Washington Statement Department of Ecology
Eastern Region Office
4601 North Monroe
Spokane, Washington 99205-1295

Statement of Basis for
Air Operating Permit Number 25AQ-DRAFT
SGL CARBON FIBERS AMERICA, LLC
Moses Lake, Washington

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List of Abbreviations

AOP	Air Operating Permit
BACT	Best Available Control Technology
BTU	British Thermal Units
°C	Degrees Celsius
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COMS	Continuous Opacity Monitoring System
dscf	Dry Standard Cubic Foot
dscf/m	Dry Standard Cubic Foot per minute
Ecology	Washington State Department of Ecology
E.I.T.	Engineer in Training
EPA	United States Environmental Protection Agency
°F	Degrees Fahrenheit
FCAA	Federal Clean Air Act
ft^3	Cubic foot
gr/dscf	Grains per dry standard cubic foot
hr	Hour
lb	Pound
MMBtu	Million British Thermal Units
MRRR	Monitoring, Recordkeeping, and Reporting Requirement
NOC	Notice of Construction
NO_x	Oxides of Nitrogen
NSPS	New Source Performance Standard
O^2	Oxygen
O&M	Operation and Maintenance
P.E.	Professional Engineer
PM	Particulate Matter
PM-10	Particulate Matter with aerodynamic diameter □ 10 micrometers
ppm	Parts per million
PSD	Prevention of Significant Deterioration
RACT	Reasonably Available Control Technology
RCW	Revised Code of Washington
RM	EPA Reference Method from 40 CFR Part 60, Appendix A
scfm	Standard Cubic Feet per Minute
SIP	State Implementation Plan
SO2	Sulfur Dioxide
T	Temperature
TAP	Toxic Air Pollutant
TPD	Tons Per Day
TPY	Tons Per Year
TSP	Total Suspended Particulate
VOC	Volatile Organic Compound
WAC	Washington Administrative Code
w%	Percentage by Weight
yr	Year

1.0 Introduction

This document, the Statement of Basis, is required by WAC 173-401. It summarizes the legal and factual basis for the permit conditions in the AOP issued by the State of Washington Department of Ecology to SGL Composites, LLC (SGL) for a facility located in Moses Lake, Washington. Unlike the AOP, this document is not legally enforceable. This Statement of Basis summarizes the emitting processes at the facility, air emissions, permitting and compliance history, the statutory regulatory provisions that relate to the facility, and the steps taken to provide opportunities for public review of the permit. SGL is obligated to follow the terms of the permit. Any errors or omission in the summaries provided here do not excuse the permittee from the requirements in the permit.

2.0 Permit Authority

Title V of the Federal Clean Air Act Amendments required all states to develop a renewable operating permit program for industrial and commercial sources of air pollution. The Washington State Clean Air Act (Chapter 70A.15 Revised Code of Washington (RCW)) was amended in 1991 and 1993 to provide the Department of Ecology and Local Air Agencies with the necessary authority to implement a state-wide air operating permit program. The law requires all sources emitting one hundred tons or more per year of a criteria pollutant, ten tons of an individual hazardous air pollutant, or twenty-five tons cumulative hazardous air pollutants, to obtain an operating permit. Criteria pollutants include sulfur dioxide, nitrogen dioxide, particulate matter, carbon monoxide, ozone, and lead.

Chapter 173-401 of the Washington Administrative Code (WAC), which specifies the requirements of Washington State's Operating Permit program became effective November 4, 1993. The United States Environmental Protection Agency (EPA) granted Washington's program interim approval on December 9, 1994. Final approval of Washington's program was granted on August 13, 2001. The current version of the regulation became effective on September 16, 2018.

3.0 Facility Information

3.1	Company Name	SGL Carbon Fibers America, LLC
3.2	Facility Name	SGL Carbon Fibers America, LLC
3.3	Unified Business Identification No	602-996-887
3.4	Facility Address	8781 Randolph Rd, Moses Lake, WA 98837
3.5	Responsible Official	Greg Pincelli, Plant Manager
3.6	Mailing Address	8781 Randolph Rd, Moses Lake, WA 98837
3.7	Facility Contact	Greg Pincelli, Plant Manager
3.8	Facility Contact Phone Number	(509) 762-4633

4.0 Basis for Title V Applicability

WAC 173-401-200(19)(a) and (b) identify any source that emits or has the potential to emit one hundred tpy or more of any regulated air pollutant, 10 tpy or more of any HAP, or 25 tpy or more of any combination of HAPs listed in §112(b) of the FCAA as a major source. Major sources are required to obtain Title V permits under 173-401-300(1)(a)(i).

SGL Carbon Fibers America (SGL) is subject to Title V, Air Operating Permit regulations due to the potential to emit Hydrogen Cyanide (HCN) in excess of 10 tons per year. SGL is also a Synthetic Minor 80 for Nitrogen Oxides.

Table 1: Facility-Wide Potential to Emit Emissions (controlled)

Pollutant	Emission Limit
Nitrogen Oxides, NOx	90 tons per 12 month rolling period
Carbon Monoxide, CO	36 tons per 12 month rolling period
Sulfur Dioxide, SO2	18 tons per 12 month rolling period
Particulate Matter (Filterable and Condensable) including fugitives, PM10, PM2.5	91 tons per 12 month rolling period
Particulate Matter (Filterable Only) including fugitives, PM	60 tons per 12 month rolling period
Volatile Organic Compounds, VOC	45 tons per 12 month rolling period
Acrylonitrile, C3H3N	306.2 pounds per 12 month rolling period
Ammonia, NH3	458 pounds per day
Hydrogen Cyanide, HCN	287 pounds per day

5.0 Attainment Classification

The facility is in an area that is classified as in attainment for all criteria pollutants at the time of permit issuance.

6.0 Facility Description

The facility covers approximately 110 acres; there are currently five process lines in operation and Line 6 is under construction. Each of the six lines have four ovens with thermal oxidizers and selective catalytic reduction for control. There are two production lines per building and one administrative building. A site plan is included as Appendix A. A process flow diagram is included as Appendix B.

Production starts with feeding the process lines with filaments of polyacrylonitrile from a series of boxes (referred to as the “creel”). From the creel, the fiber is fed through a series of incrementally hotter ovens, and then furnaces, to burn off impurities. The resulting carbonization adds tension to the fiber. The amount of tension is determined by customer strength specifications. Finally, the treated product is wound onto spools before packaging and shipping to the customer. Each process line features a

Regenerative Thermal Oxidizer (RTO), to combust organic compounds from the oxidation ovens, a Thermal Oxidizer (TO) to combust organic compounds from the carbonization furnaces, and a CEMS (Continuous Emission Monitoring System) to measure NOx. For Lines 1 – 6, exhaust from each RTO will be directed through a Selective Catalytic Reduction (SCR) unit to control NOx emissions generated by the RTO.

7.0 Facility Emission Units/Processes

Unit ID	Lines 1 – 6 Equipment
Lines 1-6 PPOSO	Fifty, Portable Pre-Oxidation Splicing Ovens
FWP1	454 BHP Natural Gas-Fueled Internal Combustion Fire Water Pump Engine
FWP2	454 BHP Natural Gas-Fueled Internal Combustion Fire Water Pump Engine

Unit ID	Line 1 Equipment
Line1OO1	Oxidation Oven
Line1OO2	Oxidation Oven
Line1OO3	Oxidation Oven
Line1OO4	Oxidation Oven
Line1RTO	Regenerative Thermal Oxidizer
L1RTOHTR1	8.4 MMBtu/hr Natural Gas RTO Preheater
L1RTOHTR2	8.4 MMBtu/hr Natural Gas RTO Preheater
Line1F1	Carbonization Furnace
Line1F2	Carbonization Furnace
Line1SCR	Selective Catalytic Reduction
Line1SCRHTR	4.6 MMBtu/hr Natural Gas SCR Preheater
Line1TO	Thermal Oxidizer
L1TOHTR	4 MMBtu/hr Natural Gas TO Preheater
L1EG1	454 BHP Natural Gas-Fueled Internal Combustion Emergency Power Engine
L1EG2	454 BHP Natural Gas-Fueled Internal Combustion Emergency Power Engine
L1EG3	454 BHP Natural Gas-Fueled Internal Combustion Emergency Power Engine
L1EG4	454 BHP Natural Gas-Fueled Internal Combustion Emergency Power Engine
L1EG5	454 BHP Natural Gas-Fueled Internal Combustion Emergency Power Engine

Unit ID	Line 2 Equipment
Line2OO1	Oxidation Oven
Line2OO2	Oxidation Oven
Line2OO3	Oxidation Oven
Line2OO4	Oxidation Oven
Line2RTO	Regenerative Thermal Oxidizer
L2RTOHTR1	8.4 MMBtu/hr Natural Gas RTO Preheater
L2RTOHTR2	8.4 MMBtu/hr Natural Gas RTO Preheater

Unit ID	Line 2 Equipment
Line2F1	Carbonization Furnace
Line2F2	Carbonization Furnace
Line2SCR	Selective Catalytic Reduction
Line2SCRHTR	4.6 MMBtu/hr Natural Gas SCR Preheater
Line2TO	Thermal Oxidizer
L2TOHTR	4 MMBtu/hr Natural Gas TO Preheater
L2EG1	454 BHP Natural Gas-Fueled Internal Combustion Emergency Power Engine
L2EG2	454 BHP Natural Gas-Fueled Internal Combustion Emergency Power Engine
L2EG3	454 BHP Natural Gas-Fueled Internal Combustion Emergency Power Engine
L2EG4	454 BHP Natural Gas-Fueled Internal Combustion Emergency Power Engine
L2EG5	454 BHP Natural Gas-Fueled Internal Combustion Emergency Power Engine

Unit ID	Line 3 Equipment
Line3OO1	Oxidation Oven
Line3OO2	Oxidation Oven
Line3OO3	Oxidation Oven
Line3OO4	Oxidation Oven
Line3RTO	Regenerative Thermal Oxidizer
L3RTOHTR1	8.4 MMBtu/hr Natural Gas RTO Preheater
L3RTOHTR2	8.4 MMBtu/hr Natural Gas RTO Preheater
Line3F1	Carbonization Furnace
Line3F2	Carbonization Furnace
Line3SCR	Selective Catalytic Reduction
Line3SCRHTR	4.6 MMBtu/hr Natural Gas SCR Preheater
Line3TO	Thermal Oxidizer
L3TOHTR	4 MMBtu/hr Natural Gas TO Preheater
L3EG	2,937 BHP Compression/Ignition Diesel-Fueled Emergency Power Engine

Unit ID	Line 4 Equipment
Line4OO1	Oxidation Oven
Line4OO2	Oxidation Oven
Line4OO3	Oxidation Oven
Line4OO4	Oxidation Oven
Line4RTO	Regenerative Thermal Oxidizer
L4RTOHTR1	8.4 MMBtu/hr Natural Gas RTO Preheater
L4RTOHTR2	8.4 MMBtu/hr Natural Gas RTO Preheater
Line4F1	Carbonization Furnace
Line4F2	Carbonization Furnace
Line4SCR	Selective Catalytic Reduction

Unit ID	Line 4 Equipment
Line4SCRHTR	4.6 MMBtu/hr Natural Gas SCR Preheater
Line4TO	Thermal Oxidizer
L4TOHTR	4 MMBtu/hr Natural Gas TO Preheater
L4EG	2,937 BHP Compression/Ignition Diesel-Fueled Emergency Power Engine

Unit ID	Line 5 Equipment
Line5OO1	Oxidation Oven
Line5OO2	Oxidation Oven
Line5OO3	Oxidation Oven
Line5OO4	Oxidation Oven
Line5RTO	Regenerative Thermal Oxidizer
L5RTOHTR1	8.4 MMBtu/hr Natural Gas RTO Preheater
L5RTOHTR2	8.4 MMBtu/hr Natural Gas RTO Preheater
Line5F1	Carbonization Furnace
Line5F2	Carbonization Furnace
Line5SCR	Selective Catalytic Reduction
Line5SCRHTR	4.6 MMBtu/hr Natural Gas SCR Preheater
Line5TO	Thermal Oxidizer
L5TOHTR	4 MMBtu/hr Natural Gas TO Preheater
L5EG	2,937 BHP Compression/Ignition Diesel-Fueled Emergency Power Engine

Unit ID	Line 6 Equipment
Line6OO1	Oxidation Oven
Line6OO2	Oxidation Oven
Line6OO3	Oxidation Oven
Line6004	Oxidation Oven
Line6RTO	Regenerative Thermal Oxidizer
L6RTOHTR1	8.4 MMBtu/hr Natural Gas RTO Preheater
L6RTOHTR2	8.4 MMBtu/hr Natural Gas RTO Preheater
Line6F1	Carbonization Furnace
Line6F2	Carbonization Furnace
Line6SCR	Selective Catalytic Reduction
Line6SCRHTR	4.6 MMBtu/hr Natural Gas SCR Preheater
Line6TO	Thermal Oxidizer
L6TOHTR	4 MMBtu/hr Natural Gas TO Preheater
L6EG	2,937 BHP Compression/Ignition Diesel-Fueled Emergency Power Engine

8.0 Insignificant Emission Units

8.1 WAC 173-401-530(1)(a): Emission units for which the actual emissions are less than the emission thresholds established in section WAC 173-401-530(4) and WAC 173-401-531.

8.1.1 Pre-Oxidation Portable Electric Splicing Ovens

8.2 WAC 173-401-530(1)(b): Emission unit or activity considered insignificant if its size or production rate based on maximum rated capacity is below the specified level in WAC 173-401-533.

8.2.1 LPG Storage Tank: one 500-gallon propane tank < 40,000-gallons WAC 173-401-533(2)(d).

8.2.2 VOC and gasoline storage tanks: Ultra-low sulfur diesel storage tanks (two 1,250 gallon and one 1,700-gallon) < 10,000-gallons or less and VP < 80 mmHg at 21 °C WAC 173-401-533(2)(c).

8.2.3 Ammonia tanks (One 1,000-gallon and four 500-gallon): Storage tanks of inorganic salts, bases and acids WAC 173-401-533(2)(s).

8.2.4 Less than one ton of welding rod per day: welding activities WAC 173-401-533(2)(i).

8.2.5 Cooling tower, not using chromium-based corrosion inhibitors, not used with barometric jets or condensers, not in direct contact with gaseous or liquid process streams containing regulated air pollutants. Less than 10,000 gallons per minute, WAC 173-401-533(2)(m).

8.2.6 Laboratory testing activities, including fume hoods, for testing of carbon fiber properties, WAC 173-401-533(3)(c).

8.2.7 Propane- and battery-powered forklifts and maintenance carts.

8.2.8 PAN Precursor and carbon fiber storage.

8.2.9 CEMS calibration and maintenance activities.

8.2.10 Process building vents.

8.2.11 Plant upkeep activities.

8.2.12 Portable drums and totes.

8.2.13 Comfort air conditioning systems.

8.2.14 Parking lot exhaust emissions.

8.2.15 Deaeration for boilers.

8.2.16 Steam vents and safety relief valves, steam leaks.

8.2.17 Air compressors and compressed air systems.

8.2.18 Boiler blow down.

8.2.19 Process water and white-water storage tanks (e.g. RO water, fire water).

8.2.20 Packaging – periodic cutting of cardboard to size using a panel saw.

8.2.21 Resin Sizing Tanks

9.0 Title V Facility Timeline

9.1	DATE, 2025	AOP Order No. DRAFT Issued
9.2	DATE, 2025	AOP Order No. DRAFT Effective

10.0 Permitting History

10.1 Approval Order Number 10AQ-E362 was issued on July 13, 2010. On March 23, 2010, SGACF (SGL Automotive Carbon Fiber) applied to install and operate two polyacrylonitrile carbon fiber production lines. Each line had the capacity to produce up to 1,500 tons of carbon fiber per year. To stay below 100 tons per year (tpy) limit, SGL requested and received a federally enforceable limit of 99 tpy on nitrogen oxides (NOx).

10.2 On January 31, 2011, SGLACF applied to install seven natural gas-fired reciprocating engines. Six of the engines were intended to provide power to safely shut down Line 1 should a grid power failure occur. The seventh engine was to provide power to an emergency power water pump for fire suppression. Approval Order Number 10AQ-E362 was rescinded and replaced by Approval Order Number 11AQ-E408 on April 14, 2011.

10.3 On July 25, 2012, SGLACF applied to install and operate four natural gas-fired emergency power reciprocating engines. These engines were installed to provide power to safely shut down Line 2. Approval Order Number 11AQ-E408 was rescinded and replaced by Approval Order Number 12AQ-E465 on February 21, 2013.

10.4 On June 28, 2013, SGLACF applied to double the size of the facility from two lines to four lines. Each of the four lines is designed to produce up to 1,760 tons of carbon fiber per year. To stay below the 100 tpy limit, SGLACF installed controls to ensure NOx emissions would not exceed 100 tpy thus meeting their federally enforceable limit of 99 tpy on NOx in the original Approval Order. Approval Order Number 12AQ-E465 was rescinded and replaced by Approval Order Number 13AQ-E525 on January 24, 2014.

10.5 On March 4, 2014, SGLACF submitted an application to increase the size of the facility from four lines to eight lines. The proposed Lines 5-8 Project was identical to Lines 1-4 Project authorized by Approval Order Number 13AQ-E525 with three exceptions. SGLACF proposed to generate backup emergency power from diesel engines instead of natural gas engines, furnace emissions are no longer routed

through a selective catalytic reduction (SCR) control device due to plugging problems, and a new mode of operation (Standby Mode) has been requested. The furnace emissions are still routed through a thermal oxidizer (TO) but water injection is proposed to reduce the formation of NOx. During the public comment period for the preliminary determination, EPA expressed its position that the approval process for Lines 5-8 should have been aggregated with the existing Approval Order.

Under the terms of Settlement Agreement and Agreed Order No. 10768 signed June 16, 2014, Ecology acknowledged that Lines 1 and 2 were appropriately permitted as minor sources, and SGLACF agreed to submit new minor and major source permit applications addressing Lines 3-8. Lines 5-8 Project was never approved.

10.6 On March 26, 2014, SGLACF applied to change the emergency backup power for Lines 3 and 4 allowed in Approval Order 13AQ-E525 from natural gas internal combustion engines to diesel compression ignition engines. Approval Order Number 13AQ-E525 was rescinded and replaced by Approval Order Number 14AQ-E558 on September 9, 2014.

10.7 On August 15, 2014, SGLACF applied to increase the size of the facility to 10 lines. Each of the additional lines is expected to produce 1,760 tons of carbon fiber each year and include a regenerative thermal oxidizer (RTO) and a TO to combust organic compounds in the exhaust from the oxidation ovens and carbonization furnaces, respectively. An SCR will be installed on Lines 3-6 but is not proposed for Lines 7-10. Additionally, eight diesel-fueled backup emergency power generators and a fire water pump engine will be installed. PSD 14-02 was issued April 13, 2015, for Lines 3-10 (criteria pollutants). Approval Order Number 14AQ-E558 was rescinded and replaced by Approval Order 14AQ-E586 on April 20, 2015, for Lines 1-10.

10.8 On September 25, 2015, SGLACF submitted an application to change the emission limits on eight 2,937 diesel –fueled emergency generators due to their inability to meet the manufacturer estimated load specific emission rates. Additionally, SGLACF did not identify the portable oxidation ovens during the last permitting cycle.) Approval Order Number 14AQ-E586 was rescinded and replaced by Approval Order 15AQ-E636 on March 24, 2016

10.9 Since 2011, SGLACF has used portable electric ovens in the Feed and Pretension step to splice together polyacrylonitrile from one creel box to another. Polyacrylonitrile is oxidized in these portable ovens, at temperatures similar to the main ovens, to attach the end of one box to the beginning of another so that a continuous campaign may be run. SGLACF refers to these ovens as pre-oxidation portable electric ovens and will have up to 50 portable ovens on-site. No other changes have been proposed for the facility.

10.10 On January 16, 2019, SGL Composites LLC submitted a Notice of Construction application requesting to change their name and amend their existing Approval Order, 15AQ-E636, to remove sources associated with Phases 3-6 and request a synthetic minor limit with respect to the Prevention of Significant Deterioration (PSD) program to supersede their current PSD permit 14-02.

SGL requested to remove Lines 7-10 and all associated equipment from the current permit because those lines were not built and were not at the time part of SGL's business plan to build. Removing Lines 7-10 associated equipment eliminated all but NOx from being above the PSD threshold. SGL requested a synthetic minor limit for NOx to make the facility a synthetic minor facility with respect to PSD for all pollutants. SGL identified that the line speed on Lines 1-6 could be run at a higher speed than the previously noted nominal capacity of the lines. The increased line speed was not expected to impact any of the SGL permit limits, and SGL did not request any permit limit increases. Approval Order Number 15AQ-E636 was rescinded and replaced by Approval Order Number 19AQ-E003 on May 16, 2019.

10.11 On August 8, 2019, SGL Composites LLC submitted a Notice of Construction application to add back in limits for PM (filterable) and fugitive emissions. These limits need to be included in the minor Approval Order, so that the PSD Order may be rescinded without any additional reporting requirements. There was no emission increase with the change. Approval Order Number 19AQ-E003 was rescinded and replaced by Approval Order Number 19AQ-E062 on September 5, 2019.

10.12 On December 16, 2020, SGL Composites LLC submitted a Noice of Construction application to allow for the use of a new polyacrylonitrile (PAN) with pure silicon finish raw material on Line 5 in addition to the current raw material. SGL is also requesting a change to the facility description on all six lines to identify up to 128 tows of raw material per line. Approval Order Number 19AQ-E062 was rescinded and replaced by Approval Order Number 21AQ-E004 on May 10, 2021.

10.13 On February 15, 2023, SGL Composites LLC submitted a Noice of Construction application to change the source testing frequency and method for Acrylonitrile. Approval Order Number 21AQ-E004 was rescinded and replaced by Approval Order Number 23AQ-E026 on May 9, 2923.

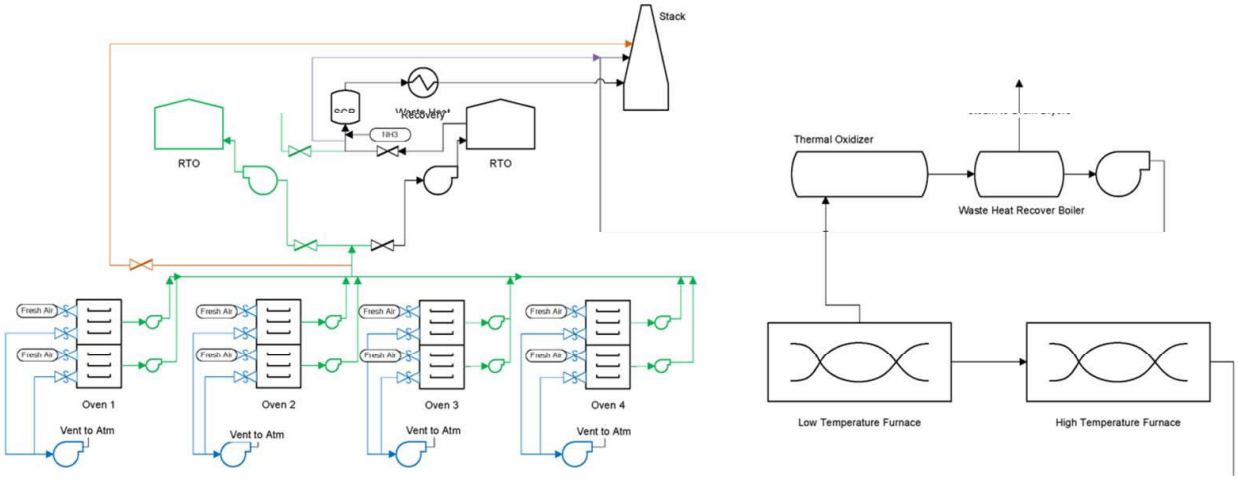
10.14 On January 18, 2024 SGL Composites LLC submitted a Notice of Construction application to allow SGL to run full silicon coated precursor on any production line instead of Line 5 only. Approval Order Number 23AQ-E026 was rescinded and replaced by Approval Order Number 24AQ-E028 on March 26, 2024.

10.15 On January 16, 2024, SGL Composites LLC submitted a Notice of Construction application to allow for the use of the Line 5 polyacrylonitrile (PAN) with pure silicon finish raw material on Lines 1-4 and 6, in addition to the current PAN with

fatty acid finish already used on Lines 1-6 for production of carbon fiber products. Approval Order Number 24AQ-E028 was rescinded and replaced by Approval Order Number 24AQ-E030 on July 3, 2024.

Appendix A: Site Map

Appendix B: SGL Process Flow



Process Operating Modes (Lines 1-6)

Green = Normal Operating Mode

Blue = Shutdown Mode

Orange = RTO Bypass Mode

Purple = SCR Bypass Mode

Appendix C – Comments and Responses

Responsiveness Summary

SGL Composites, LLC
Response to Public Comment

Prepared by:

Washington State Department of Ecology
Air Quality Program

DATE 2025

DEPARTMENT OF ECOLOGY
State of Washington