TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Standard Carbon LLC, dba Standard Purification
551 North U.S. Highway 41, Dunnellon, FL 34432

Facility ID No. 0830170

PROJECT

Project No. 0830170-006-AC
Application for Minor Air Construction Permit
for Facility Modifications

COUNTY

Marion County Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Air Resource Management
Southwest District Office
Temple Terrace, Florida 33637-7600

June 19, 2012
(Revised 07/03/12 and 07/05/12)

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Prepared by David Zell

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Glossary of Common Terms

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

I. Project Description:

A. Applicant:

Mr. James Sharpe, CEO
Standard Carbon LLC
551 North U.S. Highway 41
Dunnellon, FL 34432

B. Professional Engineer:

Mr. Kenneth E. Given, P.E.
Air Testing & Consulting, Inc.
333 N. Falkenburg Road, Unit B-214
Tampa, FL 33619

C. Project Location:

This existing activated carbon production facility is located at 551 North Highway 41 in Dunnellon, Marion County.

D. Project Summary *(see permit for additional details)*:

The project consists of the following new or modified emissions sources and Emissions Units (EUs):

- Addition of a new (or refurbished) kiln (Kiln No. 3) with a kiln fly ash feed hopper and separate natural gas fired combustion chamber, with emissions from the kiln inner drying chamber controlled by a cyclone separator pre-cleaner and a new baghouse **(new EU Nos. 018 and 019))**;
- Addition of a 2nd Raymond Mill (Raymond Mill No. 2) including a new receiving hopper, a new outlet hopper, and two new baghouse emission control devices **(new EU Nos. 020 and 021))**; and
- Addition of a transfer piping system and associated baghouse emission control device to allow for separate transfer of material from Raymond Mill No. 2 outlet hopper to any of the carbon storage silos **(new EU No. 022))**.
- Addition of new kiln baghouse fines hoppers (2) to existing Kiln No. 2 and new Kiln No. 3. Emissions associated with the operation of the kiln fines hoppers will be controlled by existing Baghouse PJ-3. The new fines hoppers will become **part of EU No. 007**. ***(The addition of these new kiln baghouse fines hoppers will not result in a new emission source, or an increase in potential emissions from an existing emissions unit. Actual emissions may increase due to higher utilization of the baghouse.)***
- Addition of a new Dynamic Classifier on the top of the existing Raymond Mill (Raymond Mill No. 1) to remove sand (no new baghouse required**).** Emissions from operation of this classifier will be part of the Raymond Mill emissions controlled by an existing baghouse. The classifier will become **part of EU No. 006**. ***(The addition of this new classifier will not result in a new emission source, or an increase in potential emissions from an existing emissions unit. Actual emissions may increase due to higher utilization of the baghouse.)***
- Addition of a brand new carbon product storage silo (Silo No. 18), and refurbishment and operation of existing Silo Nos. 1, 2, 3, and 6 for carbon product storage. All silos (the above additional refurbished silos, new Silo No. 18, and permitted Silo Nos. 4, 8, 10, and 12) would be piped so that they could receive carbon from multiple sources – either Raymond Mill No. 1 or No. 2, supersack dumping, tank truck discharge or railcar discharge. Only one silo will be in use at any one time so no new baghouse will be required (emissions from loading these new and refurbished silos will be controlled by baghouse PJ-2 along with Carbon Storage Silo Nos. 4, 8, 10, and 12). The new and refurbished silos will become part of **EU No. 009**. ***(The addition of these new and***

refurbished carbon storage silos will not result in a new emission source, or an increase in potential emissions from an existing emissions unit. Actual emissions may increase due to higher utilization of the baghouse.)

- Addition of a 2nd carbon product bagging unit (Bagging Unit No. 2), which will be same size and use same existing baghouse (Mahle) as the existing bagging unit (Bagging Unit No. 1). The new bagging unit will become **part of EU No. 013**. ***(The addition of this new bagging unit will not result in a new emission source, or an increase in potential emissions from an existing emissions unit. Actual emissions may increase due to higher utilization of the baghouse.)***

Also as part of this project, the following exempt-from-air-permitting modifications will be made.

- Addition of a new (or refurbished) Kiln No. 3 Fly Ash Feed Hopper K3. Loading of wet fly ash into the feed hopper does not produce any emissions and no baghouse emission control device is necessary or required. ***(The Kiln No. 3 Fly Ash Feed Hopper K3 is exempt from permitting in accordance with Rule 62-4.040(1)(b), F.A.C. (insignificant emissions).)***
- Addition of a new Sand Receiver with a small bin vent filter. ***(Bin vent filter will be a new emission source exempt from permitting in accordance with Rule 62-4.040(1)(b), F.A.C. (insignificant emissions).)***

The following permit condition revisions are also being made as part of this project.

- At the request of the permittee during a June 5, 2012 site visit to review the construction permit application, the facility recordkeeping requirements are being revised to only require monthly records of total product shipped and not separate records of product shipped by rail, bulk truck and bagged product. This revision involves minor changes to two Specific Conditions in Section 3., Subsection E. (Specific Condition Nos. E.2. and E.6.). ***(This change to the recordkeeping requirements will not result in any changes in potential, allowable or actual emissions.)***

E. Application Information:

Application Received and Complete* on: 05/21/12

(**Permit Application Processor Notes*:

- A facility site inspection was conducted on 06/05/12 to obtain additional information and clarifications on the requested modifications.

- On 06/19/12, an email was sent requesting addition of missing emissions information on the PM emissions spreadsheet attached to the application. A response was received that same day.

- On 07/03/12, an email was received from Standard Carbon requesting that an additional new carbon storage silo be added to the project.)

II. Rule Applicability

This project is subject to the preconstruction review requirements of Chapter 403, Florida Statutes and Chapters 62-204 through 62-297, Florida Administrative Code (F.A.C.), as indicated below.

Subject to:	Y/N	Comments
Rule 62-210.300, F.A.C. – Permits Required	Y	subject to general permitting requirements
Rule 62-212.400, F.A.C. - Prevention of Significant Deterioration	N	facility is not a PSD major source, nor is this project major
Rule 62-296.320(4), F.A.C. - General Particulate Emission Limiting Standards	Y	material handling operations are a potential source of unconfined particulate matter emissions.
Rules 62-296.320(1) and (2), F.A.C. - General Pollutant Emission Limiting Standards (VOCs and Odor)	Y	operation of kilns is a source of odors
Rule 62-296.401-470, F.A.C. - Stationary Source Emission Standards	N	there is no applicable source category
Rule 62-296.500, F.A.C. - Reasonably Available Control Technology (VOC)	N	Marion County is not an air quality maintenance area for ozone
Rule 62-296.700, F.A.C. - Reasonably Available Control Technology (PM)	N	this is a "new" facility, therefore not subject to PM RACT rule
Rule 62-204.800, F.A.C. - Standards of Performance for New Stationary Sources (NSPS)	N	there is no applicable source category
Rule 62-204.800, F.A.C. National Emission Standard for Hazardous Air Pollutants (NESHAPS - 40 CFR 61)	N	there is no applicable source category
Rule 62-204.800, F.A.C. National Emission Standard for Hazardous Air Pollutants for Source Categories a.k.a. MACT (NESHAPS - 40 CFR 63)	N	there is no applicable source category
Chapter 62-213, F.A.C. - Operation Permits for Major Sources of Air Pollution	N	facility is a synthetic non-Title V source
Rule 62-297.310, F.A.C. - General Compliance Test Requirements, F.A.C.	Y	VE testing is required for the new baghouse emission control devices (EU Nos. 018 thru 022)

III. Summary of Potential to Emit (PTE) from This Project

Pollutant	New EU and Description	PTE (TPY)	New Facility PTE (TPY)
PM/PM10	EU 018 - Kiln No. 3 (inner drying chamber) *(controlled by a new baghouse)*	10.95	
	EU 019- Kiln No. 3 Combustion Chamber *(uncontrolled)*	0.60	
	EU 020 - Raymond Mill No. 2 Receiving Hopper *(controlled by a new baghouse)*	0.68	
	EU 021 - Raymond Mill No. 2 and Raymond Mill No. 2 Outlet Hopper *(controlled by a new baghouse)*	21.90	
	EU 022 - Material Transfer from Raymond Mill No. 2 to Carbon Storage Silos *(controlled by a new baghouse)*	1.13	
	TOTAL	35.26	96.88*
NOx	EU 019 - Kiln No. 3 Combustion Chamber	7.93	20.78
CO	EU 019 - Kiln No. 3 Combustion Chamber	6.66	17.45
VOC	EU 019 - Kiln No. 3 Combustion Chamber	0.44	1.14
SO_2	EU 019 - Kiln No. 3 Combustion Chamber	0.05	0.13

(PM PTE Note* - With this project, **Total Facility PM/PM_{10} PTE** will be:

59.96 TPY *(see Technical Evaluation (TEV) for 0830170-003-AC)*
+ 0.866 TPY (*see TEV for 0810170-004-AC)*
+ 0.45 TPY *(see TEV for 0810170-005-AC)*
+ 35.26 TPY *(this project)* = 96.54 TPY

(Corrected **PM Emissions** spreadsheet attachment to application shows **96.88** TPY)

Based on manufacturer's design outlet concentrations (lower than the concentrations or allowable limits used to calculate the above maximum permitted PM PTE), maximum actual facility PM emissions are expected to be significantly less than this level (expected to be less than 25 TPY.)

(*Kiln Combustion Chamber Potential to Emit Note - Kiln combustion chamber potential emissions are based upon maximum design fuel heat input rate (19 MMBtu/hr) for 8760 hours/year. Previous permit applications used SCC Code 3-06-001-05 (Petroleum Industry – Process Heaters – Natural Gas) Ef to estimate natural gas combustion emissions. This application used AP-42 Section 1.4 Tables 1.4-1 and 1.4-2 Ef (Natural Gas Combustion)(SCC 1-03-006-02, which are more current than the above SCC process heater Ef, to estimate natural gas combustion emissions. These AP-42 Ef are lower for NOx, and higher for PM, VOC and CO (no change for SO_2). The facility totals reflect use of the more current and representative natural gas combustion Ef for all 3 kilns.)*

IV. Conclusions

The emission limits proposed by the applicant will meet all of the requirements of Chapters 62-204 through 297, F.A.C.

The General and Specific Conditions listed in the proposed permit (attached) will assure compliance with all the applicable requirements of Chapters 62-204 through 297, F.A.C.

V. Preliminary Determination

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Additional details of this analysis may be obtained by contacting the project engineer at the Florida Department of Environmental Protection Air Resource Management, Southwest District 13051 North Telecom Parkway, Temple Terrace, Florida 33637-7600.

Pursuant to Section 403.087, Florida Statutes and Section 62-4.070, Florida Administrative Code, the Department hereby gives notice of its intent to issue a permit to construct the aforementioned air pollution source in accordance with the draft permit and its conditions as stipulated (see attached).