apcd air pollution control district
SANTA BARBARA COUNTY

March 1, 2021

Via Email
Read Receipt Requested

Ali Aghayan
University of California - Santa Barbara
Env. Health & Safety Bldg 565
Santa Barbara, CA 93106-5132

Re: Conditional Approval of Revised 2018 Air Toxics Emission Inventory Plan UCSB Air Toxics "Hot Spots" Information and Assessment Act (AB 2588)

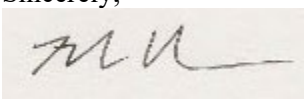
Dear Mr. Aghayan:

The Santa Barbara County Air Pollution Control District (District) has reviewed your Air Toxics Emission Inventory Plan (ATEIP) for inventory year 2018 dated June 2020. Based on our review of this plan, the District *conditionally approves* the revised ATEIP subject to changes noted in the Attachment; the numbering corresponds to our letter dated May 11, 2020.

Please submit a final ATEIP, response letter and Air Toxics Emission Inventory Report (ATEIR) by September 1, 2021. In addition, for ease of review, please submit a Track Changes version of the final ATEIP that shows all changes from the revised submittal dated June 2020. See Section 3 of the District's *Guidelines for Preparing Air Toxics Emission Inventory Plans and Reports* (https://www.ourair.org/wp-content/uploads/Guidelines-for-Preparing-ATEIPs-and-ATEIRs-in-Santa-Barbara-County.pdf) for a complete list of requirements for the ATEIR. Electronic copies of the final ATEIP, ATEIR and response letter should be sent via email to CobbsR@sbcapcd.org.

If you have any questions or require additional information, please contact me at CobbsR@sbcapcd.org.

Sincerely,



Robin Cobbs
Engineering Division

cc: UCSB SSID 02795 Project File
UCSB SSID 02795 Toxics File
Toxics Group
Engr Chron File

Attachment: ATEIP Conditional Approval Items

\\sbcapcd.org\shares\Toxics\ActiveSourceFiles\SSID02795UCSB\AB 2588 IY 2018\2018 ATEIP Conditional Approval Letter for UCSB.docx

ATTACHMENT

UCSB 2018 ATEIP Conditional Approval Items

1. Review Process. No further action required.

2. Correlating Devices. The District is working with your consultant, Adam Poll of Dudek, to resolve issues with correlating devices and source parameters, which may be completed during the ATEIR process.

3. Hot Water Heaters, Furnaces, Kilns, Cooktops, and Boiler (Section 2.1). The District is working with your consultant, Adam Poll of Dudek, to resolve issues with source parameters, including use of source test data, which may be completed during the ATEIR process.

4. Detection Limit (Section 2.1). No further action required.

5. Diesel-Fired Generators (Section 2.2.1). No further action required.

6. Natural Gas- and Propane-Fired Generators (Section 2.2.2). Address the remaining items:
   a. No further action required.
   b. The polycyclic aromatic hydrocarbons (PAHs) emission factor from the District's *Approved Emission Factors for Toxic Air Contaminants* toxics profile for 4 Stroke-Rich Burn IC-Stationary and Portable: Natural Gas Combustion for your natural gas-fired generators was omitted from the ATEIP. Please add the PAHs (excluding naphthalene) emission factor of 0.1438 lb/MMscf.
   c. Address the remaining propane gas-fired generator issues:
      i. On page 12 of the ATEIP, the hourly emission equation for the propane fired generator is labeled as the equation for the natural gas fired generators. Correct the ATEIP accordingly.
      ii. The PAHs emission factor from the District's *Approved Emission Factors for Toxic Air Contaminants* toxics profile for IC-Stationary and Portable: LPG, Butane, or Propane 4 Stroke-Rich Burn for UCSB's propane fired generators was omitted from the ATEIP. Please add the PAHs (excluding naphthalene) emission factor of 0.0129 lb/1000 gal.

7. Generator Load (Appendix G). No further action required for the ATEIP.

8. Gasoline-Fired Generators (Section 2.2.3). No further action required.

9. Laboratory Processes (Section 2.3). No further action required.

10. ROC Emission Factors for Fuel Storage and Transfer (Section 2.4).
    a. Address the remaining comments on reactive organic compound (ROC) emission factors for gasoline dispensing facilities (GDFs):
       i. The ROC emission factors for the GDFs should be based on the District's current emission factors, as described in the memo dated November 18, 2019 regarding *GDF Emission Factors for Phase I EVR and Phase II EVR*. As shown below, Table 4 of this memo lists the Phase I breathing emission factor for aboveground tank as 2.100 lb ROC/1000 gal, not 1.0 lb ROC/1000 gal as shown in Table 12 of the ATEIP. Update Table 12 accordingly.

Table 4. ROC GDF Emission Factors for Aboveground Storage Tanks

Aboveground Tanks	Loading (lb/1000 gal)	Breathing (lb/1000 gal)	Refueling (lb/1000 gal)	Spillage (lb/1000 gal)	Hose Permeation
No Control	8.400	2.100	8.400	0.610	By No. of Hoses & Hose Type – **See Table 3**
Phase I only	0.420	2.100	8.400	0.610	
Phase I and II w/o Vent Valve	0.420	2.100	0.420	0.420	
Phase I and II w/Vent Valve	0.420	0.525	0.420	0.420	

ii. Update the ATEIP to include emissions from hose permeation. The hose permeation emission factors from Table 3 of the November 18, 2019 memo regarding *GDF Emission Factors for Phase I EVR and Phase II EVR* are shown below.

Table 3. Hose Permeation Emission Factors

System Type	ROC Emission Factor (lb/day-per hose)	ROC Emission Factor (lb/year-per hose)
Conventional, Assist Uncontrolled (Pre-EVR)	0.030	10.98
Assist Controlled (EVR for both Phase I and II)	0.001	0.47
Balance (All Balance System Types)	0.010	3.74

b-c. No further action required.

11. Hazardous Waste Collection Center (Section 2.5). Address the remaining comment below regarding the Hazardous Waste Collection Center (HWCC):

    a. No further action required.

    b. The maximum hourly emissions equation for breathing loss on page 27 of the ATEIP should be divided by T, the number of operating days per year. Update the equation accordingly.

    c. No further action required.

12. Paint and Coating Operations (Section 2.6).

    a. Address the following remaining comments regarding Safety Data Sheets (SDSs):

        i. Some of the SDSs list mixtures (e.g., petroleum distillates) instead of listing each individual toxic air contaminant (TAC). CARB's *Emission Inventory Criteria and Guidelines* requires that each listed TAC is individually reported. However, the District may not require reporting each individual TAC if the specific product usage is low. The District will notify you during the ATEIR review if individual TAC reporting of mixtures is required. **No further action required for ATEIP.**

        ii. The SDS on pages 102 and 103 of the file, *Appendix H.pdf*, is illegible. Based on the sequence of products, it appears that the SDS is for Dunn Edward's Waterborne Latex Coatings. Please submit a legible copy of the SDS.

        iii. In the ATEIR, for ease of review, please include both the product name as listed on the SDS and the name as shown in the 2018 Semi-Annual Compliance Verification Reports. **No further action required for ATEIP.**

    b-c. No further action required.

13. Safety Data Sheets Assignment (Appendix H). No further action required.

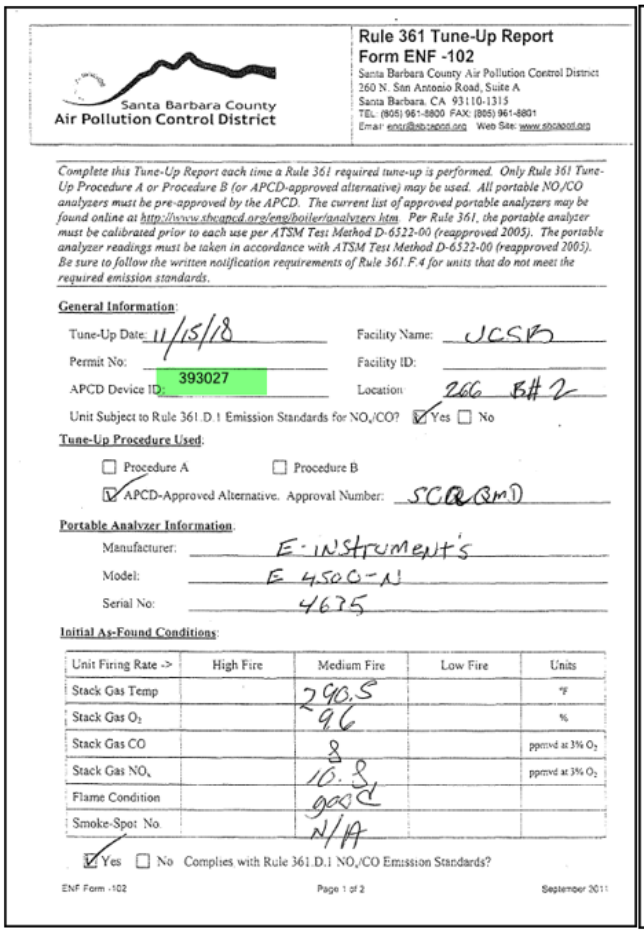
14. Safety Data Sheets Weight Fraction Range. No further action required.

15. Missing Devices. Address the remaining items:

a-b. The District is working with your consultant, Adam Poll of Dudek, to resolve issues with correlating devices and source parameters, which may be completed during the ATEIR process.

c. No further action required.

d. UCSB's 2019 2nd Semi-Annual Compliance Verification Report notes that the fuel meter was broken throughout 2019 for DID 393027. In addition, a tune up report from 2018 indicates that DID 393027 operated in 2018. UCSB's 2018 2nd Semi-Annual Compliance Verification Report indicates that the boiler began operations on November 15, 2018. Since gas usage records are not available for this boiler in 2018, the District recommends using the same assumptions that are used for other UCSB boilers without a fuel meter (e.g., the gas for the building will be apportioned to the boiler based on boiler capacity or building operating conditions). Update the ATEIP accordingly.



Santa Barbara County
Air Pollution Control District

Rule 361 Tune-Up Report
Form ENF -102

Santa Barbara County Air Pollution Control District
260 N. San Antonio Road, Suite A
Santa Barbara, CA 93110-1315
TEL: (805) 961-8800 FAX: (805) 961-8801
Email: enor@sbcapcd.org Web Site: www.sbcapcd.org

Complete this Tune-Up Report each time a Rule 361 required tune-up is performed. Only Rule 361 Tune-Up Procedure A or Procedure B (or APCD-approved alternative) may be used. All portable NO/CO analyzers must be pre-approved by the APCD. The current list of approved portable analyzers may be found online at http://www.sbcapcd.org/eng/boiler/analyzers.htm. Per Rule 361, the portable analyzer must be calibrated prior to each use per ATSM Test Method D-6522-00 (reapproved 2005). The portable analyzer readings must be taken in accordance with ATSM Test Method D-6522-00 (reapproved 2005). Be sure to follow the written notification requirements of Rule 361.F.4 for units that do not meet the required emission standards.

General Information:

Tune-Up Date: 11/15/18 Facility Name: UCSB

Permit No: Facility ID:

APCD Device ID: 393027 Location: 266 Bldg 2

Unit Subject to Rule 361.D.1 Emission Standards for NO_x/CO? ☑ Yes ☐ No

Tune-Up Procedure Used:

☐ Procedure A ☐ Procedure B

☑ APCD-Approved Alternative. Approval Number: SCAQMD

Portable Analyzer Information:

Manufacturer: E-INSTRUMENTS

Model: E 4500-N

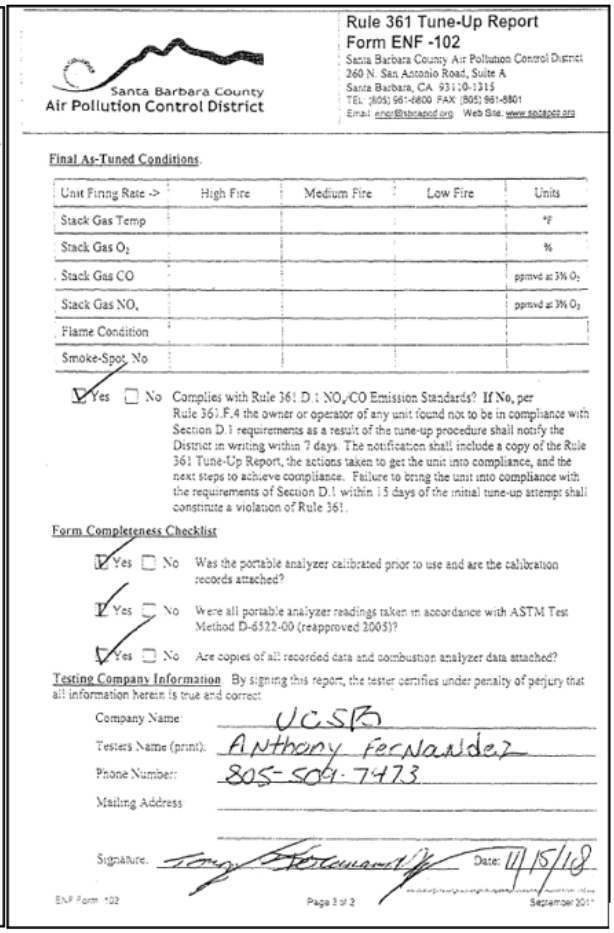
Serial No: 4675

Initial As-Found Conditions:

Unit Firing Rate ->	High Fire	Medium Fire	Low Fire	Units
Stack Gas Temp		290.5		°F
Stack Gas O_2		9.6		%
Stack Gas CO		8		ppmvd at 3% O_2
Stack Gas NO_x		10.8		ppmvd at 3% O_2
Flame Condition		good		
Smoke-Spot No.		N/A		

☑ Yes ☐ No Complies with Rule 361.D.1 NO_x/CO Emission Standards?

ENF Form -102 Page 1 of 2 September 2011



Santa Barbara County
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Rule 361 Tune-Up Report
Form ENF -102

Santa Barbara County Air Pollution Control District
260 N. San Antonio Road, Suite A
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TEL: (805) 961-8800 FAX: (805) 961-8801
Email: enor@sbcapcd.org Web Site: www.sbcapcd.org

Final As-Tuned Conditions.

Unit Firing Rate ->	High Fire	Medium Fire	Low Fire	Units
Stack Gas Temp				°F
Stack Gas O_2				%
Stack Gas CO				ppmvd at 3% O_2
Stack Gas NO_x				ppmvd at 3% O_2
Flame Condition				
Smoke-Spot No.				

☑ Yes ☐ No Complies with Rule 361.D.1 NO_x/CO Emission Standards? **If No**, per Rule 361.F.4 the owner or operator of any unit found not to be in compliance with Section D.1 requirements as a result of the tune-up procedure shall notify the District in writing within 7 days. The notification shall include a copy of the Rule 361 Tune-Up Report, the actions taken to get the unit into compliance, and the next steps to achieve compliance. Failure to bring the unit into compliance with the requirements of Section D.1 within 15 days of the initial tune-up attempt shall constitute a violation of Rule 361.

Form Completeness Checklist

☑ Yes ☐ No Was the portable analyzer calibrated prior to use and are the calibration records attached?

☑ Yes ☐ No Were all portable analyzer readings taken in accordance with ASTM Test Method D-6522-00 (reapproved 2005)?

☑ Yes ☐ No Are copies of all recorded data and combustion analyzer data attached?

Testing Company Information By signing this report, the tester certifies under penalty of perjury that all information herein is true and correct

Company Name: UCSB

Tester's Name (print): Anthony Fernandez

Phone Number: 805-501-7473

Mailing Address:

Signature: Tony Fernandez Date: 11/15/18

ENF Form -102 Page 2 of 2 September 2011

ANNUAL REPORT: BOILER & PROCESS HEATER OPERATIONS

Company Name:	University of California, Santa Barbara			Device ID:	393027
Contact Name:	Ali Aghayan			Permit #:	15156
Address:	Office of Environmental Health & Safety (Building 565), UCSB			Phone:	805 893-8533
Cit/State:	Santa Barbara, CA				
Facility Name:	Building 266, California Nanosystems Institute (CNSI)				
Annual Operating Schedule:	Hours/Day: 24	Days/Week:	7	Weeks/ Year:	52
Manufacturer:	Parker	Model:	G-2304RL		
Serial Number:	63500				
Rated Heat Input:	2.000 MM Btu/hr	MMBtu/yr Limit:	17,520		

Meter Reading as of January 1st of the Reporting Year: 11,847

FUEL USAGE for BOILER B2			
Gaseous Fuel Consumption			
Month	**Meter Reading (MCF)**	**Cubic Feet**	**MMBTU**
January	Meter Broken	Meter Broken	Meter Broken
February	Meter Broken	Meter Broken	Meter Broken
March	Meter Broken	Meter Broken	Meter Broken
April	Meter Broken	Meter Broken	Meter Broken
May	Meter Broken	Meter Broken	Meter Broken
June	Meter Broken	Meter Broken	Meter Broken
July	Meter Broken	Meter Broken	Meter Broken
August	Meter Broken	Meter Broken	Meter Broken
September	Meter Broken	Meter Broken	Meter Broken
October	Meter Broken	Meter Broken	Meter Broken
November	Meter Broken	Meter Broken	Meter Broken
December	Meter Broken	Meter Broken	Meter Broken
TOTAL	*Total usage for the 12 month reporting period was 4,144.342 mmbtu. This is based on building gas meter data minus the usage of the other boilers.		
TOTAL	**Final Reading:**	**CF**	**MMBTU**

Reporting Year: 2019 **Bldg 266, B2**

16. Variable Emissions (Appendix C). No further action required.

17. Device Schedule (Appendix C). Address each comment below regarding the Device Schedule:

    a-b. No further action required.

    c. Section 2.5 of the ATEIP states that the HWCC operates for 348 days/year while the tab, *Device Schedule* of Appendix C shows the HWCC operates 3650 hr/yr (i.e., 365 day/yr * 10 hr/day). Please correct this discrepancy.

18. Property Boundary Receptors (Appendix C). No further action required.

19. Worker Receptors (Appendix C). Based on the UTM coordinates provided, it appears that the Isla Vista Foot Patrol (IVFP) is located within the UCSB property boundary. Worker receptors must be placed at the IVFP since workers not employed by UCSB are present (e.g., employees of Santa Barbara County Sherriff's Office). Please revise Appendix C to add worker receptors at IVFP.

20. Receptor Table (Appendix C). Address the remaining items on the *Receptor Table* tab of Appendix C.

a. The *Receptor Table* tab of Appendix C included 11,576 receptors labeled as "Residential" and an additional 280 receptors labeled as "Residentia". It appears that many of these receptors are grid receptors and not at actual residential locations. Please revise the *Receptor Table* tab to correctly label residential receptors.

b. Isla Vista Elementary School was not included as a sensitive receptor. Due to the close proximity and large campus, multiple receptors must be place at Isla Vista Elementary School. Update the *Receptor Table* tab accordingly.

c. Only one receptor was placed at Friendship Manor, a large area of senior housing units. Since a residential grid will be placed over that area, no additional receptors will be required at this time. If there is an elevated risk at one of the gridded receptors or the single receptor placed at Friendship Manor, then additional receptors may be required. **No further action is required for the ATEIP.**

21. Onsite Receptors (Appendix C). Address the remaining comments:

a. All onsite residential receptors must be labeled (e.g., Anacapa Residence Hall) in the *Receptor Table* tab of Appendix C. The following onsite UCSB residences were not included as labeled receptors.

i. Storke
ii. West Campus
iii. West Campus Point
iv. Ocean Walk at North Campus
v. El Dorado
vi. San Joaquin Villages
vii. Santa Ynez
viii. Tropicana Villas
ix. Westgate
x. Santa Catalina
xi. Tropicana Gardens

b. Include worker receptors at the IVFP, as noted in Comment No. 19.

c. Only one receptor was placed at the University Children's Center (UCC). Additional receptors may be required if the initial HRA shows an elevated risk at the UCC receptor. **No further action is required for the ATEIP.**

d. Fine grid receptors covering most of UCSB were included in Appendix C. However, there are a few areas without a fine grid, including the San Clemente Villages and much of the West Campus and North Campus areas. Acute onsite receptors with a grid spacing no greater than 25 meters must be placed over any area accessible to the public. Onsite receptors are not required in fenced and gated areas that prohibit public access. Update the *Receptor Table* tab of Appendix C to include acute onsite receptors with a grid spacing no greater than 25 meters at all areas accessible to the public. If there are areas where onsite receptors are intentionally excluded, provide a map or aerial photo that highlights the portions where public access is prohibited due to fences and gates.

22. AREAPOLY Sources for Natural Gas Wall Heaters (Appendix C). Thank you for revising the AREAPOLY sources. While the shape and size of the buildings are appropriate, please address the following:

a. Source ID 487, Storke Campus Water and Wall Heater, is located at the West Campus Point Faculty Housing. Please correct the location of Source ID 487 in the *Source Parameters* tab of Appendix C.

b. It appears that natural gas water heaters and wall heaters at the West Campus Point Faculty Housing and the Ocean Walk Faculty Housing were not included in the ATEIP because these housing units are individually owned. Please confirm that this is the reason for omitting these heaters in the ATEIP. In addition, add a clarifying note in the ATEIP that natural gas water heaters and wall heaters at the West Campus Point Faculty Housing and the Ocean Walk Faculty Housing were not added as emitting sources since these homes are individually owned.

c. Please clarify why there are AREAPOLY sources with identical UTM coordinates and shape, but different release heights. For example, Source 504, Storke Campus Water and Wall Heater, and Source 276, NG WATER HEATER, are identical except for the release height. Revise as necessary.

23. AREAPOLY Source Emission Rate (Appendix C). The emission rates for several AREAPOLY sources were not set at the unit emission rate of 1 g/s divided by area as shown below. Correct the emission rates to 1 g/s divided by the area of the following AREAPOLY sources.

    a. Source 246, NG WATER HEATER, was set at 1.1167 g/s.
    b. Source 250, NG WATER HEATER, was set at 1.1057 g/s.
    c. Source 254, NG WATER HEATER, was set at 1.1218 g/s.
    d. Source 255, NG WATER HEATER, was set at 1.3021 g/s.
    e. Source 293, NG WATER HEATER, was set at 1.2527 g/s.
    f. Source 328, NG WALL HEATER, was set at 3135.2 g/s.
    g. Source 329, NG WALL HEATER, was set at 1589.8 g/s.

24. 8-hr Chronic Non-Cancer Risk (Appendix C). No further action required.

25. 8-hr Chronic Non-Cancer Risk Method (Appendix C). No further action required.

26. Chicken Pathway (Appendix C). No further action required.

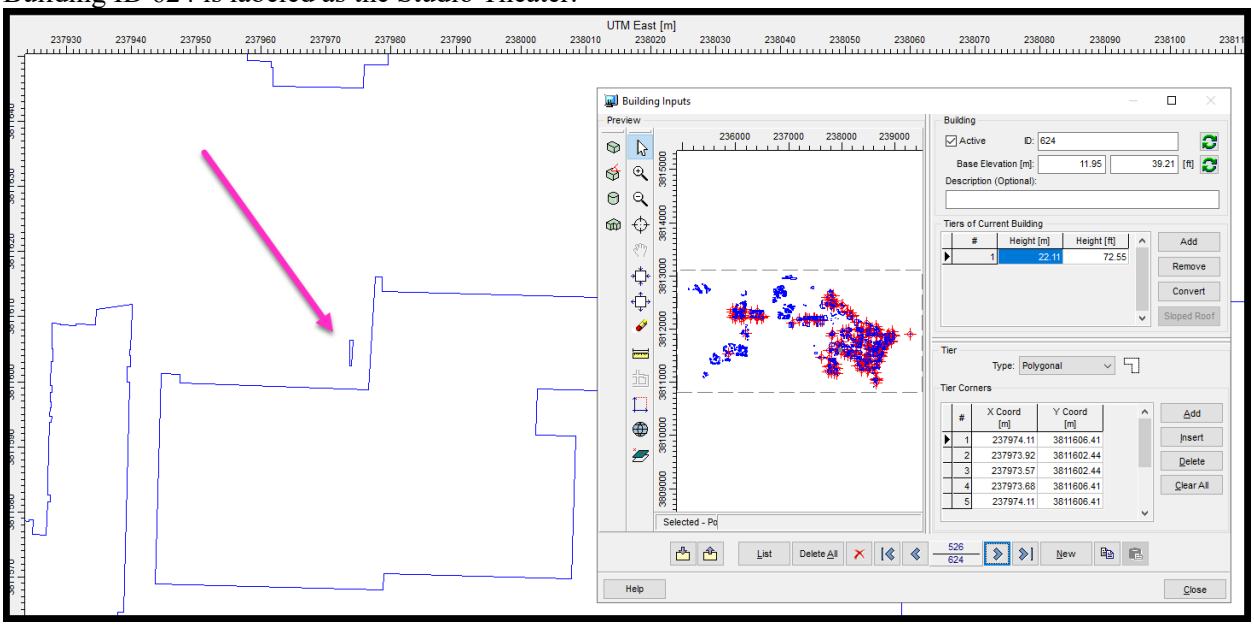
27. DEM Files (Appendix C). Thank you for providing the names of the DEM quads. However, the DEM files were not included in this submittal. Please submit the DEM files.

28. Elevations (Appendix C). No further action required.

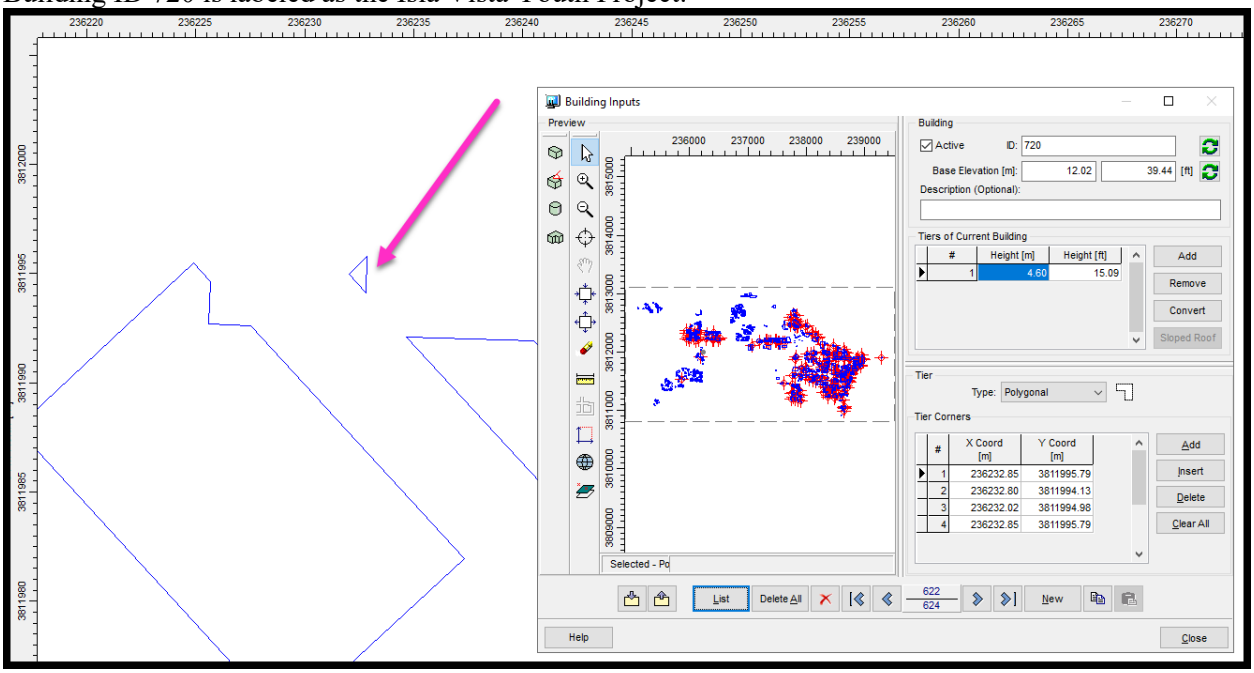
29. Building Name and Numbers (Appendix C). Several building height discrepancies were found between the 2008 ATEIP data and the 2018 ATEIP data, as Robin Cobbs noted to Adam Poll by email on January 14, 2021. Building height revisions were provided for the buildings present in 2008 in the January 15, 2021 email from Adam Poll of Dudek regarding Building Height Discrepancies - UCSB's 2018 ATEIP. Please note that the District did not review the heights of the newer buildings as confirmation data is not readily available. However, if obvious building height discrepancies are found during the HRA or ATEIR process, the District will notify you of the required revisions. **No further action required for ATEIP.**

30. Building Shape (Appendix C). It appears there may be an error in the shape or size of three buildings listed below. See the screenshots below and revise the buildings' UTM coordinates in Appendix C as necessary.

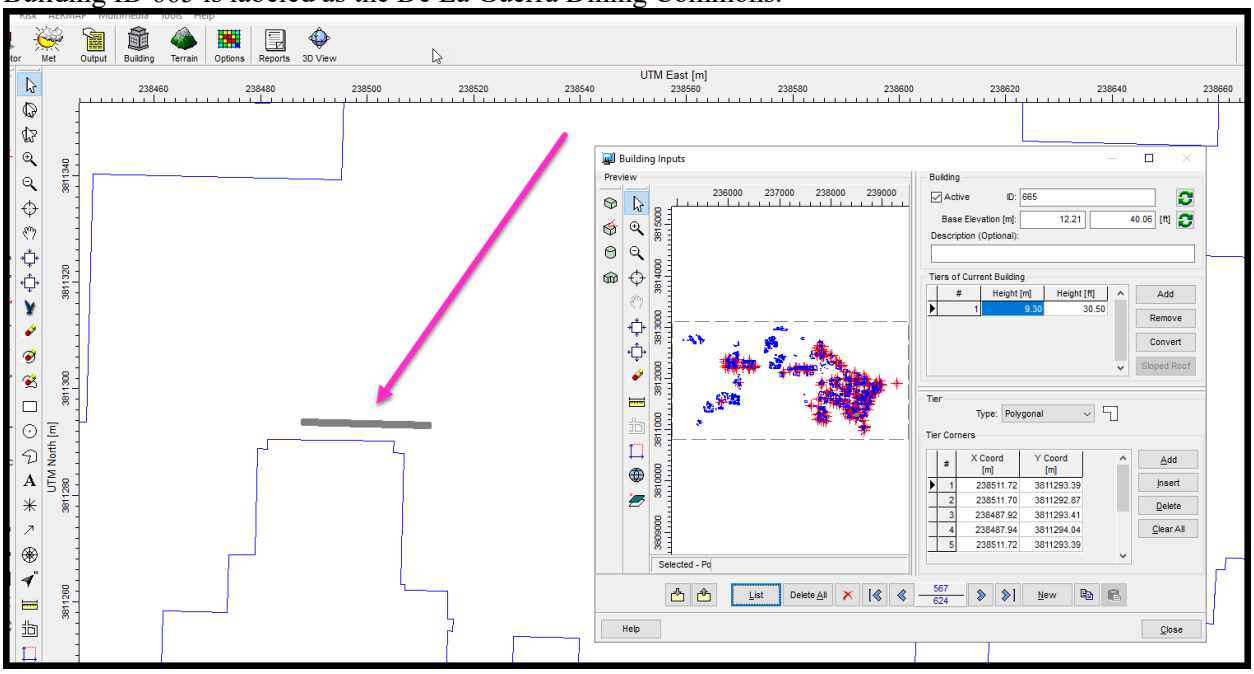
a. Building ID 624 is labeled as the Studio Theater.



b. Building ID 720 is labeled as the Isla Vista Youth Project.



c. Building ID 665 is labeled as the De La Guerra Dining Commons.



31. Identical Release Parameters for Natural Gas Boilers (Appendix C). No further action required.