



April 15, 2025

Transmitted via email to: akru461@ecy.wa.gov

Washington State Department of Ecology
Eastern Regional Office
4601 North Monroe Street
Spokane, WA 99205-1295

Attn: Andrew Kruse, PE

**Re: Notice of Construction Application
Sila Material Manufacturing Facility
Moses Lake, Washington
Project No. 2037001.020**

Dear Andy,

Sila is constructing a battery material manufacturing facility (facility) located at 3741 Road N NE in Moses Lake, Washington as allowed by Approval Order No. 25AQ-E006 (Approval Order) issued by the Washington State Department of Ecology (Ecology).

This letter and its attachments, prepared by Landau Associates, Inc. (Landau) on behalf of Sila, constitute a request for the following changes to the Approval Order:

1. Incorporate the following updates to the equipment list in the Approval Order:
 - a. Add two gas chromatographs for the Cacao 2 Reactor. Sila plans to install one gas chromatograph and potentially a second one at a later time; therefore, this request is for two gas chromatographs (GCs).
 - b. Change ID No. 5 from "Clean Air Group (Unit 90A) " to "Clean Air Group Thermal Oxidizer (Unit 90A)."
 - c. Change ID No. 6 from "Zeeco Flare (Unit 90A)" to "Zeeco Flare (Unit 91A)."
2. Update the language of Approval Condition 2.e.vi to allow the use of propylene as fuel for the flare in the event that natural gas is unavailable.

A Notice of Construction (NOC) application form (ECY Form No. 070-410) is provided in Attachment 1. Emission estimates for the GCs and combustion of propylene in the flare during natural gas curtailment are provided in Attachment 2.

Additional Information Supporting Requests 1.a and 2

The following sections provide additional information related to Sila's request for approval of the two GCs and the use of propylene as a substitute for natural gas in the flare.

Request No. 1.a: Addition of Gas Chromatographs

Sila proposes to install two GCs to continuously monitor gas from the Cacao 2 Reactor effluent lines (refer to Attachment 3). Estimates of criteria and toxic air pollutant (TAP) emissions associated with operating the GCs are provided in Attachment 2-1. An updated facility-wide total volatile organic compound (VOC) potential-to-emit (PTE) is presented in Attachment 2-2. As shown in Attachment 2-2, total VOC emissions from the GCs increase the facility-wide PTE from 10.3 to 13 tons per year.

In Attachment 2-3, TAP emission rates originating from the GCs are added to TAP emissions from existing permitted units and compared to the *de minimis* and Small Quantity Emission Rates (SQER) provided in Chapter 173-460-150 of the Washington Administrative Code. As shown in Attachment 2-3, installing the GCs results in the same TAPs having facility-wide emission rates that exceed the *de minimis* thresholds as without the GCs (1,3-butadiene, benzene, and propylene). Additionally, installing the GCs results in the same TAPs having facility-wide emission rates that exceed the SQER thresholds as without the GCs (1,3-butadiene and benzene).

In Attachment 2-4, maximum modeled concentrations of 1,3-butadiene and benzene are increased proportionally with the increase in estimated emissions from the GCs. The new proportionally scaled estimated maximum ambient concentration for 1,3-butadiene and benzene are 0.0039 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and 0.012 $\mu\text{g}/\text{m}^3$, respectively. The estimated 1,3-butadiene and benzene concentrations are less than their Acceptable Source Impact Levels (ASILs) of 0.033 $\mu\text{g}/\text{m}^3$ and 0.13 $\mu\text{g}/\text{m}^3$, respectively. Because the proportionally scaled-up concentrations of facility-wide 1,3-butadiene and benzene emissions are only 12 and 9 percent of their respective ASILs, Landau concludes that updating the AERMOD (American Meteorological Society/US Environmental Protection Agency [EPA] Regulatory Model) air dispersion model for the facility is not warranted.

Request No. 2: Propylene Usage for Flare

In the event that a thermal oxidizer upset condition occurs simultaneously with a natural gas curtailment event (i.e., sufficient natural gas is not available from the utility provider), Sila proposes to use propylene gas as a substitute for natural gas to keep the flare operating.

Attachment 2-5 presents the propylene emission rate in the event of a simultaneous thermal oxidizer upset condition and natural gas curtailment event. As shown in Attachment 2-5, the propylene emission rate is estimated to be a maximum of 56 pounds per day (lbs/day).

Sila requests that Ecology update Approval Condition 2.e.vi to include the information underlined below:

During an event of a Thermal Oxidizer emergency upset condition, the Flare is approved to for usage up to 7,300 scf/hr of natural gas or 3,193 scf/hr of propylene (351 lbs/hr), for up to 8 hours in any 24-hour period. These scenarios must not allow the facility to exceed the annual natural gas limit found in Approval Condition 1(b).

Thank you for considering these requested permit revisions. If you have any questions or would like additional information, please contact Mark Brunner by phone at (206) 631-8695 or by email at mbrunner@landauinc.com.

LANDAU ASSOCIATES, INC.



Mark Brunner
Principal

MWB/LDC/tac
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cc: Jim Dobrzynski, Sila

Attachments:

1. NOC Application Form (ECY Form No. 070-410)
2. Emission Calculations
3. Site Layout

Attachment 1: NOC Application Form (ECY Form No. 070-410)



Notice of Construction Application

A notice of construction permit is required before installing a new source of air pollution or modifying an existing source of air pollution. This application applies to facilities in Ecology’s jurisdiction. Submit this application for review of your project. For general information about completing the application, refer to Ecology Forms ECY 070-410a-g, “Instructions for Ecology’s Notice of Construction Application.”

Ecology offers up to two hours of free pre-application assistance. We encourage you to schedule a pre-application meeting with the contact person specified for the location of your proposal, below. If you use up your two hours of free pre-application assistance, we will continue to assist you after you submit Part 1 of the application and the application fee. You may schedule a meeting with us at any point in the process.

Upon completion of the application, please enclose a check for the initial fee and mail to:

**Department of Ecology
Cashiering Unit
PO Box 47611
Olympia, WA 98504-7611**

For Fiscal Office Use Only: 0299-3030404-B00-216--001--000404

Check the box for the location of your proposal. For assistance, call the appropriate office listed below:

Check box	Ecology Permitting Office	Contact
☐	Chelan, Douglas, Kittitas, Klickitat, or Okanogan County Ecology Central Regional Office (509) 575-2490	Lynnette Haller (509) 457-7126 lynnette.haller@ecy.wa.gov
☒	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Stevens, Walla Walla, or Whitman County Ecology Eastern Regional Office (509) 329-3400	Karin Baldwin (509) 329-3452 karin.baldwin@ecy.wa.gov
☐	San Juan County Ecology Northwest Regional Office (206) 594-0000	David Adler (425) 649-7267 david.adler@ecy.wa.gov
☐	For actions taken at Kraft and Sulfite Paper Mills and Aluminum Smelters Only Ecology Industrial Section (360) 407-6900	James DeMay (360) 407-6868 james.demay@ecy.wa.gov
☐	For actions taken on the US Department of Energy Hanford Reservation Only Ecology Nuclear Waste Program (509) 372-7950	Lilyann Murphy (509) 372-7951 lilyann.murphy@ecy.wa.gov

Check the box below for the fee that applies to your application.

New project or equipment:

- ☐ **\$1,904: Basic project** initial fee covers up to 16 hours of review.
- ☐ **\$12,614: Complex project** initial fee covers up to 106 hours of review.

Change to an existing permit or equipment:

- ☐ **\$357: Administrative or simple change** initial fee covers up to 3 hours of review. Ecology may determine your change is complex during the completeness review of your application. If you project is complex, you must pay the additional xxx before we will continue working on your application
- ☐ **\$1,190: Complex change** initial fee covers up to 10 hours of review
- ☐ **\$350 flat fee:** Replace or alter control technology equipment under WAC 173-400-114. Ecology will contact you if we determine your change belongs in another fee category. You must pay the fee associated with that category before we will continue working on your application.

Read each statement below, then check the box next to it to acknowledge that you agree.

- ☐ The initial fee you submitted may not cover the cost of processing your application. Ecology will track the number of hours spent on your project. If the number of hours Ecology spends exceeds the hours included in your initial fee, Ecology will bill you \$119 per hour for the extra time.
- ☐ You must include all information requested by this application. Ecology may not process your application if it does not include all the information requested.
- ☐ Submittal of this application allows Ecology staff to visit and inspect your facility.

Part 1: General Information

I. Project, Facility, and Company Information

1. Project Name: Moses Lake, WA Battery Material Manufacturing Facility - New Gas Chromatographs, Propylene Usage, and Minor Admin. Revisions
2. Facility Name: Sila Nanotechnologies, Inc. Moses Lake, WA Battery Material Manufacturing Facility
3. Facility Street Address:
3741 Road N NE, Moses Lake, Washington 98837
4. Facility Legal Description: Sila Nanotechnologies, Inc. battery parts manufacturing facility located in Moses Lake, WA
5. Company Legal Name (if different from Facility Name):
Sila Nanotechnologies, Inc.
6. Company Mailing Address (street, city, state, zip)
2470 Mariner Square Loop, Alameda, California 94501

II. Contact Information and Certification

1. Facility Contact Name (who will be onsite): Jim Dobrzynski
2. Facility Contact Mailing Address (if different than Company Mailing Address):

3. Facility Contact Phone Number: 925-989-9696
4. Facility Contact E-mail: jim@silanano.com
5. Billing Contact Name (who should receive billing information):
Mark Brunner, Landau Associates
6. Billing Contact Mailing Address (if different Company Mailing Address):
155 NE 100th St, Ste 302, Seattle, WA 98125
7. Billing contact Phone Number: 206-631-8695
8. Billing Contact E-mail: mbrunner@landauinc.com
9. Consultant Name (optional – if 3rd party hired to complete application elements):
Mark Brunner, Landau Associates
10. Consultant Organization/Company: Landau Associates, Inc.
11. Consultant Mailing Address (street, city, state, zip):
12. Consultant Phone Number: 206-631-8695
13. Consultant E-mail: mbrunner@landauinc.com
14. Responsible Official Name and Title (who is responsible for project policy or decision making):
Jim Dobrzynski (EHS Risk Manager)
15. Responsible Official Phone: 925-989-9696
16. Responsible Official E-mail: jim@silanano.com
17. Responsible Official Certification and Signature:

I certify that the information on this application is accurate and complete.

Signature: _____

Date: _____

4/15/25

Part 2: Technical Information

The Technical Information may be sent with this application form to the Cashiering Unit, or may be sent directly to the Ecology regional office with jurisdiction along with a copy of this application form.

For all sections, check the box next to each item as you complete it.

III. Project Description (most items below N/A for this application's purpose. See 2023 application)

- ☒ Written narrative describing your proposed project.
- ☐ Projected construction start and completion dates. N/A
- ☐ Operating schedule and production rates.
- ☐ List of all major process equipment and manufacturer and maximum rated capacity. N/A
- ☐ Process flow diagram with all emission points identified. N/A
- ☐ Plan view site map.
- ☐ Manufacturer specification sheets for major process equipment components. N/A
- ☐ Manufacturer specification sheets for pollution control equipment. N/A
- ☐ Fuel specifications, including type, consumption (per hour and per year) and percent sulfur. N/A

IV. State Environmental Policy Act (SEPA) Compliance

Check the appropriate box below.

- ☐ SEPA review is complete. Include a copy of the final SEPA checklist and SEPA determination (e.g., DNS, MDNS, and EIS) with your application. N/A
- ☐ SEPA review has not been conducted: N/A
 - ☐ If review will be conducted by another agency, list the agency. You must provide a copy of the final SEPA checklist and SEPA determination before Ecology will issue your permit.
Agency reviewing SEPA: _____
 - ☐ If the review will be conducted by Ecology, fill out a SEPA checklist and submit it with your application. You can find a SEPA checklist online at <https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-document-templates>

V. Emissions Estimations of Criteria Pollutants

Does your project generate criteria air pollutant emissions? ☐ Yes ☐ No

If yes, please provide the following information regarding your criteria emissions in the application.

- ☐ The names of the criteria air pollutants emitted (i.e., NO_x, SO₂, CO, PM_{2.5}, PM₁₀, TSP, VOC, and Pb)
- ☐ Potential emissions of criteria air pollutants in tons per hour, tons per day, and tons per year (include calculations)
- ☐ If there will be any fugitive criteria pollutant emissions, clearly identify the pollutant and quantity

VI. Emissions Estimations of Toxic Air Pollutants

Does your project generate toxic air pollutant emissions? ☒ Yes ☐ No

If yes, please provide the following information regarding your toxic air pollutant emissions in your application.

- ☐ The names of the toxic air pollutants emitted (specified in [WAC 173-460-150](http://apps.leg.wa.gov/WAC/default.aspx?cite=173-460-150)¹)
- ☐ Potential emissions of toxic air pollutants in pounds per hour, pounds per day, and pounds per year (include calculations)
- ☐ If there will be any fugitive toxic air pollutant emissions, clearly identify the pollutant and quantity

VII. Emission Standard Compliance (N/A. See submitted 2023 application for this information)

- ☐ Provide a list of all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, and emission standards adopted under Chapter 70A.15 RCW.

Does your project comply with all applicable standards identified? ☐ Yes ☐ No

VIII. Best Available Control Technology (N/A. See submitted 2023 application for this information)

- ☐ Provide a complete evaluation of Best Available Control Technology (BACT) for your proposal.

IX. Ambient Air Impacts Analyses (N/A. See submitted 2023 application for this information)

Please provide the following:

- ☐ Ambient air impacts analyses for Criteria Air Pollutants (including fugitive emissions)
- ☐ Ambient air impacts analyses for Toxic Air Pollutants (including fugitive emissions)
- ☐ Discharge point data for each point included in air impacts analyses (include only if modeling is required)
 - ☐ Exhaust height
 - ☐ Exhaust inside dimensions (ex. diameter or length and width)
 - ☐ Exhaust gas velocity or volumetric flow rate
 - ☐ Exhaust gas exit temperature
 - ☐ The volumetric flow rate
 - ☐ Description of the discharges (i.e., vertically or horizontally) and whether there are any obstructions (ex., raincap)
 - ☐ Identification of the emission unit(s) discharging from the point
 - ☐ The distance from the stack to the nearest property line
 - ☐ Emission unit building height, width, and length
 - ☐ Height of tallest building on-site or in the vicinity and the nearest distance of that building to the exhaust
 - ☐ Whether the facility is in an urban or rural location

Does your project cause or contribute to a violation of any ambient air quality standard or acceptable source impact level? ☐ Yes ☐ No

To request ADA accommodation, call Ecology at (360) 407-6800, 711 (relay service), or (877) 833-6341 (TTY)

¹ <http://apps.leg.wa.gov/WAC/default.aspx?cite=173-460-150>

Attachment 2: Emission Calculations

Attachment 2-1
Gas Chromatograph Emission Estimates
Sila
Moses Lake, Washington

Pollutant	CAS #	Molecular Weight (g/mol)	Gas Analyzer #1				Gas Analyzer #2				Emission Totals for Pollutants Regulated by WAC 173-460-150		Emission Total for Pollutants Regulated by WAC 173-400-110
			lb/hr	lb/day	lb/yr	ton/yr	lb/hr	lb/day	lb/yr	ton/yr	lb/day	lb/yr	ton/yr
Ethane	74-84-0	30.07	0.00909	0.218	79.7	0.0398	0.00909	0.218	79.7	0.0398			
Ethylene (a)	74-85-1	28.05	0.01414	0.339	123.9	0.0619	0.01414	0.339	123.9	0.0619			
Acetylene (a)	74-86-2	26.04	0.00263	0.0630	23.0	0.01150	0.00263	0.0630	23.0	0.01150			
Propane (a)	74-98-6	44.10	0.00445	0.1067	38.9	0.0195	0.00445	0.1067	38.9	0.0195			
Propylene (a)(b)	115-07-1	42.08	0.255	6.11	2230	1.115	0.255	6.11	2230	1.115	12.22	--	
1,3-butadiene (a)(b)	106-99-0	54.09	0.00273	0.0654	23.9	0.01194	0.00273	0.0654	23.9	0.01194	--	47.8	
Methyl Acetylene (a)	74-99-7	40.06	0.00202	0.0485	17.7	0.00885	0.00202	0.0485	17.7	0.00885			
Benzene (a)(b)	71-43-2	78.11	0.00788	0.189	69.0	0.0345	0.00788	0.189	69.0	0.0345	--	138.0	
Toluene (a)(b)	108-88-3	92.14	0.00929	0.223	81.4	0.0407	0.00929	0.223	81.4	0.0407	0.446	--	
C4 olefins (a)	624-64-6	56.11	0.00566	0.1358	49.6	0.0248	0.00566	0.1358	49.6	0.0248			
C6+ hydrocarbons (a)	592-41-6	84.16	0.00849	0.204	74.3	0.0372	0.00849	0.204	74.3	0.0372			
Methane	--	16.04	0.01617	0.388	141.7	0.0708	0.01617	0.388	141.7	0.0708			
VOC Total	--	--	--	--	--	1.366	--	--	--	1.366			2.73

Notes:
(a) VOC
(b) Regulated by WAC 173-460-150

Abbreviations:
g/mol = grams per mole
lb/day = pounds per day
lb/hour = pounds per hour
lb/year = pounds per year
VOC = volatile organic compound

Attachment 2-2
Criteria Pollutant Emission Estimates
Sila
Moses Lake, Washington

Pollutant	Emissions (tons/year)							
	Thermal Oxidizer	Dust Filtration Units	Emergency Generator	Fire Water Pump	Planned Flare Activities	VOC Fugitives	Gas Chromatographs	Total
NO _x	37		1.2	0.0085	0.18			38
CO	49		0.17	0.0028	0.15			49
PM ₁₀	2.1	0.37	0.082	6.9E-04	0.014			2.5
PM _{2.5}	2.1	0.37	0.082	6.90E-04	0.014			2.5
VOCs	8.3		0.064	3.8E-04	0.078	1.8	2.7	13
SO ₂	22		1.7E-04	2.1E-06				22
Lead	--		4.8E-05	6.0E-07				4.8E-05
Total HAP	0.056		0.026	0.027	0.069	0.0039		0.18

Abbreviations:

CO = carbon monoxide

HAP = hazardous air pollutant

NO_x = nitrogen oxides

PM_{2.5} = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns

PM₁₀ = particulate matter with an aerodynamic diameter less than or equal to 10 microns

tons/year = tons per year

SO₂ = sulfur dioxide

VOC = volatile organic compound

Attachment 2-3
First-Tier Air Toxics Evaluation
Sila
Moses Lake, Washington

Project Toxic Air Pollutant Emissions Compared to SQER and *De Minimis*

Pollutant ^a	CAS #	Avg. Period	Emission Rate						Facility-Wide Emission Rate	Percent increase in Emissions	De Minimis	SQER	Over De Minimis?	Over SQER?
			TO	Flare	E-gen	FWP	Fug	GCs						
									(lb/avg. period)					
1,3-Butadiene	106-99-0	year	1.89E+01		2.51E+00	3.13E-02	1.55E+00	4.78E+01	71	208%	0.27	5.4	Yes	Yes
Benzene	71-43-2	year	7.05E+01		2.15E+00	2.68E-02	5.74E+00	1.38E+02	216	176%	1	21	Yes	Yes
Toluene	108-88-3	24-hr	2.28E-02		8.44E-02	6.32E-04	1.22E-03	4.46E-01	0.55	409%	19	370	No	No
Propylene	115-07-1	24-hr	1.59E-01	1.36E+02	3.74E-01	2.80E-03	9.01E+00	1.22E+01	157	8.4%	11	220	Yes	No

Abbreviations:

Avg. = average
lb/avg. period = pounds per average period
SQER = small quantity emission rate
TO = thermal oxidizer
E-gen = emergency generator
FWP = fire water pump
Fug = fugitive emissions
GCs = gas chromatographs

Attachment 2-4
Acceptable Source Impact Level Comparison
Sila
Moses Lake, Washington

Predicted Project Impacts Compared to Acceptable Source Impact Levels

Pollutant	CAS Number	Averaging Period	Facility-Wide Emission Rate (lb/avg. period)	ASIL ($\mu\text{g}/\text{m}^3$)	Originally Modeled Concentration ($\mu\text{g}/\text{m}^3$)	New Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Greater than ASIL?	Percent of ASIL
1,3-Butadiene	106-99-0	year	4.8E+01	0.033	0.00187	0.00388	No	12%
Benzene	71-43-2	year	1.4E+02	0.13	0.0065	0.0115	No	9%

Abbreviations:

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

ASIL = acceptable source impact level

lb/avg. period = pounds per average period

Attachment 2-5
Propylene Emission Estimate
Upset Condition and Natural Gas Curtailment
Sila
Moses Lake, Washington

Page 1 of 1

Propylene Emissions During TO Upset Condition and Natural Gas Curtailment

7300 Max natural gas usage in flare (scf/hr)

8 Max flare usage per day (hrs/day)

58400 Max natural gas usage per day (scf/day)

1020 Natural gas heating content (BTU/scf)

2332 Propylene heating content (BTU/scf)

25544 Max propylene usage per day (scf/day)

3193 Max propylene usage per hour (scf/day)

0.11 Density of propylene (lb/scf)

2810 Propylene combusted (lbs/day)

351 Propylene combusted (lbs/hour)

98 Flare destruction removal efficiency (%)

Pollutant	Emission Estimates	
	lbs/hr	lbs/day
Propylene	7	56

Abbreviations:

BTU/scf = British Thermal Unit per standard cubic foot

hrs/day = hours per day

lbs/day = pounds per day

lbs/hour = pounds per hour

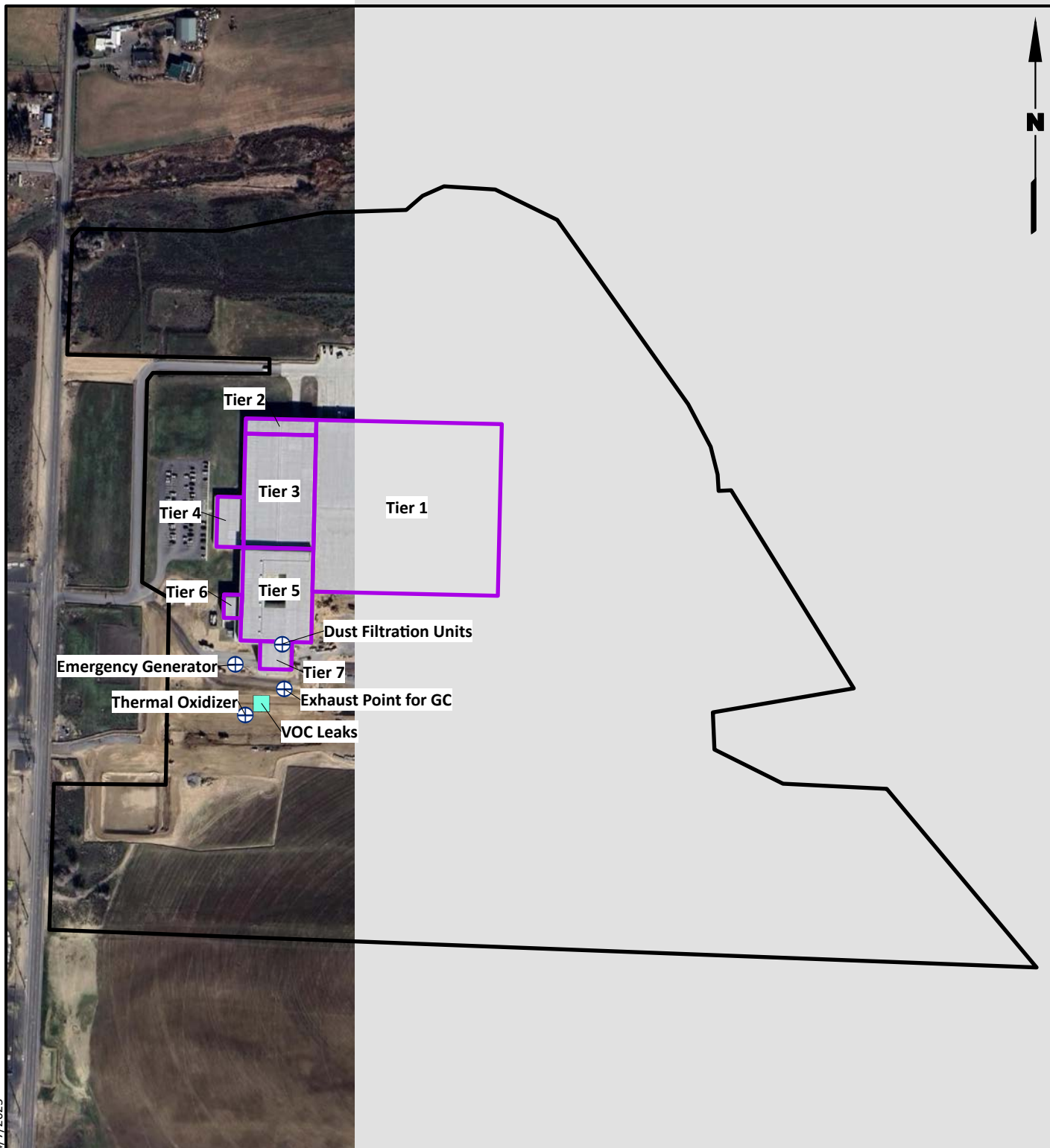
lb/scf = pound per standard cubic foot

scf/day = standard cubic feet per day

scf/hr = standard cubic feet per hour

Attachment 3: Site Layout

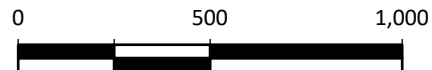
G:\Projects\2037\001\Sila\Sila.aprx 4/7/2025



Legend

- ⊕ Point Source
- Volume Source
- Building Outline
- ▭ Facility Boundary

Original may reduce its effectiveness and lead to incorrect interpretation.



Scale in Feet

Data Source: Google Earth Pro.