Florida Department of Environmental Protection

Northwest District
160 Governmental Center, Suite 308
Pensacola, Florida 32502-5794

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

Sent by Electronic Mail – Received Receipt Requested

PERMITTEE

Scrap, Inc.
Post Office Box 17808
Pensacola, Florida 32522

Authorized Representative:
Matt Crosby, Vice-President

Air Permit No. 0330284-001-AC
Permit Expires: September 2, 2014
Minor Source Air Construction Permit
Electric Shredder System

This is the final air construction permit, which authorizes the after-the-fact construction of an electric scrap metal shredding system. The proposed work was conducted at Scrap, Inc., which is a steel scrap metal recycling facility (Standard Industrial Classification No. 5093). The facility is located in Escambia County at 1751 North Green Street in Pensacola, Florida. The UTM coordinates are Zone 16, 474.8 km East, and 3366.4 km North; Latitude: 30° 25’ 53” North and Longitude: 87° 15’ 42” West. As noted in the Final-Determination provided with this final permit, no changes were made to the draft permit.

This final permit is organized by the following sections.

Section 1. General Information

Section 2. Administrative Requirements

Section 3. Emissions Unit Specific Conditions

Section 4. Appendices

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit.

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C., for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Pensacola, Florida

Rick Bradburn, Air Program Administrator — September 2, 2009 (Date)

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit) was sent by electronic mail (or a link to these documents made available electronically on a publicly accessible server) with received receipt requested before the close of business on September 2, 2009 to the persons listed below.

Matt Crosby, Vice-President; Scrap, Inc.: matt@gsi.recycling.com
William R. Rawls, Vice-President/Sec.; Scrap, Inc.: rick@gsi.recycling.com
Sheryle Reeves, P.E.; TTL, Inc.: sreeves@ttlusa.com

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

(Clerk) — 9/2/09 (Date)

FACILITY AND PROJECT DESCRIPTION

This is an electric shredder metal recycling system. Metal scrap will be conveyed into the shredder where a water suppression/injection system will be used to decrease fugitive emissions and reduce heat generation. Moist shredded material then will be conveyed to a magnetic separator. Separated ferrous material, which will comprise about 75 percent of the feed from the shredder, will be transferred by another conveyor to an air classifier system that will include a "zero-bleed" cyclone system, manufactured by Osborn Engineering, Inc. The zero-bleed system has a secondary closed loop which balances the system and eliminates exhaust to the atmosphere, leaving only the fugitive particulate emissions from the shredder. After the classifier, miscellaneous trash and selected metallics will be retrieved at a picking station. The remaining ferrous material will be transferred to a storage area by a radial stacking conveyor. The stored material will be a commercial product for off-site transport and recycle. The nonferrous fraction from the magnetic separator, plus fluff from the cyclone, will be conveyed past an overband magnetic separator, through a trommel for size separation and then to Eddy Current Separators to segregate metal and non-metal fractions.

The facility has an operations and maintenance plan (OMP) that includes setting controls, startup, shutdown, inspections, maintenance and troubleshooting of the cascade system and the water injection system. The OMP shall be updated as necessary.

This project will add the following emissions units.

Facility ID No. 03300284	
ID No.	**Emission Unit Description**
001	Electric Shredding System

FACILITY REGULATORY CLASSIFICATION

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is not a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is not a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The permitting authority for this project is the Northwest District Air Resource Management Program, Florida Department of Environmental Protection (Department). The District's mailing address is 160 Governmental Center, Suite 308, Pensacola, Florida 32502-5794. All documents related to applications for permits to operate an emissions unit shall be submitted to the District Office.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the District Office at the above address or via e-mail to nwdair@dep.state.fl.us. The Department telephone number for reporting problems, malfunctions or exceedances under this permit is 850/595-8300, extension 1220, day or night, and for emergencies involving a significant threat to human health or the environment is 800/320-0519. For routine business, telephone 850/595-8300, then press 7, during normal working hours.

3. Appendices: The following Appendices are attached as part of this permit:

   a. Appendix A. Citation Formats and Glossary of Common Terms;

   b. Appendix B. General Conditions;

   c. Appendix C. Common Conditions;

   d. Appendix D. Common Testing Requirements; and

   e. Appendix E. Operations and Maintenance Plan (OMP) dated July 2009

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: The permittee shall notify the Compliance Authority upon re-commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Unconfined Emissions of Particulate Matter. No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity, including vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling; without taking reasonable precautions to prevent such emissions. Reasonable precautions to prevent emissions of unconfined particulate matter at this facility include:
   a. Paving and maintenance of roads, parking areas, and yards. Additional concrete paving at the site entrance and in projected heavy traffic areas will be done to reduce dust generation.
   b. Application of water or chemicals to control emissions from such activities as demolition of buildings, grading roads, construction, and land clearing.
   c. Application of asphalt, water, oil, chemicals or other dust suppressant to unpaved roads, yards, open stock piles, and similar activities. Watering of all unpaved areas of the facility shall take place on a routine and as-needed basis.
   d. Removal of particulate matter from roads and other paved areas under the control of the owner or operator of the facility to prevent re-entrainment, and from buildings or work areas to prevent particulate from becoming airborne.

e. Landscaping or planting of vegetation.
f. Use of hoods, fans, filters, and similar equipment to contain, capture, and/or vent particulate matter.
g. Confining abrasive blasting where possible.
h. Enclosure or covering of conveyor systems.

[Rule 62-296.320(4)(c)2., F.A.C. and permit application 0330284-001-AC]

8. Application for Operating Permit. The applicant shall retain a Professional Engineer, registered in the State of Florida, for the inspection of this project. Upon completion the engineer shall inspect for conformity to the permit application and associated documents. An application for an operation permit shall be submitted with the compliance test results and appropriate fee when applicable. These are to be submitted within 75 days after initial operation. The permittee shall obtain an operating permit for this source before the expiration of the construction permit if the permittee desires to continue operation. [Rules 62.4-030, 62-4.050, 62-4.220 and 62-210.300(2), F.A.C.]

9. Operation and Maintenance Plan (OMP). This plan includes the startup, shutdown and operation procedures for the pollution control equipment. This plan provides reasonable assurance that the facility will operate in compliance. The permittee shall follow all procedures outlined in the most recently submitted OMP. Proposed changes to the OMP shall be submitted to the Department for review and approval prior to implementation. All records of inspections and maintenance shall be retained on site for a period of at least two years and made available for Department inspection. [Rule 62-4.070(3)]

   {Permit Note: An OMP should be a living document that provides procedures to help in maintaining the subject facility in compliance with applicable air regulations. Keeping this document up to date with the facility's current activities will not require any permit action. This does not alleviate the facility from the air construction permitting requirements for facility modifications per Rule 62-210.300(1)(a), F.A. C.}

10. Source Obligation:

    (a) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

    (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

    [Rule 62-212.400(12), F.A.C.]

A. EU 001 Electric Shredder System

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
001	Electric shredder system
Steel scrap will be conveyed into the electric shredder system where a water suppression/injection system will be used to decrease fugitive particulate emissions from the shredder. The 4000 hp shredder system is manufactured by Newell Industries (formerly Riverside Engineering) Model 80x104 Mill #199. The shredder system includes a unique patented "zero-bleed" cyclone system, manufactured by Osborn Engineering. The zero bleed system is a closed loop cyclone system without a defined emissions stack.	

EQUIPMENT

1. Electric Shredder system: The permittee is authorized to install the electric shredder system as described above. [Application No. 0330284-001-AC].

PERFORMANCE RESTRICTIONS

2. Permitted Capacity: The electric shredder hourly scrap feed rate shall not exceed 150 tons per hour. [Rule 62-210.200(PTE), F.A.C., and Application No. 0330284-001-AC, manufacturer's recommendation]

3. Restricted Operation: The hours of operation for the electric shredder shall not exceed 2400 hours/year; however, the hours of operation for the water injection/suppression system are not limited. [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C., and Application No. 0330284-001-AC]

EMISSIONS STANDARDS

4. Emissions Standards:

   a. Visible emissions (VE) shall not exceed 20% opacity during normal operation. If excess visible emissions occur due to malfunction, the shredder/air classifier system shall be shut down and inspection/repairs conducted to restore normal operation. [Application No. 0330284-001-AC and Rules 62-4.070(3) and 62-296.320, F.A.C.]

TESTING REQUIREMENTS

5. Initial Compliance Tests: The electric shredder system unit shall be tested to demonstrate initial compliance with the emissions standards for VE. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. [Rules 62-4.070(3) and 62-297.310(7)(a)1, F.A.C.]

6. Annual Compliance Tests: During each federal fiscal year (October 1 to September 30), the emissions unit shall be tested to demonstrate compliance with the emissions standards for VE. [Rule 62-297.310(7)(a)4, F.A.C.]

7. Test Requirements: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Notification may be sent via e-mail to nwdair@dep.state.fl.us. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit. [Rule 62-297.310(7)(a)9, F.A.C.]

8. Test Methods: Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
9	Visual Determination of the Opacity of Emissions from Stationary Sources

The above method is described in Appendix A of 40 CFR 60 and is adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-204.800 and 62-297.100, F.A.C.; and Appendix A of 40 CFR 60]

MONITORING REQUIREMENTS

9. Water Suppression/Injection System:

   a. The permittee shall minimize emissions of fugitive particulate matter into the atmosphere by incorporating best management practices. The water suppression system shall be engaged prior to commencing shredding operations and will remain in operation throughout the duration of the shredding process. It will not be disengaged until the shredding process has ceased. During shredding, water sprayers shall be used on the shredder feed ramp area, the first shredded product conveyor system and the front shredder wall area to further decrease particulate matter emissions. A trained operator shall observe emissions qualitatively during operation. If visible emissions are detected (e.g., due to feed variation), the water suppression system's flow rate will be increased according to the operation and maintenance manual in order to eliminate the visible emissions. [Application No.0330284-001-AC, Rule 62-4.070(3), F.A.C., and RAI response letter dated 7/8/09]

   b. Within 30 days of the issuance of this construction permit, permittee shall establish appropriate ranges of water flow rate (gallons per minute and % to be delivered through the proportional valve) and bias operational parameters for the water suppression/injection system sufficient to properly control particulate matter and visible emissions. Once the rate and parameters are established, the OMP shall be updated to reflect this flow rate and bias parameter. [Rule 62-4.070(3), F.A.C., and Appendix B of OMP dated July 2009]

   c. Inspections and maintenance shall be performed on the water suppression/injection system as outlined in the most recent OMP. This includes but is not limited to daily, weekly, and quarterly inspections, cleaning, and water meter calibration. [Rule 62-4.070(3) and OMP dated July 2009]

10. Zero-bleed Cascade System:

   a. Within 30 days of the issuance of this construction permit, permittee shall establish optimum control settings for the cascade system including but not limited to bleed-off control, bypass control and indirect control water volume in shredder. The optimum control settings shall be sufficient to properly control particulate matter and visible emissions. Once these optimum controls are established, the OMP shall be updated to reflect these control settings. [Rule 62-4.070(3), F.A.C., and OMP dated July 2009]

   b. Inspections and maintenance shall be performed on the water suppression/injection system as outlined in the most recent OMP. This includes but is not limited to daily, weekly, biweekly and monthly inspections, cleaning, repair and replacement of flaps, seals, and liners. [Rule 62-4.070(3) and OMP dated July 2009]

RECORDS AND REPORTS

11. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. For each test run, the report shall also indicate the water flow rate and bias operational parameters for the water suppression/injection system; and the optimum control settings for the cascade system. [Rule 62-297.310(8), F.A.C.]

12. Operational Data: The permittee shall maintain daily records of the electric shredder's tons of scrap processed in Tons per day, operating hours in hours per day, and that day's hourly scrap feed rate in Tons per hour. An operating hour is defined to be any hour, whole or fractional, that the mill is shredding scrap

for that day. The day's hourly scrap feed rate shall be the result of a day's tons of scrap processed that day, divided by the operating hours for that day. These records shall be maintained and shall be made available for inspection for a minimum of five years. [Rule 62-4.070(3), F.A.C.]

13. Inspection and Maintenance. Records of all inspections and maintenance (in the form of a log or checklist) shall be kept and maintained on site for a period of at least two years and made available for Department inspection. [Rule 62-4.070]

SOURCE COMMITMENTS

14. Solid waste (fluff from cyclones, trommel, eddy current separator and dredge from scrubber settling/holding pond) are to be disposed of at a Class I or II permitted landfill. [Rule 62.4-070, F.A.C.]

FINAL DETERMINATION

PERMITTEE

Scrap, Inc.
Post Office Box 17808
Pensacola, Florida 32522

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Air Resource Management Program
Northwest District
160 Governmental Center, Suite 308
Pensacola, Florida 32502-5794

PROJECT

Air Permit No. 0330284-001-AC
Minor Source Air Construction Permit
Scrap, Inc.

Construct a new electric scrap metal recycling facility.

NOTICE AND PUBLICATION

The Department distributed a draft minor source air construction permit package on August 12, 2009. The applicant published the Public Notice in the Pensacola News Journal on August 19, 2009. The Department received the proof of publication on August 25, 2009. No requests for administrative hearings or requests for extensions of time to file a petition for administrative hearing were received.

COMMENTS

No comments on the Draft Permit were received from the public, the EPA Region 4 Office or the applicant.

CONCLUSION

The final action is to issue the permit with any minor changes, corrections and clarifications described above.

SECTION 4. APPENDICES

Contents

Appendix A. Citation Formats and Glossary of Common Terms

Appendix B. General Conditions

Appendix C. Common Conditions

Appendix D. Common Testing Requirements; and

Appendix E. Operations and Maintenance Plan (OMP) dated July 2009

Citation Formats and Glossary of Common Terms

CITATION FORMATS

The following illustrate the formats used in the permit to identify applicable requirements from permits and regulations.

Old Permit Numbers

Example: Permit No. AC50-123456 or Permit No. AO50-123456

Where: "AC" identifies the permit as an Air Construction Permit
"AO" identifies the permit as an Air Operation Permit
"123456" identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

Where: "099" represents the specific county ID number in which the project is located

"2222" represents the specific facility ID number for that county

"001" identifies the specific permit project number

"AC" identifies the permit as an air construction permit

"AF" identifies the permit as a minor source federally enforceable state operation permit

"AO" identifies the permit as a minor source air operation permit

"AV" identifies the permit as a major Title V air operation permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the preconstruction review requirements of the Prevention of Significant Deterioration of Air Quality

"FL" means that the permit was issued by the State of Florida

"317" identifies the specific permit project number

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CFR 60.7]

Means: Title 40, Part 60, Section 7

GLOSSARY OF COMMON TERMS

° F: degrees Fahrenheit

AAQS: Ambient Air Quality Standard

acf: actual cubic feet

acfm: actual cubic feet per minute

ARMS: Air Resource Management System (DEP database)

BACT: best available control technology

bhp: brake horsepower

Btu: British thermal units

CAM: compliance assurance monitoring

CEMS: continuous emissions monitoring system

cfm: cubic feet per minute

CFR: Code of Federal Regulations

Citation Formats and Glossary of Common Terms

CAA: Clean Air Act

CMS: continuous monitoring system

CO: carbon monoxide

CO_2: carbon dioxide

COMS: continuous opacity monitoring system

DARM: Division of Air Resource Management

DEP: Department of Environmental Protection

Department: Department of Environmental Protection

dscf: dry standard cubic feet

dscfm: dry standard cubic feet per minute

EPA: Environmental Protection Agency

ESP: electrostatic precipitator (control system for reducing particulate matter)

EU: emissions unit

F.A.C.: Florida Administrative Code

F.A.W.: Florida Administrative Weekly

F.D.: forced draft

F.S.: Florida Statutes

FGD: flue gas desulfurization

FGR: flue gas recirculation

Fl: fluoride

ft^2: square feet

ft^3: cubic feet

gpm: gallons per minute

gr: grains

HAP: hazardous air pollutant

Hg: mercury

I.D.: induced draft

ID: identification

kPa: kilopascals

lb: pound

MACT: maximum achievable technology

MMBtu: million British thermal units

MSDS: material safety data sheets

MW: megawatt

NESHAP: National Emissions Standards for Hazardous Air Pollutants

NO_X: nitrogen oxides

NSPS: New Source Performance Standards

O&M: operation and maintenance

O_2: oxygen

Pb: lead

PM: particulate matter

PM_{10}: particulate matter with a mean aerodynamic diameter of 10 microns or less

ppm: parts per million

ppmv: parts per million by volume

ppmvd: parts per million by volume, dry basis

QA: quality assurance

QC: quality control

PSD: prevention of significant deterioration

psi: pounds per square inch

PTE: potential to emit

RACT: reasonably available control technology

RATA: relative accuracy test audit

RBLC: EPA's RACT/BACT/LAER Clearinghouse

SAM: sulfuric acid mist

scf: standard cubic feet

scfm: standard cubic feet per minute

SIC: standard industrial classification code

SIP: State Implementation Plan

SNCR: selective non-catalytic reduction (control system used for reducing emissions of nitrogen oxides)

SO_2: sulfur dioxide

TPD: tons/day

TPH: tons per hour

TPY: tons per year

TRS: total reduced sulfur

UTM: Universal Transverse Mercator coordinate system

VE: visible emissions

VOC: volatile organic compounds

General Conditions

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Sections 403.141, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in subsections 403.987(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in this permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:
   a. Have access to and copy any records that must be kept under conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules. Reasonable time may depend on the nature of the concern being investigated.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
   a. A description of and cause of noncompliance; and
   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.
9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

General Conditions

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

    a. Determination of Best Available Control Technology (not applicable);

    b. Determination of Prevention of Significant Deterioration (not applicable); and

    c. Compliance with New Source Performance Standards (not applicable).

14. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

    c. Records of monitoring information shall include:

        (a) The date, exact place, and time of sampling or measurements;

        (b) The person responsible for performing the sampling or measurements;

        (c) The dates analyses were performed;

        (d) The person responsible for performing the analyses;

        (e) The analytical techniques or methods used;

        (f) The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

Common Conditions

Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at the facility.

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]

3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed 2 hours in any 24-hour period unless specifically authorized by the Department for longer duration. Pursuant to Rule 62-210.700(5), F.A.C., the permit subsection may specify more or less stringent requirements for periods of excess emissions. Rule 62-210-700(Excess Emissions), F.A.C., cannot vary or supersede any federal NSPS or NESHAP provision. [Rule 62-210.700(1), F.A.C.]

4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permittee shall notify the Compliance Authority in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]

6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds (VOC) or organic solvents (OS) without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]

7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and 62-210.200(Definitions), F.A.C.]

8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20% opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]

9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

RECORDS AND REPORTS

10. Emissions Computation and Reporting:

    a. *Applicability*. This rule sets forth required methodologies to be used by the owner or operator of a facility for computing actual emissions, baseline actual emissions, and net emissions increase, as defined at Rule 62-210.200, F.A.C., and for computing emissions for purposes of the reporting requirements of subsection 62-210.370(3) and paragraph 62-212.300(1)(e), F.A.C., or of any permit condition that requires emissions be computed in accordance with this rule. This rule is not intended to establish methodologies for determining compliance with the emission limitations of any air permit. [Rule 62-210.370(1), F.A.C.]

    b. *Computation of Emissions*. For any of the purposes set forth in subsection 62-210.370(1), F.A.C., the owner or operator of a facility shall compute emissions in accordance with the requirements set forth in this subsection.

(1) Basic Approach. The owner or operator shall employ, on a pollutant-specific basis, the most accurate of the approaches set forth below to compute the emissions of a pollutant from an emissions unit; provided, however, that nothing in this rule shall be construed to require installation and operation of any continuous emissions monitoring system (CEMS), continuous parameter monitoring system (CPMS), or predictive emissions monitoring system (PEMS) not otherwise required by rule or permit, nor shall anything in this rule be construed to require performance of any stack testing not otherwise required by rule or permit.

(a) If the emissions unit is equipped with a CEMS meeting the requirements of paragraph 62-210.370(2)(b), F.A.C., the owner or operator shall use such CEMS to compute the emissions of the pollutant, unless the owner or operator demonstrates to the department that an alternative approach is more accurate because the CEMS represents still-emerging technology.

(b) If a CEMS is not available or does not meet the requirements of paragraph 62-210.370(2)(b), F.A.C, but emissions of the pollutant can be computed pursuant to the mass balance methodology of paragraph 62-210.370(2)(c), F.A.C., the owner or operator shall use such methodology, unless the owner or operator demonstrates to the department that an alternative approach is more accurate.

(c) If a CEMS is not available or does not meet the requirements of paragraph 62-210.370(2)(b), F.A.C., and emissions cannot be computed pursuant to the mass balance methodology, the owner or operator shall use an emission factor meeting the requirements of paragraph 62-210.370(2)(d), F.A.C., unless the owner or operator demonstrates to the department that an alternative approach is more accurate.

(2) Continuous Emissions Monitoring System (CEMS).

(a) An owner or operator may use a CEMS to compute emissions of a pollutant for purposes of this rule provided:

1) The CEMS complies with the applicable certification and quality assurance requirements of 40 CFR Part 60, Appendices B and F, or, for an acid rain unit, the certification and quality assurance requirements of 40 CFR Part 75, all adopted by reference at Rule 62-204.800, F.A.C.; or

2) The owner or operator demonstrates that the CEMS otherwise represents the most accurate means of computing emissions for purposes of this rule.

(b) Stack gas volumetric flow rates used with the CEMS to compute emissions shall be obtained by the most accurate of the following methods as demonstrated by the owner or operator:

1) A calibrated flow meter that records data on a continuous basis, if available; or

2) The average flow rate of all valid stack tests conducted during a five-year period encompassing the period over which the emissions are being computed, provided all stack tests used shall represent the same operational and physical configuration of the unit.

(c) The owner or operator may use CEMS data in combination with an appropriate f-factor, heat input data, and any other necessary parameters to compute emissions if such method is demonstrated by the owner or operator to be more accurate than using a stack gas volumetric flow rate as set forth at subparagraph 62-210.370(2)(b)2., F.A.C., above.

(3) Mass Balance Calculations.

(a) An owner or operator may use mass balance calculations to compute emissions of a pollutant for purposes of this rule provided the owner or operator:

1) Demonstrates a means of validating the content of the pollutant that is contained in or created by all materials or fuels used in or at the emissions unit; and

2) Assumes that the emissions unit emits all of the pollutant that is contained in or created by any material or fuel used in or at the emissions unit if it cannot otherwise be accounted for in the process or in the capture and destruction of the pollutant by the unit's air pollution control equipment.

(b) Where the vendor of a raw material or fuel which is used in or at the emissions unit publishes a range

of pollutant content from such material or fuel, the owner or operator shall use the highest value of the range to compute the emissions, unless the owner or operator demonstrates using site-specific data that another content within the range is more accurate.

(c) In the case of an emissions unit using coatings or solvents, the owner or operator shall document, through purchase receipts, records and sales receipts, the beginning and ending VOC inventories, the amount of VOC purchased during the computational period, and the amount of VOC disposed of in the liquid phase during such period.

(4) Emission Factors.

a. An owner or operator may use an emission factor to compute emissions of a pollutant for purposes of this rule provided the emission factor is based on site-specific data such as stack test data, where available, unless the owner or operator demonstrates to the department that an alternative emission factor is more accurate. An owner or operator using site-specific data to derive an emission factor, or set of factors, shall meet the following requirements.

1) If stack test data are used, the emission factor shall be based on the average emissions per unit of input, output, or gas volume, whichever is appropriate, of all valid stack tests conducted during at least a five-year period encompassing the period over which the emissions are being computed, provided all stack tests used shall represent the same operational and physical configuration of the unit.

2) Multiple emission factors shall be used as necessary to account for variations in emission rate associated with variations in the emissions unit's operating rate or operating conditions during the period over which emissions are computed.

3) The owner or operator shall compute emissions by multiplying the appropriate emission factor by the appropriate input, output or gas volume value for the period over which the emissions are computed. The owner or operator shall not compute emissions by converting an emission factor to pounds per hour and then multiplying by hours of operation, unless the owner or operator demonstrates that such computation is the most accurate method available.

b. If site-specific data are not available to derive an emission factor, the owner or operator may use a published emission factor directly applicable to the process for which emissions are computed. If no directly-applicable emission factor is available, the owner or operator may use a factor based on a similar, but different, process.

(5) Accounting for Emissions During Periods of Missing Data from CEMS, PEMS, or CPMS. In computing the emissions of a pollutant, the owner or operator shall account for the emissions during periods of missing data from CEMS, PEMS, or CPMS using other site-specific data to generate a reasonable estimate of such emissions.

(6) Accounting for Emissions During Periods of Startup and Shutdown. In computing the emissions of a pollutant, the owner or operator shall account for the emissions during periods of startup and shutdown of the emissions unit.

(7) Fugitive Emissions. In computing the emissions of a pollutant from a facility or emissions unit, the owner or operator shall account for the fugitive emissions of the pollutant, to the extent quantifiable, associated with such facility or emissions unit.

(8) Recordkeeping. The owner or operator shall retain a copy of all records used to compute emissions pursuant to this rule for a period of five years from the date on which such emissions information is submitted to the department for any regulatory purpose.

[Rule 62-210.370(2), F.A.C.]

c. *Annual Operating Report for Air Pollutant Emitting Facility*

(1) The Annual Operating Report for Air Pollutant Emitting Facility (DEP Form No. 62-210.900(5)) shall be completed each year for the following facilities:

a. All Title V sources.

b. All synthetic non-Title V sources.

c. All facilities with the potential to emit ten (10) tons per year or more of volatile organic compounds or twenty-five (25) tons per year or more of nitrogen oxides and located in an ozone nonattainment area or ozone air quality maintenance area.

d. All facilities for which an annual operating report is required by rule or permit.

(2) Notwithstanding paragraph 62-210.370(3)(a), F.A.C., no annual operating report shall be required for any facility operating under an air general permit.

(3) The annual operating report shall be submitted to the appropriate Department of Environmental Protection (DEP) division, district or DEP-approved local air pollution control program office by April 1 of the following year. If the report is submitted using the Department's electronic annual operating report software, there is no requirement to submit a copy to any DEP or local air program office.

(4) Emissions shall be computed in accordance with the provisions of subsection 62-210.370(2), F.A.C., for purposes of the annual operating report.

(5) Facility Relocation. Unless otherwise provided by rule or more stringent permit condition, the owner or operator of a relocatable facility must submit a Facility Relocation Notification Form (DEP Form No. 62-210.900(6)) to the Department at least 30 days prior to the relocation. A separate form shall be submitted for each facility in the case of the relocation of multiple facilities which are jointly owned or operated.

[Rule 62-210.370(3), F.A.C.]

Common Testing Requirements

Unless otherwise specified in the permit, the following testing requirements apply to all emissions units at the facility.

COMPLIANCE TESTING REQUIREMENTS

1. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. [Rule 62-297.310(2), F.A.C.]

2. Applicable Test Procedures - Opacity Compliance Tests: When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:

   a. For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.

   b. The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.

   c. The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.

   [Rule 62-297.310(4), F.A.C.]

3. Determination of Process Variables:

   a. *Required Equipment*. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

   b. *Accuracy of Equipment*. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

   [Rule 62-297.310(5), F.A.C.]

4. Frequency of Compliance Tests: The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.

   a. *General Compliance Testing*.

      1. The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.

      2. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing

an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:

(a) Did not operate; or

(b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,

3. During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for visible emissions, if there is an applicable standard.

4. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.

b. *Special Compliance Tests*. When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.

[Rule 62-297.310(7), F.A.C.]

RECORDS AND REPORTS

5. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report shall provide the following information.

a. The type, location, and designation of the emissions unit tested.

b. The facility at which the emissions unit is located.

c. The owner or operator of the emissions unit.

d. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.

e. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.

f. The date, starting time and end time of the observation.

g. The test procedures used.

h. The names of individuals who furnished the process variable data, conducted the test, and prepared the report.

i. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.

j. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

OPERATIONS AND MAINTENANCE PLAN

H_2PRO WATER INJECTION SYSTEM AND CASCADE "ZERO BLEED"

Scrap, Inc.
1751 North Green Street
Pensacola, Florida

JULY 2009

TABLE OF CONTENTS

1.0 Introduction 1

2.0 Setting Controls – Cascade System 1

3.0 Setting Controls – H_2PRO Water System 3

4.0 Startup and Shutdown 3

5.0 Inspections and Maintenance 3

6.0 Troubleshooting 6

APPENDICES

Appendix A – Cascade System – General Operating Instructions

Appendix B – H_2PRO Water System Manual

1.0 Introduction

This Operation and Maintenance Plan was prepared for the Scrap, Inc. metal shredding facility located at 1751 North Green Street, Pensacola, Escambia County, Florida. The facility includes a 4000 HP electric shredder that has the potential to process up to 360,000 tons/year, and a Cascade "Zero Bleed" air classifier. Particulate emissions from the shredder are suppressed by an integrated, electronically controlled H_2PRO Water Injection System. This equipment will be operated in accordance with the requirements of Florida Department of Environmental Protection Air Permit No_____.

2.0 Setting Controls – Cascade System

The following sections provide information on specific controls of the Cascade System manufactured by Osborn Engineering. Refer to General Operating Instructions in Appendix A.

2.1 Bleed Off Control

Location: At fan discharge.

Type: Variable air volume for discharge to atmosphere

Purpose: To minimize leakage of air at discharge of cascade, to relieve heat and dust buildup.

Actuator: Manual or electromechanical.

Adjustment Required Due To:

1. Extreme weather changes
2. Wearing our of rubber flaps

Optimum Setting Determined By:

Visual inspection of "blow-out" at cascade discharge.

1. Setting too little bleed-off will cause "blow out" at cascade discharge.
2. Setting too much bleed-off will cause accumulation of fine particulate to atmosphere which may be excessive and may cause lack of necessary air for cleaning.

When to Set: With fan running and no shredded product.

2.2 Bypass Control

Location: At fan discharge.

Type: Variable air volume for bypassing cascade.

Purpose: For control of cleaning efficiency through cascade by metering air through a parallel duct. This allows cyclone to maintain constant

Purpose: For control of cleaning efficiency through cascade by metering air through a parallel duct. This allows cyclone to maintain constant volume (equaling constant efficiency), which dampening of air would not allow, while allowing variable velocity through the cascade cleaning section. This, in turn, allows for "cut point" to be adjusted by operator.

Actuator: Manual or electromechanical

Adjustment Require Due to:

1. Weather changes (e.g. wet or dry)
2. Change in input feed stock
3. change in moisture input
4. Change in process rate.

Optimum Setting Determine by:

Visual inspection of quality of non-ferrous finished product with relation to metal "contaminant" of waste pile. There is a "grey area" in which operator will be required to make the final adjustment, a judgment call determined by the basis of maximum importance of the following:

(A) Is there too much dirt in the non-ferrous finished product, or

(B) Is there too much non-ferrous carryover in the dirt pile?

If (A) is positive, bypass is reduced to allow more air through the cascade.

If (B) is positive, bypass is increased to allow less air throughout he cascade.

Optimum setting is a balance between A and B.

When to Set: During normal production.

2.3 Indirect Control Water Volume In Shredder

Location: In control tower.

Type: Variable water volume (typical max + 65 gpm)

Purpose: To suppress dust and hydrocarbon emissions at mill in-feed area. To minimize explosion potential by lowering temperature in mill and extinguishing sparks, etc.

Actuator: Gate valve or electrical potentiometer at shredder operator control console.

1. Wet/dry weather conditions.
2. Input feed stock (more water required with flammable materials (autos vs. white goods).

Optimum Setting Determined By:

1. Addition of water when excessive smoke generated at shredder in-feed area.

2. Reduction of water when transfer conveyor and shredded material becomes saturated.

When to Set: During normal operation.

3.0 Setting Controls – H_2PRO Water System

Refer to Riverside Engineering, Inc. Operations Plan in Appendix B.

4.0 Startup and Shutdown

The water suppression system will be engaged prior to commencing shredding operations to ensure proper operation of the water suppression system. Once a load is placed on the shredder drive motor, the water suppression system is automatically engaged and the optimum water flow rate is set based on the shredder motor output. The water suppression system is automatically disengaged once the shredder motor output is at a zero load.

5.0 Inspections and Maintenance

5.1 Cascade System

Certain areas inside the cascade cleaning system will require daily cleaning due to dirt buildup. Other areas will require periodic inspection to determine if sufficient abrasion has occurred to necessitate replacement or repair of that part. Still other areas require inspection of or maintenance.

5.1.1 Daily:

- Remove debris from internal surfaces of horizontal inlet duct, cyclone inlet transition, and ledge on cyclone inlet scroll. These areas tend to build up with loose dirt and light metals, sometimes up to a depth of 12 inches. If scooped off into cyclone center daily the buildup is easily and quickly taken care of. If allowed to accumulate for a number of days, then this material will become hard packed and difficult to remove.
- Remove dirt from internal top surface and center tube of cyclone.
- Inspect fan discharge chute with diverter gate. The lead edge of the diverter gate will cause airborne rags and stringy material to hang up, requiring daily removal. Failure to remove waste may cause gate to become wedged. Also, the discharge chute entry into cascade area will require daily removal of relatively large pieces of shredded metal. These pieces are usually coil springs which tend to bounce for the opposite side of the cascade cleaning section into the chute area.
- Inspect all fan bearings and shaft bearings for proper lubrications.
- Inspect rotary valve rubber flaps daily to insure that damage is not causing air leakage, in turn causing re-entrainment of dirt in air stream. Easy visual check by watching light dust to see if it is drawn upward by

any "vacuum leak" on discharge side of valve. This may only require cleaning

5.1.2 Bi-Weekly

- Internal surface of cone – a dirt "ridge" will build up with wet materials becoming quickly hard packed. Inspect every 2 to 3 days – scrape off to remove.

5.1.3 Weekly

- Fan wheel – inspect blades weekly for dirt buildup. Moderate buildup will cause wheel to become unbalanced which could cause bearing and/or shaft damage.

5.1.4 Monthly

- Abrasive resistant liners in the cascade are bolted in and should be replaced before worn through to external housing material.
- Discharge flaps on cascade cleaning chamber will eventually become "ragged". Replace when necessary.
- Inlet air gate rubber flaps will become worn. These flaps should be replaced when necessary.
- 90 degree elbow inlet duct with bolt on back places require monthly inspection for replacement.
- The abrasive resistant plate welded in the cyclone inlet scroll may require infrequent repair. Since this is a very large shape, repair by patching areas with new AR steel, by welding.
- Rotary valve flaps may require replacement (as previously described).
- All other rubber flaps and seals may periodically require replacement.
- V-Belt Drive: Using tachometer, check fan RPM to insure fan is turning the correct speed. If belts are slipping, the speed of fan will be slower than original. If slipping, tighten per V-Belt drive manufacturer's instructions.
- Magnehelic Gauges: The gauges furnished are very accurate when new. But, when liquid and dust are allowed to enter through the vacuum tubes, they quickly become useless. Install the tubing and fittings permanently as required, but leave the gauges un-mounted, so they can be kept inside in a cleaner environment. Bring out the gauges only when necessary and then treat them as a hand held instrument.

5.2 H_2PRO Water System

5.2.1 Daily

- Inspect air and water piping – examine for leaks in any junctions or fittings.
- Drain condensation from air regulator collection bulb to prevent corrosion of components in the air system.
- Inspect regulators when the system is operating to make sure pressure is sufficient for proper operation.
  - 90 – 100 pounds per square inch (psi) for proportional valve.
  - 12 – 25 psi for air through water nozzles.
- Inspect nozzles to prevent debris from building up within the shredder box.
  - Water pressure needs to be 65 – 95 psi for the required flow into the shredder box.

5.2.2 Weekly

- Inspect nylon inserts inside the water nozzles to make sure that they are present and clean.
- Inspect lines that feed the nozzles. Examine the lines for any cuts or abrasions that might impair proper operation of the system.
- Inspect and clean the filter on the air system for the proportional valve.

5.2.3 Quarterly

- Inspect and calibrate the proportional valve to make sure it has a proper stroke.
  - Remove valve from manifold and inspect the gasket on the cone to make sure it is pliable and there are no deformations to the seal.
  - Inspect the seat from which the valve was removed to make sure there is not any build up of corrosions or foreign objects.
  - Check operation of the valve:
    - Give a 0% command from the operators touch screen and make sure the valve is fully extended.
    - Give a 100% command and make sure the valve is fully retracted.
    - When the stroke of the valve has finished a Green light on the top of the valve should illuminate.
    - If the stroke of the valve does not either fully extend or retract, contact the Manufacturer.
    - Red light on top of the valve indicated it has power and is ready for operation.
- Check calibration of water meter:

- Fill a 55-gallon drum (or comparable container of known volume) and document time required for container to fill. Calculate the flow rate.
- Repeat procedure a minimum of three times and take average flow rate.
- If the average flow rate differs from the meter reading by more than 5%, contact the Manufacturer.

6.0 Troubleshooting

6.1 Cascade System

6.1.1 Ferrous Product Dirty:

A. Too much bypass air.

B. Too much bleed off air.

C. Too much water.

D. Fan not operating correctly (belts slipping, out of phase, etc.)

E. Air system leaking or partially plugged.

6.1.2 Non-Ferrous dirty:

A. Same as ferrous dirty.

6.1.3 Excessive Particulate Discharge from Bleed-Off Stack"

A. Not enough water in mill.

B. Rotary valve flaps or surge hopper doors leaking, causing re-entrainment of dust in air stream.

C. Excessive fluff in feed stock.

6.1.4 Blow Out of Air at bottom of Cascade

A. Not enough bleed off air.

B. Leakage of air anywhere in system from top of cascade to fan inlet.

C. Buildup of material in bleed off stack.

6.1.5 Excessive Metal in Waste:

A. Not enough bypass air.

6.2 Troubleshooting – H_2PRO Water System

Refer to Operations Manual in Appendix B

APPENDIX B

H_2PRO WATER SYSTEM MANUAL

WATER SYSTEM OPERATION MANUAL

Version 1.1
5/24/07

RIVERSIDE ENGINEERING

121 Interpark, Suite 604
San Antonio, Texas 78216
Phone: 210-227-9090
Fax: 210-227-7038

Water System
Setup Manual

Riverside Engineering

121 Interpark, Suite 604
San Antonio, Texas 78216
Phone: 210-227-9090
Fax: 210-227-7038

MAIN CONTROL PANEL

Turns Water System off. Resets Area Mist and Front Wall Spray to OFF.

NOTE: Front Wall & Area Mist may be turned back on after OFF has been pressed.

The MANUAL button takes user to the *Manual Mode Selection Screen* where the following Modes may be selected.
MANUAL – Operator sets the MAN % FLOW SET in % of full output at the *FLOW CONFIG* screen. The system will then operate at this setting regardless of MOTOR % OUTPUT status until turned OFF by the operator.
SUPERVISED – Operator sets the MAN FLOW % SET in % of full output at the *FLOW CONFIG* screen. The system will operate at this setting as long as Motor % Output is above the % OUTPUT IDLE setting and the DWELL TIME IDLE setting has not timed out. Both % FLA IDLE and DWELL TIME IDLE settings are set at the *FLOW CONFIG* screen.

Presing the AUTO button on the *MAIN CONTROL PANEL* screen will begin operating the WATER SYSTEM in proportion to MOTOR % OUTPUT. Before operating in AUTO mode, the WATER SYSTEM must first be configured for the application. By pressing the

WATER CONFIG button on the *MAIN CONTROL PANEL* screen the operator will be able to view and edit the parameters necessary for AUTO operation

Set as the desired minimum water flow in percent to be delivered to the shredder through the proportional valve. Water flow will only go below this setting in the MANUAL/SUPERVISED and AUTO modes of operation under the following conditions.

- MOTOR % OUTPUT $\leq$ % OUTPUT IDLE for (X) seconds as set at the DWELL TIME IDLE button.

Set as the desired maximum water flow in percent to be delivered to the shredder through the proportional valve. *Exception: The SYSTEM FLOOD push button will produce a 100% flow output through the proportional valve.*

Set as the percentage of Motor % Output at which the Mill Motor is at speed and idling with no material in the shredder. *Note: Set this parameter approximately 5 – 10% higher than actual Idle Speed. This will help insure that the water system will turn off at Idle Speed. Bearing and Hammer condition may have an influence on this setting.*

Amount of time in which Motor % Output is at or under the % Output Idle setting before Water Output % (water flow rate) is forced to 0 %.

In AUTO mode only – the amount of time in which Water Output % remains at current level before responding to a decrease flow request from the PLC. An increase flow request will bypass the Dwell Time Load setting and respond immediately.

The Monitor Load push button takes the user to the Motor Load screen. This screen displays MOTOR % OUTPUT and scales the 4-20 ma input signal for MOTOR % OUTPUT at the FULL SCALE SET button.

NOTE: The customer supplied MILL MOTOR LOAD (4-20 ma signal) will be scaled in the PLC with 4 ma = 0 % Output and 20 ma = 100% Output. For example: A motor with a FLA rating of 600 amps is scaled to read a maximum of 1200 amps or 200 % of FLA at 20 ma input signal. Therefore in the (WATER SYSTEM PLC) 1200 amps (20 ma) = 100 % Motor Output.

MOTOR LOAD

The BIAS ADJ button is the primary means of adjusting WATER % OUTPUT once system operational parameters have been established. Based upon material condition (wet material vs. dry material) the operator may wish to alter the WATER % OUTPUT based upon % MOTOR OUTPUT. An increase in the BIAS SETTING will increase flow output and vice versa. The chart on page 6 shows the WATER % OUTPUT to % MOTOR OUTPUT relationship in more detail.

RED
MIN FLOW % = 25
MAX FLOW % = 100
% OUTPUT IDLE = 30
BIAS = 83 approx

GREEN
MIN FLOW % = 25
MAX FLOW % = 100
% OUTPUT IDLE = 30
BIAS = 71 approx

BLUE
MIN FLOW % = 25
MAX FLOW % = 100
% OUTPUT IDLE = 30
BIAS = 59 approx

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H_2PRO WATER SYSTEM

MAINTENANCE SCHEDULE

The H_2PRO water system was designed as a relatively maintenance free system, there is however, items that require routine maintenance for proper operation. This document outlines the maintenance schedule on the H_2PRO water system. It breaks down the daily, weekly, and quarterly tasks that need to be carried out for continuous operation of the manifold and all its systems.

The water system has three basic separate systems which include water delivery, air and electrical. The electrical system does not need any maintenance other than to keep the control junction boxes free of any debris and foreign objects within the closures. Yearly blow out with low pressure air is recommended to minimize dust collection.

DAILY:

The daily inspection of the water system will consists of a visual inspection of both the air and water piping examining the system for leaks in any junctions and fittings. The air regulators collection bulb needs to be inspected and drained of condensation to prevent corrosion of any components in the air system. There will also need to be an inspection of the regulators when the system is operating to make sure the pressure is sufficient for proper operation. The settings for the air system are as follows: 90-100 psi for the proportional valve and 15-25 psi for the air through the water nozzles. The inspection of the nozzles is required to be on a daily basis due to debris build up within the shredder box. The pressure for the water needs to be 65-95 psi for the required flow into the shredder box.

WEEKLY:

Inspecting the nylon inserts inside the water nozzles to make sure that they are present and clean of debris. They need to be kept clear so proper water air mixture can be delivered in to the shredder box freely. The lines that are feeding the nozzles will also need to be inspected at this time also for any cuts or abrasions that might impair proper operation of the system. The filter on the air system for the proportional valve needs to be inspected and cleaned for protection of the valve.

QUARTERLY:

Quarterly inspection needs to be performed on the proportional valve to make sure that it has a proper stroke and it is calibrated correctly. The first is to remove it from the manifold and inspect the

gasket on the cone to make sure that is pliable and there are no deformations to the seal, also inspect the seat from which the valve was removed to make sure there is not any build up of corrosion or foreign objects. Next the operation of the valve needs to be checked by giving a 0% command from the operators touch screen and make sure the valve is fully extended. Then give a 100% command and make sure the valve is fully retracted. In either case, when the stroke of the valve has finished a Green light on the top of the valve should illuminate. If for any reason the light or the stroke of the valve is not either fully extended or retracted then a representative from Riverside Engineering should be contacted to determine what actions need to be made to correct the problem. The red light on the top of the valve indicates it has power and is ready for operation.

The calibration of the water meter needs to be checked to ensure that the gallons per minutes are correct. This can be accomplished by filling a 55 gallon drum and keeping track of the amount of time it took to completely fill the drum. This procedure needs to be done a minimum of three times and the average of all three times needs to be compared to the reported figure on the water meter. If the discrepancy is greater than 5% then a representative of Riverside Engineering will need to be contacted and the recalibration of the water meter will need to be addressed.

SUMMARY:

This maintenance procedure is a minimum for proper operation of the system. As operators and maintenance personnel become more familiar with the system at each location, they might add to this procedure to customize it for its location: i.e. regular draining of the system for cold operation and addition of heat traces for freezing conditions.

At any time if there are any questions to the proper operation or maintenance of the system a representative at Riverside Engineering can address those questions and present solutions for continued operation of the system.

Riverside Engineering
System Integration Division

TECHNICAL SUMMARY

$H_2^{PR}O$ WATER INJECTION SYSTEM

The purpose of this Technical Summary is to provide a basic operational overview of the $H_2^{PR}O$ water injection system from Riverside Engineering.

Q) What is the $H_2^{PR}O$ Water Injection System?

A) The $H_2^{PR}O$ Water Injection System (W.I.S.) is a PLC (Programmable Logic Controller) controlled wall mounted water injection system. The system is fully adjustable and can be easily customized in the field to meet most customer water injection requirements. The customer or Riverside Technician inputs the required parameters into the PLC via a 6" Color Touch Screen HMI (Human Machine Interface). The PLC then calculates and controls the water flow to the Shredder based upon these parameters. The ability to adjust and change these operational parameters means the $H_2^{PR}O$ W.I.S. will easily adapt to meet the customers changing needs.

Q) What does it do for me?

A) The primary function of the $H_2^{PR}O$ W.I.S is to control the amount of water injected into the shredder in proportion to motor or engine percent output. If the motor or engine is running with only a light load, less water is needed in the shredder. Conversely, if the motor or engine is heavily loaded, more water is needed in the shredder. The system also stops water flow when the shredder is operating under a no load condition for a specific amount of time (operator adjustable). In addition to flow control, the Riverside spray nozzles inject air into the water stream at the point of entry into the shredder to atomize the water into a fine mist that distributes throughout the shredder. As the highly distributed water vapor encounters hot spots in the shredder it creates steam. The steam then accumulates in the shredder collecting dust and vapors as it reduces the amount of combustible air that is available in the shredder. The limited amount of air available in the shredder helps reduce the quantity and severity of explosions.

Q) How does it work?

A) The PLC will calculate and control water injection based upon the following parameters.

- % OUTPUT IDLE – expressed in percent FLA (full load amps) for AC/DC motors or RPM (revolutions per minute) for engines. This is the percent of motor or engine output, where the shredder is running at idle condition (no shredding).
- BIAS ADJ – This is the percent of FLA or RPM at which maximum water flow is desired.
- MIN FLOW % - Minimum water flow desired at % output idle. Set as percentage of full flow capacity.
- MAX FLOW % - Maximum water flow desired at BIAS ADJ set point. Set as a percentage of full flow capacity.
- DWELL TIME IDLE – Time in seconds that Flow Output will remain at the Min Flow % setting when at or below the % Output Idle setting.
- DWELL TIME LOAD – Time in seconds that Flow Output will remain at the last peak state, in regards to a decrease in Motor % Output. An increase in Motor % Output will be reflected immediately in Flow Output.

After the above parameters are entered, the PLC can calculate the desired water flow by monitoring MOTOR % OUTPUT. See the following graph.

GRAPH 1

"A" RED LINE	"B" GREEN LINE	"C" BLUE LINE
MIN FLOW % = 25	MIN FLOW % = 25	MIN FLOW % = 25
MAX FLOW % = 100	MAX FLOW % = 100	MAX FLOW % = 100
% OUTPUT IDLE = 30	% OUTPUT IDLE = 30	% OUTPUT IDLE = 30
BIAS = 83 approx	BIAS = 71 approx	BIAS = 59 approx
DWELL TIME LOAD = 1 sec		
DWELL TIME IDLE = 1 sec		

Each colored line in GRAPH 1 represents % Flow Output at different Operational Parameter settings. By determining where each line intersects with % Motor Output on the horizontal line, % Flow Output can be read from the vertical line on the left.

The following graph details the relationship between % Motor Output, % Flow Output and Dwell Time.

GRAPH 2

NOTE: Refer to GRAPH 1 example "A" to determine calculated % FLOW OUTPUT at a specific % MOTOR OUTPUT level.

Q) Why not just inject water at a constant rate?

A) Injecting water at a constant rate, regardless of shredder load, has a few drawbacks. First, to be truly effective at dust control and explosion prevention, the flow of water will have to be set for the maximum capacity of the shredder. Therefore only at short, intermittent time intervals will water injection match production needs. This causes a great deal more water being consumed than production requires. In addition, a manual system will continue to deliver water to the shredder until turned off. The $H_2^{PR}O$ W.I.S. will stop water flow when no flow is required. The result is a significant reduction in overall water consumption and associated costs. Secondly, shredded product that is to wet will have a negative effect on Downstream and Non-Ferrous separation operations.

Q) What does the $H_2^{PR}O$ system need from me?

A) There are a few requirements needed from the customer for proper operation of the system. If the customer cannot provide one or more of these items Riverside can assist in providing these requirements.

1) 4 - 20 ma or 0 – 10 vdc signal referencing % Motor Load (amps from AC or DC motor or RPM from natural gas or diesel).

2) Compressed air – 1 CFM @ 80 PSI for Proportional Valve operation

3) Compressed air – 10 CFM @ 15 PSI for water injection nozzles.

4) Water Supply rated for 10 – 30 GPM at normal operation and 100 GPM at flood conditions. 2"-3" Line @ city pressure (50 – 75 PSI) typical.

Q) Anything else I need to know?

A) Pre-plumbed on the $H_2^{PR}O$ W.I.S. rack are three additional water outlets with solenoid valve operation. These additional lines can be plumbed to other areas on or near the shredder as deemed necessary. The typical default locations for these lines are: Area Mist (located above the Shredder Ramp and DFR area), First Shredded Product Conveyor, and the Front Wall spray. These lines can be turned on individually from the HMI or collectively from the blue FLOOD BUTTON on the control console. These lines are often used during an explosion to extinguish the resulting fires.

An added benefit to the $H_2^{PR}O$ W.I.S. is the flow rate and totalizing feature. Displayed on the Main Screen of the HMI are the current values for GPM (rate) and Total Gallons Consumed (totalizer). In addition, by pressing the HISTORY button on the HMI, the previous water consumption for the last six days is displayed.

The last features of the $H_2^{PR}O$ W.I.S. are the three modes of operation: AUTO, SUPERVISED MANUAL and MANUAL. AUTO is the most beneficial mode of operation and has been described above. MANUAL and SUPERVISED MANUAL modes of operation allow the operator to inject water into the shredder at a constant rate (set from HMI) regardless of Shredder Load. SUPERVISED MANUAL mode will however stop water flow when Shredder Load is less than the % OUTPUT IDLE setting.