure.

1.5 ES-405 Specifications

PARAMETER	SPECIFICATION
Measurement Principles:	Right angle light scatter detection, using a laser diode as light source.
Number of Mass Channels:	4 ($PM_{1.0}$, $PM_{2.5}$, $PM_{4.0}$, PM_{10})
Sample Air Flow Rate:	1.0 LPM
Sheath Air Flow Rate:	1.0 LPM
Flow Control:	Active Volumetric Flow Control
Data Storage Resolution:	0.1 µg/m^3
Data Storage Intervals:	User-Selectable 1, 5, 10, 15, 30, or 60 minutes.
Laser Type:	Diode Laser, 100 mW, 785 nm.
Pump Type:	Brushless diaphragm pump.
Power Supply:	Universal 100-240 VAC input, 50/60Hz. Optional 12VDC.
Power Consumption:	1.0 amp @ 12 VDC (12 Watts) average continuous draw with inlet heater running. 0.63 amps (8 Watts) running with inlet heater off.
Operating Temperature:	0 to +50°C
Storage Temperature:	-20º to +60º C
Ambient Humidity Range	0 to 95% RH, non-condensing.
Humidity Control	Automatic 10 Watt inlet heater module controlled to sample RH, with set point.
User Interface:	Menu-driven interface with 4x20 character OLED display and dynamic keypad.
Serial Interface:	RS-232, full duplex serial port for PC or datalogger communications. RS-485, half duplex for modem communications. RS-485, half duplex for sensor communications. USB port for PC communications.
Serial Settings:	Baud = 115200, 8 data bits, no parity, and 1 stop bit. (factory Default) 115200, 57600, 38400, 19200, 9600, 4800, 2400 (selectable).
Alarm Contact Closure:	Normally closed contact closure relay output. Contact rating 1.0A @ 30V DC max.
Compatible Software:	Comet™, terminal programs such as HyperTerminal®
Factory Service Interval:	24 Months typical, under continuous use in normal ambient air.
Mounting Options:	Pole or wall mount bracket standard. Optional EX-905 tripod recommended.
Unit Weight	11.2 lbs
Unit Dimensions	Height: 24" Width: 12" Depth: 6.75"

Specifications may be subject to change without notice.

2 ES-405 SETUP and STARTUP

The ES-405 is designed for rapid deployment and easy setup by a single person in less than 15 minutes in most applications. This section describes the basic assembly, setup, and start-up of the instrument.

2.1 Standard and Optional Accessories

When unpacking a new ES-405, verify that the contents are undamaged. If the shipping cartons are damaged, notify the carrier immediately. Verify that the included accessories are correct and complete. If anything is missing, contact the technical service department at service@metone.com or (541) 471-7111. See the Accessories section at the back of this manual for more details. The normal configuration of the ES-405 is supplied with the following standard accessories:

- Weatherproof TSP inlet with debris screen.
- Instruction manual.
- External power supply and cable.
- USB Cable.
- Grounding Cable.
- Pole/wall mounting bracket.

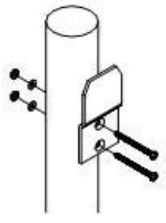
The following optional accessories may or may not also be included, depending on the order:

- Serial communications cable.
- Aluminum tripod.
- External digital MET sensors.
- External alarm cable.
- External DC power cable for batteries or solar systems.
- Modem kits for phone line, cell, radio, or satellite telemetry.
- Solar power kits (usually drop-shipped from the solar manufacturer). A DC/DC controller is highly recommended to regulate incoming voltage to 12V.

2.2 Mounting Options

Custom Pole or Wall Mounting:

The ES-405 can be mounted to a pole, mast, or wall using the included mounting bracket. The bracket must be screwed or bolted to the pole or wall with appropriate hardware. The enclosed bolts may not be appropriate for the desired mounting. The slot on the back of the ES-405 slips over the tab on the mounting bracket. The tab on the bottom of the ES-405 should also be bolted to the mounting surface to ensure that the unit cannot be knocked off its mounting.



Typical Mounting Bracket Pole Installation

Note: If mounting the unit to a wall, take care to ensure that there is adequate clear space around the inlet to allow unrestricted airflow into the instrument. Wall mounting is often not considered

ideal and not recommended due to the airflow and particulate obstruction of the wall itself. Mount the instrument with no large obstructions nearby whenever possible.

Tripod Mounting:

The Met One EX-905 aluminum tripod is the recommended mounting for the ES-405 for most outdoor applications. It is not included as a standard accessory in order to save expense for users who may not require it. Deploy the tripod as follows:

1. Remove the three stainless steel detent pins from the tripod base by pulling the rings. Unfold the three tripod legs and reinsert the three pins so that each pin secures a leg in the open position. Make sure the erected tripod is rigid and stable.

2. Lift the ES-405 assembly and slide the slot on the back of the ES-405 over the tab on the top of the tripod. Insert the supplied ¼-20 bolt through the tab on the bottom of the ES-405 and through the hole in the body of the tripod. Secure it with the supplied washers and nut. This prevents the ES-405 from falling or shifting on the tripod.
3. Site the tripod on a surface that is as level as possible. The tripod feet may be secured to the ground or mounting surface with bolts, screws, or tent pegs if necessary. Secure the tripod in windy conditions!

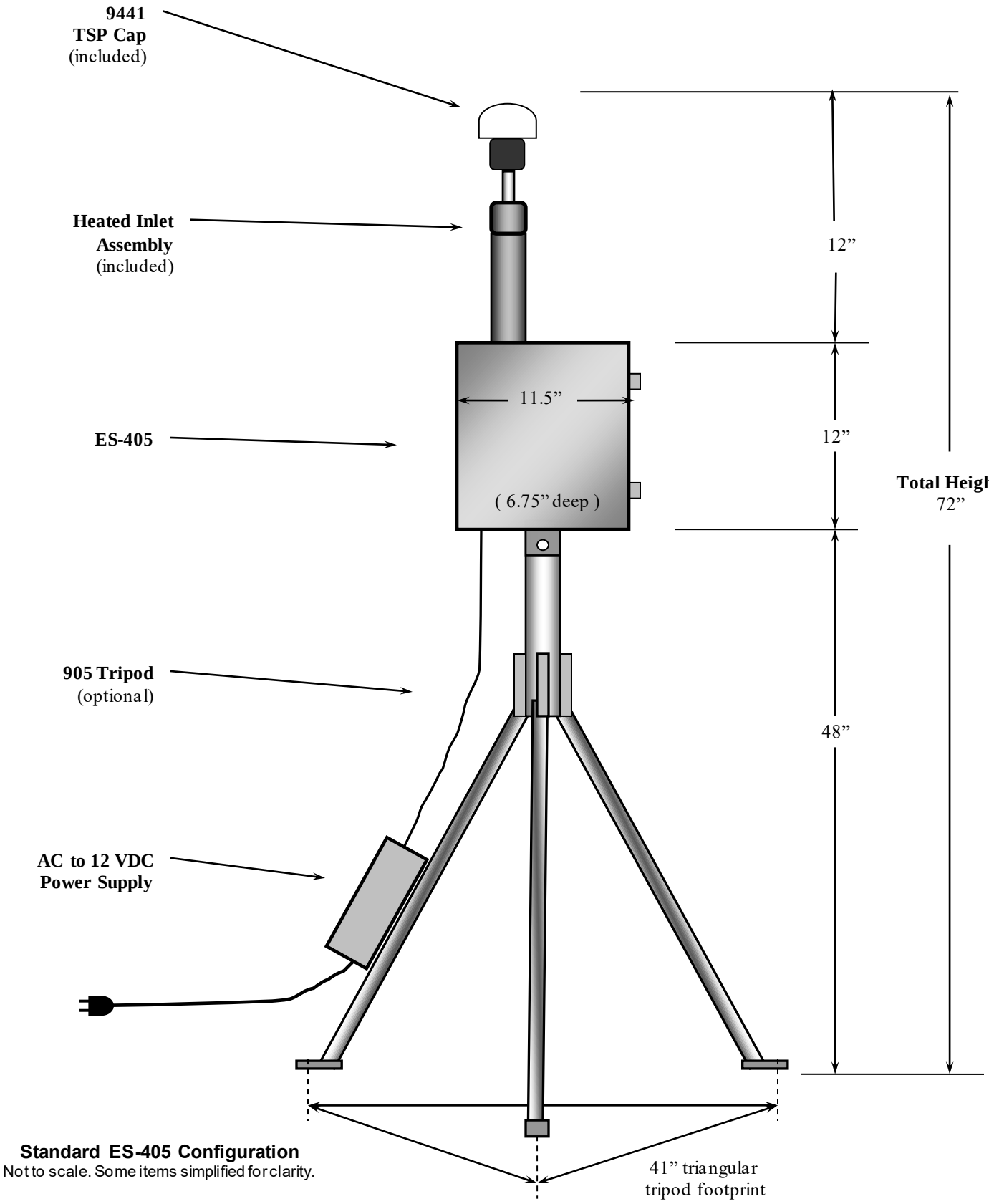
2.3 Setting Up the ES-405

Set up the rest of the ES-405 hardware items and accessories as described below:

1. **Install TSP inlet:** The included weatherproof TSP inlet is simply installed directly onto the top of the ES-405 inlet tube to keep water, insects, and debris out of the instrument. Lubricate the o-rings if necessary. Never operate the ES-405 outdoors without the TSP inlet in place, as the resulting water/debris damage is not covered under warranty.
2. **Optional MET sensor:** If an optional MET sensor is supplied, it may come with a cross-arm tube which mounts to the stud on the top of the EX-905 tripod with supplied fittings. Install the MET sensor on the end of the cross-arm. The sensor should be as far from the ES-405 unit as possible without affecting the tripod balance. If a wind vane is employed, it must be able to rotate fully without hitting anything. Plug the MET sensor into the corresponding connector on the bottom of the ES-405. Consult the separate manual that comes with the MET sensor for alignment details.
3. **Optional CCS Modem:** Mount the CCS modem. Plug its power supply cable into the DC power input on the bottom. If it is an AC power supply bolt the power supply to one of the

legs of the tripod with the supplied U-bolts. Connect the communication cable to the CCS modem and to the RS-485 serial connection at the base of the ES-405.

4. **AC Power Supply:** If the ES-405 is to be operated on AC line voltage, bolt the power supply to one of the legs of the tripod with U-bolts. Plug the power supply output cable into the DC power input on the bottom of the ES-405. When the power supply is plugged into AC power, the ES-405 will turn on automatically.



Standard ES-405 Configuration
Not to scale. Some items simplified for clarity.

2.4 Electrical Connections

The ES-405 has five weatherproof connectors on the bottom of the enclosure. These connectors provide the connections for the power supply, external sensors, communications, and alarm options. Each connector has a different pin configuration to prevent plugging cables into the wrong
connector. The ES-405 will turn on automatically whenever a 12V power source is connected to the power input.

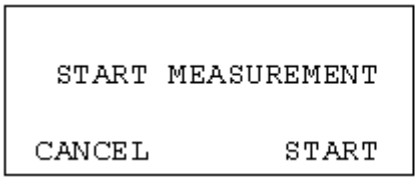
The ES-405 chassis ground lug should be connected to an earth ground with the supplied grounding cable whenever possible, to reduce potential EMI/RFI electrical noise in the unit.

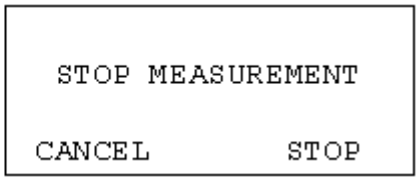
The RS-485 SERIAL connection is for an optional CCS Modem or optional RS-485 half-duplex cable. The RS-485 SENSOR connection is for an optional MET Sensor. The RS-232 SERIAL connection is for RS-232 communications. The ALARM connection is for the optional alarm output.

2.5 Power-Up and Starting Operation

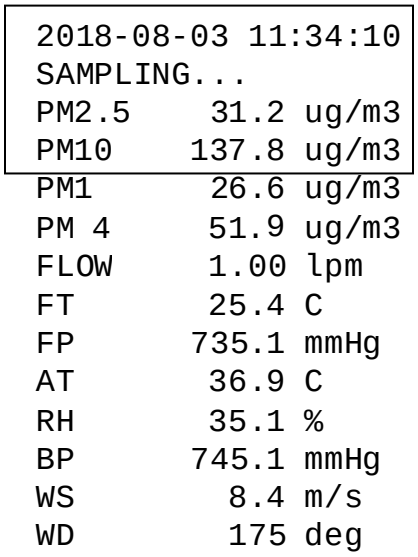
As soon as power is applied to the ES-405, the unit will boot up and display ES-405 and company website for a few seconds.

The ES-405 will then default to the OPERATE screen as shown below and begin sampling. Pressing the Enter key on the keypad will bring up the START or STOP screen depending on whether or not the unit is currently sampling.





Pressing the ▼ down arrow displays the readings that do not fit on the screen. The MET data will only display if optional digital sensors are connected



2.6 Default Setup

The ES-405 is factory configured to measure continuously with one-minute sample. The following table lists some of the factory default configurations which may need to be changed for your application. See Section 6 for details about the settings.

Parameter	Setting
Sampling Rate	1 minute
Time	Pacific Time
PM1 K-Factor	1.0
PM2.5 K-Factor	1.0
PM4 K-Factor	1.0
PM10 K-Factor	1.0
Baud Rate	115200

3 SITE SELECTION and REMOTE POWER OPTIONS

Use the following criteria when deciding on a sampling location for the ES-405. Always consider the safety and security of the unit, as well as the suitability of the sampling environment.

3.1 Site Selection Requirements

Selection of a proper site for the ES-405 is critical for accurate measurements.

The following is a summary of general ambient particulate monitoring site requirements that will be appropriate for use with the ES-405 in many cases. Some of these criteria may not be appropriate in some applications, due to the versatile nature of the ES-405:

Inlet Height:

- The inlet should be located in the "breathing zone", between 2 and 15 meters above ground level. When installed on the standard tripod, the ES-405 inlet is positioned two meters above the ground or other mounting surface.
- If the ES-405 is to be collocated with other particulate instruments, such as FRM filter-type samplers or BAM units, then the air inlet must be the same height as the inlet of the other samplers, within one meter vertically. Within one foot is preferred.
- If the ES-405 inlet is the highest point on a building, then lightning rods must be installed to prevent destruction of the unit during electrical storms.

Inlet Radius Clearance:

- The ES-405 inlet should have a one meter radius free of any objects that may influence airflow characteristics, including the inlet of another instrument.
- If an ES-405 is to be collocated at a station along with BAM or FRM samplers, the inlets of each sampler must be no less than one meter apart from each other, and no more than four meters apart. Two meter inlet spacing is recommended where possible.
- If installed near a Hi-Volume sampler, then the distance between the inlet of the ES-405 and the Hi-Vol must be no less than two meters.
- The ES-405 inlet should be located away from obstructions such as short walls, fences, and penthouses, so that the inlet is unobstructed for two meters in all directions whenever possible. In some ES-405 applications, this may not be entirely possible.
- If located beside a major obstruction (such as a building) then the distance between the ES-405 and the building should be equal to twice the height of the building.
- The inlet should be at least 20 meters from the drip line of any overhanging trees.
- There should be at least a 270 degree arc of unrestricted airflow around the inlet. The predominant direction of concentration movement should be included in the arc.

Artificial Particulate Sources:

To avoid possible errors in the concentration measurements, the inlet must be located as far as possible from any artificial sources of particulate, such as blowers, vents, or air conditioners on a rooftop. Especially if any of these types of devices blow air across the inlet of the ES-405. Even sources of filtered air must not blow across the inlet.

Spacing from Roadways:

The ES-405 should usually not be located directly next to a major highway or arterial roadway, as vehicle exhaust will dominate the concentration measurement. This effect can be difficult to predict accurately as shifting winds may direct the plume toward or away from the inlet. An obvious exception would intentional roadside particulate studies.

- Roads with a daily traffic volume of less than 3,000 vehicles are generally not considered major sources of pollutants, and in this case the ES-405 should be located at least five meters from the nearest traffic lane.
- The ES-405 should be located at least 25 meters from any elevated roadway greater than five meters high.
- The unit should be located as far as possible from unpaved roadways, as these also cause artificial measurements from fugitive dust.
- The unit should not be installed in unpaved areas unless year-round vegetative ground cover is present, to avoid the effects of re-entrained fugitive dust.

3.2 Fall Hazard and Security Cautions

If the ES-405 is to be installed more than three meters above ground level, then the tripod legs must be bolted down to prevent the unit from falling to the ground. An accidental fall may cause major optical system damage requiring that the unit be returned to the factory for repairs. In addition, dropping the ES-405 from any height will cause a potential safety hazard for those below, and may damage the unit beyond repair.

The ES-405 tripod should be secured to the mounting surface in windy conditions to prevent the unit from falling over, even at ground level. This is especially important in winds over 30 mph. If bolt-down is not possible, then the tripod legs may be weighted down with sand bags or cinder blocks to secure the unit. Wind or fall damage is not covered under warranty.

The ES-405 should be secured from theft or vandalism to the extent possible. A limited-access rooftop or a fenced lot are often good places to deploy the unit. Solar panels and batteries are highly susceptible to theft and should be secured.

3.3 Confined Sampling Locations

Because of the portable and versatile nature of the unit, the ES-405 is sometimes deployed in confined or non-ambient locations to monitor localized particulate sources, such as tunnels, mines, quarries, shopping malls, train stations, etc. Each of these applications is unique and presents various challenges. We recommend that you contact a Met One Service representative to determine the suitability of the unit if you plan a custom deployment like this. In any case, the safety of those around the unit is paramount, and the protection of the unit from damage is very important.

4 ES-405 USER INTERFACE and MENU SYSTEM

This section describes the ES-405 user interface system, and describes the functions of the main menu options, including how to view data and errors.

4.1 The User Interface - Keypad and Display Functions

The ES-405 user interface consists of a 4x20 character organic light-emitting diode display (OLED) and a dynamic keypad. The two white keys under the display are called “soft keys”. These are dynamic keys which change in response to a menu option displayed directly above the key on the bottom row of the display. The function of these keys depends on which menu is shown on the display and are often used for functions such as “SAVE” and “EXIT”.

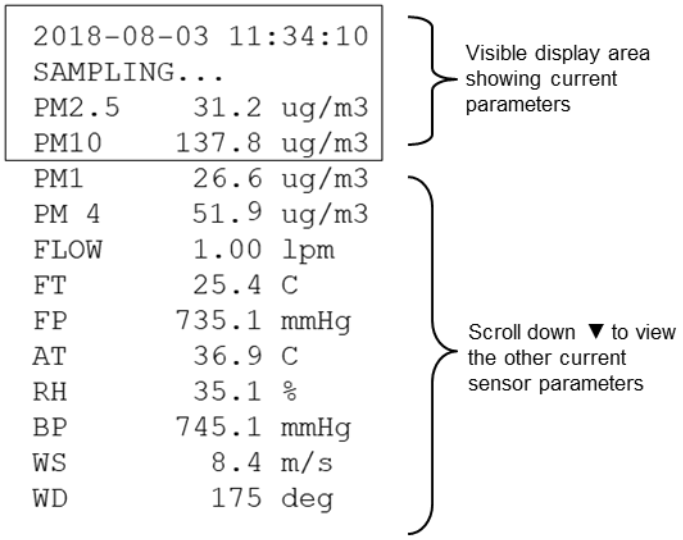
The four, red arrow (cursor) keys are used to scroll up, down, left, and right, to navigate in the menu system, and to select items or change fields on the screen. The arrow keys are also often used to change parameters or increment/decrement values in the menu system. The right arrow key can be used to wake up the display if it has turned off to save power.

The MENU key is used to enter the main menu or to select an item in a list. The ESC key is used to escape or exit out of a menu.

ES-405 Keypad and Display

4.2 Using the Main Sampling Screen

The ES-405 display shows the Operate screen when the unit is in normal operation. The active display area shows the current date and time and most recent measurement concentration. Not all the parameters monitored by the ES-405 can fit on the screen, press the down ▼ arrow to view the remaining parameters. The date and time will remain at the top of the display at all times.



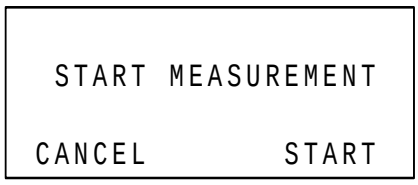
Main Sampling Screen

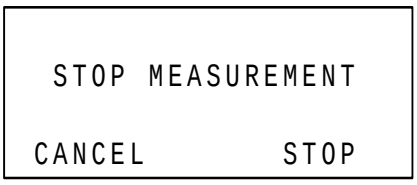
Below is a table which describes the parameters visible in the main sampling display as shown above. These are all the logged parameters in the ES-405. The active display shows the 1-second real-time value for each parameter, while the stored data shows the average value over the user-selected logging interval. AT, RH, BP, WS and WD are only visible if an external digital MET sensor is attached.

Parameter	Description
PM2.5	Real-time particulate concentration, in micrograms per cubic meter.
PM10	Real-time particulate concentration, in micrograms per cubic meter.
PM1	Real-time particulate concentration, in micrograms per cubic meter.
PM4	Real-time particulate concentration, in micrograms per cubic meter.
FLOW	Real-time sample flow rate, in actual liters per minute.
FT	Internal temperature in degrees C.
FP	Internal barometric pressure in mmHg.
AT	External ambient temperature in degrees C (if equipped).
RH	External ambient relative humidity (if equipped).
BP	External ambient barometric pressure in mmHg (if equipped).
WS	Wind speed in meters per second (if equipped).
WD	Wind direction in degrees (if equipped).

The Main ES-405 screen

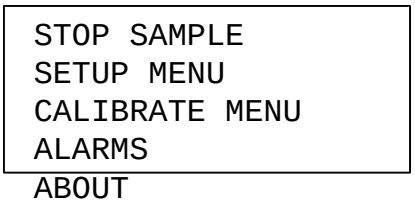
Pressing the Enter key while in the Operate screen will either bring up the Start or Stop screen depending on whether the instrument is currently sampling or not.





4.3 Using the Main ES-405 Menu System and Clearing Memory

MENU SCREEN: The first line of the Menu screen is Start or Stop depending on whether the instrument is currently sampling or not.

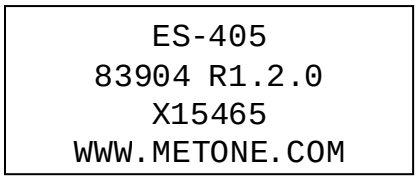


The main ES-405 menu system can be entered at almost any time by pressing the MENU key. Use the ▲▼ arrow keys to select the desired menu option, then press the MENU key to enter the selected sub-menu. The functions in the SETUP and CALIBRATE menus are described in Section 6 and 7.

SETUP: This is the setup menu for the ES-405. All the setup parameters in this menu are described in Section 6.

CALIBRATE: This is the field calibration menu for the ES-405. All the calibrations and tests in this menu are described in Section 7.

ABOUT: This menu option displays the ES-405 model number, firmware version and revision, and serial number as shown in the example below. Press the MENU/SELECT key to return to the main menu.



5 ES-405 MEASUREMENT METHOD

The Met One Instruments, Inc model ES-405 is a type of air quality sensor which automatically measures and records real-time airborne PM_{10}, PM_4, $PM_{2.5}$, and PM_1 particulate concentration levels using the principle of right-angle laser light scatter. This section describes the measurement systems.

5.1 Sheath Air

The Particle Profiler uses a sheath air system. When a particle counter is to be used to sample aerosols containing high concentrations of particles, the sensor should incorporate sheath air to prevent particles from contaminating the internal optics of the sensor. The particle laden sample air is enclosed in a sheath of clean filtered air that prevents particles from escaping. Sample air is drawn into the ES-405 by an internal pump. Flow rate is controlled with a flow sensor to maintain constant 1 LPM flow on the inlet nozzle. Additional air is added around the sample flow to contain the particles.

5.2 Detection

The ES-405 is always ready to detect particles. Sample air is drawn into the detector chamber and subjected to an intense laser beam located at right angles to the flow. The laser beam has been shaped to produce a flat very thin beam, producing a small sample area. Light travels through the sample stream and terminates in the light trap. Particles pass through the laser beam and scatter light. The amount of light scattered is proportional to the size of the particle. A portion of this light scatters toward the elliptical mirror. This light is then directed to the detector. The output of the detector is then analyzed to determine the number of particles and the size of the particles. Detected particles are multiplied by a fixed density to provide an indicative particulate mass measurement.

5.3 Sizing and Counting

The amount of scattered light is converted to a voltage pulse and based on the amplitude of the pulse signal it will pass through one or more of the size discriminators and into the associated counter(s).

5.4 Calibration

Calibration is performed using ideal (PSL) spheres, which provide a powerful tool for assessing the sensitivity, accuracy, resolution and false count level. The particle detector is compared to a reference mono-dispersed (single size) suspension of polystyrene latex (PSL) spheres in clean filtered air for both calibration and certification of performance specifications. This calibration technique serves two purposes:

1. Provides a standard traceable reference.
2. Provides a measure of how well the unit maintains its calibration (reproducibility).

5.5 K-Factor

The AQ Mass Profiler's PSL sphere calibration provides an extremely consistent calibration but does not generally match the characteristics of all ambient particulate. A K-Factor (multiplier) must be established for good accuracy and correlation to collocated instruments.

It is best to compare the ES-405 to regulatory monitors distinguished as Federal Reference Monitors (FRM) or Federal Equivalent Monitors (FEM). Contact your local air quality authorities for information on locations and how to access the data. Some sites may have hourly data, while others may have 24-hour data.

Calculate the K-Factor for each particulate size fraction as the reference concentration divided by the ES-405 light scatter concentration over the same time period. For example, if the reference total concentration was 51 $\mu g/m^3$ and the ES-405 total concentration was 38 $\mu g/m^3$, then the K-Factor would be 51 divided by 38 or 1.342. If only one size fraction K-Factor will be calculated for the unit it is advisable to use this number for all four PM sizes.

The K-Factor is only valid at the same site and for the same particulate type. If the local particulate source changes, the K-Factor may no longer be valid. The accuracy of the mass output can be affected by variations in size, color, shape, and index of refraction of the sampled particles. The K Factor for each PM mass fraction can be set in the calibrate menu.

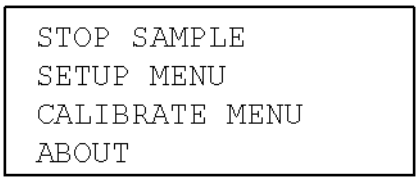
5.6 Sample RH Control for Light Scatter Mass

The relative humidity (RH) of the sample air has an influence upon the measurement of particulate mass by optical units. At RH values greater than about 50% this effect begins to increase due to particle aggregation and particle size increases as water is absorbed. The ES-405 mitigates this through a heated inlet tube that uses an internal sample RH sensor. The RH of the incoming air is measured, and the inlet heater is turned on whenever the user-set setpoint is exceeded (typically 40% RH).

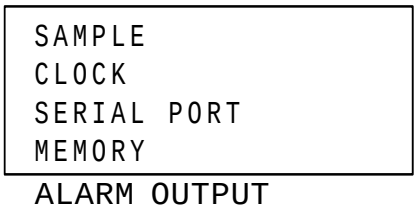
6 SETUP MENU DESCRIPTIONS

The ES-405 has a system of setup menus which contain all of the settings and parameters needed to perform the measurement and operation of the unit. Many of these settings are set at factory default values which are correct for most applications but may be altered by the operator to suit the specific needs of your monitoring program. This section describes the SETUP menu in detail and should be reviewed to ensure desired operation. Once set, most of the values in the SETUP menus will not need to be changed by the site operator. The settings will not be lost if the unit is unplugged or powered down.

The SETUP menu can be accessed through the main ES-405 menu. Use the arrow keys to select SETUP option in the main menu, then press the MENU key to enter the menu.

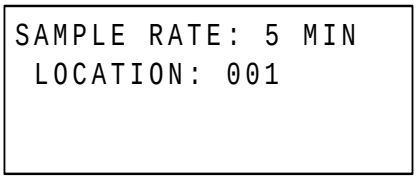


Use the ▲▼ keys to select the desired sub-menu and press the ENTER key again to enter. The top SETUP menu is shown below:



6.1 SAMPLE Setup

Set the Sample Rate and Location ID

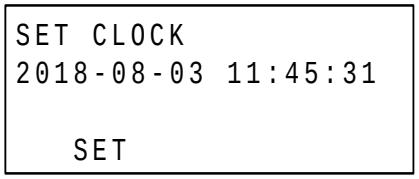


The Sample Rate choices are a pick list with the following choices.

```
SAMPLE RATE:    1 MIN
                5 MIN
                10 MIN
                15 MIN
                30 MIN
                1 HR
```

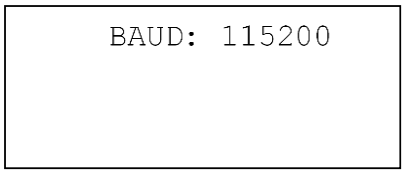
6.2 CLOCK Setup

Press the ENTER key. Scroll left and right to access each field to edit. Use the Up/Down arrows to change each field as it flashes. Press ENTER key when complete, then press the soft key under SET to finish.



6.3 SERIAL PORT

Set the baud rate for RS-232 and USB serial communication.



Baud rate choices are a pick list with the following choices:

```
BAUD: 2400
      4800
      9600
      19200
      38400
      57600
      115200
```

6.4 MEMORY

Allow to clear the files.

Choices

```
FILE: DATA LOG
      ALARM LOG
      ALL LOGS
```

6.5 ALARM OUTPUT

This screen is used to establish the rules for activating the alarm contact closure relay output of the ES-405. This contact closure connection is located on the bottom of the enclosure and requires an optional cable with the contact wires routed out. The contacts are normally open/normally closed and will close/open when the event is triggered. This can be used to signal an external warning light, logic controller, or logger input to take some action. The optional external alarm cable (MOI part number 83569) relay wiring function is as follow:
Red=Normally Open, Black=Normally Closed, Green=Common.
Select the OUTPUT SOURCE, OUTPUT TIMING, or PM LIMITS screen as shown below.

```
OUTPUT SOURCE
OUTPUT TIMING
PM LIMITS
```

The alarm OUTPUT SOURCE can be set to ALARM EVENT or PM LIMIT. Setting ALARM EVENT means that any instrument error or alarm will activate the output. The PM LIMIT setting is real-time concentration threshold that will trigger the alarm and can be set from 0.1 to 999.9 µg/m^3 for each PM size.
Press the ENTER key. Use the Up/Down arrows to select the source. Press ENTER key.

```
SOURCE: PM LIMIT
```

The OUTPUT TIMING screen is used to set how long the alarm signal is ACTIVE when triggered (1 to 60 seconds) and how much delay time must pass before the alarm can be reactivated again (1 to 60 minutes).

```
ACTIVE: 10 SEC
 DELAY: 01 MIN
```

The PM LIMITS screen is used to set the individual PM trigger Levels for each of PM1, PM2.5, PM4 and PM10. Setting the trigger level to 0 will disable triggering of the output for the specified PM Level.
Press ENTER to begin and end editing the PM limit for each mass size.

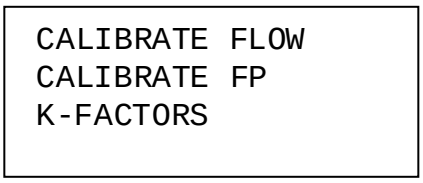
```
  PM1:  000.0 ug/m3
PM2.5:  000.0 ug/m3
  PM4:  000.0 ug/m3
 PM10:  000.0 ug/m3
```

7 CALIBRATE MENU – FIELD CALIBRATIONS

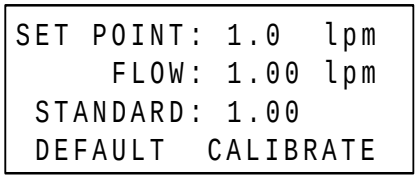
The ES-405 has a system of calibration menus which allow the operator to audit or calibrate the airflow control system parameters for optimal performance. These parameters are often audited monthly and calibrated quarterly during continuous operation. The exact frequency may vary depending on the harshness of the local conditions and the data validation requirements established by the sampling program administrator and your resulting standard operating procedures (SOP).

The CALIBRATE menu is located in the main ES-405 menu. Use the arrow keys to select CALIBRATE option in the main menu, then press the ENTER key to enter the menu. Use the ▲▼ keys to select the desired sub-menu and press the ENTER key again to enter. The top CALIBRATE menu is shown below

7.1 CALIBRATE Menu



7.1.1 CALIBRATE Flow Screen



The SET POINT parameter is the target flow rate that the ES-405 will attempt to maintain.

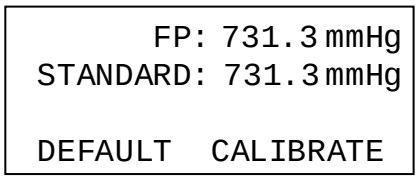
The FLOW parameter is the current reading from the ES-405 flow sensor, in actual volumetric liters per minute. The ES-405 should automatically regulate to the setpoint (1.0 LPM) when the flow calibration screen is entered. This may take a moment.

The STANDARD parameter is where you can enter the correct value from your traceable flow meter, using the arrow keys. **The flow reading that you enter must be in actual conditions**. The FLOW value should change to match the STANDARD value when you press the CALIBRATE soft key.

The DEFAULT soft key can be pressed to clear out all previous field calibrations and restore the factory calibration for the sensor. Use this if difficulty is encountered during the calibration. Press ESC to escape without changes.

Note: To audit the ES-405 flow rate without changing the calibration, simply compare the FLOW value to your traceable standard and record the results. If the CALIBRATE soft key is not pressed, then no flow calibrations are affected.

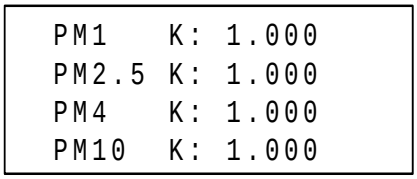
7.1.2 CALIBRATE FP Screen



The FP parameter is the current reading from the ES-405 pressure sensor. The STANDARD parameter is where you can enter the correct value from your traceable pressure standard, using the arrow keys. You will need to convert units if your standard outputs pressure in other units. The FP value should change to match the STANDARD value when you press the CALIBRATE soft key. The DEFAULT soft key can be pressed to clear out all previous field calibrations and restore the factory calibration for the sensor. Use this if difficulty is encountered during the calibration. Press ESC to escape without changes.

7.1.3 K-FACTOR Screen

Press Enter to begin and end editing the K-Factor value for each mass size.



8 MAINTENANCE and TROUBLESHOOTING

This section provides information about routine maintenance of the ES-405, and for performing more detailed diagnostic tests if a problem is encountered. The ES-405 generates error messages on the display or in the data log if a failure or other problem is detected. Many times, there is a simple solution. Persistent errors often signify a failure which will require investigation.

WARNING: The ES-405 Particulate Profiler can only be serviced or calibrated by factory-authorized personnel. Unauthorized maintenance on the Particle Profiler may result in exposure to laser radiation that can cause blindness and void warranty.

The ES-405 is an extremely component-dense assembly! Only skilled and trained electro-mechanical technicians should attempt any disassembly or repairs inside the ES-405. Routine maintenance procedures do not involve removing the ES-405 assembly from the enclosure. Calibrating particle sensors like the one in the ES-405 Particle Profiler requires specialized equipment and a skilled technician. Met One Instruments maintains a calibration facility for calibrating particle counters according to industry-accepted methods using NIST traceable standards. The ES-405 Particle Profiler should be calibrated on a 24 month basis.

8.1 Basic Problem and Cause/Solution Table

The following table contains information on some of the more common ES-405 problems which may be encountered, and some steps to identify and remedy the problems. Met One welcomes customer suggestions for new items to include in this section of future manual revisions. If the solution cannot be found in the following table, then contact one of our expert service technicians for help in resolving your problem.

Problem:	The ES-405 won't start a measurement cycle.
Cause/Solution:	• You must press the START SAMPLE key to start continuous operation. • The unit will not start a cycle if the input DC voltage is below the restart threshold, 10 volts DC.

Problem:	Flow failures or low flow.
Cause/Solution:	• Check the filter. This must be replaced periodically. • Try to DEFAULT the flow sensor calibration. If corrupted flow cal parameters are entered into the flow calibration, it may appear that the flow system is not working. • Verify the internal AT and BP sensors function. They appear as FT and FP on the main screen when their output is enabled. Failed sensors can affect the flow. • The sample pump itself will eventually wear out and need to be replaced. It should last at least a year under normal conditions. Check the other possibilities first.

Problem:	Optical system alarms and failures
Cause/Solution:	• The ES-405 must be periodically returned to the factory for optical system cleaning. The period will depend on your particulate levels. • Check the filter and replace as needed. • The laser diode has a finite lifetime which will be reduced at high temperatures. It may eventually fail and need to be replaced at the factory.

Problem:	The ES-405 data does not match BAM or FRM data at the same site
Cause/Solution:	• A K-Factor (multiplier) must be established for good accuracy and correlation to collocated instruments. The K-Factor will sometimes be very significant, such as a multiplier of 3 or 5. See Section 5.5. • The K-Factor is only valid at the same site and for the same particulate type. If the local particulate source changes, the K-Factor may no longer be valid. • The ES-405 TSP inlet is designed for low winds only. High winds may cause a cut-point in the TSP inlet itself. • Clean the TSP inlet monthly. • Check the sample RH data and filter RH sensor operation. High sample RH will cause ES-405 over-reading. The sensor itself can occasionally fail. • Check the ES-405 for flow calibration problems. • Check the alarm log for optical system alarms.

8.2 Suggested Periodic Maintenance Intervals

The following table shows the Met One recommended period for routine maintenance items. Some of these items will need to be performed more, or less, often depending on the exact characteristics of your location. The program administrator should review these items and establish SOPs appropriate for your application.

Maintenance Item	Suggested Period
AQ Flow Audit/Calibration	**Monthly**
Calibrate Sensor	**24 Months**
TSP Cleaning	**Monthly**
Replace Filter	**Yearly**

8.3 Flow Calibration

Connect a flow meter to the inlet nozzle of the ES-405 Particle Profiler and allow the flow to stabilize. If it is not 1.00 LPM ± 0.05LPM, then it needs to be calibrated. Refer to Section 7.1.1.

8.4 Filter Change

The filter cartridge is located in the front panel of the instrument. It can be removed by unscrewing the black Delrin filter holder. The expected lifetime of the filter is one year, but in heavy particulate areas they may need to be replaced more often. The replacement filter p/n is 580358.

8.5 TSP Inlet Cleaning

The TSP inlet must be cleaned periodically. The time interval between cleanings varies depending on the local particulate levels. The TSP inlet should be disassembled and cleaned at least every three months during continuous use.

The TSP inlet can be disassembled for cleaning by removing the three screws in the cap. Soap and water often work best for cleaning the TSP inlet and debris screen. Do not over-tighten the screws during reassembly or the plastic threads will strip out.

8.6 Factory Service Interval

The ES-405 needs to be periodically returned to the factory for service and recalibration. The recommended period is 24 months during continuous use. However, some users establish their own interval depending on the harshness of the sampling conditions, particulate levels, and data scrutiny. High concentration operation will often require more frequent factory service.

Factory service primarily consists of optical system cleaning, laser/detector checks, and recalibration. As-found calibration checks can also be requested. Contact the Met One technical service department to schedule ES-405 service. A Return Authorization (RA) number must be obtained before the unit is returned.

9 DATA RETRIEVAL and COMMUNICATIONS

This section describes the methods used to retrieve data files from the ES-405. The unit has a single serial data output which can be routed through the RS-232 data port or the USB serial port, and may be used with a local computer, laptop, or digital datalogger. An RS485 output is available for connection to the CCS modem to allow remote data viewing and collection. Access to the data through the serial port is easy using the Comet software or simple terminal or escape commands.

9.1 Serial Port Connections to a Computer

The ES-405 can be directly connected through the supplied USB cable to most standard desktop computers and laptops. The USB port is located behind the front door, in the bottom right of the unit.

The ES-405 can be directly connected through the purchased serial cable to desktop computers that have a 9-pin (DB-9) RS-232 serial port connector.

The ES-405 default settings are 115200 Baud, 8 data bits, no parity, one stop bit, no flow control. The baud rate may be changed to a slower rate. The other communications settings are fixed.

9.2 Modem Options for Remote Data Retrieval

Met One Instruments CCS cloud display and storage cell modem is recommended for remote access to the ES-405. Contact Met One for details.

9.3 Comet™ Data Retrieval Software

The ES-405 is compatible with the Comet™ program, which is a simple Windows-based communications terminal program developed by Met One Instruments. This is the recommended method for all ES-405 data retrieval, since Comet allows the user to easily download the data logs, error logs, and settings files from the ES-405 without the user having to know any of the underlying communications protocols. A comprehensive pdf user's manual for the program is also available from the Met One Instruments website. Install the program on to the computer that will be used for data retrieval and review the manual for complete data examples.

Note: If the Comet software is being used for data retrieval, none of the terminal mode commands shown in the following sections of this manual will be needed.

Comet is a communications terminal program which can retrieve data from the ES-405 using either a direct local connection or a remote connection via various modem types or even an IP address.

Warning: A Silicon Labs CP210x Driver for the USB connection must be installed before connecting to the USB Type B port.

Driver download weblink: https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers

Note: Before using the USB Type B port, ensure an existing RS-232 connection is disconnected.

The Comet program is available from the Met One Instruments website: https://metone.com/products/comet/

Install the program on the computer, then run it from the Programs directory. Create a new station for the ES-405 and then use it to retrieve the data from the ES-405 monitor.

The Comet program has a “Terminal” button which provides access to the ES-405 just as when using any other terminal program.

9.4 Downloading Data Using a Terminal Emulator

ES-405 data can also be easily downloaded through the serial port using a terminal emulator program, like PuTTY. Connect the serial port of the ES-405 to your computer or laptop serial port using the supplied serial cable.

Importing the raw text file into a spreadsheet:

The data saved in a text file from a terminal download can be viewed by simply opening the text file. However, the data is often hard to view in the raw text format due to the comma-separated layout of the data fields. The easiest way to analyze the data is to open it as a .csv file into a spreadsheet program such as Excel®:

1. Open the spreadsheet program.
2. Select to open the downloaded file. The program should prompt you how to delimit the fields. Select comma.
3. The text file can be opened directly with Excel or similar software. Each data parameter should appear in its own spreadsheet column, with the correct data header at the top of each column. You can then save the file as a spreadsheet file if desired.

9.5 Data Retrieval Commands Through the Serial Port

When a serial connection between the computer terminal program and the ES-405 has been established, you will have access to the ES-405 data files by sending the following commands through the serial port with keyboard strokes or ASCII characters.

There are two modes of communication:

1. User communication – This is a user interactive mode using simple letter commands for ease of use.
2. Computer communication – This mode is used for computer-to-device communication. It has a level of data integrity.

9.5.1 User Communication

In the user communication mode (terminal mode), press the Enter key, <cr>, three times to enter the mode. In this mode simple character commands can be issued with no <Esc> character required.

An asterisk character appears during wake-up and after a command has completed. The asterisk indicates that the instrument is ready for a new command.

Commands are echoed back from the instrument in this mode. Commands are terminated by the Enter key <cr>.

A help menu can be viewed by sending H, h, or ?; giving all the commands available to the user. Pressing <Esc>, X<cr> or Q<cr> will exit user mode

Note: After a few minutes, the ES-405 will stop waiting for a command and you will have to send another series of three carriage returns to reestablish the command prompt connection.

9.5.2 Computer Communication

In the computer communication mode, the command format has an optional level of data integrity – checksum. This is enabled whenever an <Esc> character is sent to the instrument. Character echo is suppressed in this mode.

9.5.3 Computer Command Format

The computer command has the following format:

<Esc>Cmd p1 p2*cs<cr>

Computer commands are prefaced with an <Esc> (0x1B) character followed directly by a command, Cmd, which is variable in length depending on the command. After the command characters there can be zero or more parameter fields, p1 p2. Each parameter field is delimited by one or more Space characters (0x20).

A computer command requesting product revision example follows:

<Esc>rv

ES-405, 83904, R1.2.0.0a

9.5.4 Checksum Computation

Checksum is calculated as the 16 bit unsigned integer sum of all characters after the <Esc> character up to but not Including the Checksum Delimiter Character * (0x2A). It is printed out as an ASCII decimal number.

The result is always 5 characters in length with leading zeros.

A valid checksum may be signaled in the following manner: *//<cr>

A same command example with checksum follows:

<Esc>rv*//

ES-405, 83904, R1.2.0.0a*01278

9.5.5 Serial Command List

The command set descriptions are listed in the following table:

<table>
<tr><th>Command</th><th>Function</th></tr>
<tr><td>#</td><td>Get MetRecord revision.</td></tr>
<tr><td>1</td><td>Report settings.</td></tr>
<tr><td>2</td><td>Report All data.</td></tr>
<tr><td>3</td><td>Report New data.</td></tr>
<tr><td>4</td><td>Report Last data.</td></tr>
<tr><td>7</td><td>Alarm Report</td></tr>
<tr><td>E</td><td>End (Stop) sample cycle.</td></tr>
<tr><td>H, ?</td><td>Help menu.</td></tr>
<tr><td>S</td><td>Start a sample cycle.</td></tr>
<tr><td>Q</td><td>Exit User mode and enter Computer mode.</td></tr>
<tr><td>DT</td><td>Get/Set date and time. yyyyMMddHHmmss</td></tr>
<tr><td>ID</td><td>Get/Set location ID or address. The range is 1 to 999.</td></tr>
<tr><td>MA</td><td>Modbus Address. The range is 1 to 247.</td></tr>
<tr><td>OI</td><td>Interval Output On/Off. 1=Enabled, 0=Disabled.</td></tr>
<tr><td>QH</td><td>Query Header</td></tr>
<tr><td>RF</td><td>Reference flow for calibration</td></tr>
<tr><td>RO</td><td>Report Options. Uses bit flags for the different readings. Add up all the bit flags for combinations needed
<table>
<tr><td>Reading</td><td>Bit</td><td>Add</td></tr>
<tr><td>Flow</td><td>0</td><td>1</td></tr>
<tr><td>Temperature (FT)</td><td>1</td><td>2</td></tr>
<tr><td>Pressure (FP)</td><td>2</td><td>4</td></tr>
<tr><td>RH (FRH)</td><td>3</td><td>8</td></tr>
<tr><td>Met Sensor</td><td>4</td><td>16</td></tr>
</table>
e.g. RO 11 = Flow, Temperature, RH</td></tr>
<tr><td>RQ</td><td>Request last reading.</td></tr>
<tr><td>RV</td><td>Get product information.</td></tr>
<tr><td>SB</td><td>Get/Set serial baud rate. 3=2400, 4=4800, 5=9600, 6=19200, 7=38400,8=57600,9=115200.</td></tr>
<tr><td>SK</td><td>Set PM K Factors. K Factor range is 0.1-20.0. PM1=1, PM2.5=2, PM4=3, PM10=4</td></tr>
<tr><td>SM</td><td>Set Mode 0-Single, 1-Repeat, 2-Logger</td></tr>
<tr><td>SPR</td><td>RH Setpoint to turn inlet heater on.</td></tr>
<tr><td>ST</td><td>Get/Set Sample Time in Seconds.</td></tr>
</table>

9.6 Serial Command Explanations

9.6.1 User Data Report

The 2, 3, 4 and RQ commands will print the User Data Report.

The Time field is the standard ISO style time stamp. The optional fields follow. The Met bit is active for this report and if set will include WS, WD, AT, RH and BP at the end of the record.

The Data Report without Met bits enabled is as follows:

Time,PM1(ug/m3),PM2.5(ug/m3),PM4(ug/m3),PM10(ug/m3),FLOW1(lpm),FT(C),FP(mmHg),FRH(%)

2020-06-11 12:19:00,000.5,001.8,004.9,019.7,1.00,+37.6,659.0,11.1

9.6.2 OI Command

When OI is set to 1, the unit will volunteer a record after each sample period similar to the User Data Report.

9.6.3 SK Command

This is used to set the K factors for each PM size. PM1=1, PM2.5=2, PM4=3, PM10=4. It is entered as SK (PM#) (K factor). A typical command and response for each PM size is as follows.

```
*SK 1 3.78

SK 1,3.78,PM1

*SK 2 2.70

SK 2,2.70,PM2.5

*SK 3 2.70

SK 3,2.7,PM4

*SK 4 2.16

SK 4,2.16,PM10
```

9.7 MODBUS Communication

The ES-405 supports MODBUS communications protocol. The serial transmission is RTU mode. The following MODBUS 3x registers are used to access various readings. RS-485 communication is enabled by connecting the optional 83179 cable to the RS-485 serial connection at the bottom of the unit.

9.7.1 Instantaneous Real Time Readings

Note: the instantaneous PM levels are also the last measurement values due to how the mass is calculated. All other values are instantaneous.

Name	Address	Type	Points	Description
Date/Time	1000	Uint32	2	Current Unix time (Seconds since Jan 1 1970)
Status	1002	Uint32	2	Current alarm status
IOP Current	1004	Float	2	(mA) IOP Laser Current
Light Noise	1006	Float	2	(V) Light Noise
AT1	1008	Float	2	(C) Temperature
AT2	1010	Float	2	(C) Temperature (Digital)
Flow	1012	Float	2	(LPM) Flow
RH1	1014	Float	2	(%) Relative Humidity
BP	1016	Float	2	(Pa) Barometric Pressure
RH2	1018	Float	2	(%) Relative Humidity (Digital)
BP2	1020	Float	2	(mmHg) Barometric Pressure (Digital)
WS	1022	Float	2	(MPS) Wind Speed (Digital)
WD	1024	Float	2	(Deg) Wind Direction (Digital)
PM 1	1026	Float	2	(ug/m3) Mass PM 1
PM 2.5	1028	Float	2	(ug/m3) Mass PM 2.5
PM 4	1030	Float	2	(ug/m3) Mass PM 4
PM 10	1032	Float	2	(ug/m3) Mass PM 10

9.7.2 Last Data Record Readings

Name	Address	Type	Points	Description
Date/Time	1500	Uint32	2	Current Unix time (Seconds since Jan 1 1970)
Status	1502	Uint32	2	Current alarm status
IOP Current	1504	Float	2	(mA) IOP Laser Current
Light Noise	1506	Float	2	(V) Light Noise
AT1	1508	Float	2	(C) Temperature
AT2	1510	Float	2	(C) Temperature (Digital)
Flow	1512	Float	2	(LPM) Flow
RH1	1514	Float	2	(%) Relative Humidity
BP	1516	Float	2	(Pa) Barometric Pressure
RH2	1518	Float	2	(%) Relative Humidity (Digital)
BP2	1520	Float	2	(mmHg) Barometric Pressure (Digital)
WS	1522	Float	2	(MPS) Wind Speed (Digital)
WD	1524	Float	2	(Deg) Wind Direction (Digital)
PM 1	1526	Float	2	(ug/m3) Mass PM 1
PM 2.5	1528	Float	2	(ug/m3) Mass PM 2.5
PM 4	1530	Float	2	(ug/m3) Mass PM 4
PM 10	1532	Float	2	(ug/m3) Mass PM 10

10 PARTS and ACCESSORIES

10.1 Consumables, Replacement Parts, and Accessories

The following parts are available from Met One for maintenance, replacement, service, and upgrades. If unsure about a part you need, please contact the technical service department. Some of these parts may require technical skills or special instructions before use or installation.

Description	Part Number	Graphic
Sample Pump Module Assembly	**81643**	
Flow Sensor, Differential Pressure	**82258-1**	
Temperature Sensor Assembly and Harness	**80957-2**	
Air Filter, 0.01 micron	**580358**	
O-Ring, Filter Holder	**720074**	
Pole Mount Bracket	**9425**	
TSP Sampling Inlet Harsh environment, with insect screen and rain cap	**9441**	
OLED Display, 20x4 Character	**701751**	
Profiler Engine Assembly	**83120**	
Power Supply, 100-240 VAC input 12 VDC output, Weatherproof	**9438-4**	
RS-232 Communication Cable	**83245**	
RS-485 Communication Cable	**83179**	
USB Cable	**500784**	
External Alarm Cable	**83569**	
Solar Power Kit, 160W, 3.7 minimum PSH	**730139**	
Solar Power Kit, 240W, 2.5 minimum PSH	**730140**	
ES-405 Factory Service and Recalibration		Call Met One

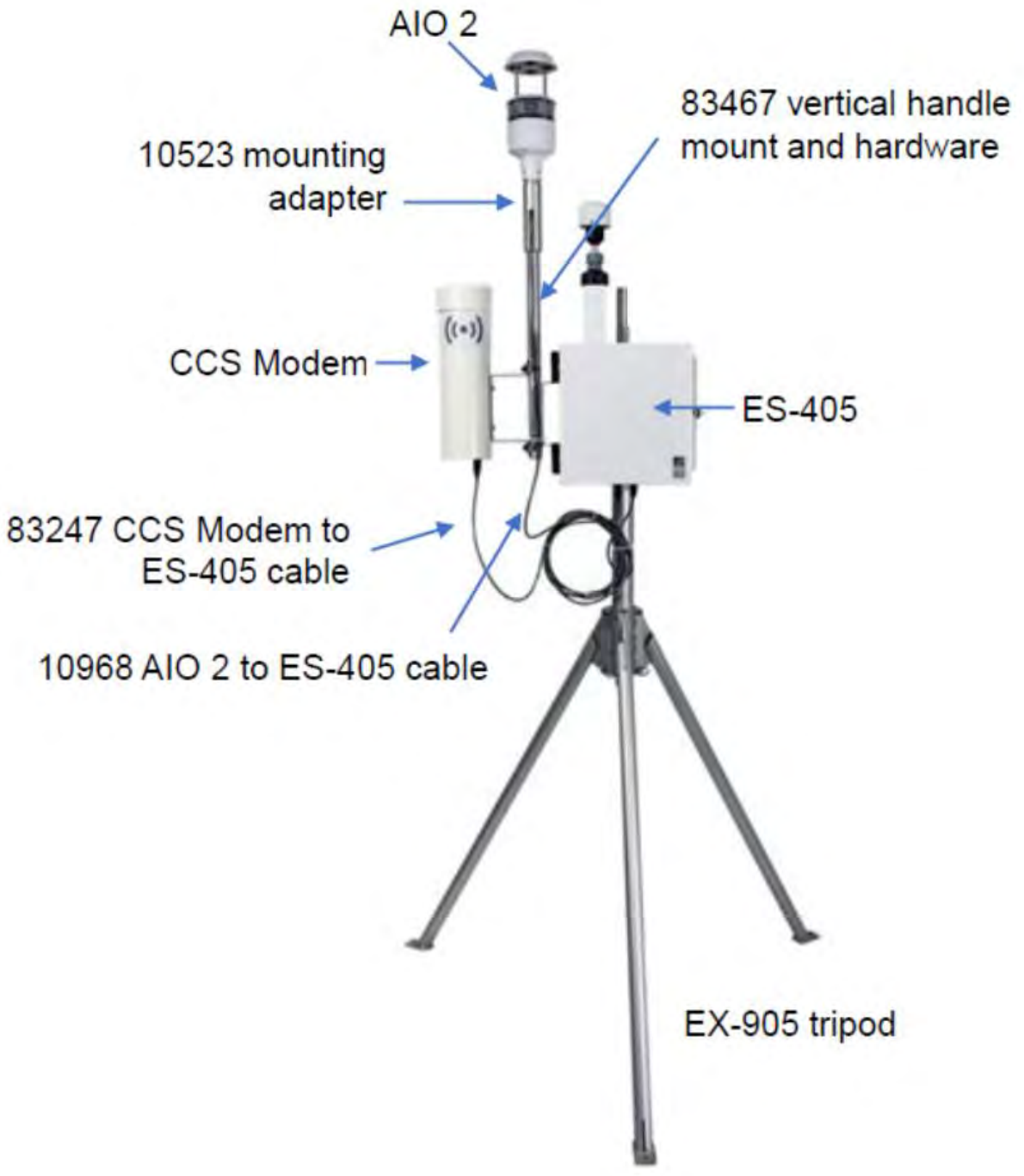
Description	Part Number	Graphic
Aluminum Tripod	**EX-905**	
Combination Sensor for Sonic Wind Speed and Wind Direction	**AIO 2**	
AIO 2 to ES-405 Cable	**10968**	
Mounting and Alignment Adapter, AIO 2	**10523**	
Vertical Handle Mount and Hardware	**83467**	
Combination Sensor for Ambient Temperature, Relative Humidity, and Barometric Pressure	**597A**	
Cable Assembly, 597A Sensor to ES-405	**82959-8**	
Combination Sensor for Wind Speed and Wind Direction, cross-arm mounted	**EX2-034**	
Combination Sensor for Sonic Wind Speed and Wind Direction, cross-arm mounted	**EX2-AIO**	
Comet Cloud Service Modem	**CCS Modem 2**	
ES-405 to CCS COM Cable	**83247**	

10.2 Combination Sensor Options

The ES-405 can be equipped with optional combination wind speed and direction, ambient temperature, relative humidity, and barometric pressure sensors. There are both analog and sonic type sensors available. Ensure the ES-405 is powered down before connecting a new sensor to the unit.

10.2.1 AQ Eagle

The AQ Eagle is an air quality monitoring system that features the ES-405. It includes an AIO 2 to measure wind speed, wind direction, ambient temperature, RH, and barometric pressure, as well as a CCS Modem to provide real time remote connectivity to the ES-405. The image below shows the AQ Eagle setup with each component labeled.



10.2.2 EX2-034

The EX2-034 is a mechanical cup and vane sensor that provides wind speed and direction measurements. It is mounted to the optional EX-905 tripod using the provided cross arm. It connects to the ES-405 RS-485 SENSOR connector using the included signal cables and analog to digital signal converter. This converter measures the wind sensor's analog signals and provides an RS-485 digital output to the ES-405 with wind speed and direction values. This type of sensor requires manual orientation when deployed. Consult the separate manual that comes with the wind sensor for details.

10.2.3 EX2-AIO

The EX2-AIO sensor provides sonic wind measurements, ambient temperature, RH, and barometric pressure. It is mounted to the optional EX-905 tripod using the same cross-arm assembly as the EX2-034B. However, it has a different adapter to mate it to the cross-arm itself. It connects to the ES-405 through the RS-485 SENSOR connector on the bottom of the monitor. This connection both provides power to the sensor and collects its digital output string to provide wind speed and direction information.

This type of sensor includes an internal compass for wind direction correction and does not require manual orientation when deployed. Consult the separate manual that comes with the wind sensor for details.

10.2.4 597A

The 597A measures ambient temperature, relative humidity, and barometric pressure. It connects to the ES-405 through the RS-485 SENSOR connector using the 82959-8 cable.

10.3 CCS Modem

The Met One Instruments, Inc. Comet Cloud Service (CCS) modem provides real time remote connectivity to the ES-405. A personalized webpage dashboard gives current measurement values graphically and in tabular form. The private link can be shared with other authorized users allowing easy data sharing across an organization. Data is stored in the cloud for 2+ years and can be downloaded to a computer or other device at any time. It connects to the ES-405 through the RS-485 SERIAL connector.

Appendix C

MODEL AIO 2
ALL IN ONE WEATHER SENSOR

OPERATION MANUAL
Document No. AIO 2-9800 Rev. F

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AIO 2 Weather Sensor Manual

Technical Support

This manual is structured by customer feedback to provide the required information for setup, operation, testing, maintaining, and troubleshooting your AIO 2 Weather Sensor. Should you still require support after consulting your printed documentation, we encourage you to contact one of our expert Technical Service representatives during normal business hours of 7:00 a.m. to 4:00 p.m. Pacific Time, Monday through Friday. In addition, technical information and service bulletins are often posted on our website. Please contact us and obtain a Return Authorization (RA) number before sending any equipment back to the factory. This allows us to track and schedule service work and to expedite customer service. Please have your instrument serial number available when contacting the manufacturer.

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Safety Notice

The contents of this manual have been checked against the hardware and software described herein. Since deviations cannot be prevented entirely, we cannot guarantee full agreement. However, the information in this manual is reviewed regularly and any necessary corrections are included in subsequent editions. Faultless and safe operation of the product presupposes proper transportation, storage, and installation as well as careful operation and maintenance. The seller of this equipment cannot foresee all possible modes of operation in which the user may attempt to utilize this instrumentation. The user assumes all liability associated with the use of this instrumentation. The seller further disclaims any responsibility for consequential damages.

Electrical & Safety Conformity

The manufacturer certifies that this product operates in compliance with the following standards and regulations:

FDA/CDRH This product is tested and complies with 21 CFR, Subchapter J, of the Health and Safety Act of 1968 US 21 CFR 1040.10

Table of Contents

1. Introduction & Overview – AIO 2 All In One Weather Sensor

1.1. Overview

The AIO 2 Weather Sensor provides measurements of wind speed, wind direction, ambient air temperature, relative humidity, and barometric pressure in a single, compact, rugged unit. It integrates a folded-path, low-power sonic anemometer with a precision thermistor temperature sensor, fast-response capacitive relative humidity sensor, and a state-of-the-art barometric pressure sensor. It also includes an internal flux-gate compass that allows for automatic alignment of wind direction to magnetic north, regardless of the sensor's orientation.

The small footprint and power efficiency of the AIO 2 make it ideal for remote regions, urban environments, air quality networks, construction/remediation sites, and other network applications. The unit can be used in permanent (cooperative weather networks, schools, public information dissemination) or temporary (emergency response, audit, research program support) installations.

Designed for maximum portability and utility, the AIO 2 is well suited for rapid deployment and use by one person under all conditions. The unit may be mounted on a tower, tripod or vehicle mast. Data output is a serial, digital message that can be interfaced to most data logging systems.

The AIO 2 even has the capability to connect an external contact closure rain gauge (such as the Met One 360 or 370) and/or solar radiation sensor (such as the Met One 10718). If these inputs are present, their measurements are then integrated into the AIO 2 serial data output.

2. Specifications

PARAMETER	SPECIFICATION
Wind Speed Operating Range	0 to 75 m/s (0 to 168 mph)
Wind Speed Calibrated Range	0 to 60 m/s (0 to 134 mph)
Wind Speed Accuracy	±0.5 m/s or 5% of reading (whichever is greater)
Wind Speed Resolution	0.1 m/s
Wind Direction Range	0 to 360 degrees
Wind Direction Accuracy	±5° (including Compass)
Wind Direction Resolution	1.0°
Alignment Compass Accuracy	±2°
Alignment Compass Resolution	1°
Temperature Range	-40 to +60 °C (-40 to +140 °F)
Temperature Accuracy	±0.2 °C from 0 to 60 °C, ±0.5 °C from -40 to 0 °C
Temperature Resolution	0.1 °C
Relative Humidity Range	0 to 100%
Relative Humidity Accuracy	±3% 25 °C
Relative Humidity Resolution	1.0%
Barometric Pressure Range	600 to 1100 hPa
Barometric Pressure Accuracy	±0.5 hPa 25 °C
Barometric Pressure Resolution	0.1 hPa
External Rain Gauge Input	Resolution 0.25mm or 0.01”, user selectable
External Solar Radiation Sensor Input	Measured in W/m^2
Measurement Rate Output	1 Hz
Signal Output Type	RS-232, RS-485, and SDI-12
Operating Temperature	-40 to +60 °C (-40 to +140 °F)
Operating Relative Humidity	0 to 100%
Dimensions	4.5 inches diameter, 11 inches height
Shipping Weight	6 pounds (including packaging)

3. Unpacking & Installation

3.1. Unpacking

Any damages incurred to the equipment during shipping are the responsibility of the carrier. If any damage to the shipment is noticed before unpacking, a claim must be filed with the commercial carrier immediately. You should follow any special unpacking instructions provided by the carrier as you then carefully remove all items from the containers and inspect each component. It is recommended to document and photograph all damaged packages and items before, during, and after unpacking them.

Unpack the AIO 2 and accessories and make a visual inspection of the contents; contact your supplier if anything is missing. The AIO 2 Weather Sensor ships with the following items:

- AIO 2 All In One Weather Sensor.
- Calibration certificate.
- Operation manual (this document).

Optional Accessories that may be purchased include:

- 10523 ¾” IPS pipe vertical mounting adaptor
- 10106 Universal mounting arm
- 10600 Interface station – provides wiring terminals, 12VDC power, USB and DB9 serial connections.
- WeatherView Software
- USB Driver CD
- Comet Terminal Software CD

The required 10624 signal cable is sold separately. It is custom built to the desired length.

Contact Met One Instruments (see the Technical Support section at the beginning of this manual) to arrange for any replacement items needed.

Please keep the carton(s) and associated packing materials for reuse.

3.2. Deployment

3.2.1. Tripod / Pipe top Installation:

The AIO 2 can be quickly and easily deployed on top of a Met One 905 tripod or any other vertical ¾” IPS pipe using the optional 10523 vertical mount.

Route the 10624 signal cable connector end through the 10523 mount adaptor as shown below.

Plug the cable connector into the base of the AIO 2 and turn the connector sleeve clockwise (as seen from below the sensor) until tight. Then slide the AIO 2 onto the top of the 10523 mount adaptor and tighten the two slotted base set screws as shown below.

Position the cable in the slot on the side of the mount and then slide the assembly onto the tripod mast or pipe. Tighten the 2 set screws on the 10523 mount to affix it to the tripod/pipe.

The AIO 2 includes an internal alignment compass so the adaptor and AIO 2 sensor can face any direction and still correctly read wind direction (as referenced to Magnetic North). The MD command can be used to set a magnetic declination to reference the wind direction reading to True North. See section 3.6 for more details about setting the magnetic declination.

Run the signal cable from the mount to the data collection device being used (such as a data logger or computer) following the wiring connections listed in section 3.3.

3.2.2. Universal Mounting Arm Installation:

If a tripod or ¾” pipe is not available, the optional 10106 Universal Mounting Arm can be used to mount the AIO 2 horizontally or vertically to a variety of vertical posts or pipes. The included hose clamps will fit up to 3” diameter posts, but larger user supplied hose clamps can be substituted to mount the arm to larger diameter structures.

10106 Universal Mounting Arm Orientation Options

Horizontal

Vertical

3.3. Input / Output Connections

10624 Cable Wire Color Designations:

RED	POWER POSITIVE (8-36VDC, 30mA nominal @ 12VDC)
BLK	POWER COMMON
BLU	SDI-12
GRN	SIGNAL COMMON
WHT	RS-232 TX
BRN	RS-232 RX
YLW	RS-485 +A
GRY	RS-485 -B
ORN	EXTERNAL RAIN GAUGE OPTION INPUT
VIO	EXTERNAL SOLAR RADIATION SENSOR OPTION INPUT
WHT/BRN	SHIELD (must be grounded for transient protection to function)

Warning: Do not short any of the signal or power wires to ground or to each other.

Maximum Cable Length Considerations:
The maximum recommended cable length depends on the communication protocol to be used:

RS-232C	50FT maximum
RS-485	4000FT maximum
SDI-12	200FT maximum

Connecting to the optional 10600 Interface Base Station

- The optional 10600 Interface Base Station provides:
  - 12VDC power to the sensor
  - Convenient wiring terminal blocks for the AIO 2 sensor
  - Connection points for optional external Rain gauge and Solar radiation sensors.
  - USB and DB9 serial port outputs for easy Computer connectivity.

- See the included 10600 manual for use and connection details.

3.4. Operational Checkout

Connect the AIO 2 to your data logger or recording electronics. Connect power to the sensor cable per wiring diagram in section 3.3. The AIO 2 will automatically start streaming its serial output and your recording electronics should start displaying or recording measurements from the AIO 2. Verify the data seems reasonable by comparing it to data from a local weather source. If the data looks OK, the unit is in operation. If data is questionable, contact Met One Instruments, Inc. Service Department for further guidance (see the Technical Support section at the beginning of this manual).

3.5. Maintenance

The unit has no moving parts and therefore requires no periodic maintenance for wear items. It is recommended that the data be checked every 6 -12 months to be sure there has been no failure of any of the electrical components. This can be done by placing a small container (at least 12inch diameter) over the sensor to zero check the wind measurement. The ambient temperature, relative humidity, and pressure readings can be verified against collocated devices such as the Met One 083E-1-35 T/RH sensor and Met One 092 BP sensor.

3.6. Setting Magnetic Declination

The internal flux gate compass automatically corrects the wind direction in the AIO 2 to magnetic North. This means that the unit will *not* require directional alignment or orientation upon deployment.

If it is necessary to measure wind direction referenced to True North it is important to understand and know the magnetic declination of the area in which the sensor is being operated. The declination in the AIO 2 is factory set at zero degrees. To change this, refer to the MD command instruction in section 7.1.11 for setting the Magnetic Declination.

4. User Selectable Options

The following User Defined Options can be set following the instructions detailed in Appendix A.

BV Battery Voltage Printout Toggle On/Off
CV Compass Reading Printout Toggle On/Off
ID View / Set Instrument ID
MA Set MODBUS Address
MD Set Magnetic Declination
ME Metric or English Units
OI Set Output Interval
PU Set Pressure Units
RT Output Record Type
RU Set Rain Units
RV Display Firmware Version Number
SA SDI Address
SC Solar Option Calibration Constant
ST Set Serial Trigger Address
SU Set Wind Speed Units
TU Set Temperature Units
Q Quit Terminal Mode and Save changes

5. User Interface

The output of the AIO 2 is a fixed length, comma delimited, serial data stream. The serial output is factory set for 9600 baud, no parity, 8 data bits, 1 stop bit, and no flow control. The output interval default is once per second. This may be changed using the *OI* command (see Appendix A). The data is easily viewed and can be displayed and captured using Met One Instruments' Comet Software or other terminal communication program.

An ***example*** of the standard output format is shown below:

000.6,272,+023.6,022,0974.3,000.00,0000,12.7,U0,*02257 CR/LF

Each parameter is a fixed length with leading zeros separated by a comma. The string terminates with a Carriage Return and Line Feed. Field parameters are defined as:

000.6,272,+023.6,022,0974.3,000.00,0000,12.7,U0,*02257 CR/LF
WS,WD,AT,RH,BP,RN,SR,BV,CONFIG,CheckSum

The wind speed, temperature, pressure and rainfall units can be changed with the *SU, TU, PU,* and *RU* terminal commands respectively. Please refer to Appendix A for more information.

NOTE: the internal alignment compass reading can be added to the output string using the CV command; see Section 7.1.3 for details and an output string example.

The AIO 2 output can also be configured to emulate the Legacy AIO 102780 output data format. An ***example*** of the Legacy AIO output format is shown below:

002.6, 219, +020.8, 042, 1013.2, *1787CR/LF

Each parameter is a fixed length with leading zeros separated by a comma and one space. The string terminates with a Carriage Return and Line Feed. Field parameters are defined as:

002.6,	219,	+020.8,	042,	1013.2,	*1787
WS	WD	Temp	RH	BP	Check Sum

Note: when displaying the pressure in In/Hg, there will be an extra leading zero character but the fixed length of the field will not change.

A check sum parameter will be added to the end of the message (*9999).

The check sum is the addition of all the characters from the start of the message through the first character preceding the asterisk (*). The check sum is expressed as a decimal number. This is a 16 bit sum and should not overflow past 4 digits given the number of characters in the output string.

Polled data mode (RS232 or RS485)

The sensor can be set for polled data mode instead of continuous serial output by setting the OI command to Zero, and using the serial trigger string to request a data string. Refer to the *ST* terminal command in Appendix A for instructions on setting the Serial Trigger.

SDI-12 Interface

In addition to the above communications methods, the sensor can be polled by an SDI-12 Master Station for data. This operates completely independent of the RS232 or RS485 communications and can be used in conjunction with those methods. Data are polled using a series of SDI-12 commands. Please see appendix A for a list of supported SDI commands. The default SDI Address for the AIO 2 is zero.

Please consult your data-logger manual for more information on SDI interfaces or call Met One for additional help.

6. Standard Configuration

Serial Interface
The serial interface is fixed at 9600 Baud and configured for No Parity, 8 Data Bits and 1 Stop Bit, with no flow control.

Wind Speed
The Wind Speed unit choices are MPH or M/S. The default is M/S. The Speed range for M/S is 0-60. The Speed range for MPH is 0-134.

Temperature
The Temperature unit choices are Degrees C or Degrees F. The default is Degrees C. The range for Degrees C is -40 to +60, the range for Degrees F is -40 to +140.

Pressure
Pressure Range choices are In/Hg, Millibars, or mm/Hg, and the default is Millibars. The Pressure range for Millibars is 600-1100, for In/Hg is 17.72 to 32.48, and for mm/hG is 450 to 825.

Precipitation Input
The Precipitation resolution can be 0.25mm/tip or 0.01”/tip. 0.25mm/tip is the default.

Solar Radiation Input
The Solar Radiation input units are watts per square meter. The default calibration constant is 2 W/m^2 per mV (1.000VDC = 2000 W/m^2).

7. Appendix A

7.1. Terminal Mode and SDI Commands

RS232 / RS485 Terminal Mode Commands

Terminal mode is activated by entering three carriage return characters within a 2 second period. Terminal mode times-out after 2 minutes of inactivity.

Successful entry into Terminal Mode will return an asterisk prompt:

7.1.1. H,h,? – Display Help Menu

BV - Battery Voltage Printout Toggle On/Off
CV - Compass Heading Printout Toggle On/Off
ID - View / Set Instrument ID
MA - Set MODBUS Address
MD - Set Magnetic Declination
ME - Metric or English Units
OI - Set Output Interval
PU - Set Pressure Units
SA - SDI Address
SC - Solar Calibration
RT - Output Record Type
ST - Set Serial Trigger Address
SU - Set Speed Units
TU - Set Temperature Units
RV - Display Firmware Version Number
RU - Set Rain Units
Q - Quit command mode and save any changes

NOTE: The commands noted in this appendix will change both the RS232 and RS485 outputs. The SDI-12 output can be configured independently. See pages below for SDI-12 commands.

7.1.2. BV – Battery Voltage Printout Toggle On/Off

This command enables or suppresses the Battery Voltage reading in the serial string output.

COMMAND	**RESULT**
BV<cr>	Report current setting
BV0<cr>	Battery Voltage Measurement removed from serial output 000.0,000,+024.5,045,0970.5,000.00,0000,M0,*02112
BV1<cr>	Battery Voltage Measurement enabled in serial output 000.0,000,+024.5,045,0970.5,000.00, 0000,**12.0**,M0,*02344

7.1.3. CV – Compass Measurement Printout Toggle On/Off

This command enables or suppresses the Compass Reading in the serial string output.

COMMAND	RESULT
CV<cr>	Report current setting
CV0<cr>	Compass Measurement removed from serial output 000.0,000,+024.5,045,0970.5,000.00, 0000,12.0,M0,*02344
CV1<cr>	Compass Measurement enabled in serial output 000.0,000,+024.5,045,0970.5,000.00, 0000,12.0,**240**,M0,*0254

7.1.4. ID – View / Set Instrument ID

Read or Set the Instrument ID

COMMAND	RESULT
ID<cr>	Report the Instrument ID setting (provides help)
ID XX<cr>	Set Instrument ID to number from 1 to 99

7.1.5. MA – View / Set Modbus Address

Read or Set the Modbus Address

COMMAND	RESULT
MA<cr>	Report the Modbus Address setting (provides help)
MA XX<cr>	Set Instrument ID to number from 1 to 247. Setting this value to 0 will disable Modbus.

7.1.6. ME – Metric or English Units

This command will set all units in the the serial port's output to Metric or English

COMMAND	RESULT
ME<cr>	Report Units setting
ME0<cr>	Set Units to Metric (Default): WS: m/s AT: Deg C BP: mbars RN: mm
ME1<cr>	Set Units to English: WS: MPH, AT: Deg F BP: inHg

	RN: inches

7.1.7. SU –Wind Speed Units

Read or Set this serial port's output Units for Wind Speed

COMMAND	RESULT
SU<cr>	Report Units setting
SU0<cr>	M/S
SU1<cr>	MPH

7.1.8. TU –Temperature Units

Read or Set this serial port's output Units for Temperature

COMMAND	RESULT
TU<cr>	Report Units setting
TU0<cr>	Fahrenheit
TU1<cr>	Celsius

7.1.9. PU –Barometric Pressure Units

Read or Set this serial port's output Units for Pressure

COMMAND	RESULT
PU<cr>	Report Units setting
PU0<cr>	Millibars (Default)
PU1<cr>	Inches of Mercury
PU2<cr>	Millimeters of Mercury

7.1.10. RU –Rain Units

Read or Set this serial port's output Units for Pressure

COMMAND	RESULT
RU<cr>	Report Units setting
RU0<cr>	mm (Default)
RU1<cr>	Inches

7.1.11. MD –Magnetic Declination

The flux compass in the AIO 2 sensor provides Wind Direction to MAGNETIC north. Software in the Interface allows the setting of a declination angle to correct the Wind Direction output to TRUE north. It is recommended that this procedure be done in the lab, but can be done in the field as well. Once the declination angle is set in the sensor, it is stored in non-volatile memory, and does not have to be reset each time the sensor is fielded. The declination angle must be reset only if the system is used in a different geographical location separated by many miles from the location where the declination was originally set.

It is suggested that the magnetic declination be determined before performing this calibration. Visit the following web site for help in determining the correct declination for your site:

www.ngdc.noaa.gov/geomag/declination.shtml

Click “Compute your declination”. On the next page, enter either zip code, or select country and city, then click “Get Location” and then “Calculate”. Alternatively, you can enter longitude and latitude directly, and then click “Calculate”. Declination is reported in Degrees, Minutes and Seconds. Divide minute’s value by 60 to get decimal fraction of degrees (I.E. 50 minutes = 0.8 degrees). If the declination needs to be adjusted, please use the *MD* command as shown below.

Read or Set the Magnetic Declination

COMMAND	**RESULT**
MD<cr>	Report Magnetic Declination setting
MDXX.X<cr>	Set Declination to XX.X Degrees

Note: West declination values are entered and reported as negative values.

7.1.12. OI –Output Interval

Read or Set the Output Interval for this serial port
Note: This command is not supported by SDI-12.

COMMAND	**RESULT**
OI<cr>	Report Output Interval setting
OI0<cr>	For Serial Trigger (Address must be set with ST command).
OI1<cr>	Sensor Output every 1 second (Default)
OI2<cr>	Sensor Output every 2 seconds
OI3<cr>	Sensor Output every 5 seconds
OI4<cr>	Sensor Output every 15 seconds
OI5<cr>	Sensor Output every 30 seconds
OI6<cr>	Sensor Output every 60 seconds

7.1.13. ST – Serial Trigger

Read or Set the Serial Trigger character string (Poll command)

COMMAND	RESULT
ST<cr>	Report Serial Trigger string setting (provides help)
ST XXXXXX<cr>	Set Serial Trigger

7.1.14. SA – SDI-12 Address

Read or Set the SDI-12 Address, used to poll data in SDI-12 mode.

COMMAND	RESULT
SA<cr>	Report SDI-12 Address string setting (provides help)
SAx<cr>	Set SDI-12 Address, where 'x' is in the range [0-9], [A-Z] or [a-z] Case Sensitive.

7.1.15. SC – Solar Calibration

Read or Set the Solar Radiation Input Calibration Constant, units are in W/m^2 per mV.

COMMAND	RESULT
SC<cr>	Report Solar Radiation Input Calibration Constant Default is 2 W/m^2 per mV (1.000V = 2000W/m2)
SCX.XXX<cr>	Set Solar Calibration Constant to x.xxx in W/m^2 per mV.

7.1.16. RT – Output Record Type

Read or Set the Output Record type.

COMMAND	RESULT
RT<cr>	Report Output Record Type
RT1<cr>	Set Output Record Type to Met Record format (default).
RT2<cr>	Set Output Record Type to AIO format for compatibility with legacy AIO 102780 systems.

7.1.17. RV – Software Version Number

Report the current Software Version Number

COMMAND	RESULT
RV<cr>	Report current Software Version

7.2. SDI-12 Commands

NAME	SDI-12 COMMAND	SENSOR RESPONSE
Address Query	?!	*a*<CR><LF> Where *a* = address
Acknowledge Active	*a*!	*a*<CR><LF> Where *a* = address
Send Identification	*a*I!	*a*13METONE AIO 2 2.0.0*xxxxx*<CR><LF> Where *a*=address and *xxxxx* = S/N
Change Address	*a*A*b*!	*b*<CR><LF> Where *b* = new address
Start Measurement	*a*M!	*a*0009<CR><LF> Where *a* = address
Start Measurement with CRC	*a*MC!	*a*0009{crc}<CR><LF> Where *a* = address and {crc} = CRC
Send Data	*a*D0!	*a+bbb.b+ccc.c+ddd.d+eee.e*<CR><LF> Where *a* = address, *bbb.b* = wind speed, *ccc.c* = wind direction, *ddd.d* = temperature, and Send Data *eee.e* = relative humidity
	*a*D1!	*a+ffff.f+gggg.g+hhhh+ii.ii*<CR><LF> Where *a* = address, *ffff.f* = barometric pressure, *gggg.g* = Rain Option, *hhhh* = Solar Option, and ii.ii = Power Supply Voltage
Start Concurrent Measurement	*a*C!	*a*00009<CR><LF> Where *a* = address
Start Concurrent Measurement with CRC	*a*CC!	*a*00009{crc}<CR><LF> Where *a* = address and {crc} = CRC
Continuous Measurements	*a*R0!	*a+bbb.b+ccc.c+ddd.d+eee.e*<CR><LF> Where *a* = address, *bbb.b* = wind speed, *ccc.c* = wind direction, *ddd.d* = temperature, and *eee.e* = relative humidity
	*a*R1!	*a+ffff.f+gggg.g+hhhh+ii.ii*<CR><LF> Where *a* = address, *ffff.f* = barometric pressure, *gggg.g* = Rain Option, *hhhh* = Solar Option, and ii.ii = Power Supply Voltage
Continuous Measurements with CRC	*a*RC0!	*a+bbb.b+ccc.c+ddd.d+eee.e*{crc}<CR><LF> Where *a* = address, *bbb.b* = wind speed, *ccc.c* = wind direction, *ddd.d* = temperature, *eee.e* = relative humidity, and {crc} = CRC
	*a*RC1!	*a+ffff.f+gggg.g+hhhh+ii.ii*{crc}<CR><LF> Where *a* = address, *ffff.f* = barometric pressure, *gggg.g* = Rain Option, *hhhh* = Solar Option, and ii.ii = Power Supply Voltage and {crc} = CRC

NAME	SDI-12 COMMAND	SENSOR RESPONSE
Report Wind Units	*a*XSU!	*a*XSU*b*!<CR><LF> Where *a* = address, and *b* = 0 for Meters per Second (default), or 1 for Miles per Hour
Set Wind Units *a*XSU*b*	*a*XSU*b*!	
Report Temperature Units	*a*XTU!	*a*XTU*d*<CR><LF> Where *a* = address, and *d* = 0 for Celsius (default), or 1 for Fahrenheit
Set Temperature Units	*a*XTU*d*!	
Report Pressure Units	*a*XPU!	*a*XPU*f*<CR><LF> Where *a* = address, and *f* = 0 for Millibars (default), or 1 for Inches of Mercury
Set Pressure Units	*a*XPU*f*!	
Report Rain Units	*a*XRU!	*a*XRU*f*<CR><LF> Where *a* = address, and *f* = 0 for mm (default), or 1 for Inches
Set Rain Units	*a*XRU*f*!	
Report Version Number	*a*XRV!	*a*XVN*xx.x*<CR><LF> Where *a* = address and *xx.x* = firmware version

8. Modbus

8.1. Modbus operation:

The AIO 2 can be queried for data using the Modbus RTU protocol. The AIO 2 will automatically detect a Modbus data request via its standard RS-232 or RS-485 interface, and will change to Modbus mode, ready to send out data as requested by a connected Modbus Master.

If the AIO 2 is to be used as a Modbus device, it is recommended to set the Output Interval (OI) command to 0 (zero) to turn off the 1/second output, as shown in section 7.1.12. This will prevent any serial traffic conflicts.

The AIO 2 can be assigned a Modbus address between 1 to 247, which allows it to be addressed on a multiple device network. Setting the Modbus address to 0 will disable the Modbus functionality of the AIO 2.

The AIO 2's current measurement data can be polled via Modbus using the 3X and 4X register addresses:

3X Registers

ModBus Name		Addr	Type	Points	
MB_123456	=	0	float	2	Known value for easier Byte Order configuration
MB_SN	=	2	Char	5	Serial Number String
MB_Revision	=	7	char	20	39 Char + Zero Terminator word aligned to 40 bytes
MB_WS	=	100	float	2	Wind Speed
MB_WD	=	102	float	2	Wind Direction
MB_AT	=	104	float	2	Ambient Temperature
MB_RH	=	106	float	2	Relative Humidity
MB_BP	=	108	float	2	Barometric Pressure
MB_Rain	=	110	float	2	Rain (Reset on Read)
MB_Solar	=	112	float	2	Solar Radiation Disregard if not installed
MB_Batt	=	114	float	2	Supply Voltage
MB_Comp	=	116	float	2	Compass Heading

4X Registers

ModBus Name		Addr	Type	Points	
MB_Byte_Order	=	0	Int	1	1 thru 4

9. Appendix B

9.1. Theory of Operation

Wind

The Met One sonic anemometer operates on the principal that the speed of the wind affects the time it takes for sound to travel from one point to a second point. If the sound is traveling in the direction of the wind then the transit time is decreased. If the sound is traveling in a direction opposite the wind then the transit time is increased.

Ambient Temperature

The temperature sensor in the AIO 2 uses a precision Thermistor. This provides highly accurate and stable temperature readings.

Relative Humidity

The relative humidity sensor is a capacitive polymer sensor which is constructed to provide excellent resistance to wetting, dust, dirt, oils, and common environmental chemicals.

Barometric Pressure

The barometric pressure sensor is a stable transducer using nano-technology, yielding a linear and repeatable sensor with low hysteresis.

This piezo-resistive pressure sensor module is mounted on an electronic circuit board within the sensor. A microcontroller controls the operation of the sensor and the data interface.

The microcontroller polls the pressure sensor module once per second for the barometric pressure and the ambient temperature. The raw readings are temperature corrected by the microcontroller.

Fluxgate Compass

The internal compass module is low power and compact. It employs a pair of magneto-resistive sensors, which change with varying magnetic field strengths, to sense the Earth’s magnetic field.

The AIO 2 microprocessor measures the output of the internal compass and then corrects the wind direction data for the orientation of the sensor. The output of the AIO 2 wind direction is relative to magnetic North. A user programmable value of Magnetic Declination may optionally be entered through terminal mode. This enables wind direction output relative to True rather than Magnetic North.