777 12th Street, Third Floor

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT

Sacramento, CA 95814

STATEMENT OF BASIS
RENEWAL OF
TITLE V FEDERAL OPERATING PERMIT

TITLE V PERMIT NO.:	TV2011-01-01
FACILITY NAME	GRAFIL INC.
FACILITY LOCATION	5900 88th Street Sacramento, CA 95828
MAILING ADDRESS	5900 88th Street Sacramento, CA 95828
RESPONSIBLE OFFICIAL	Masayoshi Ozeki President 916-379-2168
CONTACT PERSON	Gordon Shearer Director of Operations 916-386-1733
REVIEWING ENGINEER:	Ady R. Santos
DATE:	August 28, 2012

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A. PURPOSE OF THIS STATEMENT OF BASIS

The Title V Federal Operating Permit is intended to be a document containing only enforceable terms and conditions as well as any additional information, such as the identification of emission units, emission points, emission sources and processes that make the terms meaningful. 40 CFR Part 70.7(a)(5) requires that each Title V permit have an accompanying "...statement that sets forth the legal and factual basis for the draft permit conditions". The purpose of this Statement of Basis is to satisfy the above requirement by providing pertinent details regarding the permit/application data and permit conditions in a more easily understandable format. This report will also include background narrative and explanations of regulatory decisions made by the reviewer. It should be emphasized that this Statement of Basis, while based on information contained in the permit, is a separate document and is not itself an enforceable term and condition of the permit.

B. PROPOSAL

Grafil Inc. submitted an application for the renewal of their Title V Federal Operating Permit which was issued on 10-22-2007. Since the last modification to the Title V permit on 7-09-2009, Grafil recently implemented changes to their Graphite Fiber Manufacturing Process Line 31, which were authorized in SMAQMD's authorities to construct. On 7-16-2012, Grafil submitted an application for a modification of their Title V Federal Operating Permit.

C. PERMIT ACTIONS

The following permit actions have occurred since the initial Federal Operating Permit No. TV1996-01-01 was issued:

Permit Action	Date Issued	Permit No.
Initial Title V Federal Operating Permit	10-29-1997	TV1996-01-01
1st Minor Modification	04-15-1998	TV1996-01-02
1st Permit Renewal (Includes Minor Modification)	10-22-2002	TV2002-01-01
1st Minor Modification	04-04-2006	TV2002-01-02
2nd Permit Renewal	10-22-2007	TV2006-01-01
1st Significant Modification	07-09-2009	TV2006-01-02
1st Administrative Amendment	06-17-2010	TV2006-01-02A
2nd Administrative Amendment	12-21-2011	TV2006-01-02B

Current Permit Action

There have been changes to the Graphite Fiber Manufacturing Process Line 31 and its ancillary equipment since the most recent administrative amendment to the Title V permit. Those changes have been issued Authorities to Construct in accordance with SMAQMD Rule 201 and will be incorporated into the Title V permit through this Title V renewal permit action. Grafil has submitted an application for a minor modification of their Title V permit.

3rd Permit Renewal (Includes Significant Modification)	TV2011-01-01

D. FACILITY DESCRIPTION

Grafil Inc. manufactures carbon fiber at its facility in Sacramento, California. The carbon fiber is used by their customers to manufacture finished products such as sporting goods, satellites, helicopter rotor blades, drive shafts, pumps, valves and CNG tanks.

Grafil manufactures the carbon fiber from polyacrylic fiber raw material. The carbon fiber is processed in two parallel production lines, designated as Line 31 and Line 32. The two production lines operate independently of each other. The carbon fiber produced from these lines receives a surface treatment with a water based nylon coating in a third processing line.

High quality continuous polyacrylic fibers wound on spools are received and stored in the precursor warehouse. During processing, spools are transferred from the storage area and batch loaded to the feed end of each production line. Fiber is unwound from many spools simultaneously and processed through a sequence of production steps in Lines 31 and 32. These production steps include, in order:

1. Surface oxidation in atmospheric ovens;
2. Tar removal in low temperature furnaces;
3. Carbonization in high temperature furnaces; and
4. Surface treatment of the fibers with a solution that promotes good adhesion with polymer matrix systems, a necessary requirement for some end users.

Refer to Figure 1 for the Graphite Fiber Manufacturing schematic process flowchart.

Total processing time through each line is dependent on package length, fiber speed and customer product requirements. Processing operations occur semi-continuously, 24 hours per day, 7 days per week and 52 weeks per year.

There are four thermal oxidizers and two baghouses associated with the carbon fiber processing lines that are used to control the emission of volatile organic compounds, particulate matter and toxic pollutants.

In addition to the carbon fiber processing lines the facility has the following support equipment:

1. Two natural gas-fired boilers;
2. One diesel-fueled emergency use IC engine to drive a fire pump for firefighting purposes; and
3. One natural gas-fueled emergency use IC engine to drive an electric generator when utility electricity becomes unavailable.

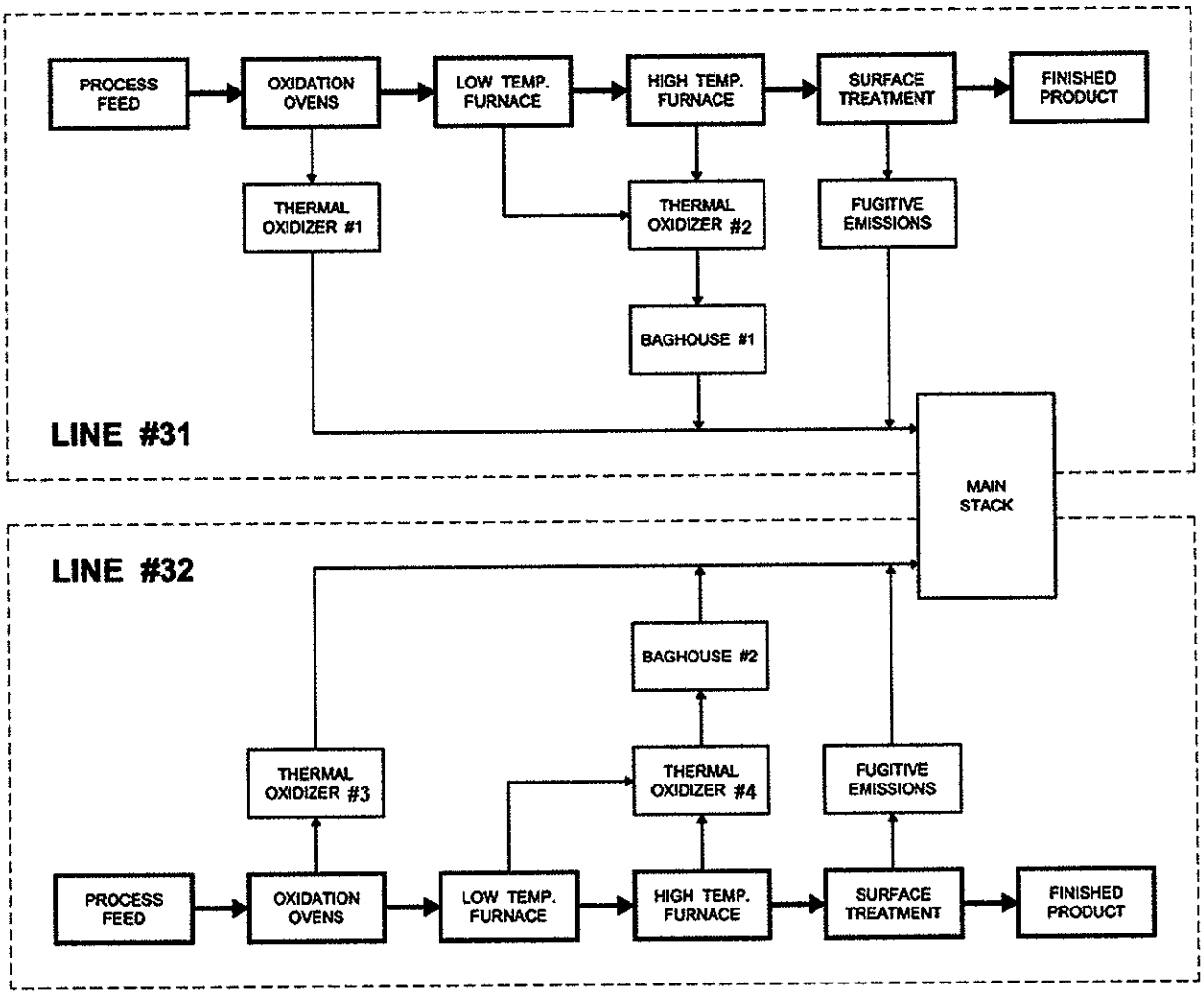

Figure 1 – Graphite Fiber Manufacturing Schematic Flowchart

E. SIGNIFICANT EMISSIONS UNIT DESCRIPTION

SMAQMD Permit No. 23365 – **Graphite Fiber Manufacturing Process Line 31** Consisting of:

1. Four (4) Oxidation Ovens, 235 KW each, Electrically-heated, Vented to **APC Afterburner No. 1** [SMAQMD P/O 11425]
2. **Two (2) Oxidation Ovens**, Despatch, Ovenpak 25 OP LE Burners, 2.5 MMBtu/hr Heat Input Rating each, Natural Gas-fired with Electrically-heated Back-up
3. Low Temperature Furnace, 252 KW, Electrically-heated, Vented to **APC Afterburner No. 2** [SMAQMD P/O 15841]
4. High Temperature Furnace, 400 KW, Electrically-heated, Vented to **APC Afterburner No. 2** [SMAQMD P/O 15841]
5. High Temperature Furnace End-cap Extractor Filter
6. Electrolyte Surface Treatment Bath, Vented to Atmosphere
7. Surface Treatment Fiber Dryer
8. Size Bath
9. Sized Fiber Dryer
10. Sized Make-up Facility
11. Two (2) Low Temperature Furnace End-cap Hoods, Low Temperature Rodding Exhaust, Two (2) Rodding Point Hoods, Two (2) High Temperature End-cap Hoods, Vented to Process Exhaust Fan
12. Process Exhaust Fan, One (1) Primary and One (1) Standby, Vented to **APC Afterburner No. 1** [SMAQMD P/O 11425]
13. Continuous Emission Monitor, One (1) Primary and One (1) Standby, Boreal Laser, Inc., Continuous Hydrogen Cyanide (HCN) Monitor, Model Gas Finder, Serial Nos. HCNFC 2001 and HCNFC 2003, Located in Plant Exhaust Stack for Afterburner Exhaust and Plant Air Ducting (One HCN Monitor Serving Both Line 31 and Line 32)

SMAQMD Permit No. 11425 – **APC Afterburner No. 1** Consisting of:

1. APC Afterburner No. 1, John Zink, 9.18 MMBtu/hr Heat Input Rating
2. Exhaust System Venting the Oxidation Ovens of the Graphite Fiber Manufacturing Process Line 31 [SMAQMD A/C 23365]

SMAQMD Permit No. 15841 – **APC Afterburner No. 2** Consisting of:

1. APC Afterburner No. 2, Zeeco, 2.4 MMBtu/hr Heat Input Rating
2. Exhaust System Venting the Low Temperature Furnace and High Temperature Furnace of the Graphite Fiber Manufacturing Line 31 [SMAQMD A/C 23365]

SMAQMD Permit No. 15840 – **APC Baghouse No. 2** Consisting of:

JM Construction & Engineering, Model 120 JMCE 100T, Pulse Jet, 1584 Sq. Ft. Cloth Filter Area, 1200 CFM Air Flow Rate, Venting the **APC Afterburner No. 2** [SMAQMD P/O 15841]

SMAQMD Permit No. 21608 – **Graphite Fiber Manufacturing Process Line 32** Consisting of:

1. Four (4) Oxidation Ovens, 235 KW each, Electrically-heated, Vented to **APC Afterburner No. 3** [SMAQMD P/O 11426]
2. Two (2) Oxidation Ovens, 400 KW each, Electrically-heated, Vented to **APC Afterburner No. 3** [SMAQMD P/O 11426]
3. Low Temperature Furnace, 252 KW, Electrically-heated, Vented to **APC Afterburner No. 4** [SMAQMD P/O 18279]
4. High Temperature Furnace, 400 KW, Electrically-heated, Vented to **APC Afterburner No. 4** [SMAQMD P/O 18279]
5. High Temperature Furnace End-cap Extractor Filter
6. Electrolyte Surface Treatment Bath, Vented to Atmosphere
7. Surface Treatment Fiber Dryer
8. Size Bath
9. Sized Fiber Dryer
10. Sized Make-up Facility
11. Two (2) Low Temperature Furnace End-cap Hoods, Low Temperature Rodding Exhaust, Two (2) Rodding Point Hoods, Two (2) High Temperature End-cap Hoods, Vented to Process Exhaust Fan
12. Process Exhaust Fan, One (1) Primary and One (1) Standby, Vented to **APC Afterburner No. 3** [SMAQMD P/O 11426]
13. Continuous Emission Monitor, One (1) Primary and One (1) Standby, Boreal Laser, Inc., Continuous Hydrogen Cyanide (HCN) Monitor, Model Gas Finder, Serial Nos. HCNFC 2001 and HCNFC 2003, Located in Plant Exhaust Stack for Afterburner Exhaust and Plant Air Ducting (One HCN Monitor Serving Both Line 31 and Line 32)
14. Waste Heat Recovery Boiler, 2.4 MMBtu/hr, Vented to **APC Baghouse No. 2** [SMAQMD P/O 19659]

SMAQMD Permit No. 11426 – **APC Afterburner No. 3** Consisting of:

1. APC Afterburner No. 3, John Zink, 9.18 MMBtu/hr Heat Input Rating
2. Exhaust System Venting the Oxidation Ovens of the Graphite Fiber Manufacturing Process Line 32 [SMAQMD P/O 21608]

SMAQMD Permit No. 18279 – **APC Afterburner No. 4** Consisting of:

1. APC Afterburner No. 4, Zeeco, 2.4 MMBtu/hr Heat Input Rating
2. Exhaust System Venting the Low Temperature Furnace and High Temperature Furnace of the Graphite Fiber Manufacturing Process Line 32 [SMAQMD P/O 21608]

SMAQMD Permit No. 19659 – **APC Baghouse No. 2** Consisting of:

JM Construction & Engineering, Model 120 JMCE 100T, Pulse Jet, 1584 Sq. Ft. Cloth Filter Area, 1500 CFM Air Flow Rate, Venting the APC Afterburner No. 4 [SMAQMD P/O 18279]

SMAQMD Permit No. 23363 – **Boiler No. 4**

Cleaver Brooks, Model 4WI-700-100-150, Serial No. OL106305, 4.8 MMBtu/hr Heat Input Rating, Natural Gas-fired

SMAQMD Permit No. 23364 – **Boiler No. 3**

Cleaver Brooks, Model CBI 200-150-150, Serial No. OL103578, 6.124 MMBtu/hr Heat Input Rating, Natural Gas-fired

SMAQMD Permit 21750 – **IC Engine Emergency Standby**

Clark/John Deere, Model JU6H-UFADN0/606GHFC28D, Serial No. PE6068I083029, 197 BHP @ 1760 RPM, 6.8 L Displacement, Diesel-fueled, Driving a Direct-Drive Fire Pump

SMAQMD Permit 23366 – **IC Engine Emergency Standby**

Generac, Model SG 150, Serial No. to be verified, 231 BHP @ 3600 RPM, 6.8 L Displacement, Natural Gas-fueled, Driving an Emergency Electric Generator

F. INSIGNIFICANT EMISSIONS UNIT DESCRIPTION

Equipment Description	Basis for Designation as Insignificant
Refrigeration and air conditioning units Vacuum cleaning system	SMAQMD "List and Criteria" (Part B, Section 5,II,X,1). Any refrigeration unit provided the unit: 1) contains less than 50 pounds of refrigerant: and 2) is not used in conjunction with pollution control equipment.
Cold solvent cleaner	SMAQMD "List and Criteria" (Part B, Section 5,II,O,2). Any unheated, non-conveyorized cleaning equipment (not including control enclosures: 1) which has an open surface area of no more than 10.8 square feet (2 square meters) and internal volume of no more than 92.5 gallons; 2) which uses organic solvents with an initial boiling point of 302°F or greater as determined by ASTM test method 1078-78; and 3) from which the owner or operator can demonstrate, through solvent purchase and use records, that less than 25 gallons per year of solvent was lost exclusive of solvent loss through recycling or disposal.
Two laboratory rooms	SMAQMD "List and Criteria" (Part B, Section 5,II,W,1). Any laboratory fume hood or vent, provided such equipment is used exclusively for the purpose of teaching, research or quality control.
Epoxy resin mixers Water-based nylon coating fiber processing line Surface treatment of the fibers with an aqueous ammonium salt solution Nitrogen tank Reverse osmosis system	SMAQMD "List and Criteria" (Part B, Section 5,I). An insignificant activity in any activity, process, or emissions unit which is not subject to a source-specific requirement of a State Implementation Plan, preconstruction permit, or federal standard and which: 1) meets the "Criteria for Specific Source Categories" below; or 2) emits no more than 0.5 tons per year of a federal hazardous air pollutant (HAP) and no more than two tons per year of regulated pollutant that is not a HAP.

G. ALTERNATIVE OPERATING SCENARIO

There are no alternative operating scenarios requested by the Title V source.

H. PROCESS MODIFICATION

In March 2012, Grafil submitted applications to modify their Graphite Fiber Manufacturing Process Line 31, referred to in the engineering evaluation as Line 31 Oven Replacement Project. Grafil proposed to increase the carbon fiber production capacity of Line 31. A higher production throughput will increase the process steam demand on the two existing boilers, which currently have fuel usage limitations.

These significant modifications will be incorporated into the Title V permit through this Title V renewal permit action.

SMAQMD Permit No. 23365 – Carbon Fiber Manufacturing Process Line 31

Production throughput of the carbon fiber process is contingent on the combined capacities of the oxidation ovens. Grafil proposed to replace the two 500-KW electric ovens with two 2.5 MMBtu/hr natural gas-fired ovens with electrically-heated back-up units. This physical change in the process units for Line 31 is expected to provide a 16% increase in production capacity.

SMAQMD Permit No. 23363 – Modification to Boiler Fuel Usage

There will be no physical modification to the 4.8 MMBtu/hr heat input capacity boiler. Grafil requested an increase in the fuel usage limitation for this boiler from the current limit of 1.907 MMcf/quarter to 3.90 MMcf/quarter. This increase in steam output will sustain the higher steam process demand.

SMAQMD Permit No. 23364 – Modification to Boiler Fuel Usage

There will be no physical modification to the 6.124 MMBtu/hr heat input capacity boiler. Grafil requested an increase in the fuel usage limitation for this boiler from the current limit of 4.211 MMcf/quarter to 7.27 MMcf/quarter. This increase in steam output will sustain the higher steam process demand.

SMAQMD Permit No. 23366 – Natural Gas-fueled Emergency Standby IC Engine

This new natural gas-fueled IC engine will replace the existing propane-fuel IC engine [SMQMD P/O 15839].

I. COMPLIANCE ASSURANCE MONITORING REQUIREMENTS

The Compliance Assurance Monitoring (CAM) rule, pursuant to 40 CFR Part 64, applies to an emissions unit that has an emission limitation with a potential to emit greater than the Title V major source threshold of 100 tons per year and has an add-on control device to achieve compliance. It requires the monitoring, compliance certification, periodic reporting and recordkeeping information by owners and operators of Title V sources with applicable regulated air pollutants.

The continuous emission monitoring system (CEM) for hydrogen cyanide (HCN) is not federally enforceable because it is a pollutant that is not regulated by any Federal rule or SIP-approved rule. Hence, CAM does not apply since there is no emissions unit at this carbon fiber manufacturing facility that is subject to the above CAM applicability criteria.

J. FACILITY EMISSIONS AND EMISSION OFFSETS

FACILITY EMISSIONS

Emissions/Process Unit	Maximum Annual Facility Emissions (tons/year)					
	VOC	NOx	SOx	PM10	PM2.5	CO
Graphite Fiber Mfg Process Lines 31 & 32	14.6	25.1	26.3	22.8	22.8	92.0
Oxidation Ovens Process Line 31	0.121	0.797	0.013	0.167	0.167	32.41
Boiler, 4.8 MMBtu/hr	0.043	0.085	0.004	0.060	0.060	0.577
Boiler, 6.124 MMBtu/hr	0.080	0.016	0.004	0.111	0.111	1.076
IC Engine Standby, 197 BHP	0.044	0.131	0.000	0.006	0.006	0.113
IC Engine Standby, 231 BHP	0.009	0.007	0.000	0.002	0.002	0.079
Total	**14.9**	**26.1**	**26.3**	**23.1**	**23.1**	**126.3**

Emissions/Process Unit	Maximum Annual Facility Emissions (tons/year)	
	Single HAP	Total HAPs
Graphite Fiber Mfg Process Lines 31 & 32	17.9 (A)	18.2
Oxidation Ovens Process Line 31	(B)	(B)
Boiler, 4.8 MMBtu/hr	(B)	(B)
Boiler, 6.124 MMBtu/hr	(B)	(B)
IC Engine Standby, 197 BHP	(B)	(B)
IC Engine Standby, 231 BHP	(B)	(B)
Total	**17.9**	**18.2**

(A) Based on hydrogen cyanide (HCN) allowable emission concentration of 95 ppm.
(B) HAP emissions from natural gas-fired combustion equipment are deemed insignificant.

EMISSION LIMITS AND EMISSION OFFSETS FOR MODIFIED PROCESS PERMITS

SMAQMD Permit Nos. 23365 & 21608 - Graphite Fiber Manufacturing Process Line 31 & Line 32

There are no changes in the combined hourly and quarterly emissions from process Lines 31 & 32 as shown below:

Pollutant	Maximum Allowable Combined Emissions From Graphite Fiber Manufacturing Process Line 31 & Line 32				
	Hourly (B) (lb/hour)	1ST Quarter (lb/quarter)	2nd Quarter (lb/quarter)	3rd Quarter (lb/quarter)	4th Quarter (lb/quarter)
VOC	3.34	7,214	7,295	7,375	7,375
NOx	5.74	12,398	12,536	12,674	12,674
SO_2 (A)	5.994	12,947	13,091	13,235	13,235
PM10	5.2	11,232	11,357	11,482	11,482
PM2.5	5.2	11,232	11,357	11,482	11,482
CO	21.0	45,360	45,864	46,368	46,368

(A) Emission factor for SOx is based on the combined SOx emissions from the products of combustion from the four APC Afterburners with a combined heat input capacity of 23.16 MMBtu/hr, SOx emission factor of 0.0006 lb/MMBtu from AP-42, Table 1.4-2, and the manufacturing process parameters based on 20 ppmv SOx and 31,000 scfm.

(B) Based on 3-hour average.

SMAQMD Permit No. 23365 – Graphite Fiber Manufacturing Process Line 31

The combustion emission changes from the two new oxidation ovens in process Line 31 are as follows:

Pollutant	Maximum Allowable Combined Emissions From Two (2) Oxidation Ovens (2 x 2.5 MMBtu/hr) in Process Line 31				
	Hourly (lb/hour)	1ST Quarter (lb/quarter)	2nd Quarter (lb/quarter)	3rd Quarter (lb/quarter)	4th Quarter (lb/quarter)
VOC	0.03	59	60	61	61
NOx	0.18	393	397	402	402
SO_2	0.003	6	7	7	7
PM10	0.04	82	83	84	84
PM2.5	0.04	82	83	84	84
CO	0.74	1,598	1,616	1,634	1,634

The emission offset liabilities that resulted from the emission increases were satisfied by surrendering two SMAQMD Emission Reduction Certificates and securing a loan from the SMAQMD Community Bank.

Permit No.	Emission Reduction Credits Surrendered (A)				
	Pollutant	1ST Quarter (lb/quarter)	2nd Quarter (lb/quarter)	3rd Quarter (lb/quarter)	4th Quarter (lb/quarter)
SMAQMD 23365 Graphite Fiber Mfg Process Line 31	VOC (A)	59	60	61	61
	NOx (B)	393	398	402	402
	PM10 (C)	82	83	84	84
	PM2.5 (C)	82	83	84	84

(A) VOC – ERC Loan No. C12-1004
NOx – ERC Cert. Nos. 12-01160 & 12-01162 and ERC Loan No. C12-1004
PM10 – ERC Loan No. C12-1004
PM2.5 – ERC Loan No. C12-1004

SMAQMD Permit No. 23363 – Boiler No. 4, Cleaver Brooks, 4.8 MMBtu/hr

Pollutant	Maximum Allowable Emissions	
	(lb/quarter)	(lb/year)
VOC	21	86
NOx	43	170
SOx	2	9
PM10	30	119
PM2.5	30	119
CO	289	1,154

The emission offset liabilities that resulted from the emission increases were satisfied by surrendering a SMAQMD Emission Reduction Certificate.

Permit No.	Emission Reduction Credits Surrendered (A)				
	Pollutant	1ST Quarter (lb/quarter)	2nd Quarter (lb/quarter)	3rd Quarter (lb/quarter)	4th Quarter (lb/quarter)
SMAQMD 23363 Boiler 4.8 MMBtu/hr	VOC	21	21	21	21
	NOx	22	22	22	22
	PM10	30	30	30	30
	PM2.5	30	30	30	30

(A) Includes emission offset liability which was deferred during the permit action for SMAQMD Permit No. 20835 on 2-20-08.
VOC, NOx, PM10 and PM2.5 – ERC Cert. No. 12-01158

SMAQMD Permit No. 23364 – Boiler No. 3, Cleaver Brooks, 6.124 MMBtu/hr

Pollutant	Maximum Allowable Emissions	
	(lb/quarter)	(lb/year)
VOC	40	160
NOx	79	317
SOx	4	9
PM10	55	221
PM2.5	55	221
CO	538	2,152

The emission offset liabilities that resulted from the emission increases were satisfied by surrendering a SMAQMD Emission Reduction Certificate and securing a loan from the SMAQMD Community Bank.

Permit No.	Emission Reduction Credits Surrendered (A)				
	Pollutant	1ST Quarter (lb/quarter)	2nd Quarter (lb/quarter)	3rd Quarter (lb/quarter)	4th Quarter (lb/quarter)
SMAQMD 23364 Boiler 6.124 MMBtu/hr	VOC	40	40	40	40
	NOx	33	33	33	33
	PM10	55	55	55	55
	PM2.5	55	55	55	55

(A) Includes emission offset liability which was deferred during the permit action for SMAQMD Permit No. 21254 on 8-30-07.
VOC – ERC Cert. No. 12-01159 and ERC Loan No. C12-1003.
NOx – ERC Cert. No. 12-01159
PM10 – ERC Cert. No. 12-01159 and ERC Loan No. C12-1003
PM2.5 – ERC Cert. No. 12-01159 and ERC Loan No. C12-1003

SMAQMD Permit No. 23366 – IC Engine Standby, Generac, 231 BHP

There is no emissions change for this emergency IC engine.

Pollutant	Maximum Allowable Emissions	
	(lb/quarter)	(lb/year)
VOC	18	18
NOx	14	14
SOx	0.2	0.2
PM10	4	4
PM2.5	4	4
CO	157	157

SMAQMD Permit No. 21750 – IC Engine Standby, John Deere, 197 BHP

Emergency electrical generating equipment are exempt from the requirement to provide emission offsets provided the conditions specified in SMAQMD Rule 201, Section 110 are satisfied.

Pollutant	Maximum Allowable Emissions	
	(lb/quarter)	(lb/year)
VOC	87	87
NOx	261	261
SOx	0	0
PM10	13	13
PM2.5	13	13
CO	226	226

K. APPLICABLE FEDERALLY ENFORCEABLE REQUIREMENTS

FACILITY-WIDE REQUIREMENTS

SMAQMD RULE 101 – GENERAL PROVISIONS AND DEFINITIONS

SIP Approved: 03-19-1999 (64 FR 13514)
[09-03-1988 adoption]

Rule Description: This rule provides definitions of terms, specifies authority to arrest and specifies what data is public information.

Compliance Status: Grafil complies with the applicable federally enforceable requirements.

SMAQMD RULE 102 – CIRCUMVENTION

SIP Approved: 12-05-1984 (49 FR 47490)
[05-15-1972 adoption; 11-29-1983 renumbered version]

Rule Description: This rule prohibits concealment of emission and specifies how compliance determinations are made for combined and separated emissions.

Compliance Status: Grafil complies with the applicable federally enforceable requirements.

SMAQMD RULE 108 – MINOR VIOLATION

SIP Approved: No

Rule Description: This rule implements the provisions of Chapter 3 of Part 1 of Division 26 of the California Health and Safety Code (Section 39150 et seq.) which defines a minor violation and establishes guidelines for issuing a Notice to Comply.

Compliance Status: Grafil complies with the rule requirement.

SMAQMD RULE 201 – GENERAL PERMIT REQUIREMENTS

SIP Approved: 07-13-1987 (52 FR 26148)
[11-20-1984 amended version]
The current 08-24-2006 version of this rule is not SIP-approved.

Rule Description: This rule provides an orderly procedure for the review of new sources of air pollution and of the modification and operation

of existing sources through the issuance of permits.

Compliance Status: Grafil complies with the applicable federally enforceable requirements.

SMAQMD RULE 202 – NEW SOURCE REVIEW

SIP Approved: 06-19-1985 (50 FR 25417)
[11-20-1984 adoption]
The current 10-28-2010 version of this rule is not SIP-approved.

Rule Description: This rule sets the procedures for review of new and modified stationary sources and provides the mechanisms for evaluating the applicability of BACT and/or offset requirements.

Compliance Status: Grafil's equipment has been reviewed pursuant to this rule. BACT and/or emission offsets have been provided as required by the rule.

SMAQMD RULE 207 – TITLE V - FEDERAL OPERATING PERMIT PROGRAM

SIP Approved: This rule is not SIP-approved but the rule is applicable because it is part of the SMAQMD Title V Federal Operating Permit program approved by the U.S. EPA on 1-21-2003 (68 FR 65637).

Rule Description: This rule sets forth the procedures for review, issuance and renewal of Title V operating permits.

Compliance Status: The permittee has submitted a timely and complete permit application for Title V permit renewal and for the Title V permit minor modification. Grafil complies with the applicable federally enforceable requirements.

SMAQMD RULE 214 – FEDERAL NEW SOURCE REVIEW

SIP Approved: 07-20-2011 (76 FR 43183)

Rule Description: This rule sets the procedures for review of emissions units at new and modified major stationary sources and provides the mechanisms for evaluating the applicability of BACT and/or offset requirements.

Compliance Status: This is a recently adopted and SIP approved rule. The facility's equipment will be reviewed pursuant to this rule for all

future permitting actions.

SMAQMD RULE 301 – PERMIT FEES - STATIONARY SOURCE *(Title V related fees only)*

SIP Approved: This rule is not SIP-approved but the portions of the rule related to Title V permit fees are applicable because they are part of the SMAQMD Title V Federal Operating Permit program approved by the U.S. EPA on 11-21-2003 (68 FR 65637).

Rule Description: This rule requires Title V sources to pay specified fees.

Compliance Status: Grafil complies with the applicable federally enforceable requirements.

SMAQMD RULE 307 – CLEAN AIR ACT FEES

SIP Approved: 08-26-2003 (68 FR 51184)
[09-26-2002 adoption]

Rule Description: This rule requires major sources of VOC and NOx to pay specified fees beginning after the U.S. EPA determines that the SMAQMD has failed to demonstrate attainment of the one hour ozone ambient air quality standard by the attainment year.

Compliance Status: Grafil complies with the applicable federally enforceable requirements.

SMAQMD RULE 401 – RINGELMANN CHART

SIP Approved: 02-01-1984 (49 FR 3987)
[04-19-1983 amended version]

Rule Description: This rule limits the discharge of air contaminants into the atmosphere through visible emissions and opacity limitations.

Compliance Status: Grafil complies with the federally enforceable requirements.

SMAQMD RULE 403 – FUGITIVE DUST

SIP Approved: 12-05-1984 (49 FR 47490)
[08-03-1977 adopted version]

Rule Description: This rule regulates operations which may cause fugitive dust emissions into the atmosphere.

Compliance Status: Grafil complies with the federally enforceable requirements.

SMAQMD RULE 442 – ARCHITECTURAL COATINGS

SIP Approved: 11-09-1998 (63 FR 60214)
[09-05-1996 amended version]
The current 05-24-2001 version of this rule is not SIP-approved.

Rule Description: This rule limits the quantity of volatile organic compounds in architectural coatings supplied, sold, offered for sale, applied, solicited for application or manufactured for use within the SMAQMD.

Compliance Status: The affected coatings used by the permittee are received and stored in containers that display the required manufacturer's labels and demonstrate compliance with the rule requirements. Grafil complies with the federally enforceable requirements.

EQUIPMENT-SPECIFIC REQUIREMENTS

SMAQMD RULE 404 – PARTICULATE MATTER

SIP Approved: 07-13-1987 (52 FR 26148)
[11-20-1984 amended version]

Rule Description: This rule limits the discharge of particulate matter into the atmosphere to 0.1 grains per dry standard cubic foot.

Compliance Status: Grafil complies with the federally enforceable requirements. The most recent source test for particulate matter from the main stack of the carbon fiber process showed a concentration of 0.0114 grains per dry standard cubic foot, which is significantly lower than the applicable rule limit.

SMAQMD RULE 406 – SPECIFIC CONTAMINANTS

SIP Approved: 12-05-1984 (49 FR 47490)
[12-06-1978 amended version]

Rule Description: This rule regulates emissions of sulfur compounds and combustion contaminants by limiting the emission concentration of particulate matter (0.1 gr/dscf @ 12% O_2) and sulfur dioxide (0.2% by vol SO_2).

Compliance Status: Grafil complies with the federally enforceable requirements.

The natural gas-fired boilers and gaseous-fueled IC engine and using worst case SO_2 emission factor indicated compliance with the SO_2 percent by volume and PM concentration limits of this rule.

The estimated SO_2 and PM10 emissions from the larger 6.124 MMBtu/hr boiler are as follows:

SO_2 Emission Factor	=	0.6 lb/MMcf
PM10 Emission Factor	=	7.6 lb/MMcf
F-Factor for natural gas	=	8,710 dscf/MMBtu
HHV for natural gas	=	1.020 MMBtu/MMcf
Molecular weight of SO_2	=	64 g/mol
Molar volume	=	385.3 dscf/mol

$$\text{SO}_2\text{ Concentration} = \frac{(0.6\text{ lb/MMcf})(385.3\text{ dscf/mol})}{(8{,}710\text{ dscf/MMBtu})(1{,}020\text{ MMBtu/MMcf})(64\text{ lb SO}_2\text{/mol SO}_2)}$$

$$= 0.000000407 \times 100\%$$

$$= \underline{0.0000407\%\ SO_2} < 0.2\%\text{ by vol SO}_2$$

$$\text{PM Concentration} = \frac{(7.6\text{ lb/MMcf})(0.006124\text{ MMcf/hr})(7{,}000\text{ grains/lb})}{(6.124\text{ MMBtu/hr})(8{,}710\text{ dscf/MMBtu})}$$

$$= \frac{325.80\text{ gr/hr}}{53{,}340\text{ dscf/hr}}$$

$$= \underline{0.0061\text{ gr/dscf}} < 0.1\text{ gr/dscf @ 12\% CO}_2$$

SMAQMD RULE 411 – NOx FROM BOILERS, PROCESS HEATERS and STEAM GENERATORS

SIP Approved: 08-01-2007 (72 FR 41894)
[08-23-2007 amended version]

Rule Description: This rule limits NOx and CO emissions from boilers, steam generator and process heaters with heat input ratings of 1 MMBTU/hour or greater.

Compliance Status: Grafil complies with the federally enforceable requirements. Each boiler must initially demonstrate compliance with a NOx concentration of 9 ppmvd corrected to 3% O_2 and 100 ppmvd CO corrected to 3% O_2. The 6.125 MMBtu/hr boiler will be required to subsequently conduct compliance source tests every second calendar year.

SMAQMD RULE 412 – STATIONARY IC ENGINES LOCATED AT MAJOR STATIONARY SOURCES OF NOx

SIP Approved: 04-30-1996 (61 FR 18959)
[06-01-1995 adoption]

Rule Description: This rule limits NOx, CO and NMHC emissions from stationary internal combustion engines rated at more than 50 BHP located at a major stationary source of nitrogen oxides.

Compliance Status: The two IC engines are for standby emergency use. Hence are subject only to the requirements of Sections 304 and 501. Grafil complies with the applicable federally enforceable requirements.

SMAQMD RULE 420 – SULFUR CONTENT OF FUELS

SIP Approved: 12-05-1984 (49 FR 47490)
[08-13-1981 amended version]

Rule Description: This rule regulates emissions of sulfur compounds from the combustion of fuels by limiting the sulfur content of the fuel. This rule limits the sulfur content of gaseous fuel to less than 50 grains per 100 cubic feet of sulfur compounds, calculated as hydrogen sulfide.

Compliance Status: Based on PG&E's gas system sulfur survey for the second quarter of 2012, the maximum total sulfur for pipeline quality natural gas was 0.296 gr/100 scf or 4.99 ppmv, which is significantly less than the rule limit. Grafil complies with the federally enforceable requirements.

40 CFR 60 SUBPART IIII – STANDARDS OF PERFORMANCE FOR STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES

Rule Description: This regulation applies to new, reconstructed or existing IC engines with a displacement of less than 30 liters per cylinder where the model year is 2007 or later for non-fire pump engines and the model year listed in Table 3 of this subpart or later model year for fire pump engines.

Compliance Status: The IC engine/fire pump is a 2008 model year unit and has demonstrated compliance with this subpart by meeting the Tier 3 non-road standards; using CARB diesel; and operation for maintenance purposes limited to 50 hours per year, that is monitored with a non-resetting hour meter.

40 CFR 60 SUBPART JJJJ – STANDARDS OF PERFORMANCE FOR STATIONARY SPARK IGNITION INTERNAL COMBUSTION ENGINES

Rule Description: This regulation applies to new, reconstructed or existing stationary spark ignition IC engines that commence construction after June 12, 2006 and where the IC engines are manufactured:

- On or after July 1, 2007 for engines ≥500 HP;
- On or after January 1, 2008 for lean burn engines ≥500 HP and <1350 HP;
- On or after July 1, 2008 for engines <500 HP; or
- On or after January 1, 2009 for emergency engines >25 HP.

Compliance Status: The gaseous-fueled IC engine is rated at 231 HP, EPA-certified engine where the certification emissions level for VOC, NOx and CO comply with the emission standards by this subpart.

40 CFR 63 SUBPART DDDDD – NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANT FOR INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS

Rule Description: This regulation applies to new, reconstructed, or existing affected source located at a major source of hazardous air pollutants (HAP).

Compliance Status: This facility is not a major source of HAP. Therefore, this NESHAP is not applicable.

40 CFR 63 SUBPART JJJJJJ – NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANT FOR INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS FOR AREA SOURCES.

Rule Description: This regulation applies to each new, reconstructed, or existing affected source located at an area source of hazardous air pollutants (HAP) and under the boiler subcategories – coal-fired, biomass-fired and oil-fired.

Compliance Status: The two boilers at this facility are both natural gas-fired. Therefore, this NESHAP is not applicable.

40 CFR 63 SUBPART ZZZZ – NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS FOR RECIPROCATING INTERNAL COMBUSTION ENGINES

Rule Description: This regulation applies to all new and reconstructed stationary reciprocating internal combustion engines (RICE) less than or

equal to 500 HP located at major sources of hazardous air pollutants (HAP) and all new and reconstructed stationary RICE located at area sources.

Compliance Status: The emergency standby IC engines at this facility are new RICE at an area source. This subpart requires compliance with the requirements specified in either 40 CFR 60 Subpart IIII or 40 CFR 60 Subpart JJJJ. The propose SI engine is an EPA-certified unit and is deemed in compliance with the emission standards in 40 CFR 60 Subpart JJJJ. The existing CI engine is a certified Tier 3 unit and has demonstrated compliance with the emission standards on 40 CFR 60 Subpart IIII.

L. TITLE V PERMIT CONDITIONS

It is recommended that the Grafil Inc. Title V Federal Operating Permit renewal be issued together with the recent significant permit modifications.

Refer to the proposed Title V Federal Operating Permit No. TV2011-01-01 for permit conditions.

APPROVED BY: _____ **DATE:** 8-20-12