

**APPENDIX J**

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**RESPONSE TO COMMENTS RECEIVED ON THE DRAFT SUBSEQUENT ENVIRONMENTAL  
IMPACT REPORT**



**FINAL SUBSEQUENT ENVIRONMENTAL IMPACT REPORT**  
**SUNSHINE GAS PRODUCERS RENEWABLE ENERGY PROJECT**  
**COMMENTS AND RESPONSES TO COMMENTS**

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**ATTACHMENT**

<b>A</b>	Air Emissions Reduction Assessment for Sunshine Canyon Landfill Gas to Energy Plant
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## INTRODUCTION

The Draft Subsequent Environmental Impact Report (Draft SEIR) was circulated for a 45-day public review and comment period beginning on May 10, 2011 and ending June 23, 2011. The Draft SEIR was prepared to analyze potentially significant environmental impacts from the proposed Sunshine Gas Producers Renewable Energy Project (SGPREP). The proposed project is considered to be a modification of the projects evaluated in the 1993 Final EIR and 1999 Final SEIR for the combined County and City portions of the Sunshine Canyon Landfill (SCLF), which finalized modifications to the SCLF Conditional Use Permit (CUP). The Draft SEIR included the project description, analysis of potential adverse environmental impacts from the proposed project, including air resources, cultural resources, energy, geology and soils, hydrology and water quality, and noise impacts, and comparison of project alternatives to the proposed project.

The South Coast Air Quality Management District (SCAQMD) received ten comment letters on the Draft SEIR during the public comment period. In response to a Notice of Intent to Issue a Permit to Construct for the Sunshine Gas Producers LLC Facility ID 139938 (NOI) for the proposed project issued in January 2012, a number of comment letters on the NOI were received by SCAQMD. Five of these comment letters on the NOI, received between February 14, 2012 and February 29, 2012, contained comments on the Draft SEIR. In spite of the fact that Draft SEIR-related comments in the five NOI letters were received well after the close of the public comment period on June 23, 2011 and the fact that lead agencies are not required to respond to comments received after the close of comments (Public Resources Code §21091(d)(2)(A)), responses to these late comments were prepared and included in the Final SEIR.

The comment letters and responses to the comments raised in those letters are provided in this appendix of the Final SEIR. The comments are bracketed and numbered. The related responses are identified with the corresponding number and are included following each comment letter.

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Natural Resources Agency

Edmund G. Brown, Jr., Governor



DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

801 K STREET, MS 19-01, SACRAMENTO, CALIFORNIA 95814 • (916) 322-4027 • WWW.CALRECYCLE.CA.GOV

May 27, 2011



Mr. Jeffrey Inabinet
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182

Subject: SCH No. 1989071210 - Draft Subsequent Environmental Impact Report for the Sunshine Gas Producers Renewable Energy Project, Los Angeles County

Mr. Inabinet:

Thank you for allowing the Department of Resources Recycling and Recovery (CalRecycle) staff to provide comments for this proposed project and for your agency's consideration of these comments as part of the California Environmental Quality Act (CEQA) process.

CalRecycle staff has reviewed the Draft Subsequent Environmental Impact Report and offers the following project description, analysis and our recommendations for the proposed project based on our understanding of the project. If CalRecycle's project description varies substantially from the project as understood by the Lead Agency, CalRecycle staff requests incorporation of any significant differences in the Final Subsequent Environmental Impact Report. Significant differences in the project description could qualify as "significant new information" about the project that would require recirculation of the document before certification pursuant to CEQA Section 15088.5.

1-1

Proposed Project Description

The Sunshine Gas Producers Renewable Energy Project (SGPREP) is proposing to develop and operate a gas turbine electrical generation facility within the boundaries of the Sunshine Canyon Landfill, Facility No. 19-AA-2000, located in northern Los Angeles County. The SGPREP would consist of the construction and operation of five gas turbine electricity generator sets, landfill gas compressor, gas treatment equipment, one SGPREP flare, one substation, one switchyard, two buildings, and a parking lot. The SGPREP total footprint would be approximately two acres. The five gas turbine electricity generators will have a total gross electricity generation capacity of 24.5 Mega Watts (MW), and a net output of 20 MW. No component of the currently proposed project would expand the landfill capacity or increase the amount of waste that can be accepted on a daily, monthly or annual basis.

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The following areas were identified as significant and unavoidable, after the implementation of mitigation measures:

- Air Quality
- Cumulative - Greenhouse Gas Impacts

1-1  
Con't

**CalRecycle Staff's Comments**

Prior to the start of operation, SGPREP needs to be adequately described, to the satisfaction of the Sunshine Canyon Landfill, Local Enforcement Agency (LEA), in Sunshine Canyon Landfill's Joint Technical Document. Please refer to Title 14, California Code of Regulations (14 CCR), Section 21620, which states that any proposed changes to the design or operation must be presented to the LEA for their review and approval at least 180 days prior to implementation. For more information regarding applicant requirements, please contact the Sunshine Canyon Landfill LEA staff person, David Thompson, at 213.252.3348.

1-2

**Conclusion**

Since there will be significant impacts resulting from the proposed project, CalRecycle staff requests that a copy of the Statement of Overriding Considerations and Findings be forwarded as required by CEQA Section 15091 along with any related resolutions adopted by the decision-making body.

CalRecycle staff requests copies of any subsequent environmental documents including, the Final Subsequent Environmental Impact Report, copies of public notices, and any Notices of Determination for this project.

Please refer to 14 CCR, Section 15094 (d) that states: "If the project requires discretionary approval from any state agency, the local lead agency shall also, within five working days of this approval, file a copy of the notice of determination with the Office of Planning and Research [State Clearinghouse]."

CalRecycle staff requests that the Lead Agency provide a copy of its responses to comments at least ten days before certifying the Final Subsequent Environmental Impact Report. Please refer to Public Resources Code, Section 21092.5 (c).

1-3

If the document is certified during a public hearing, CalRecycle staff requests ten days advance notice of this hearing. If the document is certified without a public hearing, CalRecycle staff requests ten days advance notification of the date of the certification and project approval by the decision-making body.

Please note that the correspondence related to this letter and for staff of the Permitting and Assistance Branch should be sent to 1001 I Street – MS 10A-15, P.O. Box 4025, Sacramento, CA 95812-4025. All other correspondence should be sent to the address in the letterhead.



DSEIR Sunshine Gas PREP

May 27, 2011

If you have any questions regarding these comments, please contact me at 951.782.4194 or E-mail me at [Martin.Perez@calrecycle.ca.gov](mailto:Martin.Perez@calrecycle.ca.gov).

Sincerely,



Martin Perez  
Permitting and Assistance Branch - South  
Permits Division and Certification Division  
CalRecycle

cc: Virginia Rosales, Supervisor  
Permitting and Assistance Branch - South  
Permits and Division and Certification Division

Susan Markie, Manager  
Permitting and Assistance Branch - South  
Permits and Division and Certification Division

David Thompson  
Sunshine Canyon Landfill Jurisdiction  
[david.thompson@lacity.org](mailto:david.thompson@lacity.org)

Gerry Villalobos  
Sunshine Canyon Landfill Jurisdiction  
[gvillalobos@ph.lacounty.gov](mailto:gvillalobos@ph.lacounty.gov)

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**COMMENT LETTER NO. 1****CALRECYCLE, DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY****MAY 27, 2011****RESPONSE 1-1**

The comment provides a brief summary of the proposed project that is, generally, correct. The comment then states that significant differences in the project description between the Draft and Final SEIR could qualify as significant new information that would require recirculation of the SEIR pursuant to CEQA Guidelines §15088.5. Changes to the project description do not automatically constitute significant new information. New information added to an EIR is not significant unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment on a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. Further, CEQA guidelines §15088.5 (b) states "recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR." CEQA guidelines §15088.5 (a) states that significant new information requiring recirculation of an EIR can consist of the following:

- (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
- (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
- (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.
- (4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (*Mountain Lion Coalition v. Fish and Game Com.* (1989) 214 Cal.App.3d 1043).

Changes to the project description between the draft and final CEQA documents can occur for a number of reasons, including: in response to comments, new information is identified, etc. Some minor changes to the project description for the SGPREP have occurred based on comments received. Examples of modifications between the Draft and Final SEIR are summarized below, and discussed in more detail throughout this Response to Comments document:

- As a result of the comments received, the project proponent worked with the turbine manufacturer to guarantee lower carbon monoxide (CO) emissions. This resulted in modified calculations and determination of less than significant CO impacts.
- Based on comments received, additional evaluation of potential control technologies was conducted, as summarized in response to Comment 4-3.

- Comments identified additional sensitive receptor locations for consideration with regard to air quality and noise impacts, which resulted in additional localized air quality and noise modeling. There was no resulting change to impact significance determinations.
- The Cultural Resources Assessment was modified to include the small additional disturbance areas associated with the water pipeline installation and maintenance grading for a roadway associated with the SGPREP. Findings did not result in changes to significance determinations.
- Additional cumulatively related projects were located within the two mile radius of the proposed project. The inclusion of these cumulatively related projects did not result in changes to any cumulative significance determinations.
- Additional cumulatively related projects were located within the two mile radius of the proposed project. The inclusion of these cumulatively related projects did not result in changes to any cumulative significance determinations.
- The odor discussion has been enhanced to include discussion of the Stipulated Third Amendment to the Order for Abatement at SCLF, and provide additional detail on odor impact assessment.

The modifications were evaluated and do not constitute significant new information as defined above requiring recirculation. All changes to the SEIR from the draft to the final document are identified as either strikeout for deleted text or underline for added text.

#### **RESPONSE 1-2**

The comment indicates that the SGPREP should be described in SCLF's Joint Technical Document (JTD) to the satisfaction of the landfill's local enforcement agency (LEA), and in accordance with Title 14, California Code of Regulations, §21620. The project proponent has discussed the addition of the proposed project to the JTD with David Thompson, SCLF LEA representative and Patti Costa of Republic Services. The JTD update will be filed by SCLF following certification of the SGPREP EIR, and in accordance with the requirements and timeframes specified by Title 14, California Code of Regulations, §21620.

The CEQA analysis for the proposed SGPREP provides a comprehensive analysis of potential impacts from the proposed project. Any notification requirements between SGPREP and other entities do not affect the analysis or the conclusions regarding significance in the Final SEIR.

#### **RESPONSE 1-3**

The comment requests that CalRecycle receive copies of the following documents:

- Findings – CEQA Guidelines §15091 simply requires:
  - (e) The public agency shall specify the location and custodian of the documents or other material which constitute the record of the proceedings upon which its decision is based.

Upon certification, the SCAQMD will post the Findings and the Statement of Overriding Considerations, which constitute part of the record of proceedings for the SGPREP, online at: <http://www.aqmd.gov/ceqa/nonaqmd.html>. Pursuant to CalRecycle's request, copies of these documents will also be provided to them.

- Documents specifically called resolutions are not adopted by the SCAQMD for permit application projects like the SGPREP in which the SCAQMD is the lead agency. Other similar documents associated with certification of the SGPREP, including the Notice of Determination, will be provided to CalRecycle.
- SCAQMD policy includes providing copies of final CEQA documents to all parties commenting on the draft CEQA documents. As a result, a copy of the Final SEIR will be provided to all commenting parties, including CalRecycle.
- PRC §21092.5 (a) is a statutory requirement for lead agencies to provide responses to comments submitted by other public agencies 10 days before certifying an EIR. The SCAQMD has and will continue to comply with all statutory and implementing guideline requirements related to CEQA, including providing responses to comments to public agencies, including CalRecycle, 10 days before certification of the Final SEIR for the SGPREP.

Pursuant to CEQA there is no requirement to hold a public hearing; as a result no public hearing is planned since the Executive Officer is the person authorized by law to make the decision.

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STATE OF CALIFORNIA

Edmund G. Brown, Jr., Governor

**NATIVE AMERICAN HERITAGE COMMISSION**

915 CAPITOL MALL, ROOM 364  
SACRAMENTO, CA 95814  
(916) 653-6251  
Fax (916) 657-5390  
Web Site [www.nahc.ca.gov](http://www.nahc.ca.gov)  
e-mail [de\\_nahc@pacbell.net](mailto:de_nahc@pacbell.net)



June 7, 2011

Mr. Jeffrey Inabinet, CEQA Section Planner

**South Coast Air Quality Management District**

21865 Copley Drive  
Diamond Bar, CA 91765-4178

Re: SCH#1989071210 CEQA Notice of Completion, draft Subsequent Environmental Impact Report (DSEIR) for the: "Sunshine Gas Producers Renewable Energy Project;" Located at the Sunshine Landfill in the Granada Hills/Sylmar area, Los Angeles County, California

Dear Mr. Inabinet:

The Native American Heritage Commission (NAHC), the State of California 'Trustee Agency' for the protection and preservation of Native American cultural resources. The NAHC wishes to comment on the above-referenced proposed Project.

2-1

This letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9.

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ... objects of historic or aesthetic significance.' In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC Sacred Lands File (SLF) search resulted in; **Native American cultural resources were not identified** within the 'area of potential effect (APE), based on the USGS coordinates of the project location provided. However, there are Native American cultural resources in close proximity to the APE. The NAHC "Sacred Sites," as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.04(a) and 5097.06. Items in the NAHC Sacred Lands Inventory are confidential and exempt from the Public Records Act pursuant to California Government Code §6254.10.

2-2

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you make contact with the list of Native American Contacts on the attached list of Native American

2-3

contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project. Pursuant to CA Public Resources Code § 5097.95, the NAHC requests that the Native American consulting parties be provided pertinent project information. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). Pursuant to CA Public Resources Code §5097.95, the NAHC requests that pertinent project information be provided consulting tribal parties. The NAHC recommends *avoidance* as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and Section 2183.2 that requires documentation, data recovery of cultural resources.

Furthermore we recommend, also, that you contact the California Historic Resources Information System (CHRIS) California Office of Historic Preservation for pertinent archaeological data within or near the APE, at (916) 445-7000 for the nearest Information Center in order to learn what archaeological fixtures may have been recorded in the APE.

Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA (42 U.S.C 4321-43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation.

Furthermore, Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery'.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects.

The response to this search for Native American cultural resources is conducted in the NAHC Sacred Lands Inventory, established by the California Legislature (CA Public Resources Code 5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code 6254.10) although Native Americans on the attached contact list may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance" may also be protected under Section 304 of the NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places and there may be sites within the APE eligible for listing on the California Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APEs and possibility threatened by proposed project activity.

2-3

Con't

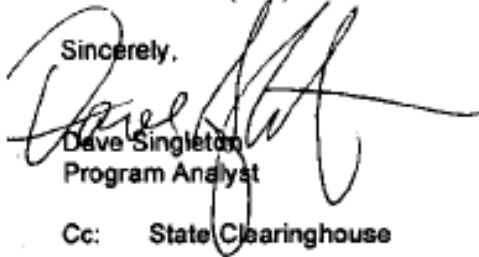
2-4

2-5



If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,



Dave Singleton  
Program Analyst

Cc: State Clearinghouse

Attachment: Native American Contact List

**California Native American Contact List**  
 Los Angeles County  
 June 7 2011

<p>Charles Cooke                  32835 Santiago Road                  Acton, CA 93510                  suscol@intox.net</p> <p>(661) 733-1812 - cell                  suscol@intox.net</p>	<p>Chumash                  Fernandeno                  Tataviam                  Kitanemuk</p>	<p>Tongva Ancestral Territorial Tribal Nation                  John Tommy Rosas, Tribal Admin.                  Private Address                  Gabriellino Tongva</p> <p><b>tattnlaw@gmail.com</b>                  310-570-6567</p>
<p>Beverly Salazar Folkes                  1931 Shadybrook Drive                  Thousand Oaks, CA 91362                  folkes@msn.com</p> <p>805 492-7255                  (805) 558-1154 - cell                  folkes9@msn.com</p>	<p>Chumash                  Tataviam                  Fernandeno</p>	<p>Kitanemuk &amp; Yowlumne Tejon Indians                  Delia Dominguez, Chairperson                  981 N. Virginia                  Covina, CA 91722                  deedominguez@juno.com</p> <p>(626) 339-6785</p>
<p>Fernandeno Tataviam Band of Mission Indians                  Ronnie Sales, Cultural Preservation Department                  601 South Brand Boulevard, Suite 102                  San Fernando CA 91340                  rsalas@tataviam-nsn.gov</p> <p>(818) 837-0794 Office</p> <p>(818) 837-0796 Fax</p>	<p>Fernandeno                  Tataviam</p>	<p>San Fernando Band of Mission Indians                  John Valenzuela, Chairperson                  P.O. Box 221838                  Newhall, CA 91322                  tsen2u@hotmail.com</p> <p>(661) 753-9833 Office                  (760) 885-0955 Cell                  (760) 949-1604 Fax</p>
<p>LA City/County Native American Indian Comm                  Ron Andrade, Director                  3175 West 6th St, Rm. 403                  Los Angeles, CA 90020                  randrade@css.lacounty.gov</p> <p>(213) 351-5324                  (213) 386-3995 FAX</p>	<p>Chumash                  Fernandeno                  Tataviam</p>	<p>Randy Guzman - Folkes                  655 Los Angeles Avenue, Unit E                  Moorpark, CA 93021                  ndnRandy@yahoo.com</p> <p>(805) 905-1675 - cell                  Shoshone Paiute                  Yaqui</p>

his list is current only as of the date of this document.

istribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

his list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed CH#1889071210; CEQA Notice of Completion; Subsequent Environmental Impact Report (SEIR) for the Sunshine Gas Producers Renewable Energy Project; located at the Sunshine Landfill in the Granda Hills/Symare area of the San Fernando Valley; Los Angeles County, California.

**California Native American Contact List**  
Los Angeles County  
June 7 2011

San Manuel Band of Mission Indians  
Ann Brierty, Policy/Cultural Resources Department  
26569 Community Center Drive Serrano  
Highland, CA 92346  
(909) 864-8933, Ext 3250  
abrierty@sanmanuel-nsn.  
gov  
(909) 862-5152 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.6 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed CH#1989071210; CEQA Notice of Completion; Subsequent Environmental Impact Report (SEIR) for the Sunshine Gas Producers Renewable Energy Project; located at the Sunshine Landfill in the Granda Hills/Sylmar area of the San Fernando Valley; Los Angeles County, California.

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**COMMENT LETTER NO. 2****NATIVE AMERICAN HERITAGE COMMISSION (NAHC)****JUNE 7, 2011****RESPONSE 2-1**

This comment identifies the NAHC as a trustee agency for protection and preservation of Native American cultural resources. The comment also indicates that the NAHC letter identifies laws and regulations pertinent to protecting Native American cultural resources. No further response is necessary.

**RESPONSE 2-2**

This comment cites the CEQA Guidelines requirement to address archaeological and historical resources in CEQA documents. This comment states that the NAHC Sacred Lands File search identified no Native American cultural resources within the area of potential effect (APE), but asserts that there are cultural resources in close proximity to the APE. Based on comments received from NAHC in response to the Notice of Preparation/Initial Study (NOP/IS; Draft SEIR Appendix C, Comment Letter No. 1, Dated December 9, 2009), the Draft SEIR included analysis of potential impacts from the proposed project to cultural resources (Section 4.3 of Draft SEIR). The analysis in the Draft SEIR referenced the Phase I Cultural Resources Assessment (CRA) prepared by John Minch and Associates (JMA) in April 2010. During preparation of the Phase I CRA, JMA asked the NAHC to perform a Sacred Lands File Check (January 19, 2010), which did not indicate the presence of Native American cultural resources within a one-half mile radius of the proposed project.

JMA prepared a Revised Phase I CRA in October, 2011, which included the small additional disturbance areas associated with the water pipeline installation and maintenance grading for a roadway associated with the SGPREP (Reference Appendix G of the Final SEIR). All areas included in the proposed project are within SCLF boundaries. The Revised Phase I CRA included a Sacred Lands File Check (June 7, 2011), which confirmed previous findings that no sensitive Native American sites have been recorded within the proposed project area. Additionally, the Revised Phase I CRA included field reconnaissance of the proposed project area on August 26, 2011, which did not identify any prehistoric or historic resources. Based on the results of the initial and revised Phase I CRAs, it was concluded that no Native American cultural resources are in or near the APE. Although the investigation results did not identify any prehistoric or historic resources within the proposed project area, it lies in an area of known sensitivity for archaeological resources. Therefore, as already required pursuant to Section 5.02 of the SCLF Mitigation Monitoring and Reporting Summary, a professional archaeologist will monitor all earth disturbing activities associated with construction of the proposed project.

**RESPONSE 2-3**

This comment recommends that the SCAQMD make early contact with the list of Native American Contacts included as an attachment to the NAHC letter, to identify potential impacts to Native American cultural resources and to work with these contacts to identify any concerns regarding the proposed project. As indicated in Response 2-2, JMA asked the NAHC to perform

a Sacred Lands File Checks on January 19, 2010 and June 7, 2011. The result of the search indicated that no sensitive Native American sites have been recorded within the proposed project area or within one-half mile of the proposed project area (JMA 2011).

In addition, JMA sent letters of inquiry to the Native American individuals and groups included on the NAHC consultation list provided in the December 9, 2009 comment letter for the NOP/IS, and made follow up calls (see Table 1) as described in the initial JMA Phase I CRA referenced in the Draft SEIR. As of the date of completion of the initial Phase I CRA (April 13, 2010), responses received are as noted in Table 1.

As a result of the additional Native American tribes, individuals and organizations listed in the NAHC June 7, 2011 comment letter for the Draft SEIR, JMA contacted the individuals and groups listed in Table 2. It is unclear why the list of NAHC contacts in the December 9, 2009 comment letter differs from the list of contacts in the June 7, 2011 NAHC comment letter. The responses received as of the date of completion of the Revised Phase I CRA (JMA 2011), are summarized in Table 2.

In accordance with the text following the Native American Contacts list in the June 7, 2011 comment letter, SCAQMD understands that distribution of the list is not sufficient form of engagement, and, as summarized in Tables 1 and 2, has contacted Native American agencies and individuals. Additionally, it should be noted that these contacts were provided by NAHC to the SCAQMD in regard to the proposed project and would not necessarily be applicable to other projects.

**TABLE 1**  
**Native American Agency and Individuals Phone Log Summary**  
**(Native American Contact List - December 2009)**

Person Who Placed Call	Person Who Received Call	Date and Time	Result
Robert Dorame, Tribal Chair, Gabrielino Tongva Indians of California Tribal Council	Laura White, Principal Investigator, JMA	02/09/10 3:30 p.m.	Mr. Dorame said he would provide a written response in the near future. To date, no response has been received.
Laura White, Principal Investigator, JMA	Cindi Alvitre, Ti'At Society	04/14/10 2:30 p.m.	Ms. Alvitre said that the project lay outside of her geographical area of interest.
Anthony Morales Gabrielino/Tongva San Gabriel Band of Mission Indians	Laura White, Principal Investigator, JMA	02/09/10 4:30 p.m.	Mr. Morales stated that he was concerned for the natural habitat and recommended that the project be monitored by a Native American.
Robert White, Principal Investigator, JMA	John Tommy Rosas, Tribal Admin, Tongva Ancestral Territorial Tribal Nation	04/14/10 2:15 p.m.	No answer.
Laura White, Principal Investigator, JMA	Sam Dunlap, Tribal Secretary, Gabrielino Tongva Nation	04/14/10 2:50 p.m.	No answer. Left message to return call.
Laura White, Principal Investigator, JMA	Bernie Acuna, Gabrielino-Tongva Tribe	04/14/10 2:48 p.m.	No answer. Left message to return call.

Person Who Placed Call	Person Who Received Call	Date and Time	Result
Laura White, Principal Investigator, JMA	Linda Candelaria, Chairperson, Gabrielino-Tongva Tribe	04/14/10 2:45 p.m.	No answer. Left message to return call.

**TABLE 2**  
**Native American Contacts List (June 7, 2011)**

Person Who Placed Call	Person Who Received Call	Date and Time	Result
Laura White, Principal Investigator, JMA	Charles Cooke, Chumash Fernandeno Tataviam Kitanemuk	09/15/11 3:00 p.m.	No answer. Left message to return call.
Laura White, Principal Investigator, JMA	Beverly Salazar Folkes, Chumash Tataviam Fernandeno	09/15/11 3:05 p.m.	No answer. Left message to return call.
Laura White, Principal Investigator, JMA	William Gonzales, Tribal Senator – Tamit District 1, Fernandeno Tataviam Band of Mission Indian	09/15/11 3:10 p.m.	Secretary gave me his voice mail. Left message to return call.
Laura White, Principal Investigator, JMA	Ron Andrade, Director, LA City/County Native American Indian Commission	09/15/11 3:30 p.m.	No answer. Left message to return call.
Laura White, Principal Investigator, JMA	Delia Dominguez, Chairperson, Kitanemuk & Yowlumne Tejon Indians - Yowlumne Kitanemuk	09/15/11 3:35 p.m.	No answer. Left message to return call.
Laura White, Principal Investigator, JMA	John Valenzuela, San Fernando Band of Mission Indians - Fernandeno Tataviam Serrano Vanyume Kitanemuk	09/15/11 3:40 p.m.	Tribal Office phone number disconnected. Left message on cell phone to call.
Laura White, Principal Investigator, JMA	Randy Guzman – Folkes, Chumash Fernandeno Tataviam Shoshone Paiute Yaqui	09/15/11 3:40 p.m.	Proceed with caution. If something is found during monitoring please notify him.
Laura White, Principal Investigator, JMA	Ann Brierty, Policy/Cultural Resources Department, San Manuel Band of Mission Indians	09/15/11 3:52 p.m.	Secretary provided her voice mail. Left message to return call.
Robert White, Principal Investigator, JMA	John Tommy Rosas, Tribal Admin, Tongva Ancestral Territorial Tribal Nation - Gabrielino Tongva	09/15/11 3:55 p.m.	No answer.

It should be noted that the SCAQMD maintains a specific list of Native American contacts that includes 45 contacts provided by the NAHC for past projects. In addition to the information provided to the contacts listed in Tables 1 and 2, contacts for the following Native American tribes were sent notices of availability of the Draft SEIR: Fort Yuma Quechan Indian Nation; Cabazon Band of Mission Indians; Juaneño Band of Mission Indians; Los Coyotes Band of Mission Indians; Pechanga Band of Mission Indians; Cahuilla Band of Indians; Santa Rosa Band of Mission Indians; AhaMaKav Cultural Society; San Fernando Band of Mission Indians; Ti' At

Society – Gabrielino; Torres-Martinez Desert Cahuilla Indians; Twenty-nine Palms Band of Mission Indians; Soboba Band of Mission Indians; Colorado River Reservation; San Manuel Band of Mission Indians; Fort Mojave Indian Tribe; Ramona Band of Mission Indians; Native American Environmental Protection Coalition; and Chemehuevi Reservation. The contacts provided in the comment letter from the NAHC on the Draft SEIR (Table 2) will be added to the SCAQMD’s Native American contacts list and contacted for all future projects.

This comment also cites environmental justice requirements (definition of environmental justice found in California Government Code Section 65040.12(e)) for contacting Native Americans. As noted in Response 2-2, based on the results of the initial and revised Phase I CRAs, it was concluded that no Native American cultural resources are in or near the area of potential effect. Further, as noted above, searches of the Sacred Lands File on January 19, 2010 and June 7, 2011 did not indicate the presence of Native American cultural resources within the area of the proposed project or within a one-half-mile radius of the proposed project area (Note: the June 7, 2011 Sacred Lands File search extended the study area to the SCLF boundary). Based on these results, the proposed project does not violate environmental justice requirements in any way.

The comment recommends contacting the California Historic Resources Information System (CHRIS) California Office of Historic Preservation (OHP) for archaeological data. CHRIS operates as a repository of contributed information regarding historical resources in California. The Historical Resources Inventory (HRI) maintained by OHP includes only information on historical resources that have been identified and evaluated through one of the programs that OHP administers under the National Historic Preservation Act or the California Public Resources Code. The HRI includes data on, among other things, resources considered for listing in the National and California Registers or as California State Landmarks or Points of Historical Interest.

The following archaeological resources were examined during the Phase I CRA conducted in April 2010: National Register of Historic Places, California Register of Historical Resources, California Historical Landmarks, California Points of Historical Interest, and the California State Directory of Properties. Since the California Points of Historical Interest, a CHRIS database, has already been consulted along with other reputable databases that provide information on archaeological and cultural resources and no archaeological or cultural resources were identified within one-half mile of the proposed project area, no further database consultation is considered to be necessary.

As identified in this letter, pursuant to California Public Resources Code (PRC) Section 5097.95, which defines Lead Agency cooperation with the NAHC on environmental documentation, all non-confidential draft and final SEIR documents, for which SCAQMD is the lead agency, are currently available to the public on the SCAQMD CEQA Documents webpage, which can be accessed at: <http://www.aqmd.gov/ceqa/nonaqmd.html>. Requests for any confidential documents or other information must be submitted as part of a Public Records Act request. Information requested pursuant to a Public Records Act request is subject to evaluation by SCAQMD’s District Counsel and, if it is determined to be confidential, would not be released.



The CRA described above, including Native American scoping, was completed as part of SCLF's existing CEQA mitigation measures and to support this SEIR. As part of this study, JMA contacted the NAHC in Sacramento and requested Sacred Lands File Checks on January 19, 2010 and June 7, 2011. All of the individuals and groups provided by the NAHC as possible sources of additional information were contacted by U.S. mail and phone (Tables 1 and 2 above, and Appendix G). In addition, JMA's Principal Investigator, Laura S. White, M.A., RPA conducted an in-person records search at the South Central Coastal Information Center (SCCIC), California State University, Fullerton as part of the Phase I CRA. The SCCIC is the regional Information Center within the California Historical Resources Information System (CHRIS) for Los Angeles County.

Because the proposed project does not involve a federal action, federal lands or tribal lands, the project will not require review under the National Environmental Policy Act (NEPA; 42 USC 4321 – 43351), §106 and 4(f) of federal National Historic Preservation Act (NHPA), 36 CFR Part 800.3 (Initiation of the §106 Process), and Native American Graves Protection and Repatriation Act (NAGPRA). This comment notes that the 1992 *Secretary of the Interiors Standard for the Treatment of Historic Properties* was revised to be applied to all historic resources included in the National Register of Historic Places; As there are no sites listed in the National Register of Historic Places within a one-mile radius of the proposed project (JMA 2011), this aforementioned *Standard* would not be applicable. The comment also cites federal Executive Orders 11593 (preservation of cultural environment), 13175 (coordination and consultation) and 13007 (sacred sites) as useful references for NHPA §106; however, as stated above, the proposed project would not be subject to NHPA §106.

#### **RESPONSE 2-4**

This comment cites PRC §5097.98, California Government Code §27491 and Health and Safety Code §7050.5, which all include provisions for accidental discovery of archaeological resources during construction.

As discussed in Section 4.3 of the Draft SEIR, there are currently a number of mitigation measures in the existing Mitigation Monitoring and Reporting Summary (MMRS)<sup>1</sup> to reduce potential cultural resources impacts at the SCLF and to ensure compliance with the current SCLF CUP requirements. With regard to cultural resources, the following mitigation measures are listed in the Archaeological, Historical, and Paleontological sections of the MMRS and would continue to apply to the currently proposed project:

- Prior to the commencement of initial earth excavation, specific sections of the landfill project area would be resurveyed as a precautionary measure to minimize potential loss of undiscovered archaeological or paleontological resources. Specific sections of the project

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<sup>1</sup> The MMRS was approved in 1993 for the County Landfill (the MMRS was updated in 2006 to incorporate the most stringent mitigation requirements of either the City or County CUP. A copy of the MMRS is included in Appendix B of the Final SEIR.

area to be resurveyed would be determined by the intended cut and fill areas proposed for landfill development. As new areas for excavation are identified by the permittee, an evaluation of the need for resurveying of those areas would be made based on prior survey results and consultation with the appropriate technical specialists. Factors to be considered for delineation of areas to be resurveyed would be known site selection factors associated with aboriginal groups suspected of having inhabited the general area. These factors include: proximity to water, the type of local vegetation (e.g., food source, shelter, and fuel) and the topography (e.g., slope and aspect).

- An archaeologist and paleontologist would be on site during major infrastructure work that requires significant excavation. In the event that archaeological and paleontological resources are discovered during grading or excavation, the archaeologist and/or paleontologist shall be allowed to redirect grading away from the area of exposed fossils to allow sufficient time for inspection, evaluation, and recovery.
- Archaeological resources recovered during surface collection, subsurface excavations, and monitoring, with related records, notes, and technical reports, shall be curated at a regional repository approved by Los Angeles County (the County).

In addition, the construction activities will cease to prevent further disturbance if human remains are unearthed until the County Coroner has made the necessary findings with respect to origin and disposition, as required by Public Resources Code §5097.98-99 and Health and Safety Code §7050.5. CEQA Guidelines §15370(a) defines avoidance as: “Avoiding the impact altogether by not taking a certain action or parts of an action.” As indicated in Responses 2-2 and 2-3, there is currently no evidence that there are archaeological or cultural resources located on or within one-half mile of the proposed project area. However, if significant cultural resources in the form of Native American human remains are discovered, construction activities will cease and Sunshine Gas Producers will comply with relevant federal, state and local regulations.

This comment recommends that consultation between tribes, lead agencies and project proponents should occur. As noted in Response 2-3, the SCAQMD maintains a comprehensive list of Native American contacts in the southern California region. The Native American contacts on this list receive notices for all projects where the SCAQMD is lead agency. With regard to Native American tribes and organizations contacted about the proposed project, refer to Response 2-3.

## **RESPONSE 2-5**

This comment notes that the search for Native American cultural resources utilizes the NAHC Sacred Lands Inventory (established by California PRC 5097.94(a)), which is exempt from the California Public Records Act (California Government Code 6254.10). Additionally, the comment notes confidentiality of historic properties may be protected under NHPA §304, or at the discretion of the Secretary of the Interior; however, as discussed in Response 2-3, these federal codes would not apply to the proposed project. As noted in Response 2-3, no Native American cultural resources were identified on or within one-half mile of the proposed project area. SCAQMD acknowledges that the specific nature of any cultural resources/historic properties that may be uncovered as a result of constructing the proposed project would be kept confidential.



**JONATHAN E. FIELDING, M.D., M.P.H.**  
Director and Health Officer

**JONATHAN E. FREEDMAN**  
Chief Deputy Director

**ANGELO J. BELLOMO, REHS**  
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June 16, 2011

Mr. Jeffrey Inabinet  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4178

**SUBJECT: NOTICE OF COMPLETION OF A DRAFT ENVIRONMENTAL IMPACT REPORT; SUNSHINE GAS PRODUCERS RENEWABLE ENERGY PROJECT (SCH NO. 92041053)**

Dear Mr. Inabinet,

The Los Angeles County Department of Public Health (DPH) appreciates the opportunity to provide comment on the Draft Subsequent Environmental Impact Report (DSEIR). DPH staff has completed its review of the DSEIR and offer the following comments:

1. Traffic impacts and road degradation: During construction, will material hauling vehicles entering and exiting the landfill impact traffic and/or cause road surface degradation on adjacent freeways and San Fernando Road?

3-1

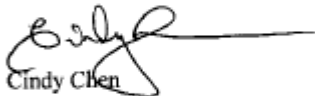
2. Soil Compatibility with Septic System: The proposed project includes the installation of a septic system to manage wastewater discharge associated with the employee sanitary facilities. The project proponent is required to work with DPH to ensure the proper design and installation of the septic system. Additionally, the building permit is conditional to the approval of the septic system design, which ensures that the proposed project would not be constructed until the septic system design meets the necessary design requirements, including the use of soils that adequately support the use of a septic system. Therefore once the design requirements are met, this impact would be less than significant.

3-2

3. Industrial Wastewater: It is estimated that approximately 8,500 gallons of condensate waste water would be generated each day from the Sunshine Gas Producer's (SGP) Facility's Landfill Gas treatment process. The waste water would be captured and included in the Sunshine Canyon Landfill (SCL) wastewater management system. Will the SCL waste water management system have adequate capacity to handle the additional wastewater from the SGP Facility? SCL operates the wastewater treatment system to ensure that the water quality meets the Los Angeles Regional Water Quality Control Board requirements for beneficial reuse, in this case for application to land for dust suppression and irrigation. Effluent from the proposed project's septic system shall not be commingled with the industrial wastewater generated from the SGP Facility. A separate septic treatment system will be required to treat the sanitary waste in accordance with DPH requirements. Wastewater produced from the proposed project would be appropriately managed and treated on site in accordance with relevant industrial wastewater requirements; therefore, wastewater impacts would be less than significant.

3-3

Very truly yours,



Cindy Chen  
Chief of Solid Waste Management Program

Cc: County Counsel (Julia Weissman)

**COMMENT LETTER NO. 3****COUNTY OF LOS ANGELES, DEPARTMENT OF PUBLIC HEALTH****JUNE 16, 2011****RESPONSE 3-1**

This comment requests additional information on traffic impacts and road surface degradation from material hauling during construction of the proposed project. By the very nature of the issue of road surface degradation, it is difficult to evaluate whether a small amount of traffic that results from construction of the proposed project or any specific project, relative to the truck trips already on the roads, materially contributes to road surface degradation. Further, there is no methodology currently available that measures roadway degradation in general or roadway degradation from individual projects. Accordingly, to attempt to address that issue would be speculative and is beyond the scope of CEQA (CEQA Guidelines §15145).

The NOP/IS prepared for the proposed SGPREP concluded that it would not generate significant adverse traffic impacts during construction or operation of the proposed project (see IS pages 2-52 through 2-59). No comment letters were received that refuted this conclusion. However, to address whether the additional traffic associated with the construction of the project will result in adverse traffic impacts, information on traffic relative to that provided in the NOP/IS (see Draft SEIR Appendix A) is discussed in the following paragraphs.

**Vehicle Traffic on Local Roads**

The maximum additional traffic per day from all vehicles, including trucks and automobiles, associated with the construction of the proposed project would occur during Phase III, which would result in an additional 120 vehicle trips on the roadways for a period of one to two months.<sup>2</sup> The total average daily traffic currently on San Fernando Road is 4,903 vehicles per day.<sup>3</sup> These will be distributed throughout the day, and therefore, it is unlikely that at any given time there will be a traffic increase greater than or equal to two percent of the current traffic volume. The traffic increase would be lower for the remaining 22 months of construction and during operation.

**Truck Traffic on Freeways**

The maximum increase in truck traffic from the proposed project would be 70 additional truck trips per day, which would occur during Phase I of construction.<sup>4</sup> As reported by the California

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<sup>2</sup> Phase III construction traffic would include two one-way trips by the following vehicles: 20 concrete trucks, and 40 vehicles. The phase would result in a total of 120 vehicle trips per day, and 40 truck trips per day.

<sup>3</sup> California Environmental Health Tracking Program's traffic spatial linkage web service; [http://www.ehib.org/traffic\\_tool.jsp](http://www.ehib.org/traffic_tool.jsp). Accessed October 2011.

<sup>4</sup> Phase I construction traffic would include two one-way trips by the following vehicles: 25 dump trucks, 10 flatbed trucks, 10 worker vehicles. This phase would result in a total of 70 one-way truck trips per day.

Department of Transportation (Caltrans), the truck annual average daily traffic (AADT) on I-5 at the California State Route 14 (CA-14) interchange is 19,165 trucks.<sup>5</sup> Caltrans reported truck AADT on CA-14 at the I-5 interchange is 8,968 trucks. The project related truck trips will be distributed throughout the day, and therefore, it is unlikely that at any given time there will be a traffic increase greater than or equal to two percent of the current traffic volume.

Lastly, the existing SCLF MMRS includes Mitigation Measure 9.1, which limits access for deliveries to SCLF. The proposed project would comply with these measures, including: (1) no traffic associated with the proposed project would occur on Sundays, and (2) the San Fernando entrance would be used by the proposed project from 5:00 am to 6:00 pm Monday through Friday and 6:00 am to 2:00 pm on Saturday. If trucks must enter the gate at other times, SCLF would notify the LEA for determination of necessity.

Based on the information above, traffic generated by the proposed project during construction and operation would not substantially increase traffic volumes on the adjacent roadways or freeways, and therefore, as concluded in the NOP/IS, the proposed project would not have significant adverse impacts on traffic and transportation.

### **RESPONSE 3-2**

This comment identifies requirements for the project proponent to work with County of Los Angeles, Department of Public Health (DPH) to ensure proper design and installation of the septic system. The project proponent has had multiple conference call meetings with DPH to discuss the septic system design and compliance with DPH requirements. The project proponent will continue to work closely with DPH to ensure the necessary design requirements are met, resulting in less than significant impacts, consistent with the analysis in the SEIR.

### **RESPONSE 3-3**

As indicated in Section 4.6.3.1 of the Draft SEIR for the proposed project, the SGPREP would generate up to approximately 8,500 gallons of wastewater per day (gpd) as a result of gas treatment (condensate), and an additional 500 to 1,000 gallons of wash water per quarter. The volume of condensate generated by the SGPREP would likely be higher than SCLF's current generation rates as the turbines require that landfill gas (LFG) contain less moisture than the LFG combusted by the flare. The existing SCLF wastewater treatment system's capacity is approximately 12,000 gpd. SCLF currently generates and treats approximately 3,000 gpd. Since the SGPREP project would displace combustion from the flare, the 8,500 gpd of condensate generated by SGPREP would also include the portion of condensate that is currently generated from LFG that is combusted in the flare (this constitutes the vast majority of the current process rate of 3,000 gpd). Therefore, the existing SCLF wastewater treatment system's capacity is sufficient to handle the condensate generated by the remaining on-site flares and the additional condensate from the SGPREP. All treated wastewater is to be reused on site for dust control and

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<sup>5</sup> 2009 Annual Average Daily Truck Traffic on the California State Highway System. 2010. <http://traffic-counts.dot.ca.gov/2009all/docs/2009truckpublication.pdf>. Accessed October 2011.

irrigation purposes and would meet the provisions for on-site use of water provided in the SCLF site's Waste Discharge Requirements (WDR), Order No. R4-2008-0088, issued by the Los Angeles Regional Water Quality Control Board. The WDR does not limit the quantity of treated wastewater that can be reused for dust control and irrigation. With regard to the septic system, see Response 3-2.

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June 20, 2011

South Coast Air Quality Management District  
Mr. Jeffrey Inabinet  
c/o CEQA Section, Planning, Rule Development and Area Sources  
21865 Copley Drive  
Diamond Bar, CA 91765-4178

RE: Draft Subsequent Environmental Impact Report for The Sunshine Gas Producers Renewable Energy Project (SCH No. 9204153) at Sunshine Canyon Landfill

Mr. Jeffrey Inabinet:

Thank you for the opportunity to comment on the Draft Subsequent Environmental Impact Report.

The Granada Hills North Neighborhood Council (GHNNC) was certified by the City of Los Angeles on September 10, 2002, and has had a duly elected and installed Board of Directors since March 31, 2003. The area it represents and services is bounded by the Los Angeles City/County line and I-5 (Golden State Freeway) to the north, the 405 (San Diego Freeway) to the east, the 118 (Ronald Reagan Freeway) to the south, and to Aliso Canyon in the west. It is composed of 3 districts. District 1 - Sunshine Canyon Landfill, District 2 - DWP/MWD, and District 3 - All Residential Areas to the south encompassing approximately 28,600 stakeholders.

4-1

The GHNNC Planning and Land Use Management (PLUM) Committee discussed the above referenced project on Monday, May 16, 2011. For the protection of our stakeholders the GHNNC PLUM recommended that our Board oppose this project as proposed. Based on the information included in the document that stated that: "compared to the existing environmental setting, the proposed project would increase GHG emissions and would exceed the SCAQMD significant threshold." We were faced with a choice of a project that might have been a worthy project versus one with excessive CO and PM2.5 emissions which are especially detrimental to our stakeholders, that could not even be mitigated with the use of pollution credits (which we also oppose), and which furthered the degradation of the local environment and the air we breathe.

4-2

**At a duly noticed meeting on May 23, 2011 the GHNNC Board agreed with the PLUM recommendation to oppose The Sunshine Gas Producers Renewable Energy Project (SCH No. 9204153) at Sunshine Canyon Landfill unless it results in a reduction of local pollution, without the use of offset of pollution credits. However, if this project is approved we must insist that the most efficient equipment available be used, that an analysis of the use of additional equipment such as scrubbers be included to make sure that this purported beneficial use does not make our existing air quality any worse than it is.**

4-3

Respectfully,

Anne Ziliak, Planning and Land Use Chair, Granada Hills North Neighborhood Council  
For Kim Thompson, President, Granada Hills North Neighborhood Council

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**COMMENT LETTER NO. 4****CITY OF LOS ANGELES, GRANADA HILLS NORTH NEIGHBORHOOD COUNCIL****JUNE 20, 2011****RESPONSE 4-1**

This comment provides information regarding the Granada Hills North Neighborhood Council (GHNNC), including its certification by the City of Los Angeles, the area it represents, and the number of constituents. No other response is necessary.

**RESPONSE 4-2**

This comment states the GHNNC's PLUM Committee's opposition to the proposed project, citing exceedances of the GHG significance thresholds as well as "excessive CO and PM<sub>2.5</sub> emissions... that could not even be mitigated with the use of pollution credits." Application of emission reduction credits for CO and PM<sub>2.5</sub> are discussed below. A discussion of emission reduction credits to offset emission increases from nonattainment and precursor pollutants is presented in Response 4-3.

As stated in Section 5.3.5.4 of the Draft SEIR, the large majority of the increase in GHG emissions reported in the Draft SEIR over baseline conditions results from the increased LFG produced by the SCLF. Regardless of the LFG treatment technology used (existing flares versus proposed turbines), the quantity of LFG will continue to increase, which will result in an increase in GHG emissions. As discussed in Chapter 6 (Alternatives) of the Draft SEIR, LFG emissions from continuing waste disposal and, therefore, combustion GHG emissions will increase over baseline nearly the same amount under the No Project Alternative, that is, not implementing the SGPREP and continuing to flare LFG as under the proposed project. Excluding combustion emissions from burning LFG, GHG emissions generated by the SGPREP from water conveyance, waste generation and decomposition, and construction, which would not occur under the No Project Alternative, would be extremely minor, approximately 40 metric tons of CO<sub>2</sub> equivalent per year (MTCO<sub>2e</sub>/yr), however, with the addition of new mitigation measure GHG-3, all construction GHG emissions are expected to be mitigated through funding provided by the project proponent to the SCAQMD's Rule 2702 – Greenhouse Gas Reduction Program. Table 5-7, Comparison of Baseline and Proposed Project Scenarios, Total Greenhouse Gas Emission Rates from the Draft SEIR (see footnote 8 on Table 5-7) was revised in the Final SEIR as shown below to demonstrate that GHG emissions from water conveyance, waste generation and decomposition, and construction contribute a small portion to the total GHG emissions.

**TABLE 5-7**  
**Comparison of Baseline and Proposed Project Scenarios**  
**Total Mitigated Greenhouse Gas Emission Rates**

Processes / Scenario	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	Total CO <sub>2</sub> e	Tons CO <sub>2</sub> e
	(MT/day)	(MT/day)	(MT/day)	(MT/day)	(MT/year)
SCLF Flare Baseline <sup>1</sup>	208	0.38	0.0026	217	79,269
Proposed Project Turbines <sup>2</sup>	301	0.60	0.0037	314	114,635
Solid Waste Generation <sup>3</sup>	0	1.13 x 10 <sup>-4</sup>	0	2.37 x 10 <sup>-3</sup>	0.87
Water Use <sup>4</sup>	2.0 x 10 <sup>-4</sup>	8.3 x 10 <sup>-9</sup>	2.2 x 10 <sup>-9</sup>	2.02x10 <sup>-4</sup>	0.074
Construction - SGP <sup>5</sup>	2.3	2.0 x 10 <sup>-4</sup>	9.8 x 10 <sup>-5</sup>	2.3	29
Construction - SCE <sup>6</sup>	3.4	2.4 x 10 <sup>-4</sup>	1.4 x 10 <sup>-4</sup>	3.5	13
Construction – Mitigation <sup>7</sup>	-	-	-	-	-39
Proposed Project Emissions					114,636
Difference					35,367
Significance Threshold					10,000
Significant? <sup>8</sup>					Yes

Notes:

1. Baseline GHG emissions for Oct 2007 through Sep 2009 (SCLF flares).
2. Proposed Project Turbine GHG emissions at capacity (Assume average 245.2 MMBtu/hr heat input, not to exceed 247 MMBTU/hr on a 24-hour average).
3. Solid waste emissions calculated based on CO<sub>2</sub>e emission factor and converted to methane emissions.
4. Water usage emissions based on GHG emissions for pumping water to the site.
5. Daily construction emissions represent the maximum daily emissions for the SGP Plant. Annual construction emissions amortized over 30 years.
6. Daily construction emissions represent the maximum daily emissions for the SCE Switchyard and Subtransmission Line. Annual construction emissions amortized over 30 years.
7. Mitigation Measure GHG-3 requires that the project proponent (or its successors) shall contribute \$36,000 to the SCAQMD's Greenhouse Gas Reduction Program, which is approximately double the amount of the Rule 2702 Participation Fee of \$15 per metric ton, to ensure that all construction GHG emissions as quantified in the Final SEIR are mitigated. The project proponent shall pay the GHG mitigation fee to the SCAQMD before starting project construction.
8. Regardless of the LFG treatment technology used (existing flares versus proposed turbines), the quantity of LFG will continue to increase, which will result in an increase in GHG emissions. The main difference in GHG emissions between the existing flaring and operation of the proposed turbines is the increase in GHG emissions from operation of the proposed project (water conveyance and waste generation and decomposition, which are relatively minor contributors), as well as construction (which would be temporary) of the SGP facility and SCE infrastructure. The increase in GHG emissions from these sources alone is the sum of solid waste generation (0.87 MT/year), water use (0.074 MT/year), and construction (26 MT/year for SGP and 13 MT/year for SCE, which equals 39 MT/year – note, as discussed in Note 7 above, the construction GHG emissions would be mitigated pursuant to Mitigation Measure GHG-3).

The Draft SEIR does identify both CO and PM<sub>2.5</sub> emissions as significant on a regional scale. The increase in CO and PM<sub>2.5</sub> emissions over baseline stems from both the increasing amounts of LFG to be flared (or burned in turbines) over time, as is discussed above for GHGs, but also due to differences in the source of emission factors. The estimated emission rates for the proposed project represent a conservative estimate of emissions based on manufacturer's guarantees (the Final SEIR text and calculations were revised as discussed in this response). Manufacturer's guarantees are designed to be greater than any foreseeable measurement, as permit conditions limiting emissions are generally based on manufacturer's guarantees. Baseline emissions, in contrast, are based on actual representative emissions data taken during a specified time period before release of the NOP/IS for public review. Therefore the actual increase in emissions (the difference between the proposed project and baseline) is anticipated to be less than the manufacturer's guarantee to remain in compliance with applicable permit conditions. For example, the actual emissions of PM<sub>10</sub> are expected to be less than the permitted emissions limit to ensure compliance. In response to comments submitted on the Draft SEIR regarding significant operational air quality impacts, SCAQMD staff requested that the project proponent

project. The project proponent contacted the equipment manufacturer regarding the possibility of further reducing operational emissions. New manufacturer guarantees were provided to the applicant on July 8, 2011 (see Attachment A of this Appendix), which resulted in reduced estimated daily emissions for both NO<sub>x</sub> and CO as presented in the table below. The updated manufacturer guarantees are based on inclusion of recent field data from other facilities utilizing the turbines.

**TABLE 3**  
**Comparison of Manufacturer Guarantees as Presented**  
**in the Draft and Final SEIR**

Criteria Pollutant	Emissions Level (ppm)		Daily Emissions (lbs/day)	
	Draft SEIR	Final SEIR	Draft SEIR	Final SEIR
NO <sub>x</sub>	25	15	639	385
CO	55	25	858	394

The Final SEIR has been updated to incorporate these revised daily emission rates. Table 4-8, Estimated Facility Operation Emission Inventory was revised in the Final SEIR to reflect the revised daily emission rates. As shown in Table 4-8, emissions of CO would be below the applicable SCAQMD significance threshold, therefore, mitigation measures, including offsets, would not be required. In addition, Table 4-8 notes that regionally, PM<sub>2.5</sub> emissions would be reduced by the use of PM<sub>10</sub> offsets, as PM<sub>10</sub> offsets primarily come from sources of combustion (the bulk of PM<sub>10</sub> from combustion sources is PM<sub>2.5</sub>). Other sections updated using the revised daily emission rates include Section 4.2.3.5 (localized operational emissions), Section 5.3.2 (cumulative impacts) and Section 6.4 (project alternatives).

**TABLE 4-8**  
**Estimated Facility Operation Emission Inventory**

Processes / Scenario		NO <sub>x</sub>	CO	VOC	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>3</sup>	SO <sub>x</sub>
		(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)
a	SCLF Flare Baseline (2007 – 2009) <sup>1</sup>	124	126	19	19	19	113
b	Total SGPREP Emissions <sup>2</sup>	385	394	107	113	113	375
b-a =c	Subtotal SGPREP Emission Increases	261	268	88	94	94	262
d	Offsets Applied to SGPREP per Rule 1303 (b)(2)(A)	261	0	88	94	0	262
c-d	Remaining SGPREP Emissions	0	268	0	0	94	0
	SCAQMD Threshold of Significance	55	550	55	150	55	150
	Significant?	No	No	No	No	Yes	No

Notes:

1. Baseline emissions for Oct 2007 through Sep 2009
2. SGPREP emissions at peak capacity (Assume average 245.2 MMBtu/hr heat input).
3. PM<sub>2.5</sub> emissions based on the conservative estimate that PM<sub>2.5</sub> emissions are equal to PM<sub>10</sub> emissions. Although offsets are not provided for PM<sub>2.5</sub>, regionally, PM<sub>2.5</sub> emissions would be somewhat reduced by the use of PM<sub>10</sub> offsets as PM<sub>10</sub> offsets primarily come from sources of combustion that contain a large fraction of PM<sub>2.5</sub>.

Based on the dispersion modeling, concentrations of NO<sub>2</sub>, CO, and PM<sub>10</sub> at the nearest sensitive receptors were estimated and presented in Table 4-9, Results of Criteria Pollutants Air Quality Modeling, of the Draft SEIR. This table was updated with the new emission factors for the Final

SEIR. As shown in Table 4-9, below, localized NO<sub>2</sub> and CO air quality impacts are further reduced and, for all pollutants shown, localized air quality impacts remain less than significant.

**TABLE 4-9**  
**Results of Criteria Pollutants Air Quality Modeling**

Criteria Pollutant	Averaging Time	Significance Threshold (µg/m <sup>3</sup> )	Concentrations for Proposed Project (µg/m <sup>3</sup> )	Significant?
NO <sub>2</sub>	1-hr	500	291	No
	Annual	100	38	No
CO	1-hr	23,000	2,337	No
	8-hr	10,000	1,612	No
PM <sub>10</sub>	24-hr	2.5	2.1	No
	Annual	1	0.36	No

Section 5.3.2 of the Draft SEIR, Cumulative Operational Impacts, indicates that CO and PM<sub>2.5</sub> emissions would exceed applicable thresholds of significance and would therefore be cumulatively significant. Since project-specific CO emissions are no longer significant, based on revised manufacturer guarantees, this text has been revised to state, “The operational criteria pollutant air quality analysis in Section 4.2 showed that PM<sub>2.5</sub> emissions would exceed the applicable regional thresholds of significance for operation.” Section 5.3.2 of the Final SEIR concludes, “As a result, project-specific operational air quality impacts from PM<sub>2.5</sub> are cumulatively considerable as defined by CEQA Guidelines § 15064(h)(1). Therefore, the project is considered to have significant adverse cumulative operational air quality impacts from criteria pollutants.”

The increase over baseline for the No Project Alternative and the comparison to the Proposed Project can be found in Section 6.4.1 of the Draft SEIR. Table 6-1b, Comparison of Proposed Project to Alternative 1 Operation Criteria Pollutant Emission Inventory in 2025, was updated with the new emission factors for the proposed SGPREP in the Final SEIR.

**TABLE 6-1b**  
**Comparison of Proposed Project to Alternative 1 Operation Criteria Pollutant Emission Inventory in 2025**

Scenario	NO <sub>x</sub>	CO	VOC	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>
	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)
Proposed Project Increase from Baseline Before Offsets	261	268	88	94	94	262
Proposed Project Increase from Baseline After Offsets <sup>1</sup>	0	268	0	0	94	0
No Project Alternative Increase from Baseline	54	56	9	8	8	50
No Project Alternative Increase from Baseline After Offsets <sup>2</sup>	0	56	0	0	8	50
SCAQMD Threshold of Significance	55	550	55	150	55	150

Notes:

<sup>1</sup> Proposed project increase from baseline includes the application of PR offsets as project design features

<sup>2</sup> SCLF currently applies emission reduction credits to NO<sub>x</sub>, CO, VOCs and PM<sub>10</sub>

A new table, Table 6-1c, Comparison of Alternative 1 to Existing Permitted Limits Operation Criteria Pollutant Emission Inventory in 2025, was added in the Final SEIR which shows the difference between the No Project Alternative at permitted values, and the Proposed Project at permitted values to clarify the reason for the differences in estimated emissions.

**TABLE 6-1c  
Comparison of Alternative 1 to Existing Permitted Limits Operation Criteria Pollutant Emission Inventory in 2025**

Scenario	NO <sub>x</sub>	CO	VOC	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>x</sub>
	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)
No Project Alternative at Existing Permit Limits Increase from Baseline	241	101	15	55	55	113
Proposed Project Increase from Baseline Before Offsets <sup>1</sup>	261	268	88	94	94	262
Offsets Applied to Proposed Project	261	0	88	94	0	262
Proposed Project Increase from Baseline After Offsets <sup>1</sup>	0	268	0	0	94	0

Notes:

<sup>1</sup> Proposed project increase from baseline includes the application of Priority Reserve offsets as project design features

The increase over baseline for the Reduced Project Alternative and the comparison to the Proposed Project can be found in Section 6.4.2 of the Draft SEIR. These tables were updated with the new emission factors for the proposed SGPREP in the Final SEIR.

**TABLE 6-4a  
Alternative 2 Operation Criteria Pollutant Emission Inventory in 2025**

Scenario		NO <sub>x</sub>	CO	VOC	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>3</sup>	SO <sub>x</sub>
		(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)
a	SCLF Flare Baseline <sup>1</sup>	124	126	19	19	19	113
b	Excess Flared <sup>2</sup>	71	73	11	11	11	65
c	Total Reduced Project Size Alternative <sup>2</sup>	231	236	64	68	68	225
b+c-a =d	Subtotal Reduced Project Size Alternative Emission Increases	179	183	56	60	60	177
e	Offsets Applied	179	0	56	60	0	177
d-e	Remaining Reduced Project Size Alternative Emissions	0	183	0	0	60	0
	SCAQMD Threshold of Significance	55	550	55	150	55	150
	Significant?	No	No	No	No	Yes	No

Notes:

1. Baseline emissions for Oct 2007 through Sep 2009
2. Excess LFG that would need to be combusted in a flare because Alternative 2 would be unable to combust the excess LFG in the three turbines
3. Emissions associated with three turbines at peak capacity (2025)

**TABLE 6-4b**  
**Comparison of the Proposed Project and Alternative 2 Operation Criteria Pollutant**  
**Emission Inventory in 2025**

Scenario	NO <sub>x</sub>	CO	VOC	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>
	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)
Proposed Project Increase from Baseline After Offsets <sup>1</sup>	0	268	0	0	94	0
Reduced Size Project Alternative Increase from Baseline After Offsets <sup>1</sup>	0	183	0	0	60	0
SCAQMD Threshold of Significance	55	550	55	150	55	150

## Notes:

1. Emissions presented in this table for the “proposed project increase from baseline after offsets” and “reduced project alternative increase from baseline after offsets” include the application of PR offsets for NO<sub>x</sub>, VOC, and SO<sub>x</sub>. These offsets are considered project design features and completely offset the project’s NO<sub>x</sub>, VOC, and SO<sub>x</sub> operational emissions

As discussed in Section 4.2.3.5 of the Final SEIR, the localized impact from NO<sub>x</sub> and CO concentrations from the proposed project would be lower than those identified in the Draft SEIR, and NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> impacts from the proposed project would all be less than significant. This determination was based on air dispersion modeling to calculate ambient air concentrations from the proposed project sources. The methodology and modeling parameters are included in Appendix E of the Final SEIR.

Finally, the proposed project will be beneficial. As stated in Section 1.7.2 of the Draft SEIR, one of the objectives of the proposed project is to maximize production of renewable energy utilizing LFG. Rather than flaring all LFG, the proposed project would combust LFG in gas turbines to produce electricity, up to the capacity of the turbines to burn LFG, thus providing a beneficial use of a renewable resource that would otherwise be wasted and this may displace electricity generated from traditional sources; however, the proposed project does not take credit for any energy displaced. The No Project Alternative, Alternative 1, does not achieve this project objective and the Reduced Project Alternative, Alternative 2, does not achieve this objective as well as the proposed SGPREP.



**RESPONSE 4-3**

This comment states GHNNC's opposition to the proposed project unless the proposed project results in a reduction of local pollution without the use of pollution credits. Application of emission reduction credits to offset emission increases from nonattainment and precursor pollutants is a federal requirement and, therefore, must be applied to the proposed project. The SCAQMD only allows the use of emission reduction credits to "mitigate" regional air quality impacts under CEQA. When performing a localized air quality analysis to determine if emissions from a project may affect pollutant concentrations at the sensitive receptor, emission reduction credits are not allowed to be used to reduce emissions. As stated in Response 4-2, the localized impacts from all modeled criteria pollutant emissions are less than significant. This means that the modeling analysis shows that emissions from the proposed SGPREP would not contribute significantly to existing ambient pollutant concentrations at any nearby sensitive receptors. Consistent with SCAQMD policy this modeling evaluation does not include emission reduction credits to offset emission increases. Similarly, as discussed in Section 4.2.3.6, impacts resulting from emissions from toxic air contaminants would also be less than significant.

As noted in Response 4-2, the difference in emissions used to determine significance in the Draft SEIR (proposed project emissions minus baseline emissions) is conservative because, under normal operating conditions, SGPREP combustion equipment is expected to operate at less than its maximum potential to emit to ensure compliance with permit condition emission limits. As a result, emissions would normally be less than shown in the Final SEIR. However, the analysis assumes that the combustion equipment operates at maximum permitted capacity to provide a worst-case analysis.

This comment also states that if the proposed project is approved, the most efficient equipment available be used and that an analysis of the use of additional equipment such as scrubbers be included. In order to address the concern regarding preparing an analysis of additional emissions reduction equipment technologies, in response to comments and at SCAQMD staff's request, a report was prepared that presents available technologies and their emission reduction potential (report included in Attachment A to this Appendix). Several similar projects, i.e., LFG to energy (LFGTE) projects, were identified and it was concluded that the Solar Turbines Mercury 50, a recuperated high efficiency turbine for LFG applications, has the lowest emissions for LFG turbines of all of the similar projects evaluated. The major findings of this study are included and summarized below:

The SCAQMD requested that SGP evaluate whether additional emission reductions are achievable for the proposed project beyond those already accounted for in the present design, and beyond those required by the United States Environmental Protection Agency (EPA) and SCAQMD rules and regulations. SGP contracted with ENVIRON to examine the potential for alternatives to the controls originally proposed, as well as alternative operating practices to reduce emissions from the LFGTE facility. This study is contained in Attachment A to this Appendix, and summarized here.

Cost for installation and economic feasibility of alternative technologies for the proposed project were not considered for ENVIRON's evaluation. Alternative methods of pollutant reduction were considered for NO<sub>x</sub>, CO, VOCs, PM (PM<sub>10</sub> and PM<sub>2.5</sub> are identical for this project), and SO<sub>x</sub>.

One important issue related to equipment life and use of air pollution controls on LFG-fired equipment is the presence of siloxanes in collected LFG. Siloxanes present in the LFG are converted to silicon dioxide ( $\text{SiO}_2$ ) particulates when combusted. Upon forming, these particulates adhere to any nearby surface of a lower temperature almost immediately. In turbines, the deposits have an adverse impact on combustion efficiency, resulting in increased emissions, as well as degradation of the equipment. In order to extend the life of the turbine and continue complying with permit conditions, the siloxane concentration in the LFG is reduced to less than  $5.0 \text{ mg Si/m}^3$  using a regenerating siloxane removal system with a dedicated flare. The different types and concentrations of siloxanes vary from one landfill to another, and are a function of the waste disposed of at the landfill. At each landfill, the siloxane concentrations can also vary over time depending on the decomposition of particular waste types, especially at large landfills. The SCLF siloxane levels are higher than any other DTE project sites; 2009 sampling results from 16 other DTE project sites ranged from 8.9 to  $34.0 \text{ mg/m}^3$  compared to SCLF siloxane level of  $47 \text{ mg/m}^3$  as summarized in Attachment A to this Appendix.

For the proposed SGPREP, the majority of the  $\text{NO}_x$  and CO emissions are associated with the turbines. The siloxane regenerating flare emits 23 percent of the total PM emissions, with the balance being emitted by the turbines. The potential post-combustion controls and/or process modifications that may be technologically feasible for the turbines and flare were analyzed separately.

The options for achieving further  $\text{NO}_x$  emission reductions are to either control the  $\text{NO}_x$  emissions at the point of generation, with low  $\text{NO}_x$  combustion technology, and/or to use post combustion technology to remove generated  $\text{NO}_x$  from the exhaust gas stream. The Solar Mercury 50 gas turbines proposed for this project already achieve the lowest  $\text{NO}_x$  emissions compared to other turbines in operation or proposed using LFG. Two post combustion  $\text{NO}_x$  control technologies were evaluated for this type of source: Selective Catalytic Reduction (SCR) and Selective Non-catalytic Reduction (SNCR). SNCR was concluded to be infeasible because, to operate effectively, it must operate at temperatures substantially higher than the exhaust temperatures generated by the gas turbines. As a result, SNCR would not provide additional  $\text{NO}_x$  emission reductions and, therefore, was not considered further as a possible add-on control technology to further reduce  $\text{NO}_x$  emissions.

With regard to SCR, the turbine exhaust concentration of  $\text{NO}_x$  prior to any post-combustion control device would be less than 15 ppm, slightly below the upper threshold of control effectiveness threshold of an SCR. In addition, a potential concern with the use of SCR on LFG-fired turbines is the presence of siloxanes. The SCR catalyst provides a high surface area for adsorption of these particles, which can result in fouling of the catalyst. Pretreatment systems are needed to protect the catalyst from exposure to silica, phosphorous, sulfur, and chlorinated and fluorinated VOCs. Additional treatment of the LFG would be required after the current proposed siloxane removal system to reduce total silica concentrations down to the range of  $5\text{-}50 \text{ }\mu\text{g/m}^3$  to protect the catalyst from being masked or poisoned. The SCR would have adverse environmental impacts that were not considered in the Draft SEIR. This includes the introduction of ammonia emissions; secondary  $\text{PM}_{2.5}$  formation associated with SCR ammonia emissions; potential increase in odors associated with ammonia; potential increases in solid and hazardous waste generation and disposal associated with the catalyst use; power loss due to the

additional pressure loss associated with the catalytic system; and potential increase in truck traffic associated with the ammonia transport and catalyst use.

The footprint of each of the five SCR systems that would be needed to control the turbines is estimated to be 15 feet wide by 45 feet long, with an estimated 30 foot tall exhaust stack. The site at its widest points measures approximately 185 feet by 195 feet. The majority of the space is occupied by operating equipment. Due to limited available space at the SCLF needed to accommodate these requirements, this treatment system is not feasible for the SGP LFGTE project. Preparation of a site that is larger than the site currently considered would require considerably more earthwork, as the landfill site has sloping terrain. The additional environmental impacts of additional earthwork include additional emissions of pollutants from the additional off-road equipment, and additional dust generation due to the additional earthwork. Additional noise impacts may also result from the required additional earthwork. This additional construction was not considered in the Draft SEIR.

CO emitted by the SGPREP is due almost exclusively to combustion occurring in the turbine and regenerating flare; it is only a minor component of the LFG. The options for achieving further CO emission reductions are to either control the CO emissions at the point of generation and/or to use post combustion control technology to remove thermal-generated CO from the exhaust gas stream. The Solar Mercury 50 gas turbines proposed for this project already achieves the lowest CO emissions compared to other turbines in operation or proposed that use LFG. Therefore, the analysis of the possible CO emission reduction technologies is limited to post combustion add-on controls for the gas turbines. Catalytic CO oxidation is the only post-combustion method identified and evaluated for reducing CO for gas turbines operating on LFG.

The CO catalytic oxidation process for simple cycle gas turbine systems involves passing the exhaust through a catalyst bed; no reagent or mixing chamber is required. As with SCR for NO<sub>x</sub> removal, a concern with the use of oxidation catalysts on LFG-fired turbines is the presence of siloxanes present in LFG. Pretreatment systems would be needed to protect the catalyst from exposure to silica, phosphorous, sulfur, and chlorinated and fluorinated VOCs. The use of a CO catalytic oxidation system would result in potential increases in solid and hazardous waste generation and disposal associated with the catalyst use; power loss due to the additional pressure loss associated with the oxidation system; and potential increase in truck traffic associated with the catalyst use.

The footprint of each of the five CO oxidation systems is estimated to be 15 feet wide by 45 feet long, with an estimated 30 foot tall exhaust stack. The CO oxidation systems could be incorporated into units with the SCR system discussed above, so only one set of systems would be needed. Similar to SCR, due to limited available space at the SCLF needed to accommodate these requirements, this treatment system is not feasible for the SGPREP. As noted above, if a larger site were constructed, there would be additional environmental impacts associated with the earthwork needed to construct such a site.

Particulate matter generated in SGPREP is due both to process and combustion related activities. The options for achieving further PM emission reductions are to either control the PM emissions associated with the process, and/or to use post-combustion technology to remove generated PM from the exhaust gas stream.

There are a number of different types of PM controls available for combustion sources. These include cyclones, baghouses, wet scrubbers, dry electrostatic precipitators (ESPs) and wet ESPs. Each of these were evaluated for use on the SGPREP turbines.

Cyclones provide a low-cost, low-maintenance method of removing larger particulates from a gas stream. Cyclones are primarily used to remove particulate matter greater than 10  $\mu\text{m}$  in diameter<sup>6</sup>, and are not very efficient with smaller particles. Although cyclones may be used to control sources with PM<sub>2.5</sub> emissions, the conventional system can only achieve a zero to 40 percent control efficiency with 20 to 70 percent control efficiency possible for high efficiency cyclones. However, higher efficiency cyclones result in higher pressure drops (8 to 10 inches of water) and thus, substantially higher energy costs to move the exhaust through the cyclone if an induced draft fan were used, or substantial reductions in power output and efficiency if no fan were used. High throughput cyclones are only guaranteed to remove particles greater than 20  $\mu\text{m}$ , with only a zero to 10 percent removal efficiency for PM<sub>2.5</sub>.<sup>7</sup> Because of the small particle size of the particulate matter from the Mercury 50, installing a cyclone would provide marginal to no additional particulate matter emission reduction benefits, especially for particulates smaller than PM<sub>10</sub>; and it is possible that the siloxanes or other LFG constituents could lead to plugging.

Most baghouses use long, cylindrical bags (or tubes) made of woven or felted fabric as a filter medium. The gas is drawn through the bags, either on the inside or the outside, depending on cleaning method, and a layer of dust accumulates on the filter media surface until air can no longer move through it. When sufficient pressure drop occurs, the cleaning process begins. In the case of simple cycle gas turbines, baghouses would require filter fabrics with membranes such as Polytetrafluoroethylene (PTFE or Teflon™) due to the low particulate matter loading and resulting inability to quickly build sufficient filter cake (the filter bag's primary filtration mechanism). Although baghouse filter fabrics are available that have temperature tolerance to gas turbine exhaust temperatures, filter membranes and their laminates have a sustained upper temperature limit of only 500 °F, accommodating short-term temperature excursions up to 525 °F.<sup>8,9</sup> Dilution or spray coolers would be necessary to bring exhaust temperature within baghouse membrane tolerance. Water spray coolers could be used to reduce the temperature of the exhaust gas stream; however, there are no known applications of this technology for gas turbines.<sup>10</sup> In addition, this technology has potential to create additional salt particulate matter, increasing turbine particulate matter emissions and has the potential to produce stickier particle

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<sup>6</sup> EPA Clean Air Technology Center, *Air Pollution Control Technology Fact Sheet*, EPA-452/F-03-005, July 2003, <http://www.epa.gov/ttn/catc/dir1/fcyclon.pdf>

<sup>7</sup> Cheremisinoff, Nicholas P. *Handbook of Air Pollution Prevention and Control*, Butterworth-Heinemann, 2002.

<sup>8</sup> EPA Clean Air Technology Center, *Air Pollution Control Technology Fact Sheet, Fabric Filter*, EPA-452/F-03-024, July 2003, <http://www.epa.gov/ttn/catc/dir1/ff-shaker.pdf>

<sup>9</sup> Telephone conversation, D. Park, ENVIRON International Corporation with J. Darrow, W.L. Gore & Associates, November 10, 2011.

<sup>10</sup> Ibid.

cake that would increase bag blinding, increase pressure drop, and reduce the service life of the filter bag.

In the specific case of SCLF, which has a predicted PM emission rate of 0.015 lb/MMBTU, after dilution,<sup>11</sup> exhaust PM concentrations are expected in the range of 10 mg/m<sup>3</sup> to 12 mg/m<sup>3</sup>. PTFE (Teflon) baghouse membranes have a lower filter rate of 10 mg/m<sup>3</sup>, which is the detection limit of in-use control efficiency performance tests.<sup>12</sup> Even if a baghouse could be installed, because of the inherent particulate control efficiency of the Mercury 50, installing a baghouse would provide marginal to no additional PM emission reduction benefits, especially for particulates smaller than PM<sub>10</sub>.

Wet scrubbers remove pollutant gases by dissolving or absorbing them into the liquid. Various types of wet scrubbers can be used to remove PM<sub>2.5</sub> including fiber-bed, impingement plate, filter bed, mechanically aided, packed bed, spray chamber, and venturi wet scrubber. Installation of a wet gas scrubber would not achieve the major goal of this technology survey – further reductions in emissions given the very low concentrations of PM present in the flue gas. In addition, the use of a wet gas scrubber would result in power loss from the additional pressure loss associated with the system, which is especially acute the smaller the PM size being controlled. There are additional concerns pertaining to use of a wet gas scrubber, including the following: substantial water demands which were not analyzed in the Draft SEIR; the potential generation of solid waste and wastewater; and the potential need for wastewater treatment systems that were not analyzed in the Draft SEIR.

A wet ESP is a particle control device that uses electrical charges to move particles out of the exhaust stream onto into a wet medium or collector plate. For new wet ESPs, the PM control efficiency ranges from 99 percent to 99.9 percent. Wet ESPs can experience a number of problems including corrosion at the top of the electrical wires because of air leakage and acid condensation. Water and dissolved pollutants can form highly corrosive acid solutions. Wet ESPs could generate substantial water demand and wastewater quality impacts from acid condensation, resulting in the need for on-site water treatment facilities. Further, this technology is limited to a maximum operating temperature of 190 °F,<sup>13</sup> much lower than the exhaust temperatures anticipated for the turbines. Installation of a wet ESP is not considered to be feasible because its maximum operating temperature is substantially lower than the exhaust temperatures from the turbines.

Dry ESPs operate on the same principle as wet ESPs, except that water is not used so charged particulates are attracted to dry collector plates or wires. The PM control efficiency for new dry ESPs is similar to wet ESPs, ranging from 99 percent to 99.9 percent. Like wet ESPs, dry ESPs can experience a number of problems including corrosion at the top of the electrical wires because of air leakage and acid condensation. Also, because weighted wires tend to oscillate, the

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<sup>11</sup> In order to bring turbine exhaust temperature from 850°F to 500°F a dilution air flow rate equal to about 60 percent of the Solar Mercury 50 turbine exhaust gas flow rate is required.

<sup>12</sup> Telephone conversation, J. Darrow, W.L. Gore & Associates, November 10, 2011.

<sup>13</sup> EPA Clean Air Technology Center, *Air Pollution Control Technology Fact Sheet, Wet Electrostatic Precipitator (ESP) Wire-Pipe Type*, EPA-452/F-03-029, July 2003, <http://www.epa.gov/ttn/catc/dir1/fwespwpi.pdf>

middle of the wire can approach the pipe causing increased sparking and wear, which has potential hazardous impacts. Dry ESPs, which are effective on PM<sub>2.5</sub>, can operate at temperatures up to 1,300 °F.<sup>14</sup> The typical inlet loading to a dry ESP is one to 10 g/m<sup>3</sup>, compared to the PM exhaust concentrations of 0.007 g/m<sup>3</sup> expected for this project. In addition, ESPs require relatively large spaces for installation to obtain the low gas velocities needed for efficient PM collection.<sup>14</sup> Installation of a dry ESP would not achieve the major goal of this technology survey – further reductions in PM emissions because of the inherently low PM concentrations in the exhaust from the turbines. Further, dry ESPs have high power requirements.

Sulfur oxide emissions from the proposed project are solely a byproduct of the combustion processes. To further control SO<sub>x</sub> emissions, alternative pre-treatment processing of the LFG would be needed. As with the removal of PM, scrubbers are not feasible for this application.

The preferred sulfur removal method for LFG involves a non-regenerating, iron-based media. The leading manufacturer of iron-based sulfur removal media, SulfaTreat, was contacted to assess the applicability of this process to SGPREP. While the use of this system can reduce SO<sub>x</sub> emissions from SGPREP, it has potential adverse environmental impacts that were not considered in the Draft SEIR. Change-out of SulfaTreat media has been associated with odor complaints in other facilities. Given the current concerns about odors from the landfill, SulfaTreat could exacerbate such concerns. In addition, there are other potential environmental concerns: SulfaTreat has the potential to generate water demand and water quality impacts from the water wash system that were not evaluated in the Draft SEIR; the generation of a wastewater stream from the SulfaTreat system may be characterized as hazardous waste; construction air quality impacts would be generated from the construction of a new industrial wastewater treatment system or an industrial sewer connection that were not evaluated in the Draft SEIR; potential impacts to publicly owned treatment works could occur as a result of the wastewater generated by the SulfaTreat process that were not evaluated in the Draft SEIR; SulfaTreat has the potential to generate solid waste impacts that were not analyzed in the Draft SEIR; and SulfaTreat has the potential to generate transportation/circulation impacts from transport of media to the project and removal of spent media to an appropriate landfill or transport of sewage to a publicly owned treatment works that were not analyzed in the Draft SEIR.

Although this process was found to be technologically feasible, the SulfaTreat system that could treat 65 percent of the gas would require a 50 foot by 55 foot area for installation plus room around the unit for maintenance activities and storage for spent media disposal. Treatment of a greater fraction of the inlet gas would require even more room. As noted earlier in the discussion, if a larger area were needed at SGPREP, there would be additional earthwork required. This would have additional adverse environmental impacts as discussed earlier.

VOC emissions from the proposed project are largely a result of the composition of the LFG, the majority of which is destroyed in the combustion process. SCAQMD and EPA (NSPS) regulations require that 98 percent of the VOC present in LFG be destroyed during combustion.

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<sup>14</sup> EPA Clean Air Technology Center, *Air Pollution Control Technology Fact Sheet, Dry Electrostatic Precipitator (ESP) Wire-Pipe Type*, EPA-452/F-03-027, July 2003, <http://www.epa.gov/ttn/catc/dir1/fdespwpi.pdf>

Because the VOC reduction from the turbines meets the 98 percent reduction efficiency required as best available control technology (BACT) by the SCAQMD and under New Source Performance Standard (NSPS) Subpart WWW, additional VOC removal by add-on controls to the turbine was not considered feasible.

The most likely candidate for VOC control would be installation of an oxidation catalyst similar to that described for CO treatment earlier. Because of the high VOC control efficiency that would be achieved first by the pretreatment system and then by the turbines, additional VOC emission reductions from an oxidation catalyst, for example, are unlikely and thus would not achieve the major goal of this technology survey.

The current project design includes use of a regenerating temperature swing adsorption media to remove siloxanes to protect the turbine from SiO<sub>2</sub> deposits. This process also incidentally removes H<sub>2</sub>S and VOCs from the LFG. The gas exhausted from the regenerating media bed is combusted in an enclosed flare to destroy VOC and H<sub>2</sub>S (converting it to SO<sub>2</sub>) that are collected, in addition to the siloxanes. Because add-on controls are not feasible on a flare due to the high volume of gas being treated and the dilute emissions stream, an additional method for reduction of emissions would be to utilize alternative pre-treatment controls.

Use of activated carbon was considered as an alternative option to the current plan for siloxane treatment. Three parallel trains of lead/lag media vessels would be used to remove siloxanes, with additional removal of VOCs and H<sub>2</sub>S. Use of this technology is technically feasible and would result in additional reductions of SO<sub>x</sub> (but not likely VOCs). However, the system will require 95 feet by 55 feet of space as well as space around the unit for maintenance activities. In addition, there are other potential environmental concerns that were not analyzed in the Draft SEIR: the use of activated carbon has the potential to generate solid waste impacts, and the use of activated carbon has the potential to generate transportation/circulation impacts from transport of media to the project and removal of spent media to an appropriate landfill.

As discussed in response to Comment 1-1, following the publication of the Draft SEIR, the project proponent worked with the turbine manufacturer and the manufacturer was able to guarantee lower CO and NO<sub>x</sub> emissions. This resulted in modified calculations and determination of less than significant CO impacts. The current proposed project provides the lowest permitted emission rate for CO, NO<sub>x</sub>, and PM of any known permitted LFGTE turbine operating in the SCAQMD jurisdiction. In addition, the VOCs are being destroyed at the BACT emissions rate, and the actual emissions rate of the SO<sub>x</sub> is governed by the amount of reduced sulfur in the LFG. Based on the report commissioned by SGP, no additional controls or pre-process modifications were identified to further reduce emissions beyond those contained in the newly revised lower limits for the turbines. In addition, many add-on controls analyzed would result in additional environmental impacts, such as those associated with hazardous waste removal and disposal, and additional impacts of construction.

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LOS ANGELES CITY COUNCILMEMBER  
**GREIG SMITH**  
TWELFTH DISTRICT

June 21, 2011

Mr. Jeffrey Inabinet  
CEQA Section, Planning, Rule Development  
and Area Sources South Coast  
Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4178

**RE: DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT (SEIR) FOR  
SUNSHINE GAS PRODUCERS RENEWABLE ENERGY PROJECT (SCH. NO. 92041053)**

Dear Mr. Inabinet:

As the elected representative of the district which encompasses the above-referenced project, I would like to state some of my concerns, for the record.

Though I am on record as firmly in favor of renewable energy projects, I have some apprehension that while the proposed project may have a benefit to the region, the impacts of the project – increased NOx, PM 10 and PM 2.5 are local. This is a community that is already disproportionately affected by the significant impacts of the Sunshine Canyon Landfill, where this project is proposed to be sited.

5-1

I urge the AQMD Board to uphold the recent action of the Granada Hills North Neighborhood Council and only permit a project for which these local detrimental impacts can be mitigated on site – without the use of emission credits. The technology exists.

5-2

I ask that you require the proponent to prioritize environmental protection over profit, for the benefit of those that live in this community, and for their children that attend school there.

Thank you for your attention to this matter.

Sincerely,

  
GREG SMITH  
Councilman, Twelfth District

GS:nb

cc: Kim Thompson, GHNNC  
Dave Beauvais, GHSNC  
Becky Bendikson, Sunshine Canyon CAC  
Wayde Hunter, North Valley Coalition  
Councilmember Jan Perry, AQMD Board Member

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**COMMENT LETTER NO. 5****LOS ANGELES CITY COUNCILMEMBER, GREIG SMITH, TWELFTH DISTRICT****JUNE 21, 2011****RESPONSE 5-1**

Please refer to Response 4-2 for discussion of localized air quality impacts analysis from the proposed project. The localized air quality impacts analysis shows that the proposed project has no significant effect on ambient air concentrations to the local community.

**RESPONSE 5-2**

Please refer to Responses 4-2 and 4-3 for a complete discussion of localized air quality impacts analysis that includes the evaluation of sensitive receptors and use of offsets. As stated in Response 4-2, the localized impact from NO<sub>x</sub> and CO concentrations are now lower than those identified in the Draft SEIR, and NO<sub>x</sub>, CO, PM<sub>10</sub> and PM<sub>2.5</sub> emission impacts would all be less than significant. Further, as discussed in Response 4-3, the SCAQMD only allows the use of emission reduction credits for regional air quality impacts, meaning that emission reduction credits were not considered in the modeling of localized air quality impacts.

In response to public comment to evaluate potential air pollution control technologies that could potentially provide additional NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emission reductions, a survey of technologies was conducted. Please refer to Response 4-3 for a summary of the technology survey and Attachment A to this Appendix for the full report.

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**NORTH VALLEY COALITION**

11862 Balboa Blvd.  
Box 172  
Granada Hills,  
California 91344

June 23, 2011

South Coast Air Quality Management District  
Mr. Jeffrey Inabinet  
c/o CEQA Section, Planning, Rule Development and Area Sources  
21865 Copley Drive  
Diamond Bar, CA 91765-4178

**RE: Draft Subsequent Environmental Impact Report for The Sunshine Gas Producers Renewable Energy Project, SCH No. 9204153 Sunshine Canyon Landfill**

Mr. Jeffrey Inabinet:

The North Valley Coalition wishes to thank you for the opportunity to comment on the Draft SEIR.

It is our intent in our response and the attached comments not to address each and every specific instance or section where a comment and/or facts, figures, tables et cetera are located, but to address an example of an area that we question and/or comment on, and to have that comment uniformly apply to any and all sections where that information is referenced and/or used to support the project, and to be address by the proponent appropriately in each and every instance.

The members of our organization were among those recommending that the landfill gas be utilized to generate energy. However, never in our wildest dreams did we expect to be faced with a project that would increase the amount of emissions beyond that which we were currently experiencing with the existing landfill flares.

Since this project would raise the levels of permitted emissions, and does not provide any guarantees of reduced emissions from current levels, we **oppose** this project as presented and recommend the consideration of the 6.3.1 Alternative – No Project Alternative.

Sincerely,

Wayde Hunter  
President, North Valley Coalition

Attachment

6-1

**Comments to Draft SEIR by North Valley Coalition, June 23, 2011**

**4.2.3.3 Localized Construction Impacts**

Page 4-17 it states the nearest sensitive receptor is 2700 meters (2700x3.2808/5280) or 1.68 miles. Stated they used LST 2-acre site at a distance of 500 meters (500x3.2808/5280) or 0.31 miles. The construction of a water pipe to the landfill entrance they indicate would be 600 meters from the nearest receptor and that the 500 meters used is conservative, however, the trailer park/woodcutter is directly opposite the landfill is only 35 meters away from where this construction would end and/or start and would result in greater impacts. The list below also includes some other receptors that may be as close or closer to the project. This calls Table 4.7 and the methodology into question. In a number of cases these areas are located at a higher elevation than the proposed project and could possible experience greater impacts.

The nearest sensitive receptors that should also be considered are as follows (distances approximate):

- Trailer park at 14748/14810 San Fernando Road, and Patton's Firewood opposite entrance of landfill at 14747 San Fernando Road (600 - 700 meters)
- Industrial complex on San Fernando Road from approximately 14980 which includes among others Hermalair Sheet Metal at 14928 and Senora & Vega Firewood (400 meters)
- Cascades homes in Sylmar on Balboa Boulevard north of Foothill Boulevard (1400 meters)
- Cascades apartments in Sylmar on Foothill Boulevard east of Balboa Boulevard (1600 meters)
- O'Melveny Park (see map attached taken from <http://www.lamountains.com/maps/eastRiceMDAOSNewhall.pdf>) (1000 meters)
- Michael D. Antonovich Open Space Preserve, Newhall Pass Trailhead, Coltrane Avenue (see map attached <http://www.lamountains.com/maps/eastRiceMDAOSNewhall.pdf>) (450 – 600 meters)
- Foothill Soils Inc. at 22925 Coltrane Avenue, Newhall (500 – 600 meters)
- Camelot Riding Club at 22945 Coltrane Avenue, Newhall (500 – 600 meters)
- Oaktree Gun Club at 23121 Coltrane Avenue, Newhall (500 – 650 meters)
- Crescent Valley Mobile Home Estates, 23500 The Old Road, Newhall (1600 meters)
- Semper Fi Tow Inc. at 22400 The Old Road, Newhall (400 – 500 meters)

6-2

**4.2.3.4 Regional Operation Impacts**

It states on page 4-17 that: “Operation of the project would likely increase air pollutant emissions compared to baseline emissions. Operational Nox, VOC, and SOx emissions from the proposed project would be less than significant with the allocation of PR offsets. Operational CO and PM2.5 emissions from the proposed project would be significant and unavoidable.” On page 4-18 line 1 it states that: “Emissions from the proposed project would increase from the current level of emissions generated by flaring, due to the differences in the combustion process of the turbines as compared to the flares and between baseline LFG production and project capacity”. It goes on to explain in #1 that the use of a pilot flame of LFG is used as the ignition source, and in #2 it states the residence time in the combustion chamber of the turbine is less compared to the flares. While providing additional information in the form of Table 4-8 and successive pages 4-20 thru 4-22 it does not indicate how large an area the air dispersion modeling covered and whether or not only “residents” were considered. Since the operation’s noise and emissions are 24/7 365-days per year, not only residential areas and recreational areas but commercial areas as well should be considered (see the nearest sensitive receptors that should also be considered).

6-3

**CHAPTER 4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

According to the proponent on page 4-19 they state that: “The estimated emission rates for the proposed project are based on the manufacturer’s guaranteed values and represent a conservative estimate of emissions. Actual emissions for the proposed project are anticipated to be less.” If this project is approved the SCAQMD must reduce the acceptable emissions from this facility for future compliance to whatever levels stack testing produces.

6-4

**4.2.4 Mitigation Measures**

Mitigation Measure A-2 on Page 4-27 indicate that: “The project proponent shall purchase MSERCs to mitigate significant adverse NOx air quality impacts.” The use of Pollution Credits to offset this impact or any other impacts is not acceptable to this organization nor the community as a whole. Buying pollution credits or arguing that pollution will not be created over the entire region does nothing to improve the quality of the air we breath locally. The Sunshine Canyon Landfill was sited with “overriding considerations” because the air quality impacts could not be mitigated. Best Available Technology (BACT) was employed in the form of the existing flares which have been approved by the SCAQMD, and which were designed to reduce this impact as much as possible. To ask that we now approve or be forced to endure additional threats to our health, safety, and welfare posed by the increase in pollutants from this less efficient destruction system especially those posed by the CO and PM2.5 emissions is unconsciable. Unless the emissions are scrubbed to produce a result the same as or less than currently emitted without the use of polluton credits, the project would not be acceptable. The DEIR should include an indepth analysis or discussion under the alternatives if additional equipment and/or methods are available to reduce the expected emissions, the cost of same, and the reason they can or cannot be employed.

6-5

**4.7.3.1 Operational Noise Impacts**

While this section purports to address or quantify noise impacts on pages 4-47 thru 4-49 it fails to fully address the impacts not only human sensitive receptors to the east and west of the property boundaries but also to the fauna in all cardinal directions. As previously argued by us under Chapter 3 Environmental Setting, Page 3-43, that there are sensitive human receptors in the east (i.e. Trailer park and woodcutter opposite entrance of landfill at 14747 San Fernando Road, the Cascades homes in Sylmar on Balboa Boulevard north of Foothill Boulevard, and the Cascades apartments in Sylmar on Foothill Boulevard east of Balboa Boulevard). There are also hikers, families, and horses that transit O'Melveny Park (second largest in Los Angeles) which are normally involved in outdoor activities which may be impacted by the noise. Further the impacts to the Michael D. Antonvich Park located north of the proposed site and with similar activities as O'Melveny Park need to be addressed. Fauna in all cardinal directions including those areas of the landfill which will not be under the landfill's footprint (i.e. interior slopes, closed City landfill, 100-acre buffer zone to south), O'Melveny Park to south and west, SEA #20 to north, and Michael D. Antonvich Open Space Preserve to the north need to be addressed. We would also like to discount or limit any reliance on background noise since the operation of the turbines is 24/7 365 days per year and the landfill and the adjacent freeway do not consistent masking effects.

6-6



**COMMENT LETTER NO. 6**  
**NORTH VALLEY COALITION (NVC)**  
**JUNE 23, 2011**

**RESPONSE 6-1**

The comment states that subsequent comments provide examples of an area of concern and requests that responses apply to all other sections where the example provided is referenced. To the extent applicable, the following responses will adhere to this request.

The comment also states that the members of the NVC have recommended in the past that LFG be used to generate energy. Because the proposed project does not reduce emissions, the NVC is opposed to it. As indicated in the Draft SEIR, LFG emissions will continue to increase with or without the proposed project. However, emissions are lower under the No Project Alternative. Despite higher emissions for the project, as discussed in the Draft SEIR, and in Response 4-2, the increased emissions do not result in significant localized air quality impacts to any nearby sensitive receptors. Combustion emissions from the flare will continue to increase to control the increasing LFG emissions. In response to comments received on the Draft SEIR, SCAQMD staff requested that the project proponent identify strategies to reduce combustion equipment emissions. For further information on emission reductions achieved since the close of the comment period on the Draft SEIR, see Response 4-2. See also Response 4-3 for a summary of the technology survey to identify potential air pollution control technologies to provide additional emission reductions and Attachment A to this Appendix for the full report.

The comment states that the NVC recommends the consideration of the No Project Alternative. This alternative would eliminate many of the proposed project's potentially significant adverse impacts related to air quality during construction which, under the proposed project, would be mitigated to less than significant levels by implementing mitigation measures. However, the No Project Alternative is expected to generate additional criteria pollutant emissions because of increasing levels of LFG and in the case of GHGs, it would generate 35,366 MTCO<sub>2</sub>e/yr, which would be significant, compared to GHG emissions from the proposed project of 35,367 MTCO<sub>2</sub>e/yr, following the implementation of mitigation measure GHG-3. Further, the No Project Alternative would not provide the benefit of generating electricity from the LFG, which instead would be wasted as it is flared to the atmosphere. LFG to energy projects are one component of California's Renewable Portfolio Standard, which is intended to reduce reliance on non-renewable fossil fuels, a large amount which must be imported from overseas, and to reduce GHG emissions. Thus, the selection of the No Project Alternative would also result in increased emissions compared to the baseline and a missed opportunity to generate electricity from a renewable energy source, and would not meet the project objectives.

**RESPONSE 6-2**

The comment suggests additional locations to be considered as sensitive receptors. The SCAQMD defines sensitive receptors as residences where residents could be exposed to pollutant concentrations 24-hours per day, seven days per week; or facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to impacts of air pollutants. Examples include hospitals, schools, convalescent facilities, and residential areas. As shown in Table 4, many of the suggested locations do not fit the definition of a sensitive receptor and therefore should not be included in analyses relating to sensitive receptors. The trailer park at 14748/14810 was not evaluated for localized air quality impacts during construction in the Draft SEIR as it was assumed that they would be vacant of residents. Based on a reconnaissance survey conducted in June 2011, the trailer park was identified as potentially being occupied. The trailer park location, however, was included in the analysis of localized operational air quality impacts as it had the potential to be inhabited during operation of the proposed project. However, as a conservative estimate, the Final SEIR includes this location as a sensitive receptor for construction evaluations as well. The Cascades Homes and Crescent Valley Mobile Home Estates were already considered in the Draft SEIR as sensitive receptors during both construction and operation. Based on a review of topographic maps, the evaluated sensitive receptors are at locations that are either approximately the same elevation or lower elevations than the proposed project. Since, all other things being equal, elevated sources would result in lower concentrations, this would not result in greater impacts. In addition, the Localized Significance Threshold (LST) methodology assumes a ground level source, where the impacts are the same regardless of topography.

**TABLE 4**  
**Sensitive Receptor Location Identification**

Description	Address/Location	Approximate Distance (feet/meters) and Direction From Proposed SGPREP/Pipeline	Sensitive Receptor (Yes/No)	LST Significant?
Trailers	San Fernando Road, east of SCLF entrance	110/26 – East of Pipeline	Yes	No
Patton’s Firewood	San Fernando Road, east of SCLF entrance	110/26 - East of Pipeline	No	NA
Industrial Complex	Approx 14980 San Fernando Road	1,000/305 – East of SGPREP	No	NA
Cascades Homes	Balboa Blvd, Sylmar	3,000/914 – Southeast of Pipeline	Yes	No
Rockwood at the Cascades Apartments	Foothill Blvd, Sylmar	3,060/933 Southeast of Pipeline	Yes	No

Description	Address/Location	Approximate Distance (feet/meters) and Direction From Proposed SGPREP/Pipeline	Sensitive Receptor (Yes/No)	LST Significant?
O'Melveny Park	O'Melveny Park	3,000/914 - Southwest of Pipeline	Yes	No
Michael D. Antonvich Open Space Preserve	Newhall Pass Trailhead, Coltrane Avenue	2,000/610 – North of SGPREP	No	NA
Foothills Soils Inc.	22925 N. Coltrane Avenue	3,400/1,036 – Northwest of SGPREP	No	NA
Camelot Riding Club	22945 N. Coltrane Avenue	4,600/1,402 – Northwest of SGPREP	No	NA
Oaktree Gun Club	23121 N. Coltrane Avenue	5,800/1,768 – Northwest of SGPREP	No	NA
Crescent Valley Mobile Home Estates	23500 The Old Road	8,000/2,438 – Northwest of SGPREP	Yes	No
Semper Fi Tow Inc.	22400 The Old Road	2,300/701 – East of SGPREP	No	NA

Notes:

NA = Not Applicable, as the property does not constitute a sensitive receptor.

The majority of the construction (SGP Facility, SCE Switchyard and SCE Subtransmission Line) remains more than 500 meters from the nearest sensitive receptor (located across from the SCLF entrance). However, construction of the water pipeline may occur as close as 26 meters from the trailer park at 14748/14810 (as a conservative estimate, analyses were done at a closer distance of 25 meters). As described in the Draft SEIR, water pipeline construction would occur during Phase V of the SGP construction. Based on updated construction information, it is estimated that the water pipeline construction would occur for 15 days concurrently within the 80 day period of Phase V and would use additional equipment that includes trencher, an industrial saw, a backhoe and a paver. Emissions associated with the water pipeline construction were added to the Phase V emissions for a 15-day period and labeled as Phase V<sub>WP</sub>. Even including the trailer park at 14748/14810, unmitigated localized construction emissions remain less than significant. Since concurrent construction activities could occur at various distances from the sensitive receptors, the emissions were compared to the LST at appropriate distances. Both the SGP Facility and SCE Switchyard/Subtransmission Line are more than 500 meters from the sensitive receptor. Thus, these emissions were compared to a LST for a distance of 500 meters. The water pipeline installation (projected to occur during Groups 11 through 13) was compared to LSTs for a distance to the sensitive receptor of 25 meters. Table 4-7 from the Draft SEIR has been revised in the Final SEIR to show the construction emissions from the SGP Facility, the SCE Switchyard/Subtransmission Line, and the water pipeline. In addition to construction emission

from the proposed project components, Revised Table 4-7 shows the applicable localized significance threshold for each component and the ratio of the construction emissions to the applicable LST. If the total ratio was less than 1.0, this indicated that the emissions would not exceed the significance thresholds and would be less than significant. As presented in the revised Table 4-7, Localized Peak On-Site Construction Emissions included in the Final SEIR (and shown below), the localized construction emissions are less than the applicable LSTs for sensitive receptors at 25 meters and 500 meters and, therefore, remain insignificant for the entire construction period. Since the analyses of the SGP Facility and SCE Switchyard/Subtransmission Line demonstrate that no impacts on pollutant concentrations at 500 meters would occur, no impacts on pollutant concentrations would occur at even greater distances.

The comment states that the approach used to calculate localized air quality impacts calls into question the methodology. The localized significance threshold methodology was developed by SCAQMD modeling and CEQA staff as part of an environmental justice initiative. The methodology was vetted through a stakeholder working group that met four times over a four-month period. The stakeholder working group was comprised of public agency representatives; industry representatives; community and environmental organization representatives; and outside air quality modeling experts. In addition, a public consultation meeting was held to accept comments from the public. The localized significance threshold methodology was adopted by the SCAQMD Governing Board on October 3, 2003. Since that time, the SCAQMD as a lead agency has conducted localized significance threshold analyses as warranted and has recommended that other public agencies perform this analysis in their CEQA documents. Given the development, history and use of the localized significance threshold analysis methodology, the implication that the methodology is “suspect” is without basis.

**TABLE 4-7**  
**Localized Peak On-Site Construction Emissions**

Concurrent Activity Groups	Project Component	Total On-Site Construction Emissions in lbs/day			
	Fraction of Threshold	CO	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Group 1	SGP	6	16	3	1
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.001</b>	<b>0.05</b>	<b>0.02</b>	<b>0.02</b>
Group 2	SGP	32	87	5	4
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.004</b>	<b>0.30</b>	<b>0.04</b>	<b>0.05</b>
Group 3	SGP	21	55	5	3
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.002</b>	<b>0.19</b>	<b>0.03</b>	<b>0.03</b>
Group 4	SGP and SCE	21	55	5	3
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.002</b>	<b>0.19</b>	<b>0.03</b>	<b>0.03</b>
Group 5	SGP and SCE	38	89	7	4
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.002</b>	<b>0.30</b>	<b>0.05</b>	<b>0.06</b>
Group 6	SGP and SCE	35	79	6	4
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.004</b>	<b>0.27</b>	<b>0.04</b>	<b>0.05</b>
Group 7	SGP and SCE	31	64	6	4
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.004</b>	<b>0.22</b>	<b>0.04</b>	<b>0.04</b>
Group 8	SGP and SCE	33	68	6	4
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.004</b>	<b>0.23</b>	<b>0.04</b>	<b>0.05</b>
Group 9	SGP and SCE	34	68	4	3
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.004</b>	<b>0.23</b>	<b>0.03</b>	<b>0.04</b>
Group 10	SGP and SCE	52	98	7	5

**TABLE 4-7**  
**Localized Peak On-Site Construction Emissions**

Concurrent Activity Groups	Project Component	Total On-Site Construction Emissions in lbs/day			
	Fraction of Threshold	CO	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
	SCAQMD Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.006</b>	<b>0.34</b>	<b>0.05</b>	<b>0.07</b>
Group 11	SGP and SCE	52	98	7	5
	Significance Threshold	8933	291	139	80
	Fraction of Threshold	0.01	0.34	0.05	0.07
	Water Pipeline	11	27	1	1
	Significance Threshold	590	114	4	3
	Fraction of Threshold	0.02	0.24	0.35	0.43
	<b>Combined Fraction of Threshold</b>	<b>0.02</b>	<b>0.57</b>	<b>0.40</b>	<b>0.50</b>
Group 12	SGP and SCE	54	101	7	6
	Significance Threshold	8933	291	139	80
	Fraction of Threshold	0.0061	0.35	0.049	0.069
	Water Pipeline	11	27	1	1
	Significance Threshold	590	114	4	3
	Fraction of Threshold	0.02	0.24	0.35	0.43
	<b>Combined Fraction of Threshold</b>	<b>0.03</b>	<b>0.58</b>	<b>0.40</b>	<b>0.50</b>
Group 13	SGP and SCE	64	116	8	7
	Significance Threshold	8933	291	139	80
	Fraction of Threshold	0.0072	0.40	0.057	0.082
	Water Pipeline	11	27	1	1
	Significance Threshold	590	114	4	3
	Fraction of Threshold	0.02	0.24	0.35	0.43
	<b>Combined Fraction of Threshold</b>	<b>0.03</b>	<b>0.63</b>	<b>0.41</b>	<b>0.51</b>
Group 14	SGP and SCE	40	78	4	4
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.004</b>	<b>0.27</b>	<b>0.03</b>	<b>0.05</b>

**TABLE 4-7**  
**Localized Peak On-Site Construction Emissions**

Concurrent Activity Groups	Project Component	Total On-Site Construction Emissions in lbs/day			
	Fraction of Threshold	CO	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Group 15	SGP and SCE	41	80	4	4
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.005</b>	<b>0.28</b>	<b>0.03</b>	<b>0.05</b>
Group 16	SGP and SCE	40	83	4	4
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.004</b>	<b>0.28</b>	<b>0.03</b>	<b>0.05</b>
Group 17	SGP and SCE	26	49	3	2
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.003</b>	<b>0.17</b>	<b>0.02</b>	<b>0.03</b>
Group 18	SGP and SCE	19	39	2	2
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.002</b>	<b>0.13</b>	<b>0.01</b>	<b>0.02</b>
Group 19	SGP	3	3	0.24	0.22
	Significance Threshold	8933	291	139	80
	<b>Fraction of Threshold</b>	<b>0.0003</b>	<b>0.01</b>	<b>0.002</b>	<b>0.003</b>

## Notes:

The SGP Facility construction area is approximately 1,860 meters from the nearest sensitive receptor.

The SCE construction area is approximately 1,200 meters from the nearest sensitive receptor.

The water pipeline construction area is approximately 26 meters from the nearest sensitive receptor.

A fraction of threshold value equal to one or greater would indicate a significance impact

**RESPONSE 6-3**

This comment begins with quotes from the Draft SEIR with respect to regional operational air quality impacts (Section 4.2.3.4, Regional Operation Impacts). These quotes demonstrate that operational emissions from the proposed project would increase above baseline emissions. As stated in the comment, this is due to the differences in combustion process of the turbines for the proposed project as compared to the existing flares, and as a result of increased quantities of LFG to be combusted at proposed project peak capacity versus baseline conditions. As discussed in Response 4-2, operational CO emission impacts are no longer significant. With this exception, these quotes are still accurate and do not require additional discussion.

The comment also asks for clarification of the area covered in the dispersion modeling for regional operational air quality impacts and expressed the opinion that residential, recreational

and commercial receptors be included. However, air dispersion modeling was not conducted to evaluate regional operational air quality impacts in the Draft SEIR. Rather, consistent with SCAQMD guidance, regional operational impacts were evaluated in the Draft SEIR on a mass emission basis and did not include air dispersion modeling, which predicts air concentrations.

Air dispersion modeling, however, was used to evaluate localized air quality impacts from the proposed project sources. As discussed in Appendix E of the Draft SEIR, the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), air pollutant dispersion model (version No. 07026) was used to predict concentrations to 1.5 kilometers (km) from the SCLF boundary. AERMOD is currently the model recommended for air quality dispersion modeling analyses by SCAQMD, California Air Resources Board (CARB), and EPA.

See Response 6-2 for a discussion of evaluated receptors for air quality and Response 6-6 for a discussion of evaluated receptors for noise.

#### **RESPONSE 6-4**

The comment states that the SCAQMD must reduce “acceptable emissions” from the facility to stack testing levels for future compliance. The proposed project must comply with SCAQMD Rule 1303 BACT, which means the most stringent emission limitation or control technique that:

- (1) has been achieved in practice for such category or class of source; or
- (2) is contained in any state implementation plan (SIP) approved by the United States EPA for such category or class of source. A specific limitation or control technique shall not apply if the owner or operator of the proposed source demonstrates to the satisfaction of the Executive Officer or designee that such limitation or control technique is not presently achievable; or
- (3) is any other emission limitation or control technique, found by the Executive Officer or designee to be technologically feasible for such class or category of sources or for a specific source, and cost-effective as compared to measures as listed in the Air Quality Management Plan (AQMP) or rules adopted by the SCAQMD Governing Board.

The emissions factors used in the Draft SEIR are based on the equipment manufacturer’s guarantees. As discussed in response to Comment 1-1, following the publication of the Draft SEIR, the project proponent worked with the turbine manufacturer to guarantee lower CO and NOx emissions. This resulted in modified calculations and determination of less than significant CO impacts. The current proposed project provides the lowest permitted emission rate for CO, NOx, and PM of any known permitted LFGTE turbine operating in the SCAQMD jurisdiction. These are the lowest levels that the manufacturer can guarantee will not be exceeded. BACT is typically based on manufacturers’ guarantees to ensure compliance with the emission rate limits as long as the systems are operated consistent with the manufacturer’s recommendations. BACT cannot be set at an emission limit where it cannot be guaranteed that the equipment can remain in compliance if operated according to manufacturers’ guarantees. Limits that are set at levels below the manufacturer’s guarantees would ultimately lead to permit violations and non-compliance. BACT limits are typically not based on source tests because source tests can vary as a result of testing conditions and variations in the analytical methods, so establishing BACT at



the lowest level tested would likely result in violations precisely because of variations in emissions. However, it should be noted that actual emissions from the proposed project will likely be below BACT levels to the extent feasible to ensure that the equipment does not violate applicable SCAQMD rules or permit conditions.

#### **RESPONSE 6-5**

This comment objects to the use of emissions offset credits to address the NO<sub>x</sub> and other emissions and states that the project would not be acceptable unless emissions levels do not increase at all above current emissions from the landfill. As indicated in Chapter 6 of the Final EIR, pollutant emissions will increase with or without the proposed project because of increasing amounts of wastes to be disposed of in the future. Also, as noted in Section 4.2.5 of the Final EIR, the use of emission offsets would be used to address regional significance thresholds that are exceeded. No emission credits were accounted for in localized air quality analyses (see Sections 4.2.3.3, 4.2.3.6 and 4.2.3.7). The localized air quality impacts in the Draft SEIR show that the proposed project would have a less than significant impact on the local community. This means that the proposed project would not significantly affect ambient air concentrations at any off-site receptors (see Response 6-2 for additional information on the localized air quality analysis for the proposed project). Refer to Response 4-2 for discussion of the components of the regional operational emissions estimates used in the Draft SEIR that result in a conservative estimate. Response 4-3 summarizes information from the report that presents an analysis of potentially available technologies and their emission reduction potential (full report included as Attachment A to this Appendix). See also Response 6-2 for additional information showing that the proposed project would not result in adverse impacts at nearby sensitive receptors.

The comment also states that BACT for the landfill was employed in the form of the existing flares to reduce impacts as much as possible. Similarly, this project will employ BACT to ensure impacts are reduced to the greatest extent possible prior to use of any offsets to address regional significance thresholds that are exceeded.

#### **RESPONSE 6-6**

The comment expresses concern about operational noise impacts to both sensitive human receptors and also biological non-human receptors and objects to relying on background noise as part of the noise impact analysis. It should be noted that noise is currently generated at SCLF from the heavy-duty equipment used to move and cover refuse and from the existing flares. Substantial noise levels are also currently generated off site from vehicle traffic on the I-5 freeway. The analysis of environmental impacts, including noise impacts is based on the difference from the baseline conditions to full operation of the project. The potential impacts of operational project noise were fully discussed in the Draft SEIR in Section 4.7, Noise. A detailed noise study found that both construction and operational noise impacts would be less than significant when compared to applicable noise standards as well as considering increases to the existing ambient noise levels.

In response to the additional sensitive receptor locations discussed with respect to air quality in Comment 6-2, the trailers located at 14748/14810 San Fernando Drive are additionally evaluated below as a receptor location for both operational and construction activities including the water

pipeline construction that would occur during Phase V of construction. The revised noise impact analysis is included in Section 4.7.3.4 of the Final SEIR and is summarized as follows.

As indicated in Subsection 3.7.1, existing noise levels at the southern noise monitor, the monitor closest to a residential noise receptor, generate energy equivalent noise levels (Leq) from 46.2 dBA to 53.7 dBA. Noise levels at the nearest residential noise receptor would be less because of the 6.0 dBA reduction in noise levels over the doubling distance to the noise receptor. The SGPREP operations are estimated to generate an Leq of 47.2 dBA at the trailers during the daytime period when project-related vehicle traffic would occur. This noise level would be generated predominately by project-related operational vehicle traffic. SGPREP operations are estimated to generate noise levels of 34.5 dBA. The level of 47.2 dBA would be below the significance threshold, which is based on the applicable noise level limits established by the City of Los Angeles Noise Ordinance for residential land use of 50 dBA for the daytime period. For the nighttime period, when no project-related vehicle traffic would occur, the proposed SGPREP operations would generate noise impact levels of 34.5 dBA, which is below the City of Los Angeles Noise Ordinance limits of 40 dBA for residential land use during the nighttime period and would not likely be discernable given ambient noise levels in the vicinity of the noise receptor, especially from traffic. The lower nighttime noise levels compared to daytime noise levels are a result of lower existing ambient noise levels and the absence of project-related vehicle traffic. Since the noise associated with the proposed SGPREP operations would not exceed established land use limits and would not result in an increase to the existing ambient noise levels of more than 3 dBA, impacts are considered less than significant. For construction activities, the noise study presented in the EIR found that noise level impacts related to construction would also be below applicable noise standards for all construction phases, including the water pipeline construction. Therefore, noise impacts generated by the proposed project would be less than significant.

Regarding the potential effects of operational noise on biological receptors, as discussed in the NOP/IS, the proposed project site is generally free of the identified sensitive biological habitats that are present in the SCLF. The SCLF contains some areas with sensitive coastal sage scrub, riparian habitat, and oak woodland habitat, but these habitats are located mostly along the south and southwestern portions of the site and around the outer portions of the SCLF, but are not located near the proposed project site. The proposed energy project site, which is currently mostly graveled and paved, does not directly support any sensitive species, rare or protected plants or animals. Given that the nearest suitable habitat for animals is approximately 500 feet from the proposed project site, the maximum noise generated by the proposed project, is projected to be 47.2 dBA, and the fact that noise is reduced by 6.0 dBA for every doubling distance to the noise receptor, noise impacts to potential animal receptors would be even less. As already noted, existing Leq noise levels in the southern portion of the SCLF noise levels range from 46.2 dBA to 53.7 dBA. Consequently, noise generated by the proposed project would not be expected to produce higher noise levels than currently exist and, therefore, would not be significant. In accordance with applicable MMRS measures (MMRS #4.29 through #4.34), SGP would coordinate surveys conducted by a biologist in accordance with U.S. Fish and Wildlife Service protocol prior to grading or construction work to identify if any sensitive or protected species are present. Additionally, SGP would comply with Migratory Bird Treaty Act requirements to prevent the loss of an active migratory bird nest, or disturbance of migratory birds in the area.

CEQA documents should address a project's contribution to exceedances, if any, of the ambient air quality standards. These standards, in particular the national ambient air quality standards, encompass both primary (human health) and secondary (public welfare) effects. Public welfare effects encompass effects other than effects to human health, including effects on vegetation and ecosystems. The ambient air quality standards are currently the same for both primary and secondary effects, with the exception that the SO<sub>2</sub> primary 1-hour standard is more stringent than the secondary SO<sub>2</sub> standard. Thus, the impact to biological resources as measured against the secondary ambient air quality standards applicable to biological resources was assessed through the impact evaluation against the primary standard.

The comment expressed concerns regarding potential noise impacts to the Michael D. Antonovich Park on the north of the project site and O'Melveny Park located southwest of the project site. Receptor 4 is located on the northern SCLF property line adjacent to the Michael D. Antonovich Park. Operational noise impacts at this receptor were calculated to be 21.3 dBA. Therefore, the operational noise impacts to Michael D. Antonovich would comply with the applicable code limits and would likely be inaudible to park users.

Receptor 3 is located on the southern SCLF property line and is the closest receptor to the O'Malley Park. Operational noise impacts at this receptor were calculated to be 24.1 dBA. The operational noise impacts would be similar to or less than receptor 3 due to the increased distance and topography from the project site. Therefore, the operational noise impacts to O'Malley Park would comply with the applicable code limits and would likely be inaudible to park users.

Lastly, background noise, or ambient noise, is a function of daytime versus nighttime community activities clearly governed by specific hourly time segments as defined within the County of Los Angeles noise code. Proposed project noise contributions during the daytime are expected to be constant during the landfill's hours of operation, whereas there will be variable noise fluctuations, which can be observed, but exist independently from landfill operations and are solely dependent on community activities outside of the landfill's boundary. Daytime and nighttime ambient community noise sources outside the boundaries of the landfill in the area of the project site were shown to have a major contribution from the nearby Interstate 5 freeway vehicle activity, which includes dramatic fluctuations of heavy truck traffic. It should be noted that the SEIR noise study for the proposed project accounts for these daytime and nighttime variations in ambient conditions and, thus, applies a worst-case landfill operational noise scenario to protect and preserve sensitive "residential" noise receptors in the vicinity of the project boundary. The analysis considers worst-case operational noise impacts because the landfill equipment was evaluated as an operational scenario to span an entire 24 hour daily period, which was coupled with the maximum project-related traffic increase volumes. No new significant adverse noise impacts beyond those identified in the Final SEIR have been identified.

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Ben Wong  
 Director  
 Local Public Affairs

June 23, 2011

Mr. Jeff Inabinet  
 c/o CEQA Section, Planning, Rule Development and Area Sources  
 21865 Copley Drive  
 Diamond Bar, California 91765-4182

RE: Notice of Completion of a Draft Subsequent Environmental Impact Report (Draft SEIR) for the Sunshine Gas Producers Renewable Energy Project

Dear Mr. Inabinet:

Southern California Edison (SCE) appreciates the opportunity to comment on the Draft SEIR for the Sunshine Gas Producers Renewable Energy Project ("project"). The project is described in the Draft SEIR as a proposal to develop and operate a gas turbine electrical generation facility at the existing Sunshine Canyon Landfill, utilizing currently flared landfill gas (LFG) to generate power. Specifically, Sunshine Gas Producers (SGP) proposes to construct and operate five gas turbine electricity generator sets, LFG compressors, gas treatment equipment, a project flare, an SGP substation, a water supply pipeline, and a telecom line. The project also proposes construction and operation by SCE of an SCE 66 kilovolt (kV) switchyard and an SCE subtransmission line to interconnect the generation facility to SCE's subtransmission system.

7-1

As part of SCE's December 18, 2009, comment letter in response to the Notice of Preparation for the project, we recommended that our interconnection facilities be described and that environmental impacts of our interconnection facilities be analyzed in the Draft SEIR to potentially streamline, if feasible, our anticipated permitting pursuant to the California Public Utilities Commission's (CPUC) under General Order 131-D (GO 131-D). We appreciate your efforts to date in thoroughly describing the SCE switchyard and SCE subtransmission line, and in analyzing construction impacts related to these interconnection facilities in the Draft SEIR. To continue our efforts in ensuring that the SEIR may potentially be used to simplify our anticipated permitting under GO 131-D, we respectfully request that the following comments be incorporated into the SEIR or be noted as appropriate.

7-2

1. Project Description

a. The proposed SCE switchyard would not be a low-profile substation. Accordingly, we recommend removal of the term "low-profile" from the description of the SCE switchyard under sections 1.7.8 and 2.8.

7-3

b. According to section 2.3, the project description assumes a 10-foot disturbance area on either side of the SCE subtransmission line. However, we anticipate that the disturbance area around each new subtransmission pole would be approximately 50 feet. We recommend that the description and corresponding analysis be modified to reflect this anticipated disturbance area around each pole.

7-4

c. According to section 2.6, the tallest structure to be located in the SCE switchyard would be 30 feet high except at the center where a three-foot extension would be installed to attach the incoming 66 kV lines. Please note our preliminary analysis indicates that the tallest structure would be approximately 80 feet high if a subtransmission pole is required to be located within the

7-5

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- switchyard. We recommend that you replace the existing text to reflect that the tallest structure in the switchyard may be approximately 80 feet high in the event SCE needs to site a subtransmission pole within the switchyard.. } 7-5  
Con't
- d. According to section 2.6, the telecommunications line for the project would be approximately 7,200 feet in length from the landfill entrance to the proposed project site, and alternatively, a portion of the telecom line may be installed on the new tubular steel poles (TSPs) installed by SCE for the subtransmission line. This description may be confusing as SGP's telecom line for its phone and data service are separate from SCE's telecommunications purposes would not be installed on the SCE's new TSPs. Accordingly, we recommend that the sentence, "Alternatively, a portion of the telecom line may be installed on the new TSPs installed by SCE for the subtransmission line," be removed. } 7-6
- e. Section 2.7.2 describes SCE's construction of a switchyard and subtransmission line to support the SGP facility. Under section 2.7.2.2, the description of activities related to the subtransmission line includes survey, access road development, pole framing/setting, TSP footing installation, conductor installation, material delivery, and restoration. Although the text under section 2.7.2 implies that SCE would conduct all of these activities, we understand that SGP or Sunshine Canyon Landfill would be responsible for the development of new access roads and restoration related to subtransmission line construction. SCE has discussed this concern with SGP and recommend, with SGP's concurrence, that the document be clarified accordingly. } 7-7
- f. Further regarding section 2.7.2, it appears that two additional activities may need to be described and analyzed as part of the Draft SEIR. Specifically, SCE proposes to construct two underground conduits and structures from each of the last two TSPs into the SCE switchyard in order to accommodate additional fiber optic telecommunications lines which SCE will eventually need, to ultimately serve the SGP project. SCE anticipates that one run of underground 5" conduit and structures will be installed from the last TSP pole, into the MEER building within the SCE switchyard. The second run of underground 5" conduit and structures will need to be installed and stubbed out, for a diverse route into the MEER building within the SCE switchyard, for future use by SCE when one of SCE's future projects is installed. In addition, SCE proposes to maintainance grade an existing access road to accommodate construction access to the new subtransmission pole located farthest from the SCE switchyard. Accordingly, we recommend that you consider whether inclusion of these components would be appropriate in the SEIR for the project. We would be available to discuss and provide more details regarding these activities further with you and the SGP. } 7-8
- g. Please note Figure 2-5 does not reflect current plans for the proposed SCE subtransmission line work previously provided to SGP. We recommend that you modify Figure 2-5 to reflect our most up-to-date plans, which will be provided to SGP upon additional coordination with SGP on pending design issues. This coordination may result in minor changes to the SCE switchyard layout location as well as how the SCE subtransmission line would enter the switchyard. } 7-9
- h. Regarding Table 2-1, please correct the second and third columns with respect to the CPUC to state "Permit to Construct (PTC)/PTC Exemption" and "A PTC application may be required to construct the SCE Switchyard and Subtransmission Line if the project does not qualify for an applicable PTC exemption." } 7-10

2. Environmental Impacts and Mitigation Measures

a. Sections 4.5.1 and 4.5.3.3 discuss geotechnical standards and requirements that may not apply to our construction. We recommend that the following text be inserted to clarify geotechnical evaluations for our construction activities: *"SCE would conduct a geotechnical study of the switchyard site and selected subtransmission pole locations. The study may require borings to collect soil samples for laboratory analysis and to evaluate the depth of bedrock and water table. The laboratory results would be analyzed to determine the physical properties of subsurface soils. The study may also include soil resistivity, slope stability, and the presence of hazardous materials. In addition, evaluation of the soil bearing capacity, landslide, subsidence, and seismic impact, such as liquefaction and landslide, may be conducted. The extent of the geotechnical analysis would be determined by a qualified engineer based on site conditions."* We also recommend that this text be carried through to sections 5.6.1 and 5.6.2 for cumulative impacts discussion. 7-11

b. Section 4.3.1 identifies several existing mitigation measures from the Sunshine Canyon Landfill Mitigation, Monitoring and Reporting Summary (MMRS) that would apply to the project to minimize impacts to cultural resources. Although mitigation measure 5.04 of the MMRS is not identified as applicable to the project, SCE's policy is to provide Worker Environmental Awareness Program (WEAP) training on all sites that are located in areas of possible paleontological and archaeological sensitivity. Accordingly, we would provide WEAP training prior to construction. Similarly, we would provide WEAP training to minimize impacts to biological resources, although not required for the project. 7-12

c. As noted above, we understand that the project is subject to the Sunshine Canyon Landfill MMRS. However, we are uncertain as to whether the SCE switchyard and SCE subtransmission line would be considered as "landfill facilities" for the purposes of implementing particular mitigation measures. We intend to request clarification on this matter with SGP and you in the near future. 7-13

3. Cumulative Impacts

a. We recommend that you replace the discussion under section 5.2.2.3 with the enclosed revised paragraphs to clarify the purpose and need, as well as the permitting status of the SCE Subtransmission Relocation project (SCE SLR):

*SCE, pursuant to a request by Republic Services, Inc. (formerly BFI) is proposing to relocate an existing 66 kV line located in the center of the SCLF to provide for the needed expansion of the landfill's capacity. The proposed SCE-SLR project consists of the relocation of approximately 4,200 feet of the existing 66 kV subtransmission line, which currently runs through the center of SCLF (Figure 2-6) to a new location that runs approximately 8500 feet along the perimeter of the disturbed area of the landfill property within County boundary (Figure 5-1). The proposed SCE SLR would be located within the SCLF boundaries approved by Los Angeles County. . As shown on Figure 5-1, the proposed subtransmission line would be located adjacent to the proposed SGP Facility.*

*The proposed SCE SLR project would include the removal of existing support poles and wire; and installation of new wire, poles, and footings along the new alignment. Construction would be expected to take less than six months; however, a scheduled start date has not been determined due to SCE's separate permitting requirements at the CPUC. If determined to be necessary, a*

7-14

separate SWPPP will be prepared and a determination will be made as to whether the project falls under SCLF's existing NPDES.

The project is proposed in a previously disturbed area and its environmental impacts are not expected to be significant. Additionally, if the 66 kV line is relocated, it will be aligned much closer to the SGPREP, and would result in a corresponding reduction in the length of the subtransmission line required to support the SGPREP, thereby reducing the environmental impacts associated with the subtransmission line for the SGPREP. The alignment of the SCE SLR transmission line is in the final stages of design, but it is not possible to determine the exact length of additional subtransmission line that will be required for SGPREP if the SCE project is implemented.

7-14  
Con't

The 1999 Final SEIR identified the need for relocation of the SCE subtransmission line; however, the route of the relocation had not been finalized. SCE is in the process of preparing a Permit to Construct (PTC) application, along with a required Proponent's Environmental Assessment (PEA) in coordination with Republic Services, Inc. that SCE anticipates submitting to the CPUC in fall of 2011 for approval and for which the CPUC will serve as Lead Agency pursuant to CEQA. CPUC PTC approval by the CPUC is not anticipated until mid-2012.

- b. The analysis under section 5.5.1 indicates that construction of the project would have similar energy requirements to the SCE SLR. We recommend that the analysis be clarified to indicate that although the SCE SLR would have similar equipment usage as the project, the duration required to construct the SCE SLR would be substantially longer than the duration to construct the project. Therefore, construction of the project may not have similar energy requirements to the SCE SLR.

7-15

- c. The analysis under section 5.5.2 indicates that the operation of SCE SLR would not require expenditure of energy. We recommend that the analysis be clarified to indicate that operation of the SCE SLR would require minimal expenditure of energy for routine patrols and maintenance.

7-16

Once again, we appreciate the opportunity to comment on the project. As noted earlier throughout this document, it may be beneficial for SCE and SGP to meet with SCAQMD to clarify and/or provide certain updated information, as well as to discuss, depending on the anticipated impacts in the Final SEIR, whether SCE may be able to use the SEIR to seek expedited permitting at the CPUC. If you have any questions regarding this letter, do not hesitate to contact me at (323) 720-5292.

Sincerely,



Ben Wong  
Local Public Affairs Director  
Southern California Edison Company



**COMMENT LETTER NO. 7**  
**SOUTHERN CALIFORNIA EDISON**

**JUNE 23, 2011**

**RESPONSE 7-1**

This comment contains a summary of the proposed project description. No further response to this comment is required.

**RESPONSE 7-2**

This comment contains a summary of SCE's recommendation in its comment letter on the NOP/IS for the proposed project that SCE interconnection facilities be included in the Draft SEIR analysis, pursuant to the California Public Utilities Commission (CPUC) under General Order 131-D (GO 131-D). Based on the SCE comment letter to the NOP/IS (Appendix C, Comment Letter No. 6), the project proponent worked closely with SCE to accurately describe and analyze the SCE switchyard and transmission lines. The comment also requests that subsequent comments be incorporated into the Final SEIR to simplify permitting under GO 131-D. To the extent appropriate, as detailed in the following responses, information provided in the comment letter has been incorporated into the Final SEIR as requested. The project will continue to work with SCE to ensure the analysis of impacts from the SCE switchyard and transmission lines is sufficient for CPUC permitting purposes.

**RESPONSE 7-3**

This comment requests that the term "low-profile" be removed from the description of the SCE switchyard under Sections 1.7.8 and 2.8. The document has been modified as requested.

**RESPONSE 7-4**

This comment notes that the Draft SEIR identifies a 10-foot disturbance area on either side of the SCE subtransmission line, but states that the disturbance area around the subtransmission poles should be modified to 50 feet. Increasing the disturbance area around the subtransmission poles to 50 feet but retaining a 20-foot disturbance area along the line between the subtransmission poles would increase the total SCE Subtransmission Line construction area to approximately 1.1 acres. Section 2.3 of the Final SEIR has been modified as requested, as shown in the following paragraph:

"Additionally, the construction area for the SCE Subtransmission Lines would extend approximately 2,100 feet in length for the power line from the substation up to the existing power pole on the ridge to the southeast. Assuming a 10-foot disturbance area on either side of the lines, and a 50-foot disturbance area around each pole, this area would have an approximately ~~one~~ 1.1-acre footprint. Therefore, the total footprint of the proposed project would be ~~two~~ 2.1 acres."

Increasing the area around the subtransmission poles would not change the impact analyses as explained below:

- Regional construction impacts are not based on the size of the construction area, but are based on the number and type of equipment used and their activity levels (hours of operation). Due to the minimal size of the added area (approximately 0.1 acres) and the conservative assumptions made during the initial estimates, increasing the construction area around subtransmission poles would not require changing the number and type of equipment or activity levels. Modeling of localized construction impacts are based on the maximum daily footprint of the construction area (i.e., the area that will be disturbed on a daily basis); however, the overall construction footprint (i.e., the area that would be disturbed over the course of the construction of the entire proposed project) does not impact the evaluation as localized impact significance is determined on a daily basis. Although the construction area around the subtransmission poles would increase to 2.1 acres, the daily construction footprint (one acre) is not anticipated to change, because this is the maximum area that can be worked on in one day. Consequently, because the footprint of the daily construction area would not change, there would be no effect on the construction impact analysis or the significance conclusions.
- The cultural resources impact analysis is based on the JMA Revised Phase I CRA, which did not identify any cultural resources along the subtransmission line route. The small increase in acreage around the subtransmission poles (a total of approximately 0.1 acres) would not change any of the conclusions of the CRA, as the survey area covered the general area along the subtransmission line path, rather than surveying a specific 20-foot wide alignment.
- The energy requirements of the proposed project would not be impacted by the change in disturbance area, as the number and types of construction equipment and schedule for the subtransmission line are unaffected.
- Construction impacts to geology (soil erosion, as discussed in Subsection 4.5.3.2 of the Final SEIR) would not be impacted by the increased disturbance area as the proposed project would still be subject to SWRCB's NPDES General Construction Storm Water Permit and would implement a Stormwater Pollution Prevention Plan (SWPPP) to control soil erosion.
- There are no construction impacts associated with hydrology and water quality.
- Construction impacts from noise are evaluated based on the type and duration of construction equipment to be used at the proposed project. Since the number and types of construction equipment would not change as a result of the increase in acreage around the subtransmission poles, there would be no effect on the noise analysis or significance conclusions.

**RESPONSE 7-5**

This comment notes that the Draft SEIR identifies the tallest structure located within the SCE switchyard as 30 feet above grade (Section 2.6), and recommends that the document be modified to reflect SCE preliminary analysis, which identifies an 80-foot high subtransmission pole that may be required. Subsequent discussion with SCE has determined that this 80-foot high subtransmission pole within the SCE switchyard would not be required. Due to subsequent conversations with SCE, SCE estimates the highest structure within the SCE Switchyard would be between 30 and 40 feet, however as final engineering designs have not been completed, the conservative assumption of 40 feet has been used in the Final SEIR. However, with respect to the SCE Subtransmission Line itself, SCE has identified that the five TSPs required for the interconnection of the SCE Switchyard would range in height from 65 to 105 feet. In addition, figure heights have also been revised in Figure 2-5, based on requests made in Comment No. 7-9.

Section 2.6 of the Final SEIR has been modified as follows:

~~“The tallest structure would be 30 feet high within the SCE Switchyard except at the center where a three-foot extension would be installed to attach the incoming 66 kV lines. The SCE Switchyard would be equipped with one 66 kV structure with three circuit breakers arranged in a ring-bus configuration, with two incoming SCE 66 kV lines and one 66 kV feed to the SGP Facility. The 66 kV service would be equipped with revenue metering equipment and billing meters. The SCE Switchyard would also have a MEER to house all controls, switches, electrical system protection equipment, batteries, and the station AC and DC distribution panels.”~~

Based on the updated information provided by SCE resulting in minor changes to the proposed project, staff has evaluated these changes and concluded they would not result in changes to the impact assessments as there would be no modification to the construction schedule, equipment, or location of the proposed project on which the current analysis is based. Operational impacts would not be affected by the installation of this power pole. This information did not result in changes to impact analyses in Chapter 4.

Since it was concluded in the NOP/IS that the proposed project would generate no impacts to aesthetics resources, this topic was not further evaluated in the Draft SEIR. The conclusion of no impacts was re-evaluated in light of the above-described modifications. This re-evaluation concluded that the finding in the NOP/IS of no impact to aesthetics would not be changed as a result of the above-described modification. The elevation of the grade for the SCE Switchyard would be approximately 1,850 feet above mean sea level (msl), which is approximately representative of the grade of the SCE Subtransmission Line footings. The top of the subtransmission line poles would be at approximately 1,955 feet above msl. The SCE Switchyard is located within a canyon between slopes with ridges at approximately 2050 feet above msl. The NOP/IS stated that while Flare 8 is briefly visible from Interstate 5, overall views of the landfill are generally blocked by existing structures, topography, and landscaping. As the base of Flare 8 is approximately 2,040 feet above msl, the proposed subtransmission line pole would not exceed the height of the Flare 8, and therefore would not be expected to significantly alter views from outside the SCLF.

**RESPONSE 7-6**

This comment notes that the Draft SEIR indicates that a portion of the telecom line may be installed on the tubular steel poles (TSPs) installed by SCE. SCE recommends that reference to the telecom line installation on the TSPs should be removed. As the telecom line would be installed underground, along the same route as the water pipeline, the document (Section 2.6) has been modified as requested, as shown in the following sentences.

“The telecom line would be approximately 7,200 feet in length from the landfill entrance to the proposed project site. The telecom line would be constructed either as multi-pair copper wire and or multi-pair fiber optic cable and would use the same trench as the water supply pipeline. ~~Alternatively, a portion of the telecom line may be installed on the new TSPs installed by SCE for the subtransmission line.~~”

**RESPONSE 7-7**

This comment requests that Section 2.7.2 of the Draft SEIR be modified to clarify that SGP and/or SCLF would be responsible for the development of new access roads and restoration related to subtransmission line construction. The document has been modified as requested. Regardless of who is responsible for developing the access roads and restoration related to subtransmission line construction, the Final SEIR includes a comprehensive analysis of all potential construction-related impacts. If does not matter if SGP or SCE is responsible for these activities, the construction analysis is unchanged.

**RESPONSE 7-8**

This comment requests that consideration be made to modify the text of Section 2.7.2.1 of the Final SEIR to reflect two additional activities. Based on the estimates provided by the project proponent, construction of the conduits and TSP modifications would not be expected to require additional construction equipment, or revision of the construction schedule. This assessment is based on discussions with HR Green (contractor). They estimated that the equipment and schedule previously identified were conservative enough to include these activities. Therefore the analysis of the impacts from the construction of the proposed project would not be modified as a result of the conduits or TSP modifications. As requested, the following text is inserted after the description of SCE switchyard construction activities.

“SCE construction activities would include the construction of two underground conduits and structures from each of the last two TSPs in order to accommodate additional fiber optic telecommunications lines, which SCE will eventually need to serve the proposed SGPREP in the future. One run of underground 5-inch conduit and structures would be installed from the last TSP into the MEER building within the SCE switchyard. The second run of underground 5-inch conduit and structures would be installed and stubbed out, for a diverse route into the MEER building within the SCE switchyard for future use by SCE.”

**RESPONSE 7-9**

This comment notes that the description of the SCE subtransmission line is based on information previously provided by SCE. The comment requests that Figure 2-5 should be modified to reflect up-to-date plans for the proposed SCE subtransmission line location and SCE switchyard

layout provided after release of the Draft SEIR for public review. Figure 2-5 has been modified as requested. These modifications did not impact any of the environmental analyses as the changes in layout do not significantly alter the location of the proposed project site. Additionally, the location of the proposed water pipeline has been refined on the modified Figure 2-5. The air, cultural resources and noise analyses were modified to reflect the water pipeline installation.

### RESPONSE 7-10

This comment requests that the row of Table 2-1 discussing CPUC requirements should be modified to read as follows:

Regulatory Agency Name	Permit / Compliance Requirement(s)	Applicability to Proposed Project
California Public Utilities Commission (CPUC)	Permit to Construct (PTC)/PTC Exemption	A PTC application may be required to construct the SCE Switchyard and Subtransmission Line if the project does not qualify for an applicable PTC exemption.

Table 2-1 has been modified as requested.

### RESPONSE 7-11

The comment states that some geotechnical standards and requirements in Subsections 4.5.1 and 4.5.3.3 may not apply to the SCE project, however, it does not identify those that do not apply. The comment then goes on to request that information regarding potential future geotechnical studies conducted by SCE be inserted into the Final SEIR. The discussion of geotechnical impacts in Section 4.5 – Geology and Soils, that could be generated by the proposed project is based on a geotechnical analysis conducted in 2009 (Appendix H). Additional geotechnical surveys have been conducted at the proposed project location, the results of which indicated that on-site soil would meet geological standards for use as fill in the construction of the SGPREP, as summarized in Section 4.5 of this Final SEIR (a summary of the methodology and findings of the surveys are included in Response to Comment 8-3 below). The geology soils analysis in Section 4.5 concluded that the proposed project would not generate seismic activity, soil erosion, or soil stability impacts. In addition, it was concluded that working with the regional water quality control board and adhering to their septic tank requirements would not result in any soil incompatibilities with the proposed septic portion of the project. Based on currently available information and evaluation of the site, it is expected that the geology and soils analysis for the proposed SGPREP should be sufficient for future approvals of an SCE switchyard site and subtransmission pole project. As a result, it is not currently reasonably foreseeable that a future geology and soils impacts analysis will be necessary, so the requested text will not be incorporated into the Final SEIR.

Finally, discussion between SCE and the project proponent indicated that the geotechnical studies referenced in Comment No. 7-11 were not intended to imply additional impact studies associated with this CEQA documentation, but rather to identify SCE design considerations. As a result, SCAQMD staff believes that the geotechnical analysis is robust and sufficient for any

CPUC permitting needs. Any future geotechnical studies would be at the discretion of the CPUC in the event that modifications to the SCE project occur. Consequently, the requested text has not been added to the Final SEIR.

### **RESPONSE 7-12**

As indicated in the comment, cultural resources MMRS measure 5.04 is not identified as applicable to the proposed project. If SCE intends to implement a Worker Environmental Awareness Program (WEAP) at the switchyard site in areas where environmental impacts were concluded to be less than significant for the overall project, that would be a policy decision and is unrelated to the analysis in the Final SEIR.

### **RESPONSE 7-13**

This comment requests clarification as to whether the SCE Switchyard and SCE Subtransmission Line would be considered “landfill facilities” for the purposes of implementing MMRS measures. SCE equipment and facilities would not constitute “landfill facilities” for the purposes of the MMRS. MMRS measures that would apply to the SGP and SCE portions of the proposed project would include:

Aesthetics: 10.05

Air Quality: 6.01, 6.07, 6.09

Biological: 4.10 – 4.33, 4.48, 4.50

Cultural: 5.01, 5.02, 5.05, 7.05

Geology and Soils: 1.02, 1.06, 1.07, 1.11, 1.13

Hazards and Hazardous Materials: 7.04, 7.05, 12.04 - 12.07, 12.10, 12.12, 12.15, 13.11

Hydrology and Water Quality: 2.03, 2.14, 3.12

Noise: 9.01, 9.02, 9.03

Public Services: 12.03

### **RESPONSE 7-14**

This comment provides additional information on the project description for the proposed SCE-SLR project and recommends that the description of the SCE-SLR project in Subsection 5.2.2.4 regarding the SCE Subtransmission Relocation project should be modified as follows:

“SCE, pursuant to a request by Republic Services, Inc. (formerly BFI), is proposing to relocate an existing 66 kV line located in the center of the SCLF to provide for the needed expansion of the landfill’s capacity. The proposed SCE-SLR project consists of the relocation of approximately 4,200 feet of the existing 66 kV subtransmission line, which currently runs through the center of SCLF (Figure 2-3) to a new location that runs approximately 8,500 feet along the perimeter of the disturbed area of the landfill property within the County boundary (Figure 5-1). The purpose for the proposed SCE-SLR project is to relocate the existing transmission line. The proposed SCE-SLR would be located within the SCLF boundaries and approved by Los Angeles County. As shown on Figure 5-1, the proposed subtransmission line would be located adjacent to the proposed SGP Facility.

“The proposed SCE SLR project would include relocation of the subtransmission line (approximately 8,500 feet), the removal of existing support poles and wire,; and installation of

new wires, poles and footings along the new alignment. Construction would be expected to take less than six months; however, a scheduled start date has not been determined due to SCE's separate permitting requirements at the CPUC. ~~publicly available at this time.~~ If determined to be necessary, a separate construction SWPPP will be prepared and a determination will be made as to whether the project falls under SCLF's existing NPDES permit.

“The project, as proposed, would be located in a relatively minor occurring in a previously disturbed area and its environmental impacts are not expected to be significant. Additionally, if the 66 kV line is relocated, it will be aligned much closer to the SGPREP, and would result in a corresponding reduction in the length of the subtransmission line required to support the SGPREP, thereby reducing the environmental impacts associated with the subtransmission line for the SGPREP. ~~Because the final alignment of the SCE-SLR transmission line is in the final stages of design, not yet known, but~~ it is not possible to determine the exactly how much the length of additional the subtransmission line that would be required for SGPREP will be reduced if the SCE project is implemented. As a result, the analysis for the proposed project assumes that the entire length of transmission line would be installed.

“The 1999 Final SEIR identified the need for relocation of the SCE Subtransmission Line; however, the route of the relocation had not been finalized. SCE is in the process of preparing a Permit to Construct (PTC) application, along with A a required final Proponent's Environmental Assessment (PEA) has not been published in coordination with Republic Services, Inc., that SCE anticipates submitting to the CPUC in 2012 for approval and for which the CPUC will serve as Lead Agency pursuant to CEQA. PTC approval by the CPUC is not anticipated until 2013.”

Section 5.2.2.4 has been modified to reflect the revised SCE-SLR project description. Based on updates from SCE and BFI, the text was modified to indicate that the PTC approval would not be anticipated until 2013 rather than mid-2012 as identified in the original comment letter from SCE. The modifications to the SCE-SLR project description text are not reflective of changes to project design, location, or extent, and therefore, it can be concluded that these modifications do not significantly change the SCE-SLR project's description, create new impacts, or make existing impacts substantially worse and, as such, do not change any of the conclusions in the cumulative impacts analysis.

## **RESPONSE 7-15**

This comment requests that modifications be made to the CEQA document as follows. Section 5.5.1 of the Draft SEIR indicates that the energy requirements of the analysis should be clarified by modifying the text. It is assumed that the comment refers to the SCE portion of the proposed project, not the entire SGPREP. While peak equipment usage on a per day basis would be similar between the two projects because it is anticipated that the types of construction equipment and their activity levels would be similar, the construction schedule duration of the SCE-SLR project would be much longer than the construction schedule duration of the proposed project. The correct comparison is between the SGPREP in total compared to the SCE-SLR project in total which consists of approximately 15 tubular steel poles and conductors. Based on this comparison, it is unlikely that the SCE-SLR duration would be longer than the SGPREP duration. Therefore, energy impacts would not necessarily be greater. Therefore, the requested change has not been made to the Final SEIR.

**RESPONSE 7-16**

This commenter requests that rather than stating that the operation of the SCE SLR would require no expenditure of energy, the document should state that the SCE SLR would require minimal energy expenditure for routine patrols and maintenance. Subsection 5.5.2 has been modified as follows:

“The energy impacts from the City/County Landfill were found to be less than significant. ~~Because~~ Operation of the SCE-SLR would not require the expenditure of energy; however, the energy impacts from the proposed SCE-SLR would be require minimal, and energy expenditure for routine patrols and maintenance, which are expected to result in energy impacts that remain less than significant.”





GAIL FARBER, Director

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

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June 23, 2011

IN REPLY PLEASE REFER TO FILE EP-5

Mr. Jeffrey Inabinet
CEQA Section, Planning, Rule Development and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182

Dear Mr. Inabinet:

SUNSHINE GAS PRODUCERS RENEWABLE ENERGY PROJECT
NOTICE OF COMPLETION OF A DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT
REPORT (SCH NO. 92041053)

We have reviewed the Draft Subsequent Environmental Impact Report (DSEIR) for the
Sunshine Gas Producers Renewable Energy Project (Project), dated May 2011. The
Project proposes to develop and operate five gas turbine electricity generator sets and
associated facilities at the existing Sunshine Canyon Landfill. This renewable energy facility
would utilize landfill gas to fuel turbines that would generate electricity.

8-1

The County of Los Angeles has a history of supporting the development of renewable
energy projects within the County, and the Sunshine Canyon Landfill's Conditional Use
Permit No. 00-194-(5), specifically requires the owner/operator to use landfill gas for energy
generation at the facility to the extent technically feasible. The Project is consistent with this
requirement of the Conditional Use Permit provided it is found to be environmentally and
technically feasible.

Additionally, we have the following technical comments:

DSEIR, Chapter 3: Environmental Settings, Air Quality

Considering that the Project may yield higher emissions than those associated with flaring,
it is requested that further analysis be conducted to refine the system in order to attain the
lowest levels of emissions that are technologically feasible, and eliminate the need for
purchase of any offsets.

8-2

DSEIR, Appendix H, Geologic Evaluation and Estimates

Please revise the DSEIR to provide additional mitigation measures to address the potential
slope instability of the north slope at the landfill site. Based on the Preliminary Stability

8-3

Mr. Jeffrey Inabinet  
June 23, 2011  
Page 2

Evaluation of North Slope by AMEC (Appendix H of the Report), dated April 2, 2009, the factor of safety of the north slope does not meet the minimum standard of this Department.

} 8-3  
Con't

Underground Storage Tank

Should any operation within the proposed project include the construction, installation, modification, or removal of underground storage tanks, Environmental Programs Division, must be contacted for required approvals and operating permits.

} 8-4

If you have any questions, please contact Ms. Emiko Thompson of this office at (626) 458-3521, Monday through Thursday, 7 a.m. to 5:30 p.m.

Very truly yours,

GAIL FARBER  
Director of Public Works



PAT PROANO  
Assistant Deputy Director  
Environmental Programs Division

LL:dy  
P:\sect\Sunshine EIR Comments

cc: Department of Public Health (Cindy Chen, Gerry Villalobos)  
Department of Regional Planning (Jon Sanabria, Maria Masis, Iris Chi)

**COMMENT LETTER NO. 8****COUNTY OF LOS ANGELES, DEPARTMENT OF PUBLIC WORKS****JUNE 23, 2011****RESPONSE 8-1**

The project provides a brief summary of the proposed project description. The comment states further that the County supports renewable energy projects, that the proposed SGPREP is consistent with Conditional Use Permit (No. 00-194-(5)) for LFG to energy projects, and that it is environmentally and technically feasible. No further response is required.

**RESPONSE 8-2**

The comment requests that further analysis of the proposed system be done to assure that the lowest level of emissions are achieved and that the need for offsets as mitigation is eliminated. Further analysis of options to reduce emissions from the proposed project was conducted. Please refer to Responses 4-2 with regard to new lower emission manufacturer guarantees and 4-3 for discussions of potentially available emission control technologies that could provide further emission reductions and a discussion of the components of the emission rate estimates used in the Draft SEIR that result in conservative analysis. See also Attachment A to this Appendix for the complete findings of the study.

**RESPONSE 8-3**

The comment requests that the Draft SEIR be revised to include additional mitigation measures to address potential slope instability in the north slope of the landfill site.

As indicated in the April 2, 2009 AMEC preliminary stability evaluation report, stability of the North Slope is controlled significantly by:

- bedrock strength,
- dip of bedding in bedrock (angle and direction of bedrock), and
- whether or not clay seams exist within the slope.

AMEC performed the 2009 preliminary stability evaluation based on limited subsurface information available at that time for the SGPREP area. With limited site-specific information, AMEC made several conservative assumptions in the 2009 preliminary evaluation when addressing the factors that control stability of the North Slope (bullets above). Three key geotechnical points relative to the proposed project site were:

- 1) the uncertainty regarding bedrock strength and dip of bedding in the North Slope based on the limited existing information,
- 2) the uncertainty regarding whether clay seams were present in the North Slope, and

- 3) that findings from the field exploration subsequently planned for the North Slope could significantly affect the stability analysis.

In July, 2011, AMEC completed an extensive field exploration program and a laboratory testing program for the SGPREP, including the North Slope. The field program in the North Slope area included drilling three bucket auger borings (downhole logged by a California-licensed CEG), two hollow stem auger borings, and one continuously-sampled rock core boring. Laboratory testing included six UU triaxial strength tests and three unconfined compression strength tests on rock core samples from the North Slope. Results of the field exploration and laboratory testing addressed the three key geotechnical points above, in that:

- 1) the strength of bedrock was higher and dip of bedding steeper than assumed in the 2009 preliminary evaluation,
- 2) no evidence of clay seams was found in the bucket auger borings or rock core boring, and
- 3) after AMEC reanalyzed the stability of the North Slope using the updated information from their field exploration and laboratory testing programs, results of those analyses indicate the North Slope in its present condition is: a) globally stable, b) meets LA County stability criteria (including exceeding the minimum factor of safety of 1.5), and c) does not require mitigation measures to improve stability.

The results and updated conclusions from the AMEC field exploration, laboratory testing, and stability analyses are included in the comprehensive geotechnical investigation report provided in Attachment A to this Appendix.

#### **RESPONSE 8-4**

The comment states that if the proposed project involves installing and permitting underground storage tanks, the proposed project would require Environmental Programs Division approvals and operating permits. The proposed project would not involve the construction, installation, modification or removal of underground storage tanks containing petroleum products. The only underground storage tank associated with the proposed project would be the septic tank for the proposed septic system. In addition to meeting all County of Los Angeles Department of Public Health requirements for the installation of the septic system, the County of Los Angeles Department of Public Works Environmental Programs Division would be contacted in order to obtain required permits and approval prior to installation.

Comments to Sunshine Canyon Renewable Energy Project due 6.23.2011

- What responsibility does the City of Los Angeles and the County of Los Angeles have in the maintenance and availability of fire or explosion related incidents including but not limited to personnel and equipment. ] 9-1
- What qualifications are required on knowledge of inspections. What frequency will the inspections be and to whom. ] 9-2
- How is the project incorporated into the City of Los Angeles Methane Task Force and to the ordinances regarding methane. ] 9-3
- What precautions are taken for the surrounding neighborhood including but not limited to notification, insurance, flooding, soil and geology, air quality, groundwater, emergency services, schools-public, charter and private-, churches, health institutions and hospitals. Are these precautions for high risk incidents only or day-to-day accumulated impacts. ] 9-4
- How far is the nearest emergency hospital and what is their capacity to handle accidents. ] 9-5
- What science is being used to quantify impacts. ] 9-6
- Have there been studies on plants and wildlife and the effects of gas inhalation. ] 9-7
- What economic impacts to the area have been anticipated due to accident, earthquakes or gradual deterioration of quality of life. ] 9-8
- What evacuation plans have been established and disseminated. Who is trained. How many languages are spoken in the area and is information disseminated in those spoken languages. ] 9-9
- What is the signage and in what language. ] 9-10
- Which agency is responsible and liable for any NPDES or any other related permitting. ] 9-11
- Who will monitor any mitigation and will that monitoring and reporting be made public. ] 9-12
- Will this project effect the San Fernando Valley Basin groundwater and to what extent. ] 9-13
- Will any contamination be identified and with what methods. ] 9-14
- Has State and Local funding agencies and/or departments and/or committees been notified of this project so they can anticipate problems before taxpayer money is spent projects including but not limited to groundwater recharge. ] 9-15

- What are the impacts on the future water supply of the entire City of Los Angeles if there is significant and lengthy groundwater contamination. ] 9-16
- How is this consistent with the City of Los Angeles General Plan and its Elements and any other Community of Specific Plan. ] 9-17
- Will there be any migrating gases and with what consequence. ] 9-18
- How are fires in the forested areas outside the project being anticipated as a threat to the operation of the project and what measures are being taken for all aspects including but not limited to water contamination and greenhouse gas emission,. ] 9-19
- What is the responsibility and liability of SCE Southern California Edison Company. ] 9-20
- What is the responsibility and liability of Sunshine Gas Producer LLC. ] 9-21
- If this is a Public-Private Partnership, please delineate the responsibilities of all parties. ] 9-22
- What effect will any problems, accidents or gradual impacts have on the Metropolitan Water District supply or the LADWP Los Angeles Department of Water and Power supply at the headwaters. ] 9-23
- What is the level of national security risk and what measures are taken in that mitigation whether physical or cyber. ] 9-24
- Will there be any impact on sea-level rise or the ocean. ] 9-25

Joyce Dillard  
P.O. Box 31377  
Los Angeles, CA 90031

**COMMENT LETTER NO. 9****JOYCE DILLARD****JUNE 23, 2011****RESPONSE 9-1**

The comment asks what responsibility the City and County of Los Angeles have regarding responses to fires and explosions. As a reminder, the proposed project would be located on an existing landfill that is currently generating methane. Methane emissions are currently being flared. Instead of combusting methane in a flare, the proposed project would combust the methane in gas turbines used to generate electricity. Pursuant to SCAQMD Rule 1150.1, LFG control devices (e.g. flares or turbines) are required to control non-methane organic compounds by at least 98 percent and methane by 99 percent.

Also, as described in Section 1.4 of the Draft SEIR - Responsible Agencies - several departments within the County of Los Angeles are identified as having responsible agency authority under CEQA and the preparation of the SEIR. CEQA Guideline §15381 defines a “responsible agency” as: “a public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For purposes of CEQA, responsible agencies include all public agencies other than the lead agency that have discretionary approval authority over the project.” For the proposed project, the Los Angeles County responsible agencies are:

- Los Angeles County Department of Public Health
- Los Angeles County Department of Public Works
- Los Angeles County Department of Regional Planning

With regard to fire or explosion incidents, the Public Services section of the NOP/IS (Appendix A) describes the measures and protocols that would be implemented in coordination with County fire protection services. For example, the NOP/IS states, “In regard to fire protection and police services, the Los Angeles County Fire Department (LACFD) provides fire protection and paramedic services to the County portion of the Sunshine Canyon Landfill, where the proposed project would be located. LACFD Station 124 (25111 Pico Canyon Road) is the primary respondent to the project site.” Further, “Existing staffing at the fire station and sheriff substation serving the landfill is adequate to serve the proposed project site. However, the proposed project would be equipped with a fire extinguisher system that would be installed as part of the turbine enclosures, which would reduce the possibility of uncontrolled fires due to the proposed facility.

It was concluded in the NOP/IS that the proposed project would not generate significant adverse hazard impacts, including fire and explosion impacts. Based, in part on this conclusion, it was also concluded that the proposed project would not significantly adversely affect local fire departments’ service times necessary to respond to emergencies. No comments were received on the NOP/IS that refuted these conclusions.

**RESPONSE 9-2**

The comment asks what qualifications inspectors must have and asked about the frequency of inspections, but did not identify any specific types of inspections. It is also unclear what inspectors this comment refers to. However, during its construction, operation and maintenance, the SGPREP would be monitored on a regular, ongoing basis by qualified SGP employees and/or contractors in accordance with applicable requirements and established operations and maintenance procedures. Specific inspection requirements and frequencies are identified in the SCLF MMRS (Draft SEIR, Appendix B) – applicable SCLF MMRS measures would be incorporated into the proposed project.

Further inspections could be conducted during construction and/or operation by the following agencies:

- Los Angeles County Fire Department (Certified Unified Program Agency (CUPA) inspections, fire inspections)
- Regional Water Quality Control Board (storm water pollution prevention related inspections)
- LA County DPW (building, grading, electrical, mechanical, plumbing inspections)
- LA County DPH (septic system compliance with applicable codes)
- CalOSHA (pressure vessel inspections)
- SCAQMD

The Toxics/Waste Management, Refinery and Energy unit of the SCAQMD's Office of Engineering and Compliance (E&C) is responsible for conducting annual inspections at municipal solid waste landfill facilities throughout the South Coast basin. Compliance is determined primarily through surface emissions monitoring, via Toxic Vapor Analyzers (TVAs) and on-site inspection of landfill emission control devices. SCAQMD inspectors will verify compliance with the landfills' emissions control system, which typically consists of vertical and horizontal well-heads buried within the landfill at various depths, all of which are connected to larger gas collection pipelines (or "headers") driven by blowers. Such emission control systems are permitted by SCAQMD and its conditions are enforced by SCAQMD inspectors. All SCAQMD inspectors are trained in TVA detector usage and calibration procedures and are Hazardous Waste Operations and Emergency Response (HAZWOPER) certified.

**RESPONSE 9-3**

The comment asks how the proposed project is incorporated into the City of Los Angeles Methane Task Force and related methane ordinances. Since the proposed SGPREP facility would be located within the County of Los Angeles it would not be incorporated into the City Methane Task Force, and, the City methane ordinances would not apply. However, certain Los Angeles County methane requirements would apply to the proposed project. Specifically, as noted in Table 2-1 of the Final SEIR, the Los Angeles County Department of Public Works requires that buildings and structures located within 1,000 feet of a landfill containing decomposable material be protected against LFG intrusion. All buildings and structures for the proposed project would be constructed in accordance with applicable vapor intrusion requirements (Los Angeles County Building Code, Section 110.3). Further, the project would satisfy the Air Resources Board's regulation requiring the control and destruction of methane



generated by landfills contained in Article 4, Subarticle 6, §95464, Title 17, of the California Code of Regulations, which addresses gas collection and control system requirements. Specifically, the proposed project fulfills the requirements of subsection (b)(1), which provides gas collection and control system general requirements, subsection (b)(3), which provides requirements for gas control devices other than flares and subsection (b)(4), which provides source test requirements. MMRS 12.06 for the SCLF also specifically require that on-site structures be continuously monitored for the presence of methane gas.

#### **RESPONSE 9-4**

The comment inquires about the precautions that will be taken to address a variety of potential environmental impacts that could affect the surrounding neighborhood. The analysis of environmental impacts for the proposed project is based on using conservative assumptions. This means that when assumptions are made, those assumptions that maximize potential adverse environmental impact results are selected. As described in the Initial Study (Appendix A), Hazards and Hazardous Materials section, the location of the SGPREP facility is not within one-quarter mile of a residential unit, school, or hospital. The closest school to the project site is Van Gogh Elementary School, located more than two miles south of the proposed project site. Once operational, the proposed project would combust LFG that is currently being combusted by a flare and, as a result, would not require transport of hazardous materials by truck. Accordingly, the proposed project would not emit, handle, or transport hazardous materials within one-quarter mile of these receptors. Additionally, implementation of the proposed project would not result in emission of hazardous materials or involve handling acutely hazardous materials.

A water pipeline serving the proposed project would be located within one-quarter mile of potentially sensitive receptors, but the water pipeline involves no hazardous materials and poses no threat to sensitive receptors. Construction of the proposed project, including the water pipeline, was determined to have less than significant environmental effects on sensitive receptors. The construction of the water pipeline portion of the proposed project would be completed in approximately 15 days and would not involve the use of hazardous materials.

With regard to potential flooding, the NOP/IS indicated that the proposed project would not include construction of houses and would not place housing within a 100-year flood hazard. Additionally, the National Flood Insurance Program sponsored by the Federal Emergency Management Agency (FEMA) categorized the majority of SCLF in Zone C on the Flood Insurance Rate Map (FIRM), which is the classification for areas of minimal flooding. For this reason, it was concluded in the NOP/IS that the proposed project would not create significant adverse flooding impacts to any of the receptors mentioned in the letter, e.g., schools, churches etc. No comments were received on the NOP/IS that refuted these conclusions.

With regard to groundwater, the NOP/IS indicated that the proposed project would have no impact on groundwater supply and groundwater recharge. The proposed project would not include the use of water wells, and would not substantially alter the amount of impervious surfaces within the SCLF. For this reason, it was concluded in the NOP/IS that the proposed project would not create impacts to groundwater. No comments were received on the NOP/IS that refuted these conclusions. Additionally, as discussed in Responses 3-2 and 8-4, the septic system design and installation would be in accordance with Los Angeles County Department of

Public Health and Los Angeles County Department of Public Works requirements and standards, and would not have a significant impact on groundwater.

For issues related to geology and soils, see Response 9-8 below. For issues related to emergency services, please see Response 9-5 below. For information related to air quality see Responses 4-2, 4-3, and 6-2. See also Section 4.2 in Chapter 4 of the Final SEIR.

#### **RESPONSE 9-5**

The comment asks about the distance to the nearest emergency hospital and its capacity to handle emergencies. As described in the Initial Study (Appendix A), Public Services section, the proposed project does not require any action that would alter and, thereby, adversely affect existing public services, including fire and police protection services, or require an increase in governmental facilities or services to support the affected facilities. No comments were received on the NOP/IS that refuted these conclusions. Although not affected by the proposed project, the Providence Holy Cross Medical Center is located at 15031 Rinaldi Street in Mission Hills, approximately 4.5 miles south of the proposed project location. This hospital has a fully functioning emergency room.

#### **RESPONSE 9-6**

The comment asks what science is being used to quantify impacts. A variety of sources and methodologies were used to analyze impacts from the proposed project, and these were cited throughout the SEIR. The following provides a summary of the methodologies included in the impact analyses.

With regard to air quality, the SCAQMD is the air quality agency for most of Los Angeles, Riverside, and San Bernardino counties and all of Orange County. The SCAQMD provides guidance for performing air quality analyses to other public agencies. As a result, all methodologies, emission factors, and air quality models are consistent with SCAQMD Guidance on performing an air quality analysis, which were also used in developing the California Emission Estimator Model (CalEEMod), an air quality analysis model used throughout California.

With regard to cultural resources impacts, the analysis in the Draft SEIR referenced the Phase I CRA (CRA) conducted in April 2010. During preparation of the Phase I CRA, the NAHC was contacted to perform a Sacred Lands File Check (January 19, 2010), which did not indicate the presence of Native American cultural resources within a one-half mile radius of the proposed project. Further, the following archaeological resources were examined during the Phase I CRA conducted in April 2010: National Register of Historic Places, California Register of Historical Resources, California Historical Landmarks, California Points of Historical Interest, and the California State Directory of Properties. Therefore, the cultural resources analysis included a comprehensive survey of state recognized databases to identify whether or not the proposed project would adversely affect cultural resources. The conclusion was that the proposed project would not adversely affect cultural resources.

With regard to energy, the SEIR noted that construction of the proposed project's major components would take place over a period of approximately 24 months. Construction would

consume fuel and electricity, along with indirect energy for materials used in the proposed project facilities. However, because of the size and nature of the construction fleet and the fact that use of energy to construct a project is not a waste of energy resources, energy impacts during construction were concluded to be insignificant. During operation, the proposed project will be a net generator of approximately 20 MW of electricity. Electricity production is based on the equipment's rated design.

With regard to seismic hazards, identification of nearby active faults was based on a recent comprehensive search of nearby fault locations using a geotechnical computer program based on Cao et al. (Cao 2003). Further, the Seismic Hazard Zones Map for the Oat Mountain Quadrangle prepared by the California Department of Conservation (CGS 1998), was consulted to determine if the proposed project site is located in an earthquake induced landslide area. AMEC performed a geotechnical investigation at the SGPREP site (AMEC 2011, Appendix H), and used a revised geologic model and updated geotechnical parameters based on results of that investigation to develop geotechnical design recommendations for the SGPREP facility.

With regard to hydrology impacts, in particular water quality impacts, the SCLF currently dewater methane gas to improve the combustion efficiency in the flare. The treated condensate effluent is combined with the leachate waste stream and is further treated in the leachate treatment facility to ensure that the water quality meets applicable discharge requirements. All treated wastewater is reused on site for dust control and irrigation purposes and meets the provisions for on-site use of water provided in the SCLF WDR. There is no reason to expect that condensate from the proposed project would differ from condensate currently generated by the landfill. An additional 8,500 gallons of wastewater per day would be generated from LFG treatment and 500 to 1,000 gallons of wash water would be generated on a quarterly basis as part of equipment cleaning and maintenance. These estimates are based on information from similar types of projects.

The proposed project would use far less (40-60 gpd) than the significance threshold of 262,820 gallons per day of potable water. This estimate based on typical employee water usage rates for two to three employees.

With regard to the noise impact analyses, ambient noise levels were monitored using state-of-the-art sound level meters (SLM's). Noise emission levels for construction equipment proposed for use at the site have been documented based on measurements conducted by the Federal Highway Administration (FHWA). The noise emission levels for the proposed operational mechanical equipment were documented by the manufacturer. To determine noise impacts from the project, a noise model was created using Cadna A (Computer Aided Noise Abatement), Ver. 4.0, a robust algorithmically based computer model developed by DataKustik to predict noise impacts in a wide variety of outdoor environmental conditions. The predicted noise levels are based on the International Standards Organization (ISO) 9613 standard. The ISO 9613 standard specifies an engineering method for calculating the attenuation of sound for outdoor propagation in order to predict the levels of environmental noise at any defined user distance from a variety of sources. Model inputs include noise source data, barriers, structures, and topography.

**RESPONSE 9-7**

The comment asks if there had been studies of the biological effects of gas inhalation. Potential impacts associated with Biological Resources are described in the Initial Study (Appendix A). The proposed project is located within a landfill facility, which is generally free of identified sensitive biological resources. As discussed in the Initial Study, construction and operation of the proposed project would not impact any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish & Wildlife Service, nor would it have a substantial adverse effect on any riparian habitat or other sensitive natural community.

Further, the Draft SEIR evaluated the air quality impacts from criteria pollutant concentrations due to the proposed project and discusses the proposed project's contribution to exceedances, if any, of the ambient air quality standards. These standards encompass both primary (human health) and secondary (public welfare) effects. Public welfare effects encompass effects other than effects to human health, including effects on vegetation and ecosystems. The ambient air quality standards are currently the same for both primary and secondary effects, with the exception that the SO<sub>2</sub> primary 1-hour standard is more stringent than the secondary SO<sub>2</sub> standard. Thus, the impact to biological resources as measured against the secondary ambient air quality standards applicable to biological resources has been assessed in the Draft SEIR through the impact evaluation against the primary standard.

There are numerous reports and publications in the scientific literature that relate air pollutants to effects on biological resources. Most of these studies have focused on the effects of ozone. However, only a few provide information that might be used to develop methods to estimate effects from ambient exposures quantitatively and there are a number of factors that complicate such an evaluation. For, example, there is little or no data regarding precise dose (exposure) and response (effects) of air quality on biological resources. Further, most information on the effects of ozone on ecosystems is inferred from ozone exposures to individual plants and processes, which is difficult to use to quantify ecosystem-level productivity losses because of the complexity in scaling this information to the ecosystem level. Further difficulties in attributing growth losses to ozone can arise due to confounding factors with other stresses present in ecosystems including climate, insect damage, soil moisture, disease and other air pollutants. See U.S. EPA. 2007. Review of the National Ambient Air Quality Standards for Ozone: Policy Assessment of Scientific and Technical Information<sup>15</sup>; ASL Associates, Reconsidered Comments.<sup>16</sup> See also Response 6-6 for additional information on potential impacts from the proposed project on biological resources.

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<sup>15</sup> [http://www.epa.gov/ttnnaqs/standards/ozone/data/2007\\_07\\_ozone\\_staff\\_paper.pdf](http://www.epa.gov/ttnnaqs/standards/ozone/data/2007_07_ozone_staff_paper.pdf)

<sup>16</sup> [http://www.asl-associates.com/Reconsidered\\_comments\\_ozone\\_standard.htm](http://www.asl-associates.com/Reconsidered_comments_ozone_standard.htm)

**RESPONSE 9-8**

The comment asks what economic evaluation has been conducted regarding accidents, earthquakes or gradual deterioration of quality of life. According to CEQA Guidelines §15131, (a) “Economic or social effects of a project shall not be treated as significant effects on the environment,” and (b) “Economic or social effects of a project may be used to determine the significance of physical changes caused by the project.” However, the comment does not provide any information or examples of how the proposed project will cause deterioration in the quality of life of local residents. With the exception of construction and operational air quality impacts, the proposed project is not expected to generate significant adverse impacts to any other environmental areas. With regard to air quality, neither localized construction nor localized operational air quality impacts were concluded to be significant (i.e., pollutant concentrations at the nearest sensitive receptor were shown to be less than significant compared to the baseline). In addition, with or without the proposed project combustion of LFG will continue to increase in the future as more refuse is disposed of that will generate greater volumes of LFG.

Potential impacts related to earthquakes are described in the NOP/IS (Appendix A of the Final SEIR), Geology and Soils section, as well as Final SEIR Section 4.5, Geology and Soils. The closest active faults to the landfill are the San Fernando-Sierra Madre Fault, which is located 3.3 miles from the site, and the Northridge Blind-Thrust Fault, which is located 6.2 miles from the site. The risk of seismic hazards, such as fault rupture or strong ground shaking, exist at the site; however, implementation of standard engineering design measures (e.g., Uniform Building Code) would minimize potential seismic hazard impacts. For additional information on seismic impacts from the proposed project, refer to Response 9-6.

In addition, the SCLF FEIR (1993) and SEIR (1999) provided mitigation measures to address impacts associated with seismic hazards. Because the proposed project would be located within the boundaries of SCLF, the permittee of the proposed project would be required to implement applicable mitigation measures from the FEIR and SEIR. Accordingly, project impacts would be the same as those previously identified in the FEIR and SEIR, and implementation of the proposed project would present no additional risk associated with seismic activity. Therefore, no further analysis of this issue is required.

Risk of upset (which includes accidents) was included in the NOP/IS Hazards and Hazardous Materials discussion (Appendix A of Final SEIR), and were found to have less than significant impacts, therefore they are not within the scope of this Final SEIR.

**RESPONSE 9-9**

The comment asks what evacuation plans have been established and disseminated. SCLF has established and implemented an Emergency Action Plan (EAP), including training, in accordance with applicable regulatory requirements, which is available in English. The project proponent would prepare an EAP for the SGPREP, which would be available in English. SGPREP employees would be properly trained on emergency procedures as covered in the EAP. There are no plans at this time to make either of the EAPs available in any other languages.

**RESPONSE 9-10**

The comment asks about signage and the language for signage, but did not identify specific signage information. Appropriate signage for the SGPREP would be posted in English in accordance with applicable regulatory requirements.

**RESPONSE 9-11**

The comment asks what agency is responsible and liable for any NPDES or other permitting. Responsible agencies for NPDES and other permits are identified in Table 2-1 of the Draft SEIR and include the State Water Resources Control Board and the Los Angeles Regional Water Quality Control Board.

**RESPONSE 9-12**

The comment asks who would monitor any mitigation and whether the information would be made public. Appendix B of the Draft SEIR contains the SCLF's Mitigation Monitoring and Reporting Summary (MMRS). Additionally the SCLF Mitigation Monitoring and Reporting Program (MMRP) is available through a public records request to either the City of Los Angeles, Department of City Planning (213-978-1260), or the Los Angeles County, Department of Regional Planning (213-974-6435). The SCLF MMRS identifies the specific mitigation measures identified in the SEIR (1999) and the appropriate timeline and implementation and reporting responsibility. The NOP/IS and Draft SEIR identified the SCLF MMRS mitigation measures that are applicable to the proposed project, and would be implemented as such. Additionally, the Draft SEIR identifies further mitigation measures specific to the proposed SGPREP, which were not part of the SCLF MMRS, including those considered part of this Final SEIR, that were available for public review and comment during the current comment period. Agencies and entities identified as responsible for monitoring and implementation of SGPREP mitigation measures include SCAQMD and SGP. The MMRP for the proposed project would include information specifying the agency responsible for monitoring compliance with each mitigation measure.

**RESPONSE 9-13**

The comment inquires about the project's effect on the groundwater basin. The project will have less than significant effects on the San Fernando Valley Groundwater Basin. Groundwater issues were addressed in Section 4.6, Hydrology and Water Quality. Impacts related to hydrology and water quality were determined to be less than significant. See also Response 9-4 for additional information on potential groundwater impacts from the proposed project.

**RESPONSE 9-14**

The comment inquires about potential contamination from the proposed project. It is assumed that by contamination, the comment refers to soil or groundwater contamination. The SGPREP will run on LFG, which will be present in a gaseous state and as such, cannot become a source of contamination to the soil or groundwater. Any solid waste generated by the proposed project would be disposed of in accordance with applicable regulations. For discussion of wastewater treatment, refer to Response 3-3. As a result, the proposed project was found to have less than

significant soil and groundwater impacts. See also Responses 9-4 and 9-13 for additional information on potential groundwater impacts from the proposed project.

### **RESPONSE 9-15**

The comment asks whether state and local funding agencies had been notified to determine whether taxpayer money is spent in furtherance of the project and in particular in relationship to groundwater recharge. The proposed project is being funded entirely by private entities. Regarding groundwater recharge, there is no pumping of groundwater associated with the project. The project will produce water from the gas treatment process, which will be reclaimed and used for dust suppression at the landfill. Potable water needed for the project will be provided by the municipal water system.

CEQA Guidelines §15082 requires a lead agency to send to the Office of Planning and Research (OPR) and each responsible and trustee agency a NOP stating that an EIR will be prepared. The SCAQMD complied with these requirements as indicated in the following sentences. Agencies that were notified directly about the NOP by the SCAQMD regarding the proposed project include: U.S. Environmental Protection Agency (U.S. EPA), California Air Resources Board (CARB), Southern California Association of Governments (SCAG), Los Angeles County, City of Los Angeles, NAHC, Caltrans, California Energy Commission, Integrated Waste Management Board (CalRecycle), Regional Water Quality Control Board (Region 4), and State Water Resources Control Board. In addition to the direct noticing by SCAQMD, the NOP was sent to OPR along with a list of the agencies that should review the project. OPR also provides copies of the document to public agencies that specifically request receiving CEQA documents and to other agencies that may be considered responsible or trustee agencies. Further, notice of availability of the NOP was published in the Los Angeles Times. Consistent with CEQA Guidelines §15085, the notice of completion (NOC) of the Draft SEIR was submitted to OPR along with a list of the agencies that should review the project. OPR provided copies to other agencies as described above for the NOP. Further, pursuant to PRC §21092(b)(3)(A), the NOC was published in the Los Angeles Times and La Opinión. Finally, public agencies, organizations, and private individuals who have asked to be notified of the availability of all SCAQMD CEQA project documents, which includes the proposed SGPREP, were also sent notification of availability of both NOP and the SEIR for review.

### **RESPONSE 9-16**

The comment expresses concern about the water supply for the City of Los Angeles if the project were to result in groundwater contamination. The project does not have the potential to result in groundwater contamination. Please see Responses 9-4 and 9-13 regarding groundwater issues.

### **RESPONSE 9-17**

The comment inquires about the proposed project's consistency with the City of Los Angeles General Plan, General Plan Elements and any other Community Specific Plans, however, the proposed project is located outside of the City of Los Angeles boundaries. The SCLF is located partially within the City of Los Angeles and partially within Los Angeles County, but the proposed project is located within an unincorporated area of Los Angeles County. Where applicable, each resource section in the Draft SEIR includes a discussion regarding how the

proposed project complies with the Los Angeles County General Plan and the specific Elements within the General Plan. The analysis of noise impacts, which could have the potential to affect areas within City boundaries, did include discussion of applicable elements within the City of Los Angeles General Plan. Additionally, as discussed in the Initial Study (Appendix A of the SEIR), Land Use section, the proposed project would not “conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.” No comments were received that refuted these conclusions.

**RESPONSE 9-18**

The comment expresses concern about migrating gases. The proposed SGPREP would not generate LFG, but would use LFG generated by the existing SCLF. LFG that is currently combusted in existing flares would be diverted to the proposed SGPREP. As such, the SGPREP project does not affect or alter SCLF’s LFG collection system. The LFG would continue to be controlled, and under an Order for Abatement<sup>17</sup> which is deemed to be in compliance with SCAQMD Rule 1150.1, Control of Gaseous Emissions from Municipal Solid Waste Landfills. Please see Response 9-3 regarding LFG.

**RESPONSE 9-19**

The comment asks about fire response. The Hazards and Hazardous Materials section in the Initial Study (Appendix A of the SEIR) describes the fire response plan and coordination with local fire protection agencies. The nearest vegetated area is approximately 500 feet from the proposed SGPREP and adjacent areas are subject to brush control to prevent fires from spreading. As a result, it is unlikely that the proposed SGPREP would be in substantial danger posed by brush fires. For additional information regarding fire incidents and impacts, see Responses 6-6 and 9-1.

**RESPONSE 9-20**

The comment asks for information about the responsibility and liability of Southern California Edison (SCE) with regard to the proposed project. SCE proposes to construct and operate a 66 kilovolt switchyard and transmission line to interconnect the generation facility to SCE’s transmission system.

**RESPONSE 9-21**

The comment asks for information about the responsibility and liability of Sunshine Gas Producers (SGP) with regard to the proposed project. As described in the Final SEIR, Chapter 1, Section 1.4, Responsible Agencies, SCAQMD has primary approval authority over the proposed project, and is the lead agency under CEQA and responsible for preparation of the SEIR. As

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<sup>17</sup> SCAQMD. SCAQMD vs. BFI and Republic Services. Findings and Decision for Third Amended Order for Abatement. Hearing dates November 19, November 20, and December 3, 2011.



described in the Final SEIR, Chapter 1, Section 1.1, Introduction, Sunshine Gas Producers, L.L.C., is the applicant for the proposed project, and Republic Services, Inc. (formerly Browning-Ferris Industries of California, Inc. [BFI]), is the owner and operator of SCLF. Southern California Edison (SCE) proposes to construct and operate a 66 kilovolt switchyard and transmission line to interconnect the generation facility to SCE's transmission system.

### **RESPONSE 9-22**

The comment asks whether the project was a public-private partnership. SCAQMD enforces SCAQMD Rule 1150.1 (Control of Gaseous Emissions from Municipal Solid Waste Landfills), and SGP and BFI both have responsibility to comply with environmental regulations.

### **RESPONSE 9-23**

The comment inquires about impacts from the project to potable water supplies. Potable water is supplied to SCLF by the LADWP via an existing water distribution line. Water usage at SCLF is primarily for dust control and landscape irrigation. A small amount of potable water is used for employee drinking and sanitation needs. SCLF consumption demand is approximately 200,000 gallons per day for the entire site. Potable water is used for employee drinking and sanitation needs, for the on-site perimeter misting system and also during cell construction. Existing availability of potable water is sufficient to meet current SCLF usage and consumption demands. The proposed project will require between 40 and 60 gallons per day of potable water. This was determined to be a less than significant impact on water quality and a less than significant cumulative impact on water quality in the Draft SEIR.

### **RESPONSE 9-24**

The comment asks for information on the level of national security risk associated with the proposed project. CEQA Guidelines do not require analysis related to national security risks or associated physical or cyber related security issues. Nevertheless, no increased risk to national security can be foreseen.

### **RESPONSE 9-25**

The comment asks if there will be any impact on "sea level rise or the ocean." Sea level rise is a potential effect of global warming, which is a subset of global climate change. One identified cause of global warming is an increase of GHG emissions in the atmosphere. Because of the large amount of GHG emissions that would need to be emitted to have a measureable effect on global climate change, it is unlikely that emissions from a single project, such as the proposed SGPREP project, would measurably affect global climate change. For this reason, GHG emission impacts are typically treated as cumulative impacts. As discussed in Subsection 5.3.5.4, the proposed project was concluded to be cumulatively considerable with respect to GHG emissions and, therefore, cumulatively significant. This conclusion is based on the calculated difference in GHG emissions during operation of the proposed project compared to the baseline. However, as noted in Subsection 5.3.5.4, increased GHG emissions are primarily due to the increasing amount of LFG generated as a result of ongoing waste disposal over time. Further, GHG emissions would continue to increase with or without the proposed project because the existing flare would also combust the increasing LFG. The net result is that GHG emissions from the proposed project are slightly greater than GHG emissions compared to GHG

emissions from the flare, primarily because of the additional GHG emissions generated during construction of the proposed project. With the addition of new mitigation measure GHG-3, however, all construction GHG emissions are expected to be mitigated through funding provided by the project proponent to the SCAQMD's Rule 2702 – Greenhouse Gas Reduction Program. Although, the proposed project would likely offset some portion of GHG emissions, as it would displace higher GHG intensity energy with energy produced from renewable sources, no credit was given for this displacement. Since the proposed project was concluded to be cumulatively significant for GHG emissions, it is implicitly acknowledged that it would contribute to global climate change and the effects of global climate change.



GAIL FARBER, CHAIR  
MARGARET CLARK, VICE-CHAIR

LOS ANGELES COUNTY  
SOLID WASTE MANAGEMENT COMMITTEE/  
INTEGRATED WASTE MANAGEMENT TASK FORCE  
900 SOUTH FREMONT AVENUE, ALHAMBRA, CALIFORNIA 91803-1331  
P.O. BOX 1460, ALHAMBRA, CALIFORNIA 91802-1460  
www.lacountyiswmf.org

June 23, 2011

Mr. Jeffrey Inabinet  
CEQA Section, Planning, Rule Development and Area Sources  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4182

Dear Mr. Inabinet:

**SUNSHINE GAS PRODUCERS RENEWABLE ENERGY PROJECT  
NOTICE OF COMPLETION OF A DRAFT SUBSEQUENT ENVIRONMENTAL  
IMPACT REPORT (SCH NO. 92041053)**

The Los Angeles County Solid Waste Management Committee/Integrated Waste Management Task Force (Task Force) wants to thank you for the opportunity to provide comments on the Draft Subsequent Environmental Impact Report (SEIR) for the Sunshine Gas Producers Renewable Energy Project (Project) dated May 2011. We also want to express our appreciation for the discussion we had with you and Mr. Steve Smith of South Coast Air Quality Management District (SCAQMD) during the June 16, 2011, meeting of the Task Force.

While the Task Force supports the development of renewable energy projects from landfill gas, we are also concerned about impacts the Project may have on the nearby residential community of Granada Hills and the Van Gogh Street Elementary school. Based on the Project information presented thus far, it appears that the Project may increase the emission levels of a number of constituents at the site beyond the baseline thereby impacting the surrounding communities. Accordingly, the Task Force requests that further analysis be conducted to refine the system in order to attain the lowest levels of emissions that are technologically feasible, eliminate the need for purchase of any offsets, and that consideration be given to evaluating this Project using a more stringent standard similar to those applied to publicly owned projects.

10-1

Pursuant to Chapter 3.67 of the Los Angeles County Code and the California Integrated Waste Management Act of 1989 (Assembly Bill 939 [AB 939], as amended), the Task Force is responsible for coordinating the development of all major solid waste planning documents prepared for the County of Los Angeles and the 88 cities in Los Angeles County with a combined population in excess of ten million. Consistent with these

10-2

Mr. Jeffrey Inabinet  
June 23, 2011  
Page 2

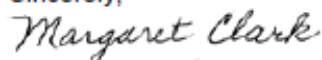
responsibilities and to ensure a coordinated, cost-effective, and environmentally sound solid waste management system in Los Angeles County, the Task Force also addresses issues impacting the system on a countywide basis. The Task Force membership includes representatives of the League of California Cities-Los Angeles County Division, County of Los Angeles Board of Supervisors, City of Los Angeles, waste management industry, environmental groups, the public, and a number of other governmental agencies.

10-2  
Con't

Your consideration towards implementing the most suitable technologies for this proposed Project and addressing the concerns of the Granada Hills community is greatly appreciated. As discussed during the Task Force meeting, we also appreciate the additional time granted to us in submitting these comments and your willingness to reevaluate SCAQMD's requirements in response to these concerns. If you have any questions, please contact Mr. Mike Mohajer of the Task Force at (909) 592-1147.

10-3

Sincerely,



Margaret Clark, Vice-Chair  
Los Angeles County Solid Waste Management Committee/  
Integrated Waste Management Task Force and  
Council Member, City of Rosemead

EKT:ts

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- cc: Office of Los Angeles County Supervisor Antonovich (Millie Jones, Edel Vizcarra)
- Office of Los Angeles County Supervisor Yaroslavsky (Ben Saltsman)
- City of Los Angeles Department of City Planning (Ly Lam)
- County of Los Angeles Department of Regional Planning (Maria Masis)
- County of Los Angeles Department of Public Health (Cindy Chen)
- Sunshine Canyon Landfill – Community Advisory Committee (Becky Bendikson, Wayde Hunter)
- Sunshine Canyon Landfill Technical Advisory Committee (Michael LoGrande, Alan Bell, Richard Bruckner, John Sanabria)
- Sunshine Canyon Landfill - Local Enforcement Agency (Wayne Tsuda)
- Each Member of the Los Angeles County Integrated Waste Management Task Force

**COMMENT LETTER NO. 10**  
**LOS ANGELES COUNTY SOLID WASTE MANAGEMENT COMMITTEE/  
INTEGRATED WASTE MANAGEMENT TASK FORCE**

**JUNE 23, 2011**

**RESPONSE 10-1**

Although the task force supports renewable energy projects, the comment requests that further analysis be conducted to refine the system to attain the lowest levels of emissions that are technically feasible and eliminate the need for purchase of offsets. At SCAQMD staff's request, the project proponent has evaluated ways of reducing air quality impacts from the proposed project. In response to this request, the project proponent was able to obtain new equipment manufacturer guarantees for lower emissions from the project. Please refer to Response 4-2. Further, a report was prepared that presents available technologies and their emission potential. The major findings of this study are summarized in Response 4-3 and the full report can be found in Attachment A to this Appendix. See also Response 4-3 with regard to use of emission offsets for the proposed project.

**RESPONSE 10-2**

This comment describes the responsibilities of the Integrated Waste Task Force and summarizes the membership of the Task Force. No response is necessary.

**RESPONSE 10-3**

The comment requests consideration of suitable technologies to address the concerns of the Granada Hills community. It is assumed the concerns referenced here refer to emissions from the proposed project. Please refer to Responses 4-2 for a discussion of revised manufacturer emission guarantees and 4-3 for discussion of a technology evaluation to identify technologies to further reduce air quality impacts from the proposed project.

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South Coast Air Quality Management District  
**Form 500-G**  
**Title V - Hearing Request Form**

Mail To:  
 SCAQMD Title V Administration  
 21865 Copley Drive  
 Diamond Bar, CA 91765-4178  
 Tel: (909) 396-3365  
 www.sqmd.gov

This form is used to request a public hearing for a proposed Title V permit. To obtain copies of the public notices for Title V permits, or for assistance in completing the form, please call the Title V Hotline at (909) 396-3013. Hearing requests should be returned to: AQMD Title V Administration, 21865 Copley Drive, Diamond Bar, CA 91765-0830. In addition, a copy of this request MUST also be mailed by first class mail, on or before the date the hearing request is filed with the AQMD, to the facilities contact person identified in the Public Notice.  
**IMPORTANT - THE DEADLINE FOR RETURNING THE FORM IS 15 CALENDAR DAYS FROM THE DATE OF THE PUBLIC NOTICE. ALL INFORMATION MUST BE COMPLETE FOR THE HEARING REQUEST TO BE CONSIDERED BY THE AQMD. See AQMD Rule 3006(a)(1)(F).**

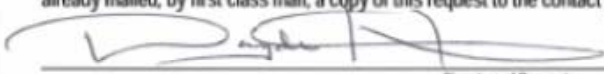
**Section I - Individual Requesting a Public Hearing**

1. Name: WAYDE HUNTER 2. Date of Request: 2/14/12  
(month/year)

3. Company Name: NORTH VALLEY COALITION OF CONCERNED CITIZENS INC 4. Title: PRESIDENT  
(if applicable)

5. Mailing Address: 11862 BALBOA BLVD BOX 172  
Street Address/PO Box  
GRANADA HILLS CA 91344  
City State Zip

6. Daytime Telephone: 818 363-3597 Ext. Fax: 818 368-5818

7. Signature of Requester:  
 I hereby request that the AQMD hold a public hearing to address concerns with the Title V Permit referenced below. I have already mailed, by first class mail, a copy of this request to the contact person at the facility listed in the public notice.  
  
Signature of Requester

8. Use the information from the public notice to identify the facility for which a hearing is requested by completing the following:

Valid AQMD Facility ID: 139938 Notice Publication Date: 2/01/12 (ASSUMED)  
(Available on Permit or Invoice issued by AQMD) (month/year)

Facility Name: SUNSHINE GAS PRODUCERS LLC  
(Business name of operator to appear on permit)

Facility Location: 14747 SAN FERNANDO ROAD (SUNSHINE CYN LANDFILL)  
Street Address  
SYLMAR CA 91342  
City State Zip

**Section II (Optional) - Alternate Person to Receive Further Notices**

1. If applicable, provide the name and address of another person to whom all further notices should be sent, in lieu of the requester.

Name of Alternate Person: KELLY T. SMITH

Company Name: THE SMITH FIRM Title: SR. ATTORNEY

Mailing Address: 1541 CORPORATE WAY, SUITE 100  
Street Address/PO Box  
SACRAMENTO CA 95831  
City State Zip

-Turn page over and complete Section III.-

Section III - Basis for Requesting a Public Hearing			
<p>The reasons for requesting and holding a hearing must be specific to air quality regulations and based on the permitting action described in the public notice. The public hearing request is subject to AQMD approval. A public hearing will be held if: 1) there is evidence that the proposed permit is not correct or is not adequate to ensure compliance with regulatory requirements, and 2) a hearing will likely provide additional information that will affect the drafting and/or issuance of the permit.</p>			
<p>Complete the following information:</p>			
<p>1. <input checked="" type="checkbox"/> I object to the issuance of this permit as proposed because:</p>			
			<p>a. SCAQMD failed to consider and respond timely to a formal request to reissue the Notice of Intent to Issue a Permit to Construct, hereafter referred to as "Notice," due to its failure to provide a copy of the air quality analysis of the equipment for public review at the Sylmar Branch Library as indicated in the Notice, which if granted would have resulted in a change to the date to file this request and/or for comments to be submitted. The Notice itself lacks an issue date.</p>
			<p>b. The DSEIR is defective. The odor section is grossly in error. It entirely misstates the contribution of the LFG to odor problems, which were very well known and highly controversial when the draft SIER was issued. It ignores the corrective action required by the SCAQMD.</p>
			<p>c. The DSEIR does not correctly identify the gas flow rates nor the amount of gas being generated at the landfill due to the lack of a sufficiently robust collection system. It fails to provide cumulative or foreseeable LFG generation.</p>
			<p>d. Persons contributing comments either to the Scoping Meeting and/or to the DSEIR were not notified of the completion of the DSEIR.</p>
			<p>e. The DSEIR identifies carbon monoxide and 2.5 particulates as significantly increased.</p>
			<p>f. The DSEIR misstates the effect of "A No Project Alternative" by failure to indicate that the use of the existing flares will produce higher destruction rates of GHG and particulate matter that will be environmentally superior for not only landfill workers but the surrounding communities.</p>
<p>2. <input checked="" type="checkbox"/> The following language in the proposed permit does not accurately reflect air quality regulatory requirements.</p>			
Permit Section	Page Number	Device or Condition Number	Objection <small>(Identify air quality regulatory requirements that are inconsistent with language in the permit)</small>
DSEIR Section 4.0, Air Quality et al.			<p>Specifically but not limited to those sections and tables which utilize SCLF Baseline information from 2007 - 2009 which does not correctly identify the gas flow rates nor the amount of gas being generated at the landfill due to the lack of a sufficiently robust collection system. SCAQMD letter dated February 10, 2012 to Bertrand Russel, SCL Area Environmental Manager support this contention. Additionally, The Analysis of Air Quality Impacts to Sensitive Receptors is based only on "new emission" units and not on the cumulative impact of all of the gas being generated.</p>

11-1

11-2

11-3

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11-7



**COMMENT LETTER NO. 11****WAYDE HUNTER****FEBRUARY 14, 2012****RESPONSE 11-1**

This comment relates to availability of the Permit to Construct for comment and not the CEQA document, therefore this comment will be responded to as part of the determination on the Request for Title V Public Hearing and will not be further responded to in this document.

**RESPONSE 11-2**

The comment states that the Draft SEIR is defective, because the odor section is in error. The comment goes on to state that the odor section misstates the contribution of LFG to odor problems which were very well known and highly controversial when the Draft EIR was issued. The comment also states that the odor section ignores the corrective action required by SCAQMD.

There are two sections of the Draft SEIR that discuss the odor issues in detail. Section 3.2.1.5 describes in detail the history of the odor issues at SCLF, up to and including the complaints received in the first quarter of 2011. It also describes the corrective action ordered by SCAQMD including the original Abatement Order of March 2010, and its amendments up to and including the Amendment published in January 2011. The Draft SEIR also included a list of potential odor causing activities that were contained in the Abatement Order, including “landfill gas emissions from either the surface of the landfill or landfill gas control equipment.” This is also repeated in Section 4.2.3.8 of the Draft SEIR.

The most recent Amendment to the Abatement Order, the Stipulated Third Amended Order of Abatement (STAOA), was signed on December 6, 2011, well after the May 2011 publication date of the Draft SEIR. The STAOA does discuss, in detail, the impact of the performance of the gas collection system on odors at SCLF. It also describes the odor remediation measures required by the STAOA, including: installing additional LFG collection wells; additional surface LFG monitoring; an additional physical or computer modeling study; hiring corrective action managers at SCLF; hiring an independent environmental consultant to monitor odors and other environmental parameters; installing a new flare; and, conducting additional environmental monitoring.

The STAOA is intended to reduce odors at SCLF and of the combustion technologies available to control LFG, the STAOA focuses on flares. The only impact that the STAOA may have is to result in additional landfill gas collection at SCLF. However, the Draft SEIR addressed the increased LFG production that would result from additional placement of refuse into the SCLF and proposes an additional LFG destruction device. Accordingly, the STAOA does not provide any information that changes the conclusions of the Draft SEIR. Therefore, the Draft SEIR is neither grossly in error nor is it defective.

**RESPONSE 11-3**

The comment states that the Draft SEIR neither correctly identifies the gas flow rates nor the amount of gas generated at the landfill due to the lack of a sufficiently robust gas collection system. The comment appears to be referring to the fact that, in response to odor complaints and the STAOA, SCLF is beginning a program intended to improve its landfill gas collection system in an effort to collect gas that now may evade the gas collection system and result in odors. As already noted the STAOA was signed on December 6, 2011, well after the May 2011 publication date of the Draft SEIR.

The gas flow rates that were used to analyze the project are independent of the rate at which the landfill generates and collects gas. The Draft SEIR presumes a quantity of LFG will be produced at full buildout corresponding to a total of 254.2 MMBTU/hr, the maximum that can be combusted in the proposed five turbines as is described in Tables D-3C of Appendix D-3 of the Draft SEIR. As required by CEQA Guidelines §15125(a), “An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.” It is generally recognized that the physical environmental conditions include both the natural environment and the man-made or built environment. (Guide to the California Environmental Quality Act, Remy, Thomas, Moose and Manley, 1999, p. 163.) Just as there are cycles and fluctuations over time in the natural environment that must be reflected in the baseline (e.g., seasonal variations, drought cycles, 100-year floods, etc.), so too there are temporal variations and cycles in the man-made or built environment (e.g., seasonal cycles in agriculture and tourism, business cycles, etc.). Because, production of LFG varies over time, the baseline was established from direct measurements taken for years 2007 through 2009 for the existing three enclosed SCLF flares (see Chapter 3, Subsection 3.2.1.5). The baseline gas flow rate corresponds to an average of 170 MMBTU/hr, as was measured during the baseline period as is described in Tables D-3B of Appendix D-3 of the Draft SEIR. Neither of the maximum quantity of LFG produced at full buildout nor the baseline values will change if the landfill is able to capture additional LFG in the future as a result of its upgrades to the LFG collection system.

The commenter also states that the Draft SEIR fails to provide cumulative or foreseeable LFG generation. The cumulative emissions would be the total emissions resulting from the maximum combustion in the proposed turbines. As described above, this is independent of the potential for the collection of greater quantities of LFG from the existing waste. The evaluation of cumulative risk impacts from the project included risks from the landfill at full buildout based on the risk assessment contained in the 1999 Final SEIR for the SCLF, as described in Section 5.3.3 of the Draft SEIR. That risk assessment was based on the theoretical gas generation and collection to ensure a conservative estimate of cumulative risks. It is not based on the actual collection of gas that was taking place prior to upgrades to the LFG collection system. Accordingly, any additional LFG collection that may occur as a result of the implementation of the STAOA is incorporated into the analysis found in the Draft SEIR.

**RESPONSE 11-4**

This comment states that persons contributing to the Scoping Meeting or the Draft SEIR via written comments were not notified of the completion of the Draft SEIR. It is assumed that the comment is referring to the Final SEIR, rather than the Draft SEIR, as multiple participants in the NVC submitted comments on the Draft SEIR. The Final SEIR was not complete as of the time of this comment and, therefore, notification of the availability of the Final SEIR could not be distributed.

With respect to public notification, as discussed in the Final SEIR Section 1.3, the NOP/IS was circulated for 30 days, starting November 19, 2009, and the Draft SEIR was circulated for 45 days, starting May 10, 2011. Notification letters of both of these public comment periods were sent out to over two thousand recipients. Both documents were also posted on the SCAQMD website. With regard to documentation, the Draft and Final SEIRs include a references section which provides citations for documents referenced in the text. Additionally, documentation relevant to studies conducted for the Draft and Final SEIRs are included in the appendices, including the noise study, the cultural resources Phase I, the air permit applications, etc.

All persons commenting on the Draft SEIR will receive a copy of the Final SEIR when it is completed.

**RESPONSE 11-5**

The comment states that the Draft SEIR identifies the carbon monoxide and PM<sub>2.5</sub> as significantly increased. The Draft SEIR identifies the mass emissions of carbon monoxide (CO) and PM<sub>2.5</sub> as significant regional operational impacts in Section 4.2.3.4 of the Draft SEIR. As discussed in Response 4-2, the proposed project will no longer result in significant impacts from CO, as is described in Section 4.2.3.4 of the Final SEIR. However, significant PM<sub>2.5</sub> impacts remain and were fully disclosed to the public as required by CEQA.

**RESPONSE 11-6**

The comment states that the Draft SEIR doesn't indicate that the use of the existing flares will produce higher destruction rates of GHG and particulate matter than will the proposed Project. The commenter is incorrect. First, neither the flares nor the turbines proposed for the Project destroy particulate matter. The proposed turbines do have a higher particulate emission rate than do the flares and that is clearly presented in the comparison of the No Project Alternative to the Proposed Project in the Draft SEIR. Table 4-8 of the Draft SEIR shows the Project PM emission rates, and Table 6-1b shows the No Project Alternative PM emission rates. The existing flares' actual destruction rate for GHGs is higher than the proposed Project's permitted emission rates. However, as described in Section 6.4.1 of the Draft SEIR, the assumed methane destruction efficiency, based on permit limits, is the same for the existing flare as it is for the proposed Project's turbines.

With regard to the environmentally superior alternative, pursuant to CEQA Guidelines §15126.6(e)(2), if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. A comparison of the relative merits of the project alternatives compared to the proposed project (see Final SEIR, Chapter 6, Table 6-6), shows that the environmentally superior alternative

would be the No Project Alternative. After the No Project Alternative, the environmentally superior alternative is considered to be Alternative 2, the Reduced Project Alternative. The selection of Alternative 2 as the environmentally superior alternative is consistent with applicable CEQA requirements.

**RESPONSE 11-7**

The comment states that the Draft SEIR did not correctly identify the baseline gas flow rates and gas generation. The baseline in the Draft SEIR is consistent with the requirement of the CEQA Guidelines Section 15125, which states: “an EIR must include a description of the physical environment in the vicinity of the project, as they exist at the time the Notice of Preparation is published...This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant.” Therefore, the Draft SEIR correctly describes the LFG collected and combusted during the baseline years at the SCLF. See also response to Comment 11-3.

The comment states that the Draft SEIR does not consider cumulative project impacts to sensitive receptors. As discussed in the Final SEIR Subsection 5.3.2, in the context of cumulative impacts with the SCLF, as long as total combustion emissions from all sources at the SCLF are less than or equal to approximately 20,835 standard cubic feet per minute (scfm), they are within the scope of the air quality analysis in the 1999 Final SEIR and, therefore, have already been accounted for in a certified CEQA document. Further, the analysis of project-specific impacts from the proposed project would not create significant adverse impacts to off-site sensitive receptors and, therefore is not considered to be cumulatively considerable (CEQA Guidelines §15064(h)(1)). If project-specific impacts are not concluded to be cumulatively considerable, it is assumed that they do not contribute to cumulative impacts created by other projects.

**From:** Kelly T. Smith [<mailto:ktsmith@thesmithfirm.com>]  
**Sent:** Tuesday, February 14, 2012 9:23 AM  
**To:** Steve Smith; Jay Chen  
**Cc:** Hunter, Wayde; Jeffrey Inabinet  
**Subject:** RE: Request to reissue Notice of Intent

Steve: The DSEIR is defective. The odor section is grossly in error. It entirely misstates the contribution of LFG to odor problems which were very well known and highly controversial when the draft EIR was issued. It ignores the corrective active required by AQMD. Perhaps that is why my clients were never notified of its preparation or completion.

] 12-1  
 ] 12-2

Kelly T. Smith  
 THE SMITH FIRM  
 1541 Corporate Way, Suite 100  
 Sacramento, CA 95831  
 T: (916) 442-2019  
 M: (916) 607-1998  
[www.thesmithfirm.com](http://www.thesmithfirm.com)

**From:** Steve Smith [<mailto:SSmith@aqmd.gov>]  
**Sent:** Tuesday, February 14, 2012 7:01 AM  
**To:** Jay Chen; [ktsmith@thesmithfirm.com](mailto:ktsmith@thesmithfirm.com)  
**Cc:** Hunter, Wayde; Jeffrey Inabinet  
**Subject:** RE: Request to reissue Notice of Intent

The Draft Subsequent Environmental Impact Report for the Sunshine Gas Producers Renewable Energy Project is online and can be found at the following link:

[http://www.aqmd.gov/ceqa/documents/2012/nonaqmd/Sunshine/SGPREPDSEIR\\_May2011.pdf](http://www.aqmd.gov/ceqa/documents/2012/nonaqmd/Sunshine/SGPREPDSEIR_May2011.pdf).

Please note, the comment period ended on June 23, 2011. Preparation of a Final SEIR is currently in progress.

*Steve Smith, Ph.D.*  
 Program Supervisor – CEQA Section  
 South Coast AQMD  
 909.396.3054 v  
 909.396.3324 f

**From:** Jay Chen  
**Sent:** Friday, February 10, 2012 6:13 PM  
**To:** [ktsmith@thesmithfirm.com](mailto:ktsmith@thesmithfirm.com)  
**Cc:** Hunter, Wayde; Jeffrey Inabinet; Steve Smith  
**Subject:** RE: Request to reissue Notice of Intent

Hi Mr. Smith:

A draft Supplemental Environmental Impact Report for this project was circulated for public review in May 2011. For specific details or its current status, please check with the AQMD's CEQA staff, Jeff Inabinet. Jeff's email is included in the cc list and his phone number is 909-396-2453. Our office is closed on Mondays, so he may not be available to reply to you until next Tuesday. Thanks.

Jay

**From:** Kelly T. Smith [<mailto:ktsmith@thesmithfirm.com>]  
**Sent:** Friday, February 10, 2012 6:04 PM  
**To:** Jay Chen  
**Cc:** Hunter, Wayde  
**Subject:** RE: Request to reissue Notice of Intent

Mr. Chen: I represent NVC in this matter. Is there a CEQA document for review?

**From:** Jay Chen [<mailto:JChen@aqmd.gov>]  
**Sent:** Friday, February 10, 2012 5:58 PM  
**To:** Hunter, Wayde  
**Cc:** [ktsmith@thesmithfirm.com](mailto:ktsmith@thesmithfirm.com); [bebend99@gmail.com](mailto:bebend99@gmail.com); [AZiliak@ghnnc.org](mailto:AZiliak@ghnnc.org); [kthompson@ghnnc.org](mailto:kthompson@ghnnc.org)  
**Subject:** RE: Request to reissue Notice of Intent

Hi Wayde:

I have brought your request to my superiors and the District Counsel for their consideration. I'll certainly inform you immediately as soon as a decision is made. In the mean time, however, my recommendation for you is to assume that the request for re-notice is not granted and, if you plan to file a hearing request, you should do so by February 15. The due date for public comments is March 1. Thanks.

Jay

**From:** [WHunter01@aol.com](mailto:WHunter01@aol.com) [<mailto:WHunter01@aol.com>]  
**Sent:** Friday, February 10, 2012 5:02 PM  
**To:** Jay Chen  
**Cc:** [ktsmith@thesmithfirm.com](mailto:ktsmith@thesmithfirm.com); [bebend99@gmail.com](mailto:bebend99@gmail.com); [AZiliak@ghnnc.org](mailto:AZiliak@ghnnc.org); [kthompson@ghnnc.org](mailto:kthompson@ghnnc.org)  
**Subject:** Fwd: Request to reissue Notice of Intent

Dear Mr. Chen:

As of 5 p.m. Friday, February 10, 2012, I have not heard if the SCAQMD has approved or denied my request for a reissue of the Notice of Intent to Issue a Permit.

As you know there is a current deadline of the 15th for me to file a request for a Hearing.

I would appreciate a response as soon as possible.

Thank you in advance for your cooperation.

Wayde Hunter  
President North Valley Coalition of Concerned Citizens Inc.  
Vice Chair SCL-CAC  
Member Granada Hills North Neighborhood Council (GHNNC)

---

**From:** [WHunter01@aol.com](mailto:WHunter01@aol.com)  
**To:** [JCHEN@aqmd.gov](mailto:JCHEN@aqmd.gov)  
**CC:** [kthompson@ghnnc.org](mailto:kthompson@ghnnc.org), [AZiliak@ghnnc.org](mailto:AZiliak@ghnnc.org), [bebend99@gmail.com](mailto:bebend99@gmail.com), [ktsmith@thesmithfirm.com](mailto:ktsmith@thesmithfirm.com)

Sent: 2/8/2012 2:07:07 P.M. Pacific Standard Time  
Subj: Request to reissue Notice of Intent

Dear Mr. Chen:

**Re: SCAQMD's Notice of Intent to Issue a Permit to Construct for the Sunshine Gas Producers LLC Facility ID 139938)**

Given that the public and organizations such as the NVC, SCL-CAC and GHNNC have been unable to view the information related to this project prior to February 7, 2012 we respectfully request that you consider this a formal request to have the SCAQMD's Notice of Intent to Issue a Permit to Construct for the Sunshine Gas Producers LLC Facility ID 139938) reissued with new timelines in order for the public to review said documentation.

As per our previous communications on January 31, 2012 that the SCAQMD had ignored the requests of the residents at the Scoping Meeting that copies of any and all documentation distributed to the public be sent not to the Sylmar Library but to the Granada Hills Library, and your subsequent email that you would provide the same to the Granada Hills Library on February 7, 2012.

On the evening of February 6, 2012, I attempted to find a copy of the draft permit at the AQMD's website and was unable to find it even after following the instructions given in the Notice.

On February 7, 2012, I went to the Sylmar Library. I spoke to the librarian Ms Faegheh Mofidi (818 367-6102) seeking said information as indicated in the notice, and she stated that she remembered receiving only one (1) page and nothing else. Just to be sure we also instituted a search of the library area and found nothing.

I spoke to Mr. Gaurang Rawal February 8, 2012 at approximately 1:30 p.m., relaying the same information as above, and asking if he was the person I should be speaking with in order to make the request to have the Notice reissued. He indicated that he would talk with his supervisor, and yourself.

In closing, I have not had a chance to verify if the promised document package has arrived at the Granada Hills Library as I have been out of town (but I will do so today). Given the existing timeline it does not allow for adequate time to review of technical data for filing of a request for a Hearing. Also if you or Mr. Rawal is not the person that this request should be submitted to, could you please inform me of the correct procedure.

Thank you,

Wayde Hunter  
President North Valley Coalition of Concerned Citizens Inc.  
Vice Chair SCL-CAC  
Member Granada Hills North Neighborhood Council (GHNNC)

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**COMMENT LETTER NO. 12****KELLY T. SMITH****FEBRUARY 14, 2012**

Comment Letter No. 12 is the final e-mail in a string of e-mails starting with the February 8, 2012 e-mail from Mr. Wayde Hunter to Mr. Jay Chen, Senior Air Quality Engineering Manager, regarding a Notice of Intent to Issue a Permit to Construct for the Sunshine Gas Producers LLC Facility ID 139938. Responses to the February 8, 2012 (NOI) e-mail and the February 10, 2012 e-mail from Mr. Wayde Hunter to Mr. Jay Chen have not been prepared because these e-mails do not include comments related to the Draft SEIR, but are related specifically to the NOI. E-mails and other correspondence related to the NOI will be addressed by Engineering and Compliance staff. The February 10, 2012 e-mail from Mr. Kelly Smith to Mr. Jay Chen asks if a CEQA document has been prepared. The February 10, 2012 e-mail from Mr. Jay Chen to Mr. Kelly Smith provides a response indicating that a Draft SEIR was prepared and circulated to the public. No further response is required for these two e-mails. The February 14, 2012 e-mail from Dr. Steve Smith, Program Supervisor – CEQA Section, confirms the dates of the public review period for the Draft SEIR. No further, response is required.

**RESPONSE 12-1**

The comment states that the Draft SEIR is defective, because the odor section is in error. Please refer to Response 11-2 for a response to this comment.

**RESPONSE 12-2**

The comment states that the Draft SEIR ignores the corrective action required by AQMD with regard to odor issues at the SCLF, and states that this may be the reason that Mr. Smith's clients were not notified of the preparation or completion of the Final SEIR. With regard to the corrective action requirements for odors at the SCLF, please refer to Response 11-2. With regard to notification of the completion of the Final SEIR, please refer to Response 11-4. With regard to notification of preparation of the SEIR, the SCAQMD prepared and released an NOP/IS for the proposed project on November 19, 2009, for a 30-day comment period, which closed on December 18, 2009. Additionally, a public scoping meeting was conducted on December 9, 2009 to discuss the proposed project. Participants from the NVC were present at the Scoping Meeting. The responses to comments provided during that scoping meeting are included in the Draft SEIR, Appendix C, Comments 8-1 through 8-11. According to the February 10, 2012 e-mail from Mr. Kelly Smith to Mr. Jay Chen, Mr. Smith represents the North Valley Coalition (NVC). Copies of the Notice of Completion (NOC; notification of the publication of the Draft SEIR) were sent to the following NVC members in May 2011:

- Wayde Hunter (NVC President, sent to personal Granada Hills address),
- Ralph Kroy (NVC Board Member, sent to personal Granada Hills address),
- Barbara Iverson (NVC Board Member, sent to personal Granada Hills address),
- MaryAnna Kienholtz (NVC Treasurer, sent to NVC listed address: 11862 Balboa Blvd, Granada Hills),
- Sherman Klein (NVC member, sent to personal Granada Hills address), and

- Mary Wrobleski (Sent to NVC listed address: 11862 Balboa Blvd, Granada Hills).

Additionally, those members of the NVC who are also members of the Granada Hills North Neighborhood Council (GHNNC) also received copies of the NOC. Copies of the NOC were sent to the following members of the GHNNC and GHNNC/NVC in May 2011:

- Kim Thompson (GHNNC President, sent to GHNNC listed address: 11139 Woodley Avenue, Granada Hills),
- Scott Manatt (GHNNC Vice President, sent to GHNNC listed address: 11139 Woodley Avenue, Granada Hills),
- Anne Zilliak (GHNNC Planning and Land Use Management (PLUM) Committee Chair, sent to personal Granada Hills address),
- Leon Marzillier (GHNNC Policy and Rules Committee Chair, sent to GHNNC listed address: 11139 Woodley Avenue, Granada Hills)
- Wayde Hunter (GHNNC PLUM Committee Member and NVC Member, sent to personal Granada Hills address),
- Ralph Kroy (GHNNC Outreach and Publicity Committee Member and NVC Member, sent to personal Granada Hills address), and
- William Lillenberg (GHNNC PLUM Committee Member, sent to personal Granada Hills address).

**From:** [WHunter01@aol.com](mailto:WHunter01@aol.com) [mailto:WHunter01@aol.com]  
**Sent:** Wednesday, February 29, 2012 12:34 PM  
**To:** Gaurang Rawal; Jeffrey Inabinet  
**Cc:** [ktsmith@thesmithfirm.com](mailto:ktsmith@thesmithfirm.com)  
**Subject:** NVC Comments to SCAQMD Notice of Intent to Permit

Dear Sirs:

Please find the attached NVC comments on:

**NOTICE OF INTENT TO ISSUE "PERMIT TO CONSTRUCT" PURSUANT TO RULE 212 AND TITLE V PERMIT PURSUANT TO RULE 3006**

APPLICANT: SUNSHINE GAS PRODUCERS, LLC. (Facility ID 139938)  
APPLICATIONS NOS.: 480567 through 480572, 482510 AND 480628  
LOCATION: 14747 San Fernando Road (at Sunshine Canyon Landfill) Sylmar, CA.

PROJECT DESCRIPTION: LANDFILL GAS TREATMENT AND LANDFILL GAS TO ENERGY SYSTEM

**Letter only.** Your email service has rejected my previous email with attachments.

Attachment 1, 2 & 3 will follow.

Thank you for the opportunity to comment.

Wayde Hunter

President, North Valley Coalition of Concerned Citizens Inc.

**NORTH VALLEY COALITION OF CONCERNED CITIZENS INC  
11862 BALBOA BOULEVARD, BOX 172  
GRANADA HILLS, CA 91344**

February 29, 2012

South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4182  
Attention: Mr. Gaurang Rawal, Air Quality Engineer, Engineering and Compliance

**RE: NOTICE OF INTENT TO ISSUE "PERMIT TO CONSTRUCT" PURSUANT TO RULE  
212 AND TITLE V PERMIT PURSUANT TO RULE 3006  
APPLICANT: SUNSHINE GAS PRODUCERS, LLC. (Facility ID 139938)  
APPLICATIONS NOS.: 480367 through 480372, 482510 AND 480628  
LOCATION: 14747 San Fernando Road (at Sunshine Canyon Landfill) Sylmar, CA.  
PROJECT DESCRIPTION: LANDFILL GAS TREATMENT AND LANDFILL GAS TO  
ENERGY SYSTEM**

**SENT: VIA Email & US Mail**

Dear Mr. Rawal:

The North Valley Coalition wishes to thank you for the opportunity to comment on the Notice of Intent to Issue a "Permit to Construct a Landfill Gas Treatment and Gas to Energy System.

To begin with, the efficiency, policy, and procedures employed by the SCAQMD to process this permit, to notify the public, and to provide the necessary documentation appears to be totally lacking, and not consistent with provisions and intent of CEQA.

13B-1

The SCAQMD failed to adequately consider and respond to a formal request to re-issue the Notice due to a failure to provide the necessary documentation, and which ultimately involved a series of email exchanges on February 8, 2012, February 10, 2012. The NVC was forced to file a Request for a Title V Hearing based on the deadline of February 15, 2012 including in the deficient Notice. To ask the requestor to "assume" that the request has not been granted did not rise to the level of an official response to the request, since the responder indicated, "he would bring my request to his superiors and District Counsel."

13B-2

By February 15, 2012, there had still not been an official reply to my request forcing a Title V Request deadline of 02/15/12 to be initiated. As of the writing of this document there still has been no official response, either to my formal request to re-issue the Notice, nor the decision on the Title V Hearing Request. This has forced our community's organizations, and the public to have to respond to this deficient Notice because of the still active and unresolved deadline of March 1, 2012 for comments.

Page 1 of 5

The SCAQMD website at <http://www.aqmd.gov/ceqa/nonaqmd.html> had information on the project but did not include the responses submitted to the DSEIR whose comment period was noted as closing June 23, 2011. The only comments noted were in Appendix C and those were to the NOP and the Scoping Hearing. We believe that the lack of acknowledgement that these other responses existed deprived the public of a reasonable understanding of the issues, and problems associated with this project. We have provided examples of two of those responses to the DSEIR (see GHNNC comments dated June 20, 2011 & NVC cover letter and comments to DSEIR dated June 23, 2011).

13B-3

A system that issues a NOP, holds Scoping Hearings, issues a DSEIR requesting public input and then withholds a portion of that information, and then follows that by issuing a Notice of Intent to Construct before an FSEIR is issued (which would have garnered further public input), has the cart before the horse. It would appear that it is premature to issue a Notice of Intent to Issue a Permit to Construct before all of the environmental impacts have been properly identified, quantified, and addressed, and that the public has had an opportunity to comment on, and to have their concerns addressed.

13B-4

**ADDITIONAL COMMENTS NOT INCLUDED IN PRIOR COMMENTS TO DSEIR**

**DSEIR section 4.2.3.4, Regional Operation Impacts**

It states that: *“Operational CO and PM2.5 emissions from the proposed project would be significant and unavoidable.”* It also goes on to state that: *“Emissions from the proposed project would increase from the current level of emissions generated by flaring, due to differences in the combustion process of the turbines as compared to the flares and between baseline LFG production and project capacity. It is expected that LFG production will increase in the future as solid waste placement increases decomposition of that solid waste (see Figure 3-1). As the supply of LFG increases, it will eventually exceed the capacity of the turbines in the proposed project. At this point, the excess gas would be flared by the existing LFG flares, as required by SCAQMD regulations.”*

13B-5

The assessment of the gas generation used in the preparation of this DSEIR is incorrect, being underestimated by at least 12 percent based in part by the failure of the landfill to capture and flare the full amount of gas being generated (see SCAQMD letter Jay Chen to Anthony Bertrand dated February 10, 2012). Since the proposed project is only sized for 10,000 scfm and the estimated gas generation rate is around 16,420 scfm with SCAQMD now requiring an additional flare by Republic to process in excess of 17,000 scfm, it supports our contention that the DSEIR is incorrect, as the capacity of the turbines has already been exceeded.

New information regarding fine particulates and ozone should also be taken into account as to the impacts on urban areas, which indicate that Southern Californians are among those at

13B-6

highest risk of death due to air pollution, according to recent U.S. Environmental Protection Agency research published in the journal Risk Analysis.<sup>1</sup>

Some additional earlier material supports our contention that the DSEIR is lacking in identifying, quantifying, modeling and risk analysis of the true impacts of the emissions. The USC Department of Chemical Engineering commissioned a study for the South Coast Air Quality Management District (SCAQMD) entitled Evaluation of Health Effects of Landfill Gas Emissions in the Los Angeles Basin. In their final report they state, under Conclusions and Recommendations: "*Further studies relating landfill gas emissions to health effects are necessary. Currently available health risk assessments are derived indirectly from data that may not describe landfills accurately. Epidemiological studies that estimate gas concentrations near landfills by emissions models and relate health data for residents living in those effected areas are recommended.*"

This same report further states that : "*Few studies relevant to estimating health risks based on landfill gas were found. Research needs to be done which relates the health of people living near a landfill to their landfill gas exposure.*" This puts in question the DOHS statement that an extensive literature review was conducted since extensive literature does not exist. This was an opportunity to conduct a meaningful study that would add to the body of literature that is so urgently needed.

It is important to remember that the PM<sub>10</sub> concentrations at the landfill and at the school exceeded State standards (50 ug/m<sup>3</sup>) more than one out of every five days, and at the landfill almost one out of every two days according to a recent study. This is even before the City expansion had begun to move operations back into the City and directly next to the community.

Particulates and emissions generated from the landfill, combined with the already-degraded air quality of the region, to produce a cumulative impact. Indeed, Dockery and Pope state that: "*It presents a comparison of recent studies of the acute effects of particulate air pollution and shows evidence for increased mortality and morbidity associated with particulate pollution, even at moderate concentrations.*" And "*In this review, changes in health measurements are reported for only small changes in daily particulate pollution: 10 ug/m<sup>3</sup> increase in PM<sub>10</sub> concentrations. Because daily concentrations of PM<sub>10</sub> in some US cities average over 50 ug/m<sup>3</sup> and often exceed 100 or 150 ug/m<sup>3</sup>, the effects of particulate pollution can be substantial for realistic acute exposures. For example, a 1% effect estimate per each 10 ug/m<sup>3</sup> increase would produce a 5% increase in the health measure of a 50 ug/m<sup>3</sup> increase in PM<sub>10</sub> concentrations, and a 3% effect estimate would produce a 16% increase.*"

13B-6  
Con't

#### 4.7.3.1 Operational Noise Impacts

While this section purports to address or quantify noise impacts on pages 4-47 thru 4-49 it fails to fully address the impacts not only human sensitive receptors to the east and west of the

13B-7

<sup>1</sup> See attached *California Watch* article & Risk Analysis Study Estimating the National Public Health Burden Associated with Exposure to Ambient PM<sub>2.5</sub> and Ozone, Society For Risk Analysis, May 31, 2011, <http://onlinelibrary.wiley.com/doi/10.1111/j.1539-6924.2011.01630.x/pdf>.

property boundaries but also to the fauna in all cardinal directions. The landfill and abutting properties sustain populations of mountain lion, deer, coyotes, and many species of birds. Many of these are sensitive to noise, and many of them are nocturnal, and potentially would be impacted further. The DSEIR contained no biological assessment of the potential impacts of this project. As part of our previous observations to the DSEIR regarding the masking effect of the freeway, we wish to cite the Calabasas Landfill which is similarly sited in regards to community and freeway, and that it also contains a gas-to-energy system. Calabasas was forced to shroud their equipment in sound deadening materials in response to neighbors' complaints of noise.

13B-7  
Con't

**5.3.6 Level of Significance After Mitigation**

The DSEIR states that: *"The cumulative impacts from CO and PM2.5 emissions are considered to be significant and unavoidable. The cumulative impacts from GHG emissions are considered to be significant and unavoidable, even after all feasible mitigation."* In Table 5-4 it indicates that the flare baseline produces 79,267 Metric Tons per year of CO2e and, the proposed project turbines 114,635 Metric Tons per year of CO2e with the total propose project emissions of 114,677 Metric Tons per year of CO2e.

13B-8

We were unable to find in the DSEIR the cumulative total of all the PM2.5-10 produced nor did we find a risk assessment based on the cumulative impacts of all the gas to be processed at maximum capacity. We do not agree that this is a new project, and that it must be considered as such, and that the landfill gas currently being flared is being considered as a part of the background air quality. To introduce a new process which is less efficient (e.g. the turbines) to replace a process currently in existence which is more efficient (e.g. three flares) does not comport with the SCAQMD's own goals to reduce pollution, and with the intent of CEQA.

13B-9

**6.5 Conclusions**

We concur with the first part of the statement under this section, which that states: *"The No Project Alternative is the environmentally superior alternative because it would eliminate the proposed project's potentially significant adverse impacts related to air quality"*. We also feel that there was a failure to analysis other technologies that are potentially environmentally superior to the conversion of the landfill gas to electricity, such as the conversion of the landfill gas to CNG or LNG to power alternate fuel vehicles.

13B-10

Sincerely,



Wayde Hunter  
President, North Valley Coalition

c.c. Jeffrey Inabinet, SCAQMD CEQA Section, Planning, Rule Development and Area Sources  
Kelly T. Smith, Esq., The Smith Firm

(5) Attachments

**BOARD MEMBERS**

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COUNCIL**

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Granada Hills, CA 91344  
Telephone (818) 360-4346  
[www.ghnnc.org](http://www.ghnnc.org)

June 20, 2011

South Coast Air Quality Management District  
Mr. Jeffrey Inabinet  
c/o CEQA Section, Planning, Rule Development and Area Sources  
21865 Copley Drive  
Diamond Bar, CA 91765-4178

RE: Draft Subsequent Environmental Impact Report for The Sunshine Gas Producers Renewable Energy Project (SCH No. 9204153) at Sunshine Canyon Landfill

Mr. Jeffrey Inabinet:

Thank you for the opportunity to comment on the Draft Subsequent Environmental Impact Report.

The Granada Hills North Neighborhood Council (GHNNC) was certified by the City of Los Angeles on September 10, 2002, and has had a duly elected and installed Board of Directors since March 31, 2003. The area it represents and services is bounded by the Los Angeles City/County line and I-5 (Golden State Freeway) to the north, the 405 (San Diego Freeway) to the east, the 118 (Ronald Reagan Freeway) to the south, and to Aliso Canyon in the west. It is composed of 3 districts. District 1 - Sunshine Canyon Landfill, District 2 - DWP/MWD, and District 3 - All Residential Areas to the south encompassing approximately 28,600 stakeholders.

The GHNNC Planning and Land Use Management (PLUM) Committee discussed the above referenced project on Monday, May 16, 2011. For the protection of our stakeholders the GHNNC PLUM recommend that our Board oppose this project as proposed based on the information included in the document that stated that: "compared to the existing environmental setting, the proposed project would increase GHG emissions and would exceed the SCAQMD significant threshold". We were faced with a choice of a project that might have been a worthy project versus one with CO and PM2.5 emissions which are especially detrimental to our stakeholders, that could not even be mitigated with the use of pollution credits (which we also oppose), and which furthered the degradation of the local environment and the air we breathe. As a result we must insist that if this project is considered, that the most efficient equipment available be used, including an analysis of the use of additional equipment such as scrubbers to make sure that this purported beneficial use does not make our existing air quality any worse than it is.

In closing, at a duly noticed meeting on May 23, 2011 the GHNNC Board agreed with the PLUM recommendation to oppose The Sunshine Gas Producers Renewable Energy Project (SCH No. 9204153) at Sunshine Canyon Landfill unless it results in a reduction of local pollution, without the use of offset of pollution credits.

Respectfully,

Anne Ziliak, Planning and Land Use Chair, Granada Hills North Neighborhood Council  
For Kim Thompson, President, Granada Hills North Neighborhood Council

13C-1





February 10, 2012

Anthony Bertrand  
Area Environmental Manager  
Republic Services, Inc.  
Sunshine Canyon Landfill  
14747 San Fernando Rd.  
Sylmar, CA 91342

Dear Mr. Bertrand:

Evaluation of the Existing Landfill Gas Collection and Control System, Sunshine Canyon Landfill. Prepared by Tetra Tech BAS, November 29, 2011  
Third Amended Order for Abatement, December 6, 2011, Conditions 1.a. and 1.b.

The South Coast Air Quality Management District (AQMD) received the above-referenced evaluation report prepared and submitted on your behalf by Tetra Tech BAS (BAS) in accordance with the Third Amended Order for Abatement (O/A). Conditions 1.a. and 1.b. of the O/A, in relevant portions, require Sunshine Canyon Landfill (SCL) to install 7 to 10 vertical wells per week, beginning December 16, 2011, until the maximum number of wells as described in the above-referenced evaluation report has been installed and the AQMD has determined that such number of wells is appropriate. The O/A Conditions also require that the installation of the wells shall be prioritized, subject to approval by the AQMD.

The AQMD staff has thoroughly reviewed the evaluation report and determined that the evaluations conducted by BAS, along with the supplemental evaluation of lateral pipe sizing submitted to AQMD on January 17, 2012, meet the requirements set forth in the O/A. These evaluations concluded that the collection efficiency of the existing gas collection and control system (GCCS) needs improvement. A summary of BAS's recommendations are provided below:

- A. Install up to 70 additional vertical wells based on priorities identified in 13 phases. Areas with most surface emissions will receive new wells first. Recognizing that the O/A requires installation of 7 to 10 wells per week, the report estimates that two phases should be scheduled for completion each week.
- B. Increase flare capacity by:
  - a. Immediate installation of a temporary flare with 3,000 scfm capacity.
  - b. Replace selected sections of GCCS piping to reduce system restrictions.
  - c. Replace Flare No. 8 with a larger capacity Flare No. 9, and
  - d. Evaluate the need for improvement at Flare Nos. 1 and 3.
- C. Begin the permitting process for additional flare capacity by January 2013, in order to provide 100% backup to the landfill gas (LFG) to Energy plant.

13D-1

- D. Upon installation of future collection and control system, the flow direction of the gas may change. Additional modeling shall be performed to verify that the pipe sizing analysis is still accurate.

AQMD staff, in general, agrees with BAS's recommendations and hereby approves the evaluation, provided that Republic Services/SCL confirms in writing that the following comments and concerns will be addressed and/or incorporated through the AQMD permitting process (e.g., minimum collection efficiency in Item 1, minimum vacuum in Item 3, and lateral pipe replacement in Item 8, etc.), or otherwise implemented for items that do not need an AQMD permit (e.g., additional evaluation in Item 2, additional information in Item 3, and additional monitoring in Item 6, etc.):

1. The evaluation of the expected gas generation rates and the GCCS system were conducted based on the current methane concentration of 44% and the collection efficiency of 68%. After the recommended improvements are made, the collection efficiency is then assumed to increase to 80%, however, the methane concentration is assumed to remain as 44%. We consider both assumptions to be marginally adequate for two reasons. First, we would expect that the GCCS should perform better than 80%, in order to ensure that the uncollected gas does not migrate into the atmosphere and continue to cause odor issues in the nearby communities. Secondly, when the GCCS collection efficiency improves, we expect the methane concentrations to be somewhat lower. Both of these adjustments would result in an increase in the estimated gas generation rates. Therefore, we recalculated the gas generation rates by using 85% collection efficiency and 42% methane concentration, and found that the estimated gas generation rates are approximately 11% higher than BAS's estimates. For example, at the end of 2016, our estimated rate was 16,420 scfm, instead of BAS's 14,752 scfm. As a result, the total permitted flare capacity of 13,335 scfm (with the proposed Flare #9 in service and Flare #8 on standby) would be exceeded in 2012, rather than BAS's estimate of mid-2014. In other words, SCL would need to immediately proceed to permit additional flare capacities, including but not limited to placing Flare #8 back in regular service in 2012 and installing an additional flare (5<sup>th</sup> flare) by 2017. In addition, SCL should conduct all necessary activities to maintain a high level of gas collection efficiency (e.g., a minimum of 80% of the estimated generation rates or possibly higher) at all times and well into the future.
2. In the gas generation rate estimates, BAS used the waste acceptance rates provided by Cornerstone, which basically assumes an annual rate of 2,515,000 tons for 2012, gradually increases until it reaches 3,432,000 tons in 2020, and then stays at this rate until 2037. The SCL-LEA has communicated its concerns to us and indicated that the gas generation rate estimates for all future years should be based on the landfill's permitted capacity of 12,100 tons per day, 6 days per week, or 3,775,200 tons per year. **The AQMD requests that SCL submit an additional evaluation by March 1, 2012, that includes the revised waste acceptance rates and 85% collection efficiency at 42% methane concentration discussed in Item 1 above.**
3. The proposed addition of 70 vertical wells is based on the estimated radius of influence (ROI) of 128 feet, which in turn is based on a minimum of 3 inches water column (w.c.) vacuum being applied to all wells and specific well design features to

13D-1  
Con't

Mr. Anthony Bertrand, Republic Services

- 3 -

February 10, 2012

minimize air intrusion. This initial set of additional wells is acceptable provided that SCL either maintains or exceeds its current level of efforts in monitoring and maintaining all of the wells, and install additional wells on an expedited schedule (i.e., faster than what required by AQMD Rule 1150.1) in areas where the coverage appears to be inadequate. In addition, SCL should apply the 3" w.c. vacuum as a minimum requirement for all wells.

In addition, the SCL-LEA is concerned that the ROI calculations were based in part on the assumption of the waste density of 1,350 lbs/yd<sup>3</sup>. The SCL-LEA believes that the in-place waste density could be as high as 1,600 lbs/yd<sup>3</sup> due to the use of 9" daily soil cover and other considerations. This density could increase as landfill ages. Therefore, SCL is requested to either provide additional information to justify the use of the waste density or additional evaluation of the ROI using the higher waste density as suggested by SCL-LEA.

4. A statement in Section 3.2.1 of the GCCS Evaluation Report indicates that measurements of 500 ppm of methane above background levels are recorded as exceedance and that, based on these results, some areas within SCL's waste footprint do not currently have adequate LFG emissions control. It should be noted that the landfill surface emission monitoring includes both the 500 ppm instantaneous surface monitoring and the 25 ppm integrated surface monitoring. Both are good indicators of insufficient LFG emission control. We believe that the above-mentioned statement was simply an oversight of the report writer and not intended for SCL to rely only on the 500 ppm monitoring results.
5. Since SCL installed very few horizontal collectors in the existing waste fill areas, the evaluations focused primarily on the effectiveness of vertical wells. While this is acceptable for the purpose of the evaluation, we would like to re-emphasize the importance of installing and maintaining the horizontal collectors in a proper manner in order for the landfill to eventually be completed with a fully-integrated, effective gas collection and control system. Therefore, SCL shall continue to install the horizontal collectors in the new fill areas as described in the O/A. As for the existing filled areas, SCL shall install a system of horizontal collectors when each of the filled areas has reached its final elevation.

In addition, the SCL-LEA is particularly concerned about two specific areas where landfill gas can escape the collection system and enter into the atmosphere: (1) the existing filled areas where the edge of the waste footprint meets the liner and (2) the side-slopes (e.g., where the old Republic Logo area was) in the existing filled area. The AQMD urges SCL to step up its effort in monitoring the emissions from these areas and, if any exceedance of 25 ppm or 500 ppm is found, take immediate remedial actions as required by Rule 1150.1 and the O/A. SCL should also consider installing additional vertical, horizontal and/or inclined wells, as appropriate, in these areas to further improve gas collection efficiency in these particular areas of concern.

6. Section 6.2 of the report evaluates the existing blowers with respect to their capabilities to support the desirable outcome of the GCCS and SCL's planned or ongoing actions to upgrade some of the blowers. BAS proposes to re-evaluate the

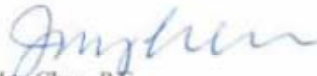
13D-1  
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overall suitability of these blowers after the ongoing flare and blower replacements are completed. We believe that this re-evaluation is necessary and should be implemented as proposed.

7. Except for the timing issues as discussed in Item 1 above, AQMD fully agrees with the statement in Section 7.3 of the report, which recommends that SCL maintain 100% flare capacity, even after the proposed DTE Biomass Energy Co. LFG to energy plant is built. This is essential in order to ensure adequate landfill gas control during the time when the energy plant is shut down for maintenance, and to provide for additional flexibility if additional gas need to be collected to mitigate gas migration.
8. The separate Lateral Pipe Sizing Evaluation submitted on January 15, 2012, identifies that 68 lateral pipes (or 6.8% of all pipes at SCL) analyzed did not meet the requirements of the analysis and thus required replacement. The analysis performed in this evaluation forms a critical basis for maintaining the collection efficiency expected in the subject evaluation. Therefore, it is important for SCL to timely upgrade these undersized lateral pipes. **SCL should further establish a definitive timeline for this task and submit it to the AQMD for approval by March 1, 2012.**

Again, AQMD staff appreciates your timely submittal of the evaluation report. AQMD staff found the report to be well-written and comprehensive, covering all aspects necessary for evaluating the GCCS systems at SCL. If you have any questions or concerns about our comments, please contact me at (909) 396-2664, or by email at [JChen@aqmd.gov](mailto:JChen@aqmd.gov).

Sincerely,



Jdy Chen, P.E.  
Senior A.Q. Engineering Manager  
Refinery & Waste Management Permitting  
Engineering and Compliance

cc: Gus Andraos, TetraTech BAS  
Cindy Chen, SCL-LEA  
Eugene Tseng, SCL-LEA  
Mohsen Nazemi  
Jill Whynot  
Nancy Feldman  
Nick Sanchez  
Ed Pupka  
Charles Tupac

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PREVIOUSLY SUBMITTED ON NVC Letterhead

June 23, 2011

South Coast Air Quality Management District  
Mr. Jeffrey Inabinet  
c/o CEQA Section, Planning, Rule Development and Area Sources  
21865 Copley Drive  
Diamond Bar, CA 91765-4178

**RE: Draft Subsequent Environmental Impact Report for The Sunshine Gas Producers Renewable Energy Project, SCH No. 9204153 Sunshine Canyon Landfill**

Mr. Jeffrey Inabinet:

The North Valley Coalition wishes to thank you for the opportunity to comment on the Draft SEIR.

It is our intent in our response and the attached comments not to address each and every specific instance or section where a comment and/or facts, figures, tables et cetera are located, but to address an example of an area that we question and/or comment on, and to have that comment uniformly apply to any and all sections where that information is referenced and/or used to support the project, and to be address by the proponent appropriately in each and every instance.

The members of our organization were among those recommending that the landfill gas be utilized to generate energy. However, never in our wildest dreams did we expect to be faced with a project that would increase the amount of emissions beyond that which we were currently experiencing with the existing landfill flares.

Since this project would raise the levels of permitted emissions, and does not provide any guarantees of reduced emissions from current levels, we **oppose** this project as presented and recommend the consideration of the 6.3.1 Alternative – No Project Alternative.

Sincerely,

Wayde Hunter  
President, North Valley Coalition

Attachment

13E-1

**Comments to Draft SEIR by North Valley Coalition, June 23, 2011**

**4.2.3.3 Localized Construction Impacts**

Page 4-17 it states the nearest sensitive receptor is 2700 meters (2700x3.2808/5280) or 1.68 miles. Stated they used LST 2-acre site at a distance of 500 meters (500x3.2808/5280) or 0.31 miles. The construction of a water pipe to the landfill entrance they indicate would be 600 meters from the nearest receptor and that the 500 meters used is conservative, however, the trailer park/woodcutter is directly opposite the landfill is only 35 meters away from where this construction would end and/or start and would result in greater impacts. The list below also includes some other receptors that may be as close or closer to the project. This calls Table 4.7 and the methodology into question. In a number of cases these areas are located at a higher elevation than the proposed project and could possible experience greater impacts.

The nearest sensitive receptors that should also be considered are as follows (distances approximate):

- Trailer park at 14748/14810 San Fernando Road, and Patton’s Firewood opposite entrance of landfill at 14747 San Fernando Road (600 - 700 meters)
- Industrial complex on San Fernando Road from approximately 14980 which includes among others Hermalair Sheet Metal at 14928 and Senora & Vega Firewood (400 meters)
- Cascades homes in Sylmar on Balboa Boulevard north of Foothill Boulevard (1400 meters)
- Cascades apartments in Sylmar on Foothill Boulevard east of Balboa Boulevard (1600 meters)
- O’Melveny Park (see map attached taken from <http://www.lamountains.com/maps/eastRiceMDAOSNewhall.pdf>) (1000 meters)
- Michael D. Antonvich Open Space Preserve, Newhall Pass Trailhead, Coltrane Avenue (see map attached <http://www.lamountains.com/maps/eastRiceMDAOSNewhall.pdf>) (450 – 600 meters)
- Foothill Soils Inc. at 22925 Coltrane Avenue, Newhall (500 – 600 meters)
- Camelot Riding Club at 22945 Coltrane Avenue, Newhall (500 – 600 meters)
- Oaktree Gun Club at 23121 Coltrane Avenue, Newhall (500 – 650 meters)
- Crescent Valley Mobile Home Estates, 23500 The Old Road, Newhall (1600 meters)
- Semper Fi Tow Inc. at 22400 The Old Road, Newhall (400 – 500 meters)

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#### 4.2.3.4 Regional Operation Impacts

It states on page 4-17 that: "Operation of the project would likely increase air pollutant emissions compared to baseline emissions. Operational Nox, VOC, and SOx emissions from the proposed project would be less than significant with the allocation of PR offsets. Operational CO and PM<sub>2.5</sub> emissions from the proposed project would be significant and unavoidable." On page 4-18 line 1 it states that: "*Emissions from the proposed project would increase from the current level of emissions generated by flaring, due to the differences in the combustion process of the turbines as compared to the flares and between baseline LFG production and project capacity*". It goes on to explain in #1 that the use of a pilot flame of LFG is used as the ignition source, and in #2 it states the residence time in the combustion chamber of the turbine is less compared to the flares. While providing additional information in the form of Table 4-8 and successive pages 4-20 thru 4-22 it does not indicate how large an area the air dispersion modeling covered and whether or not only "residents" were considered. Since the operation's noise and emissions are 24/7 365-days per year, not only residential areas and recreational areas but commercial areas as well should be considered (see the nearest sensitive receptors that should also be considered).

### CHAPTER 4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

According to the proponent on page 4-19 they state that: "*The estimated emission rates for the proposed project are based on the manufacturer's guaranteed values and represent a conservative estimate of emissions. Actual emissions for the proposed project are anticipated to be less.*" If this project is approved the SCAQMD must reduce the acceptable emissions from this facility for future compliance to whatever levels stack testing produces.

#### 4.2.4 Mitigation Measures

Mitigation Measure A-2 on Page 4-27 indicate that: "*The project proponent shall purchase MSERCs to mitigate significant adverse NOx air quality impacts.*" The use of Pollution Credits to offset this impact or any other impacts is not acceptable to this organization nor the community as a whole. Buying pollution credits or arguing that pollution will not be created over the entire region does nothing to improve the quality of the air we breath locally. The Sunshine Canyon Landfill was sited with "overriding considerations" because the air quality impacts could not be mitigated. Best Available Technology (BACT) was employed in the form of the existing flares which have been approved by the SCAQMD, and which were designed to reduce this impact as much as possible. To ask that we now approve or be forced to endure additional threats to our health, safety, and welfare posed by the increase in pollutants from this less efficient destruction system especially those posed by the CO and PM<sub>2.5</sub> emissions is unconscionable. Unless the emissions are scrubbed to produce a result the same as or less than currently emitted without the use of pollution credits, the project would not be acceptable. The DEIR should include an indepth analysis or discussion under the alternatives if additional equipment and/or methods are available to reduce the expected emissions, the cost of same, and the reason they can or cannot be employed.

13E-1  
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**4.7.3.1 Operational Noise Impacts**

While this section purports to address or quantify noise impacts on pages 4-47 thru 4-49 it fails to fully address the impacts not only human sensitive receptors to the east and west of the property boundaries but also to the fauna in all cardinal directions. As previously argued by us under Chapter 3 Environmental Setting, Page 3-43, that there are sensitive human receptors in the east (i.e. Trailer park and woodcutter opposite entrance of landfill at 14747 San Fernando Road, the Cascades homes in Sylmar on Balboa Boulevard north of Foothill Boulevard, and the Cascades apartments in Sylmar on Foothill Boulevard east of Balboa Boulevard). There are also hikers, families, and horses that transit O'Melveny Park (second largest in Los Angeles) which are normally involved in outdoor activities which may be impacted by the noise. Further the impacts to the Michael D. Antonovich Park located north of the proposed site and with similar activities as O'Melveny Park need to be addressed. Fauna in all cardinal directions including those areas of the landfill which will not be under the landfill's footprint (i.e. interior slopes, closed City landfill, 100-acre buffer zone to south), O'Melveny Park to south and west, SEA #20 to north, and Michael D. Antonovich Open Space Preserve to the north need to be addressed. We would also like to discount or limit any reliance on background noise since the operation of the turbines is 24/7 365 days per year and the landfill and the adjacent freeway does not provide consistent masking effects.

13E-1

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News > Southern Californians at risk of death from air pollution, EPA says



### Southern Californians at risk of death from air pollution, EPA says

Recommend Print

California Watch 2 weeks ago

Southern Californians are among those at highest risk of death due to air pollution, according to recent U.S. Environmental Protection Agency research published in the journal Risk Analysis.

The study, published last month, was conducted to "provide insight to the size and location of public health risks associated with recent levels of fine particulates and ozone, allowing decision-makers to better target air quality policies," the federal agency said in a statement responding to California Watch inquiries.

"While overall levels of fine particulates and ozone have declined significantly in the past two decades, these two pollutants still pose a burden to public health," the EPA statement said.

The study examined air pollution exposure based on 2005 air quality levels and projected there could be between 130,000 and 360,000 premature deaths among adults in coming years. The 2005 data was the best available for analyzing fine particulates and ozone, the EPA said. Among vulnerable populations like children, the EPA also estimates that fine particulate matter and ozone results in millions of cases of respiratory symptoms, asthma and school absences, as well as hundreds of thousands of cases of acute bronchitis and emergency room visits.

The analysis also found that Southern Californians and residents of the industrial Midwest experience the highest exposure to fine particulate matter, which has been found to exacerbate respiratory illnesses and increase heart attacks, according to the Centers for Disease Control and Prevention.

Among the most populated areas of the country, Los Angeles had the highest estimated rate of deaths attributable to air pollution, at nearly 10 percent; San Jose had the lowest at 3.5 percent.

See a county-by-county breakdown of premature death risk caused by these air pollutants here:

The Bay Area Air Quality Management District conducted a similar risk assessment last year and found that about 1,700 premature deaths can be attributed to fine particulate matter in the Bay Area each year, which is about 3.8 percent of all deaths.

Particulate matter is made up of extremely small particles and liquid droplets that are 2.5 micrometers in diameter or smaller - which means they have a width 30 times smaller than a human hair. Common sources of fine particulate matter, often referred to as PM 2.5, are forest fires and emissions from power plants, industrial sources and cars. Unhealthy forms of ozone are created when nitrogen oxides (NOx) and volatile organic compounds (VOCs) react in the presence of sunlight; ozone is typically linked to byproducts from industrial facilities and electric utilities, car exhaust, gas vapors and chemical solvents.

Local air districts in Southern California and the Bay Area have attempted to limit fine particulate matter and ozone emissions through Spare the Air days by regulating wood burning and offering financial incentives to businesses to phase out the use of diesel engines.

Public health advocates say that the EPA study illustrates the importance of improving air quality and that these types of studies on the risks of air pollution have been used to determine federal regulations and inform local clean air plans.

"One of the hardest things to explain to the public is that while the air is cleaner, we continue to find that we have underestimated the health effects of breathing in air pollution," said Joe Lyou, president and CEO of the Coalition for Clean Air and a governing board member of the South Coast Air Quality Management District. "Yes, we have made significant accomplishments, but we still have a long way to go. The public needs to understand that this is a life-and-death situation."

The EPA's research on air pollution and mortality have, however, been the subject of political and scientific debate.

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13F

http://beta.local.yahoo.com/news-southern-californians-risk-death-air-pollution-epa-says.html

2/28/2012

James Enstrom, a researcher with UCLA's School of Public Health, argues that while there is a connection between air quality and health effects, the EPA study fails to acknowledge regional nuances when it comes to the real risks of premature deaths.

**BUSINESS DIRECTORY**

"The question is whether there is enough epidemiological evidence to conclude that air pollution kills people," Enstrom said. "Every piece of evidence for the state of California as a whole shows that there's no effect (on mortality). There's some affect in the Los Angeles basin, but that's not a fair representation of absolute risk."

Enstrom, who in the past has received research funding from industries opposed to stricter air quality regulations, said the costs of these regulations are "only justified if it's killing people." "The other morbidities associated with (air pollution) are lung problems, hospitalizations, asthma, and those don't amount to enough to affect the cost-benefit ratios," he said.

In a November letter to the Office of Management and Budget, U.S. Reps. Andy Harris, R-Md., and Paul Brown, R-Ga., both physicians, also challenged the agency's "troubling scientific and economic accounting practices" that "appear designed to provide political cover for a more stringent regulatory agenda rather than to objectively inform policy decisions."

But Dan Farber, a UC Berkeley law professor and co-director of the university's Center for Law, Energy & the Environment, said the debates over the EPA's air quality findings are ultimately political.

"There is strong industry opposition to these regulations and strong opposition from groups who are ideologically opposed to regulation in general," Farber wrote in an e-mail. "EPA's most important role in terms of economic impact and public health relates to air pollution. So it's not surprising that this is the area where EPA is being attacked."

This article originally appeared in California Watch

in **Los Angeles, CA**

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## Estimating the National Public Health Burden Associated with Exposure to Ambient PM<sub>2.5</sub> and Ozone

Neal Fann,\* Amy D. Lamson, Susan C. Anenberg, Karen Wesson, David Risley, and Bryan J. Hubbell

Ground-level ozone (O<sub>3</sub>) and fine particulate matter (PM<sub>2.5</sub>) are associated with increased risk of mortality. We quantify the burden of modeled 2005 concentrations of O<sub>3</sub> and PM<sub>2.5</sub> on health in the United States. We use the photochemical Community Multiscale Air Quality (CMAQ) model in conjunction with ambient monitored data to create fused surfaces of summer season average 8-hour ozone and annual mean PM<sub>2.5</sub> levels at a 12 km grid resolution across the continental United States. Employing spatially resolved demographic and concentration data, we assess the spatial and age distribution of air-pollution-related mortality and morbidity. For both PM<sub>2.5</sub> and O<sub>3</sub> we also estimate: the percentage of total deaths due to each pollutant; the reduction in life years and life expectancy; and the deaths avoided according to hypothetical air quality improvements. Using PM<sub>2.5</sub> and O<sub>3</sub> mortality risk coefficients drawn from the long-term American Cancer Society (ACS) cohort study and National Mortality and Morbidity Air Pollution Study (NMMAPS), respectively, we estimate 130,000 PM<sub>2.5</sub>-related deaths and 4,700 ozone-related deaths to result from 2005 air quality levels. Among populations aged 65–99, we estimate nearly 1.1 million life years lost from PM<sub>2.5</sub> exposure and approximately 36,000 life years lost from ozone exposure. Among the 10 most populous counties, the percentage of deaths attributable to PM<sub>2.5</sub> and ozone ranges from 3.5% in San Jose to 10% in Los Angeles. These results show that despite significant improvements in air quality in recent decades, recent levels of PM<sub>2.5</sub> and ozone still pose a nontrivial risk to public health.

**KEY WORDS:** air pollution; mortality; ozone; PM<sub>2.5</sub>; public health burden

### 1. INTRODUCTION

Ground-level ozone (O<sub>3</sub>) and fine particulate matter (PM<sub>2.5</sub>) are associated with increased risk of mortality.<sup>(1,2)</sup> While significant progress has been made in reducing ambient concentrations of air pollution in the United States, recent levels of O<sub>3</sub> and PM<sub>2.5</sub> remain elevated from the natural background and are within the range of concentrations found by epidemiology studies to affect health. This article estimates the public health burden attributable to

recent PM<sub>2.5</sub> and ozone air quality levels within the continental United States.

The World Health Organization Global Burden of Disease (GBD) study found that urban PM<sub>2.5</sub> was associated with about 28,000 premature mortalities in the United States, Canada, and Cuba.<sup>(3,4)</sup> Anenberg *et al.*<sup>(5)</sup> used a chemical transport model (resolution 2.8° × 2.8°) to simulate O<sub>3</sub> and PM<sub>2.5</sub> concentrations in both rural and urban areas, finding 35,000 respiratory premature mortalities due to O<sub>3</sub> in North America and 141,000 cardiopulmonary and lung cancer deaths due to PM<sub>2.5</sub> in North America.

Using simulated rather than monitored concentrations allows for full spatial coverage of air pollution impacts, but global chemical transport

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models are generally coarsely resolved and frequently unable to capture fine spatial gradients of population and concentrations, particularly around urban areas. Global health impact assessment is also limited by the coarse resolution of demographic data in many locations, such as population and baseline mortality rates.

Previously, U.S. EPA calculated the public health burden attributable to PM<sub>2.5</sub> in the United States at a 12 km resolution in the east and a 36 km resolution in the west, finding that the percentage of all-cause mortality associated with PM<sub>2.5</sub> exposure was as high as 11% in some counties.<sup>(6)</sup> However, that analysis did not consider O<sub>3</sub>-related or nonmortality impacts.

Here, we aim to quantify the burden of recent concentrations of O<sub>3</sub> and PM<sub>2.5</sub> on mortality in the United States prior to the implementation of several recently promulgated air quality regulations that promise to greatly improve future air quality. We use the photochemical Community Multiscale Air Quality (CMAQ) model<sup>(7)</sup> in conjunction with several years of ambient monitored data to create fused surfaces of summer season average 8-hour ozone and annual mean PM<sub>2.5</sub> levels at a 12 km grid resolution across the continental United States. In contrast to the global analyses above, we employ finely resolved demographic and concentration data to assess fully the spatial and age distribution of air-pollution-related mortality within specific geographic areas. We also utilize the environmental Benefits Mapping and Analysis Program (BenMAP), a software package that contains a library of PM<sub>2.5</sub> and ozone mortality and morbidity concentration-response functions and is able to automate the process of quantifying PM<sub>2.5</sub> and ozone health impacts from a large number of scenarios. In addition, compared to previous work this analysis expands the metrics for assessing the public health burden for PM<sub>2.5</sub> and ozone exposure by estimating the excess mortalities associated with meeting hypothetical air quality improvements nationwide; the percentage of total mortality attributable to these two pollutants; the estimated life years lost; the change in life expectancy; and the estimated PM<sub>2.5</sub> and ozone morbidity impacts including hospitalizations and nonfatal heart attacks.

These methodological refinements enable us to answer three key policy questions: (1) What are the estimated public health impacts of recent PM<sub>2.5</sub> and ozone levels in the United States? (2) How are these impacts distributed by geographic area, age, and pollutant? and (3) What would be the size and spatial

distribution of the health-related benefits of hypothetical air quality improvements?

## 2. METHODS

### 2.1. Overview of the HIA

We estimate the number of adverse health outcomes associated with population exposure to air pollution using a health impact function. The health impact function used in this analysis has four components: the change in air quality, the affected population, the baseline incidence rate, and the effect estimate drawn from the epidemiological studies.<sup>(8,9)</sup> A typical log-linear health impact function might be as follows:

$$\Delta y = y_0(e^{\beta \Delta x} - 1)Pop,$$

where  $y_0$  is the baseline incidence rate for the health endpoint assessed;  $Pop$  is the population affected by the change in air quality;  $\Delta x$  is the change in air quality; and  $\beta$  is the effect coefficient drawn from the epidemiological study.

Here we use BenMAP (version 4.0)<sup>(10)</sup> to systematize the HIA calculation process, drawing upon its library of population data, baseline incidence, and concentration-response functions. We first describe the CMAQ air quality modeling used to simulate PM<sub>2.5</sub> and ozone concentrations. We then detail our selection of population estimates used to calculate exposure, baseline incidence rates used to calculate risk, and the mortality and morbidity concentration-response functions used to assess PM<sub>2.5</sub> and ozone-related health impacts.

### 2.2. PM<sub>2.5</sub> and Ozone Air Quality Modeling

We utilize the CMAQ model<sup>(7)</sup> to estimate annual PM<sub>2.5</sub> and summer season ozone concentrations for the year 2005 for a horizontal grid covering the continental United States at a 12 km resolution. The CMAQ model is a nonproprietary computer model that simulates the formation and fate of photochemical oxidants, including PM<sub>2.5</sub> and ozone, for given input sets of meteorological conditions and emissions. The CMAQ model is a well-established and thoroughly vetted air quality model that has seen use in a number of national and international applications.<sup>(11–13)</sup> We use CMAQ version 4.7<sup>1</sup> and the U.S.

<sup>1</sup>CMAQ version 4.7 was released on December 1, 2008. It is available from the Community Modeling and Analysis System (CMAS) at: <http://www.cmascenter.org>.

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EPA 2005 Modeling Platform, with emissions, meteorology, and initial and boundary conditions detailed elsewhere.<sup>(14,15)</sup> A detailed model performance evaluation for ozone, PM<sub>2.5</sub> and its related speciated components was conducted using observed/predicted pairs of daily/monthly/seasonal/annual concentrations.<sup>(16)</sup> Overall, the fractional bias, fractional error, normalized mean bias, and normalized mean error statistics were within the range or close to that found in other recent applications, and determined to be sufficient to provide a scientifically credible approach for this assessment.

We improve the accuracy of the air quality data used in this analysis by combining the CMAQ-modeled PM<sub>2.5</sub> and ozone concentrations with ambient monitored PM<sub>2.5</sub> and ozone measurements to create “fused” spatial surfaces for the domain shown in Figs. 1 and 2. We performed the fusion using the EPA’s Model Attainment Test Software (MATS),<sup>(16)</sup> which employs the Voronoi neighbor averaging interpolation technique.<sup>(17)</sup> Fusing modeled and measured ozone and PM<sub>2.5</sub> concentrations leverages the complete spatial and temporal coverage of modeled concentrations and the accuracy of observed air quality measurements. This technique identifies the set of monitors that are nearest to the center of each grid cell, and then takes an inverse distance squared weighted average of the monitor concentrations. The fused spatial fields are calculated by adjusting the interpolated ambient data (in each grid cell) up or down by a multiplicative factor calculated as the ratio of the modeled concentration at the grid cell divided by the modeled concentration at the nearest neighbor monitor locations (weighted by distance). For PM<sub>2.5</sub>, spatial surfaces were created by fusing all 2005 valid<sup>2</sup> modeled days of PM<sub>2.5</sub> concentrations with validated PM<sub>2.5</sub> data from 2004 to 2006 from Speciated Trends Network, Interagency Monitoring of Protected Visual Environments, and Clean Air Status and Trends Network monitoring sites. For ozone, we only used modeling results from the summer ozone season period between May 1 and September 30, 2005<sup>3</sup> and fused these data with mon-

itored ozone data from 2005 to 2007.<sup>4</sup> By fusing the CMAQ-modeled air quality data with multiple years of ambient measured data, the air quality concentrations should be more reflective of a 3-year average concentration, and less biased by unusual changes in emissions or meteorology that may have occurred during one year but not another (e.g., plant shutdown for maintenance).

We calculate the total public health burden attributable to PM<sub>2.5</sub> and ozone relative to “nonanthropogenic background” concentrations of summer-season ozone and annual mean PM<sub>2.5</sub> concentrations that would occur in the absence of anthropogenic emissions in the United States, Canada, and Mexico.<sup>(18)</sup> We identified two options to specifying these background levels. The first option was to apply PM<sub>2.5</sub> and ozone levels observed from monitors in remote locations. However, even remote monitors may be affected by nonlocal sources of nonbiogenic emissions. Alternatively, chemical transport models allow users to simulate background levels in the absence of anthropogenic emissions. For ozone, we use a median of the 4-hour mean value (13:00–17:00) for the eastern and western United States (22 ppb in the east and 30 ppb in the west) reported by Fiore *et al.*<sup>(19)</sup> In that analysis, the authors applied GEOS-Chem, a global circulation model, to model ozone formation due to emissions originating outside of the United States.<sup>(18)</sup> We then adjusted the ozone value reported in this study to an 8-hour maximum equivalent,<sup>(20)</sup> consistent with the air quality metric used in the concentration-response functions described below.

We applied background PM<sub>2.5</sub> levels specified in Table 3-23 of the 2009 EPA Integrated Science Assessment (ISA).<sup>(18)</sup> Within the ISA, average regional nonanthropogenic background concentrations were estimated using CMAQ v 4.7, with boundary conditions from GEOS-Chem and emissions from natural sources everywhere in the world, and anthropogenic sources outside continental North America.<sup>(18)</sup> The CMAQ modeling domain, with 36 km grid spacing, covered the continental United States. A model performance evaluation generally showed

<sup>2</sup> Normally, all 365 model days would have been used in the estimation of PM<sub>2.5</sub> levels; however during the modeling, an error was discovered in the aqueous phase chemistry routines of CMAQ v4.7. This error caused simulated hourly sulfate concentrations to increase sporadically and in an unrealistic manner over a very limited number of grid-cell hours over the RFS2 simulations. These data were removed as described in U.S. EPA, 2010b.

<sup>3</sup> This 153-day period generally conforms to the ozone season across most parts of the United States and contains the major-

ity of days with observed high ozone concentrations in 2005. We acknowledge that the ozone season extends beyond these dates in some urban areas (e.g., Houston, L.A.) and failing to account for the full duration of the season in these areas may introduce a downward bias in our estimate of health impacts.

<sup>4</sup> Normally, the calculation would have used the ambient data from 2004 to 2006. However, because of the abnormally low levels of ozone measured in the continental United States in 2004 as compared to that measured in 2000–2007, we chose to use the ambient data from the years of 2005–2007 instead.

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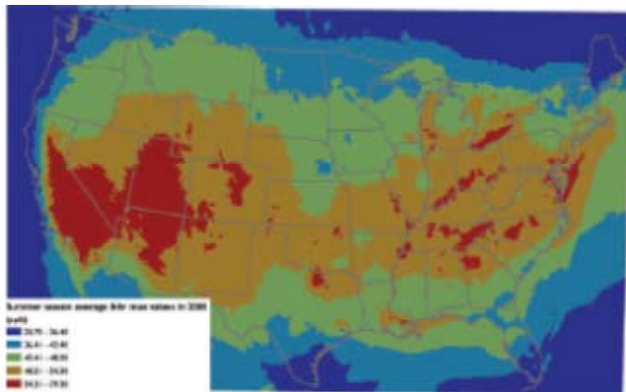


Fig. 1. Average daily 8-hour maximum summer-season ozone levels (fused surface of 2005 modeled and 2004-2006 monitored data).

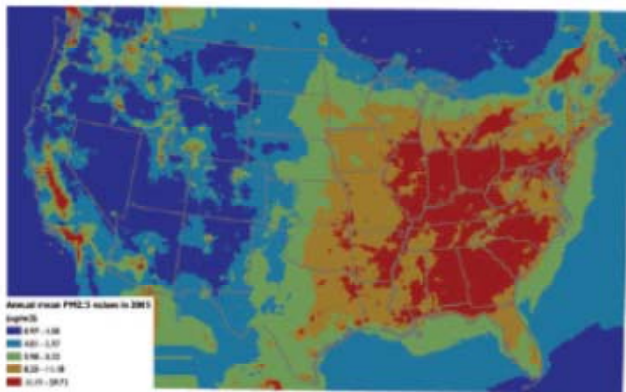


Fig. 2. Annual mean PM<sub>2.5</sub> levels (fused surface of 2005 modeled and 2004-2006 monitored data).

good agreement between modeled and monitored values at remote sites.<sup>(18)</sup>

To determine annual regional PM<sub>2.5</sub> background concentrations, the CMAQ domain was divided into seven regions (i.e., Northwest, Southwest, industrial Midwest, upper Midwest, Southwest, Northwest, and southern California). An annual average PM<sub>2.5</sub> concentration was calculated for each CMAQ grid cell and then a regional annual average was calculated from the grid cells within each of the seven regions. These values were 0.74  $\mu\text{g}/\text{m}^3$  for the Northeast, 1.72  $\mu\text{g}/\text{m}^3$  for the Southeast, 0.86  $\mu\text{g}/\text{m}^3$  for the industrial Midwest, 0.84  $\mu\text{g}/\text{m}^3$  for the upper Midwest, 0.62  $\mu\text{g}/\text{m}^3$  for the Southwest, 1.01  $\mu\text{g}/\text{m}^3$  for the

Northwest, and 0.84  $\mu\text{g}/\text{m}^3$  for southern California.<sup>(18)</sup>

**2.3. Estimation of Air Quality Concentrations Across the Population**

We aggregate U.S. Census block-level population data<sup>(21)</sup> to the national 12 km CMAQ modeling domain. We stratify population for the year 2000 by age, sex, race, and ethnicity categories corresponding to the demographic classifications considered in the health impact functions (see later) and project these data to 2005 using an economic forecasting model.<sup>(22)</sup> Modeled PM<sub>2.5</sub> and ozone concentrations

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are matched with the population projected in each 12 km grid cell and we assume that the fused air quality value in each cell is the best measure of population exposure.

### 2.4. Selection of Concentration-Response Relationships and Baseline Incidence Rates

We estimate impacts to several PM<sub>2.5</sub>-related human health endpoints, including premature deaths from long-term exposure, respiratory and cardiovascular-related hospital visits, asthma-related emergency department visits, chronic bronchitis, and nonfatal heart attacks among others. Ozone-related health endpoints include deaths from acute and long-term exposure, respiratory hospital admissions, and asthma-related emergency department visits among others. Table S1 specifies each of the endpoints, epidemiological studies, and risk estimates considered in this analysis. We use annual mean PM<sub>2.5</sub> changes as a surrogate for daily changes in PM<sub>2.5</sub> for those functions that quantify short-term impacts; this is unlikely to add appreciable bias to the health impact estimates because the concentration-response functions are approximately linear across the air quality levels experienced by U.S. populations.

We consider several factors in selecting the appropriate epidemiological studies and concentration-response functions for this analysis, including whether the study was peer reviewed, the match between the pollutant studied and the pollutant of interest, the study design and location, and characteristics of the study population; this selection procedure is described in detail in previous EPA regulatory analyses.<sup>(23–25)</sup> In general, the studies utilized here are consistent with those applied in recent EPA regulatory analyses.<sup>(24,25)</sup> Because of the significance of mortality as a health endpoint, we describe in detail the selection of the risk coefficients.

To estimate PM<sub>2.5</sub>-related long-term mortality we draw risk estimates from epidemiological studies based on data from two prospective cohort groups, often referred to as the Harvard Six-Cities Study, or “H6C,”<sup>(26,27)</sup> and the American Cancer Society “ACS” study.<sup>(2,28–30)</sup> These studies have found consistent relationships between fine particles and premature death across multiple locations in the United States.

For PM<sub>2.5</sub>, we use from the recent Krewski *et al.* (2009) extended analysis of the ACS cohort the all-cause mortality risk estimate from the random effects

Cox model that controls for 44 individual and seven ecological covariates, based on average exposure levels for 1999–2000 over 116 U.S. cities<sup>(2)</sup> (RR = 1.06, 95% confidence intervals 1.04–1.08 per 10 µg/m<sup>3</sup> increase in PM<sub>2.5</sub>). We quantify all-cause mortality rather than cardiopulmonary or lung cancer mortality specifically because it is the most comprehensive estimate of PM-related mortality. We also applied an all-cause mortality risk estimate from the Laden *et al.* (2006) reanalysis of the H6C cohort<sup>(27)</sup> (RR = 1.16, 95% confidence intervals 1.07–1.26 per 10 µg/m<sup>3</sup> increase in PM<sub>2.5</sub>).

There are strengths and weaknesses to each PM<sub>2.5</sub> mortality study that argue for using risk estimates drawn from both analyses. While the ACS-based study includes a much larger population over a broader geographic area than the H6C study, the ACS population is less racially diverse, better educated, and more affluent than the national average. By contrast, the H6C cohort population is more representative of the United States, but estimates PM mortality risk in eastern U.S. cities where PM<sub>2.5</sub> is generally comprised of a larger fraction of sulfate than it is in western cities. There are other differences in population demographics and exposure-related factors that may also contribute to differences in the eastern and western United States. To the extent that PM<sub>2.5</sub>-related mortality is strongly influenced by particle composition, applying a H6C-based risk coefficient nationwide may result in biased estimates of PM<sub>2.5</sub> mortality in the west. Conversely, applying an ACS-based risk estimate nationwide may not characterize well the PM<sub>2.5</sub> mortality impacts in the eastern United States.<sup>(31)</sup>

While we apply both the ACS- and H6C-based risk coefficients, we also include in the supplement to this article additional estimates of PM<sub>2.5</sub>-related premature mortality for the western United States using all-cause mortality risk estimates from the Krewski *et al.* (2009) intra-urban analysis of the Los Angeles region<sup>(2)</sup> (RR = 1.191, 95% confidence intervals 1.06–1.33 per 10 µg/m<sup>3</sup> increase in PM<sub>2.5</sub>) (Fig. S1). As a means of generating as comprehensive an estimate of mortality possible, to also quantify PM-related infant deaths using a risk estimate from the cohort study by Woodruff *et al.*<sup>(32)</sup> This study found a significant link between PM<sub>10</sub> and infant death between 2 and 12 months of age. (RR = 1.04, 95% confidence intervals 1.02–1.07 per 10 µg/m<sup>3</sup> increase in PM<sub>2.5</sub>).

For ozone, we estimate the change in ozone-related premature mortality applying both short- and

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long-term risk estimates. A number of time-series ozone mortality studies including an analysis by Huang *et al.* (2004) in Los Angeles<sup>(33)</sup> and an analysis by Schwartz (2005)<sup>(34)</sup> in Houston have strengthened the findings of previous studies finding a relationship between short-term ozone exposure and premature mortality. The Bell *et al.* (2004)<sup>(31)</sup> analysis of the National Morbidity, Mortality, and Air Pollution Study (NMMAPS) data set and the meta-analyses by Bell *et al.* (2005),<sup>(35)</sup> Ito *et al.* (2005),<sup>(36)</sup> and Levy *et al.* (2005)<sup>(37)</sup> sought to resolve the relationship between ozone, PM, weather-related variables, seasonality, and other variables. We apply the Bell *et al.* (2004) ozone nonaccidental mortality relative risk estimate (RR = 1.0052, 95% confidence intervals 1.0027–1.0077 per 10 ppb ozone increase)<sup>(31)</sup> because it is broadly cited. This study is also an NMMAPS-based analysis, which applies a common methodology to all cities, suggesting that it is not subject to the same risk of publication bias as the meta-analyses, which include the results of single-city studies.<sup>5(38)</sup>

Recent evidence also suggests a relationship between long-term exposure to ozone and premature respiratory mortality in the ACS cohort (Jerrett *et al.* 2009).<sup>(39)</sup> Jerrett *et al.* find that long-term exposure to ozone is associated with respiratory premature mortality in a two-pollutant model that controls for PM<sub>2.5</sub>. The Jerrett *et al.* (2009) estimate represents one of the few studies detecting an increase in mortality risk from long-term exposure to ozone. From this study, we apply a long-term respiratory mortality estimate (RR = 1.040, 95% confidence intervals 1.013–1.067 per 10 ppb ozone increase) as a means of capturing the impact of long-term ozone exposure. Until the literature evolves further, it will remain unclear whether the biological mechanisms underlying the ozone-related deaths detected by these short- and long-term studies are similar or different. By extension, the literature may also resolve the degree to which these studies are each detecting the same mortalities, over different periods of time. This uncertainty has implications for our findings, which we discuss below.

<sup>5</sup> Anderson and colleagues cite three reasons that single-city studies may be more prone to publication bias: (1) such studies frequently rely on easily available daily mortality counts, and researchers may be less inclined to publish negative findings; (2) the statistical modeling for time series entail a level of subjectivity and (3) each study can produce a large number of estimates and the researchers may select estimates based on the direction of their effect.

Because epidemiological studies assess changes in risk relative to some baseline rate, we use a baseline incidence rate for each health endpoint in the analysis (Table SII). Ideally, the incidence rate should also be matched to the geographic area of focus so that it describes the health status of the population of interest. In this analysis we apply a three-year average of 2006–2008 cause-specific county-level mortality rates from the CDC-WONDER database as a surrogate for 2005 mortality rates.<sup>(40)</sup> Morbidity rates are either national or regional averages depending on the data source (Table SII).

## 2.5. Calculating Health Impacts

Quantifying the number of PM<sub>2.5</sub> and ozone-related excess mortalities and morbidities involved specifying the health impact function with each of the key data inputs described above. This calculation produces counts of mortality and morbidity impacts. We estimate 95% confidence intervals around each mean health impact estimate using the Monte Carlo method, which samples a distribution based on the standard error reported in each epidemiological study. All estimated PM-related deaths are attributed to exposures to 2005 air quality, which we assume to occur over a 20-year period following this exposure, though recent research suggests that the lag between PM exposure and death is as short as 2 years.<sup>(25,41)</sup> We calculate the percentage of premature PM<sub>2.5</sub> and ozone-related mortality by dividing the number of excess deaths by the total number of cause-specific deaths in each county.

One criticism of the excess- or attributable-mortality calculation is that readers may infer that reductions in air pollution exposure result in deaths avoided altogether, when in fact these deaths are simply deferred into the future.<sup>(42)</sup> For this reason, we use standard life tables available from the Centers for Disease Control,<sup>(43)</sup> we estimate the number of life years and life expectancy lost to air pollution. We calculate the number of life years lost using the following formula:

$$\text{Total Life Years} = \sum_{i=1}^n LE_i \times M_i,$$

where  $LE_i$  is the remaining life expectancy for age interval  $i$ ,  $M_i$  is the change in number of deaths in age interval  $i$ , and  $n$  is the number of age intervals.<sup>(44)</sup> Alternate analyses have employed a cause-modified life

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table approach, in which the change in life years and life expectancy is estimated among individuals with preexisting chronic conditions.

For example, the U.S. EPA quantified the change in life years lost due to attainment of alternate ozone National Ambient Air Quality Standards (NAAQS) among both the general population as well as individuals suffering from Chronic Obstructive Pulmonary Disease (COPD). EPA performed this analysis to test the sensitivity of the life year calculation to the assumption that ozone-related mortalities occurred primarily among individuals with preexisting chronic conditions that would increase their susceptibility to ozone mortality. We characterize the sensitivity of our life year and life expectancy estimates to this assumption below.

### 3. RESULTS AND DISCUSSION

#### 3.1. Air Quality Estimates

Figs. 1 and 2 show the geographic distribution of summer-season ozone and annual mean PM<sub>2.5</sub> concentrations across the continental United States for the “fused” spatial surfaces discussed above. The maximum predicted PM<sub>2.5</sub> value within a populated 12 km grid cell in the continental United States is 47.2 μg/m<sup>3</sup>, the mean PM<sub>2.5</sub> value is 7.8 μg/m<sup>3</sup>, the median is 7.48 μg/m<sup>3</sup>, and the 95th percentile value is about 13 μg/m<sup>3</sup>. The maximum predicted summer-season average 8-hour maximum ozone value in a populated 12 km grid cell is 79.3 ppb, the mean value is 47.9 ppb, the median is 48.3 ppb, and the 95th percentile value is 56.1 ppb.<sup>6</sup> In general, the highest PM<sub>2.5</sub> values are in the eastern United States, while the highest ozone values are located in the western United States.

#### 3.2. Estimates of Excess PM<sub>2.5</sub> and Ozone-Related Mortalities Nationwide

We predict over 100,000 PM<sub>2.5</sub>-related premature mortalities and tens of thousands of ozone-related premature mortalities to result from 2005

air quality levels (Table I).<sup>7</sup> We estimate over double the PM<sub>2.5</sub>-related mortalities using a risk estimate drawn the Laden *et al.* (2006)<sup>(27)</sup> H6C-based study as compared to the ACS-based Krewski *et al.* (2009).<sup>(2)</sup> We estimate about four times the number of ozone-related mortalities using the Jerrett *et al.* (2009) long-term respiratory mortality risk estimate as compared to the Bell *et al.* (2004) short-term mortality risk nonaccidental estimate. We also estimate an array of morbidity impacts, including almost 200,000 PM<sub>2.5</sub>-related nonfatal acute myocardial infarctions, tens of thousands of PM<sub>2.5</sub> and ozone-related hospitalizations and emergency department visits, and hundreds of thousands of PM<sub>2.5</sub>-related cases of acute bronchitis.

Because this analysis aims to estimate the total public health burden of air pollution, the estimated impacts reported in this article are significantly larger than those found in previous EPA analyses focused on proposed rules. For the Clean Air Interstate Rule, U.S. EPA estimated that approximately 17,000 PM<sub>2.5</sub>-related premature mortalities would be avoided in 2015 as a result of large-scale air quality improvements in the eastern United States occurring from the implementation of emission controls on electrical generating units (EGUs).<sup>(25,45)</sup> In 2006, U.S. EPA estimated that between 4,400 and 9,000 PM<sub>2.5</sub>-related premature mortalities would be avoided nationwide in 2020 from attaining a new annual PM<sub>2.5</sub> standard of 14 μg/m<sup>3</sup> and a daily standard of 35 μg/m<sup>3</sup> relative to a baseline in which the United States met an annual PM<sub>2.5</sub> standard of 15 μg/m<sup>3</sup> and a daily standard of 65 μg/m<sup>3</sup>.<sup>(46)</sup> U.S. EPA<sup>(23)</sup> estimated that between 450 and 2,100 ozone-related premature mortalities would be avoided in 2020 as a result of meeting a more stringent national ozone standard of 0.065 ppm relative to a baseline in which the United States meets an ozone NAAQS of 0.08 ppm. The ozone and PM<sub>2.5</sub> impacts we estimate for this study of the overall burden of disease are significantly larger than these U.S. EPA estimates because they are projected for a larger change in air quality, assuming the individual rules have not yet gone into effect and for a more

<sup>6</sup> The ozone air quality metric used to estimate health impacts in this analysis is not equivalent to design value metric used to determine attainment with the Ozone NAAQS. The ozone modeling used in this analysis is the summer-season average of the 8-hour daily maximum concentrations. The Ozone NAAQS is the fourth highest daily 8-hour maximum over the summer season. Therefore, these ozone concentrations are not equivalent to ozone concentrations for determining attainment with the Ozone NAAQS.

<sup>7</sup> When quantifying PM-related mortality, EPA generally assumes that reductions in PM-attributable deaths are distributed over a 20-year period, with a larger proportion of deaths occurring in earlier years. Recent research suggests that the lag between PM exposure and death is as short as 2 years (Schwartz *et al.* 2008). While the length and distribution of the PM mortality lag affects the discounting of monetized mortality benefits, it does not affect the overall size of the estimated premature mortalities.

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**Table I.** Estimated PM<sub>2.5</sub> and Ozone-Related Health Impacts Due to 2005 Modeled Air Quality (Relative to Nonanthropogenic Background).

Health Effect	Annual Impact Estimates (95% Confidence Interval) <sup>a</sup>
<b>PM-related endpoints</b>	
Premature mortality	
Krewski <i>et al.</i> (2009) (age >29)	130,000 (51,000–200,000)
Laden <i>et al.</i> (2006) (age >24)	320,000 (180,000–440,000)
Infant (< 1 year)	1,800 (–1,500–4,800)
Chronic bronchitis (age > 27)	83,000 (16,000–140,000)
Nonfatal heart attacks (age > 17)	180,000 (70,000–270,000)
Hospital admissions—	30,000
respiratory (all ages)	(15,000–45,000)
Hospital admissions—	62,000
cardiovascular (age > 18)	(44,000–73,000)
Emergency room visits	110,000
for asthma (age < 18)	(68,000–150,000)
Acute bronchitis (ages 8–12)	200,000 (–7,600–350,000)
Lower respiratory	2,400,000
symptoms (ages 7–14)	(1,200,000–3,500,000)
Upper respiratory symptoms	2,000,000
(asthmatics age 9–18)	(640,000–3,400,000)
Asthma exacerbation	2,500,000
(asthmatics 6–18)	(280,000–6,800,000)
Lost work days (ages 18–65)	18,000,000 (15,000,000–20,000,000)
Minor restricted-activity	100,000,000
days (ages 18–65)	(87,000,000–120,000,000)
<b>Ozone-related endpoints</b>	
Premature mortality	
Bell <i>et al.</i> (2004) (all ages)	4,700 (1,800–7,500)
Jerrett <i>et al.</i> (2009) (age >29)	19,000 (7,600–29,000)
Hospital admissions—	31,000
respiratory causes (age > 64)	(1,200–53,000)
Hospital admissions—	27,000
respiratory causes (age <2)	(13,000–39,000)
Emergency room visits	19,000
for asthma (all ages)	(–1,200–58,000)
Minor restricted-activity	29,000,000
days (ages 18–65)	(14,000,000–44,000,000)
School absence days	11,000,000 (4,500,000–16,000,000)

<sup>a</sup>95% confidence intervals calculated using a Monte Carlo method based on the standard error reported in each epidemiological study. Health impacts attributable to 2005 air quality levels. We assume a time lag between initial exposure to PM<sub>2.5</sub> and death.

comprehensive cross-section of U.S. population. Table SIII summarizes the per-person reduction in PM<sub>2.5</sub> exposure between 2005 and 2014, when a re-

cently proposed rule expected to achieve significant emission reductions from EGUs is scheduled to take effect.

**3.3. Detailed Estimates of Impacts by Region, Age, and Air Quality Level**

While the total estimates of excess mortality and morbidity help characterize the overall national public health burden attributable to recent air quality, they provide limited insight into how these estimated impacts are distributed by geographic location or by age. Below we: (1) consider the spatial distribution of these estimated mortality impacts; (2) characterize the PM<sub>2.5</sub> and ozone-related impacts according to the number of life years lost, change in life expectancy, and the percentage of total mortality attributable to these pollutants; and (3) quantify the reduction in mortality impacts according to hypothetical improvements in air quality. Unless otherwise noted, each of these analyses apply PM<sub>2.5</sub> and ozone mortality risk coefficients from the Krewski *et al.* and Bell *et al.* studies, respectively.<sup>(1,2)</sup>

**3.3.1. The Spatial Distribution of PM<sub>2.5</sub> and Ozone-Related Excess Mortalities**

To illustrate the spatial distribution of the public health burden, we provide maps of the combined PM<sub>2.5</sub> and ozone-related mortality impacts by county in Fig. 3. These maps also identify the seven geographic regions previously used by the U.S. EPA when performing air quality and health impact analyses.<sup>(6)</sup> In any given location the number of the PM<sub>2.5</sub>-related mortalities will be influenced by the combination of air quality, population density, and baseline health status. On a per-person basis, southern California and the industrial Midwest see the greatest exposure to PM<sub>2.5</sub>. However, the confluence of poor air quality, population size and density, and baseline health status cause the largest number of estimated PM<sub>2.5</sub>-related excess premature mortalities to occur within the Northeast, Southeast, and Midwestern United States. Among urban areas, the largest estimated impacts occur in L.A., Chicago, Detroit, Pittsburgh, Houston, New York, Philadelphia, and Boston. The estimated ozone-related mortality impacts are an order of magnitude smaller than those estimated for PM<sub>2.5</sub>, partly due to the smaller relative risk associated with ozone, and generally distributed among the same counties affected most by PM<sub>2.5</sub> mortality.

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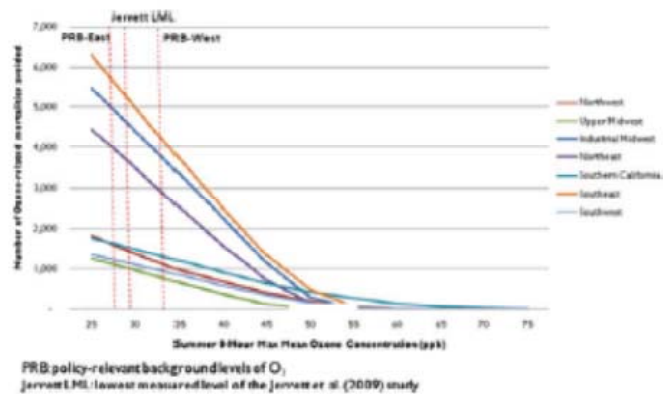
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Fig. 3. PM<sub>2.5</sub> and ozone-related excess mortalities at the county level by geographic area.

Fig. 4. The number of ozone-related excess mortalities avoided by air quality benchmark and region of the United States (using Jerrett *et al.* 2009 risk estimate).



We also consider how the estimated number of avoided PM<sub>2.5</sub> and ozone deaths changes if we assume that air quality incrementally improves (Figs. 4 and 5). For example, we estimate that about 23,000 PM<sub>2.5</sub>-related mortalities would be avoided as a result of lowering 2005 annual mean PM<sub>2.5</sub> levels down to 10 μg/m<sup>3</sup> nationwide. We estimate about 80,000 premature mortalities would be avoided by lowering PM<sub>2.5</sub> levels to 5 μg/m<sup>3</sup> nationwide. We have less confidence in impacts estimated below the lowest measured level of the PM<sub>2.5</sub> mortality studies because we are less certain of the shape of the concentration-response relationship at these levels. However, given that there is little evidence for a

threshold PM<sub>2.5</sub> mortality function, such estimates still give some insight into the fraction of the public health benefits of air quality improvements at lower PM<sub>2.5</sub> levels. The avoided PM<sub>2.5</sub> and ozone-related mortalities appear to increase in an approximately linear fashion as we reduce air quality levels to lower benchmarks. The reduction in O<sub>3</sub> and PM<sub>2.5</sub>-related excess mortalities are not distributed evenly across the United States, and most are concentrated in the Northeast, Southeast, and industrial Midwest.<sup>5</sup>

<sup>5</sup> The ozone air quality benchmarks represent various daily 8-hour maximum levels averaged over the summer season and equivalent with ozone NAAQS levels, which are set according to a

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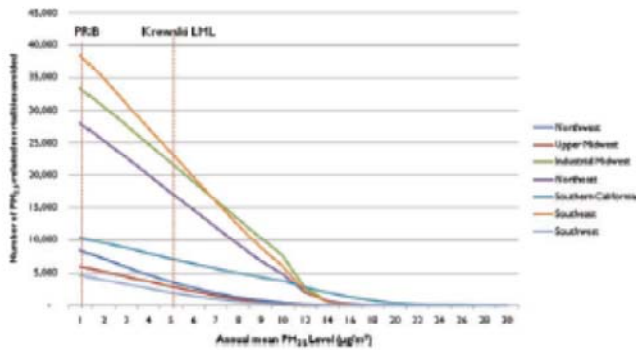


Fig. 5. The number of PM<sub>2.5</sub>-related excess deaths avoided by air quality benchmark and region of the United States (using Krewski et al. 2009 risk estimate).

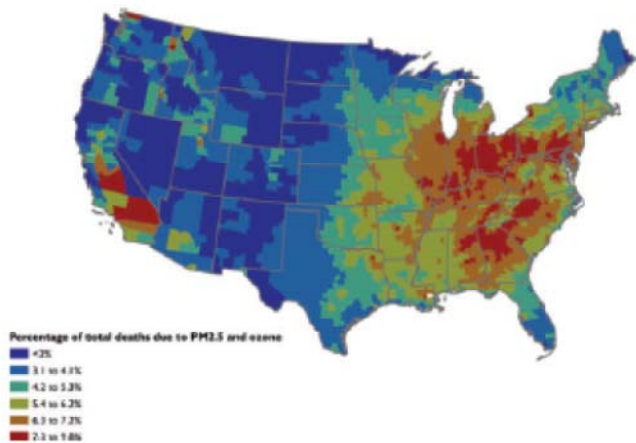


Fig. 6. Percentage of premature deaths attributable to 2005 PM<sub>2.5</sub> and ozone air quality by U.S. county.

3.3.2. Estimating the Percentage of All Deaths Attributable to PM<sub>2.5</sub> and Ozone and the Change in Life Years and Life Expectancy

The counties with the largest estimated percentage of mortality due to PM<sub>2.5</sub> and ozone tend to be in the northeastern United States, the industrial Midwest, and southern California (Fig. 6). The cumulative distribution of the percentage of mortality attributable to PM<sub>2.5</sub> and ozone indicates that among the most populous counties, the proportion of total deaths attributable to PM<sub>2.5</sub> and ozone ranges from

fourth highest daily design value. As such, health impacts at each ozone benchmark level do not reflect the health benefits of meeting different NAAQS levels.

a low of 3.5% in San Jose to as high as 10% in Los Angeles (Fig. 7). Nationwide, the percentage ranges from less than 1% to about 10% in southern California. We also estimate that about 19% of all ischemic-heart-disease-related deaths are attributable to PM<sub>2.5</sub> nationwide (Table SIV).

The overall percentage of all deaths due to PM<sub>2.5</sub> is much higher than it is for ozone (Figs. S2 and S3). While the percentage of all deaths attributable to PM<sub>2.5</sub> exposure is significantly higher in southern California than other regions, the percentage of total mortality from ozone exposure is roughly equal for southern California, the industrial Midwest, and to a lesser extent the Northeast and Southeast, and significantly lower in the Pacific Northwest. The

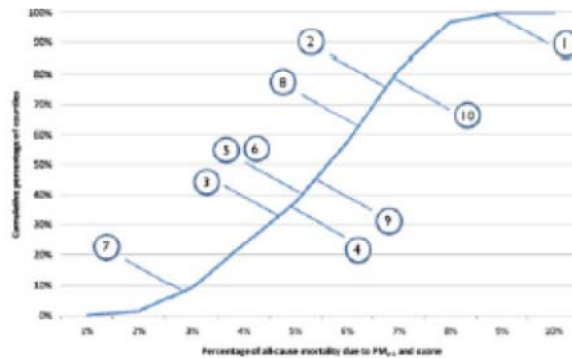
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Fig. 7. The cumulative distribution of the percentage of all-cause mortality attributable to PM<sub>2.5</sub> and ozone among the 10 most populous U. S. counties.



Counties are coded as follows: 1—Los Angeles; 2—Cook; 3—Harris; 4—Maricopa; 5—San Diego; 6—Dallas; 7—San Jose; 8—New York; 9—Bexar; 10—Philadelphia

spatial distribution of this metric and modeled ozone levels are fairly consistent across the United States. For both ozone and PM<sub>2.5</sub>, the percentage appears to decline modestly for older populations, suggesting that older populations may live in areas with lower modeled concentrations.

We estimate a large number of life years lost to PM<sub>2.5</sub> and ozone and this number varies by region of the country and by age (Figs. S4 and S5). For both PM<sub>2.5</sub> and ozone, the Northeast, Southeast, and industrial Midwest show the largest estimated total number of life years lost. Because the estimate of life years lost is influenced in part by the total number of individuals affected, we also estimate the percentage of these PM<sub>2.5</sub> and ozone-related life years lost by age range and region, which controls for differences in the size of the populations within each region (Table SV). Among populations aged 65–99, we estimate nearly 1.1 million life years lost from PM<sub>2.5</sub> exposure and approximately 36,000 life years lost from ozone exposure. The statistical abstract of the U.S. Census<sup>(47)</sup> reported 15 million life years lost among populations aged 65–99 from all causes in 2005, implying that PM<sub>2.5</sub> and ozone-related mortality accounted for approximately 7% of total life years lost among populations ages 65–99 nationwide in 2005.

Finally, using a standard life table, we quantify the change in life expectancy at birth and by 5-year age increment resulting from the elimination of PM<sub>2.5</sub> and ozone-related mortality risk (Table SVI). Among populations at birth, we estimate a change

in life expectancy of 0.7 years, a result that comports well with recent analyses of the effect of air pollution on life expectancy.<sup>(48)</sup>

When calculating changes in life expectancy, we assume that the life expectancy of those dying from air pollution is the same as the general population. It is possible to characterize the sensitivity of this assumption by referring to a 2008 U.S. EPA analysis of life years lost due to ozone exposure.<sup>(44)</sup> That analysis estimated approximately 14–53% fewer life years lost when assuming that populations dying premature from ozone exposure suffered average-to-severe COPD, as compared to the assumption that these populations shared the same life expectancy as the general population.

However, using a standard life table is reasonable when considering that: (1) the vast majority of premature deaths are estimated to occur among populations aged >64, half of whom suffer from one or more chronic illnesses, suggesting that a standard life table captures the change in life expectancy among a substantial number of individuals who suffer such chronic illnesses; and (2) a recent long-term study found that PM<sub>2.5</sub> initiated cardiovascular events among women with no history of cardiovascular disease—underscoring the role of air pollution in both promoting chronic illness and causing premature death.<sup>(49–51)</sup> Moreover, recent evidence available since the publication of that EPA report suggests that ozone-induced deaths do not occur exclusively, or even mostly, among individuals with such preexisting conditions.<sup>(52,53)</sup>

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#### 4. DISCUSSION AND CONCLUSIONS

We have estimated the recent burden of PM<sub>2.5</sub> and ozone on human health in the United States, using ambient measurements, 2005 and nonanthropogenic background PM<sub>2.5</sub> and O<sub>3</sub> concentrations simulated by atmospheric chemistry models, and a health impact function. We find that between 130,000 and 340,000 premature deaths are attributable to PM<sub>2.5</sub> and O<sub>3</sub>. We also find that geographic and age distribution of this health risk is not shared equally. Major metropolitan areas including L.A., Houston, Pittsburgh, and New York see the largest number of estimated excess PM<sub>2.5</sub> and ozone-related deaths. Southern California is estimated to experience the largest percentage of total mortality attributable to PM<sub>2.5</sub> across all ages (between 7% and 17% depending on the risk estimate used), while the greatest percentage of mortality attributable to ozone is the highest in the industrial Midwest (between 0.24% and 1%, again depending on the risk estimate used). Conversely, the largest estimated number of PM<sub>2.5</sub> and ozone-related life years lost are in the Southeast. While estimating the contribution of air pollution to total morbidity impacts is difficult due to incomplete data on hospitalizations and other health endpoints, we find that the nonmortality impacts of air pollution are substantial, consistent with previous studies estimating air pollution mortality and morbidity.<sup>(3,4)</sup>

The size of these mortality estimates is comparable to those reported in Anenberg *et al.*<sup>(5)</sup> for North America and larger than those reported by Cohen *et al.*<sup>(3,4)</sup> Although our estimates may be larger than those of Cohen *et al.*,<sup>(3,4)</sup> our analysis includes several factors that may explain these differences. In particular, we estimate impacts relative to natural background and utilize modeled air quality that better represents population exposures in rural and urban areas. This general consistency with prior estimates of PM<sub>2.5</sub> and ozone impacts reaffirms that despite significant improvements in air quality in recent decades, recent levels of ozone and PM<sub>2.5</sub> still pose a public health risk in many regions of the United States. PM<sub>2.5</sub> and ozone impose a nontrivial level of mortality risk, particularly when compared to other causes of death. For example, while this analysis estimates between 130,000 and 340,000 PM<sub>2.5</sub> and ozone-attributable deaths from 2005 air quality, in this same year there were approximately 120,000 deaths due to accidents, 72,000 deaths due to Alzheimer's, and 63,000 deaths due to influenza.<sup>(54)</sup>

It is more challenging to evaluate the contribution of air pollution to total morbidity impacts. For example, incomplete information regarding the total number and spatial distribution of asthma hospitalizations prevent us from calculating the percentage of total asthma hospitalizations attributable to PM<sub>2.5</sub> with confidence. However, analyses including the GBD<sup>(3,4)</sup> provide evidence that the nonmortality impacts of air pollution are substantial—a finding reinforced by these results.

The estimates presented here are subject to a number of important limitations and uncertainties, only some of which we can quantify. Many of these are endemic to health impact assessments (e.g., the transfer of risk estimates from epidemiology studies to other contexts and the selection of epidemiological studies used to quantify impacts) and are described in detail elsewhere.<sup>(25,55)</sup> However, certain sources of uncertainties are likely to influence the analysis greatly and are worth noting here. This health impact analysis relies upon modeled air quality estimates that utilize a national emissions inventory. Previous analyses<sup>(46)</sup> have found that even small errors in emission inventory, when compounded with other uncertainties in the analysis, can have a significant impact on the overall size of the estimated health impacts.

Alternative methods for assessing air pollution health impacts might also have yielded different results. As noted earlier, the estimated life years lost and changes in life expectancy are sensitive to the assumption that populations dying prematurely from air pollution exposure share the same life expectancy as the general population. Assuming that air pollution deaths occur only among populations with preexisting chronic conditions yields significantly different results—though the empirical evidence suggests that premature death does not occur exclusively among such populations.<sup>(53)</sup> As another example of how alternative methods would have affected our results, we might have employed an Institute of Occupational Medicine (IOM)-style life table approach, calculating lifetime air pollution risk among a cohort of individuals. A principal advantage of this technique is that it characterizes changes in risk among a population cohort over time and reduces the chance that the same health impact may be counted twice from one year to the next.

Due in part to the limited availability of air quality modeling estimates, this analysis estimated health impacts and life expectancy changes attributable to air pollution exposure in a single historical year.

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Future research might build upon this analysis by employing the IOM life-table tool in conjunction with both historical and projected air quality. Such a method would yield an improved characterization of the public health burden over time after the implementation of national air quality regulations.

Another approach is the comparative risk analysis method applied by the GBD, which aims to estimate air-pollution-related impacts within a risk framework that evaluates air pollution health impacts as one among many sources of public health risks.<sup>(3,4)</sup> One advantage of this type of comparative risk assessment is that by attempting to systematically account for all sources of mortality risk, of which air pollution is one component, it may reduce the potential for attributing an incorrect fraction of total mortality risk to air pollution. The GBD approach also aims to apportion air pollution risk according to indoor and outdoor exposure, which data limitations prevented this analysis from attempting.

Estimating PM<sub>2.5</sub> mortality and long-term ozone mortality impacts down to nonanthropogenic background levels also introduces important uncertainties. A sizable proportion of the total mortality attributed to these two pollutants occurs at air quality levels below the lowest measured level of each study (Figs. 4 and 5). Estimates of mortality impacts at air quality levels below the observable data in the epidemiology study are inherently more uncertain because at these levels we have less confidence in the shape of the concentration-response curve, although there is little evidence to suggest there is a threshold in the concentration-response functions.

We based PM<sub>2.5</sub> and ozone mortality and morbidity estimates on recent air quality concentrations. As such, our results do not reflect the important air quality improvements expected to result from an array of U.S. EPA and state air quality management programs that will be implemented in the near future—including the nonroad diesel rule, Tier-2 vehicle standards, the proposed transport rule, and a several maximum achievable control technology standards, among other rules. U.S. EPA projections of future air quality indicate that overall ambient levels of PM<sub>2.5</sub> and ozone will decline significantly compared to those levels estimated here. We anticipate that these rules will address a large portion of the PM<sub>2.5</sub> and O<sub>3</sub> public health burden identified in this article.

Another key uncertainty is the use of both time-series and cohort studies to quantify mortality impacts and changes in life years and life expectancy.

While we estimate PM<sub>2.5</sub>-related mortality using risk estimates drawn from two long-term cohort studies, we use both a short-term time-series study and a long-term cohort study to quantify ozone impacts. PM<sub>2.5</sub> cohort analyses are generally understood to better characterize the total risk of PM<sub>2.5</sub> exposure over time because they capture the impacts of both long-term and some portion of short-term exposures.<sup>(46,53,56)</sup> However, it is less clear as to whether there is a separate short- and long-term mortality impact related to ozone exposure—or whether the long-term study used in this analysis might be capturing these impacts. For this reason, there is some uncertainty as to whether the ozone mortality impacts estimated using the Levy *et al.* (2005) short-term study and the Jerrett *et al.* (2009) long-term study are additive or overlapping.

## ACKNOWLEDGMENTS

We greatly appreciate the contributions of Aaron Cohen in helping shape the conceptual basis for this article.

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**COMMENT LETTER NO. 13****WAYDE HUNTER****FEBRUARY 29, 2012**

This comment letter consisted of an email coversheet with attachments. The group is referred to as Comment Letter No 13, and individual letter attachments are identified with 13A-G.

- 13A: February 29, 2012 Cover Letter Email on the NOI from Wayde Hunter to Mr. Gaurang Rawal, Air Quality Engineer II, and Mr. Jeffrey Inabinet, Air Quality Specialist;
- 13B: February 29, 2012 letter from Wayde Hunter – North Valley Coalition of Concerned Citizens Inc to Mr. Gaurang Rawal;
- 13C: Copy of the previously submitted June 20, 2011 comment letter on the Draft SEIR from Anne Ziliak – Granada Hills North Neighborhood Council to Mr. Jeffrey Inabinet;
- 13D: February 10, 2012 SCAQMD Letter from Mr. Jay Chen to Mr. Anthony Bertrand - Republic Services;
- 13E: Copy of the previously submitted June 23, 2011 comment letter on the Draft SEIR from Wayde Hunter – NVC, to Mr. Jeffrey Inabinet;
- 13F: United States Environmental Protection Agency, 2012. Southern Californians at Risk of Death from Air Pollution, EPA Says. California Watch. <http://californiawatch.org/dailyreport/southern-californians-risk-death-air-pollution-epa-says-14843>. Downloaded 2/28/2012; and,
- 13G: Fann, Neal.; Lamson, Amy D.; Anenberg, Susan C.; Wesson, Karen; Risley, David; and Hubbel Bryan J. 2012. Estimating the National Public Health Burden Associated with Exposure to Ambient PM<sub>2.5</sub> and Ozone. Risk Analysis, Vol. 32, No. 1, 2012.

**RESPONSE 13A**

This is a cover email transmitting the balance of the attachments in the comment described above. No further response is needed on this cover email.

**RESPONSE 13B-1**

This comment letter was submitted in response to the SCAQMD's NOI and states that the SCAQMD procedures for permit processing, public notification and documentation are lacking and not consistent with the provisions and intent of CEQA. Permit processing is a separate process and is not subject to CEQA provisions or intent. The portion of this comment letter related to policy and procedures relative to the permit process will be forwarded to SCAQMD's Engineering and Compliance Division to be addressed and will not be addressed as a part of this CEQA process.

**RESPONSE 13B-2**

This comment concerns the Title V Hearing Request submitted to SCAQMD by Wayde Hunter on February 14, 2012. This comment does not pertain to the CEQA process and will be forwarded to the SCAQMD's Engineering and Compliance Division to be addressed and will not be addressed as a part of this CEQA process.

**RESPONSE 13B-3**

This comment concerns the documentation of the response to comments received on the Draft SEIR. The SCAQMD website noted in the comment contains links to all CEQA documents prepared by the SCAQMD for permit application projects like the proposed SGPREP. It is the policy and practice of the SCAQMD to keep a draft CEQA document listed after the close of the public comment period. There is no requirement in CEQA to make available in any way final CEQA documents that are still under preparation. The Final SEIR for the proposed project was still being prepared as of February 29, 2012, the date of this letter. With regard to responses to comments on the NOP/IS, there is no requirement in CEQA to respond to NOP/IS comments or include them in the Draft CEQA document. As a policy, the SCAQMD does both to let the public know that their comments were considered during the preparation of the Draft CEQA document. This Appendix to the Final SEIR includes all comments received on the Draft SEIR from the beginning of the public comment period (May 10, 2011) through June 23, 2011 and also includes late comment letters received through February 29, 2012.

**RESPONSE 13B-4**

This comment states that the SCAQMD is following incorrect procedures for the environmental review and permitting of the proposed project, specifically, citing the issuance of a Notice of Intent to Construct prior to the certification of the Final SEIR. The commenter is not correct in his assertion. The SCAQMD has correctly followed all relevant procedural and substantive CEQA requirements. As already noted, the CEQA process and the permit process are two separate processes. There is nothing in state law that prohibits the two processes from occurring simultaneously. Further, the Draft SEIR comprehensively analyzed potentially significant adverse environmental impacts that may be generated by the proposed project. Further, responses to comments received on the Draft SEIR, including late comments, have been prepared as part of this appendix of the Final SEIR. Final SEIRs, including responses to comments, will be provided to commenters prior to a decision on the proposed project. The discretionary decision requiring the completion of the CEQA process is the issuance of a Permit to Construct, not any prior notification of any decision making intent. Approval of the Permit to Construct by the decision-making body can only occur after the completion and certification of the Final SEIR.

**RESPONSE 13B-5**

This comment states that the LFG generation discussion in the Draft SEIR is underestimated by at least 12 percent. LFG generation is unrelated to LFG collection in the sense that LFG generation occurs whether or not it is being captured. As discussed in the Final SEIR Subsection 3.2.1.5, the proposed project would process an average of 8,100 scfm of LFG, normalized to 50 percent methane. Actual LFG generation and collection rates will vary primarily based on the waste acceptance rate and waste composition. If the LFG combusted is normalized to 40 percent methane content (approximately the LFG methane content at SCLF), the equivalent average flow rate would be 10,100 scfm. As described in Section 2.8 of the Final SEIR, SCLF would maintain the existing flare(s) and operate them as back-up equipment from time to time when it is necessary to shut down the turbines for maintenance, during unplanned shutdowns, or when collected LFG volumes exceed the fuel requirements of the turbines. As shown in Figure 3-1 of the Final SEIR, it is anticipated that the SGPREP would not combust all LFG generated at SCLF, and as LFG generation volumes exceed the capacity of the SGPREP, the existing and future flares would be used to control that LFG.

The 1999 Final SEIR for the SCLF analyzed emission impacts from five flares at peak production of LFG. In addition, that document also contemplated that some of the LFG would be diverted from flaring to LFG to energy projects such as the proposed SGPREP. At the time the Draft SEIR was prepared there were only three flares operating at the SCLF. Since February 2012, four flares have been in operation. Even with the installation of new flare #9, the proposed project is considered within the context of the existing City/County Landfill project. Finally, the SCAQMD will impose a permit condition on changes to the SCLF's Title V permit renewal to implement the projects included in the STAOA (Related Project #16 in cumulative analysis) to limit total landfill gas combusted at the proposed SGPREP and the flares operating at the Sunshine Canyon Landfill to less than or equal to 16,100 scfm<sup>18</sup>.

**RESPONSE 13B-6**

This comment states that Southern Californians are among the highest risk of death due to air pollution, and in particular cites PM10 concentrations. The comment states that the Draft SEIR does not sufficiently identify, quantify, model and analyze the risks associated with the emissions of the proposed project. SCAQMD staff disagrees with this opinion. Neither the

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<sup>18</sup> To ensure that total LFG combustion at SCLF (flares and proposed turbines) does not exceed total LFG combustion analyzed in the 1999 Final SEIR (20,835 standard cubic feet per minute (scfm) at an assumed LFG methane content of 40 percent), as part of the current Title V permit renewal process for SCLF, a new Title V Facility-wide Condition will be included as a condition of the Title V permit. The new permit condition would not allow total LFG combustion at SCLF (flares and proposed turbines) to exceed 16,100 scfm based on a 50 percent methane concentration, which is equivalent to 20,835 scfm at an assumed LFG methane content of 40 percent. Due to the fluctuating nature of methane content in LFG the SGPREP Title V condition is given in MMBTU/Hr and equates to a flow rate of approximately 10,170 scfm of gas at 40% methane, which is the average methane content of LFG at SCLF, which is approximately equal to 8,500 scfm of gas at 50% methane identified in the Draft SEIR, plus or minus one percent methane.

comment nor the references cited provide any data or other information that supports the opinion that the air quality analysis in the Draft SEIR is somehow deficient. In response to the quotations from Evaluation of Health Effects of Landfill Gas Emissions on the Los Angeles Basin, the proposed project would not emit LFG. Instead, it would combust LFG provided by SCLF, pursuant to SCAQMD Rule 1150.1. Consequently, the U.S. EPA reference is not relevant to the proposed project.

The commenter has stated that, according to a recent study, on site monitoring at the landfill and the school exceeded state standards more than one out of every five days, and at the landfill almost one out of every two days. They go on to state that this is before the expansion moved operations back to the City and directly next to the community. The most recent air quality study for the landfill that is publically available can be found at [http://cityplanning.lacity.org/sunshinelandfill/16thQtrRptSept2011\\_Nov2011.pdf](http://cityplanning.lacity.org/sunshinelandfill/16thQtrRptSept2011_Nov2011.pdf), and represents monitoring conducted from September 1, 2011 to November 20, 2011 and was published in January 2012. This report indicates that the state standard for PM10 was exceeded 13 percent of the time at the school and 22 percent of the time at the landfill. The report also states that most recent quarterly concentrations at the school are about average for those recorded in the preceding years. According to the report, the exceedances are the result of high winds entraining particles of crustal materials. Operation of the project will not expose additional crustal materials for entrainment in the air.

As discussed in Section 4.2.3.5 of the Final SEIR and Response 4-2 of this document, the localized air quality impacts from NO<sub>x</sub> and CO concentrations from the proposed project would be lower than those identified in the Draft SEIR, which were already lower than current BACT requirements, and localized NO<sub>x</sub>, CO, PM10, and PM2.5 impacts from the proposed project would all be less than significant, that is would not exceed applicable significance thresholds at the sensitive receptor (as discussed in Subsection 4.2.3.6). This determination was based on air dispersion modeling using appropriate models recommended by the SCAQMD, CARB, and U.S. EPA, to calculate ambient air concentrations from the proposed project sources. The methodology and modeling parameters are included in Appendix E of the Final SEIR.

The U.S. EPA reference cited in the comment refers to potential human health effects of LFG emissions. As noted above, the proposed project would not emit LFG. Instead, it would combust LFG provided by SCLF, pursuant to SCAQMD Rule 1150.1. Consequently, the U.S. EPA reference is not relevant to the proposed project.

#### **RESPONSE 13B-7**

The comment expresses concern about operational noise impacts to both sensitive human receptors and also biological non-human receptors and objects to relying on background noise as part of the noise impact analysis. Please refer to Response 6-6 for a comprehensive discussion of noise impacts from the proposed project.

**RESPONSE 13B-8**

This comment includes a quote from the Draft SEIR, which states that the cumulative impacts for CO, PM<sub>2.5</sub> and GHG emissions are all considered to be significant and unavoidable. As discussed in Response 4-2 and Section 4.2.3.5 of the Final SEIR, operational CO emission impacts are no longer significant. Response 4-2 provides further discussion of the determination of significance for GHG emissions. Although no measures to further reduce PM<sub>2.5</sub> emissions were identified (see Table 4-8 of the Final SEIR) regionally, PM<sub>2.5</sub> emissions would be somewhat reduced by the use of PM<sub>10</sub> offsets, as PM<sub>10</sub> offsets primarily come from sources of combustion (the bulk of PM<sub>10</sub> from combustion sources is PM<sub>2.5</sub>). See also response 13B-9 for additional information on PM emissions from the proposed project.

**RESPONSE 13B-9**

This comment states that the totals for the PM<sub>2.5</sub> and PM<sub>10</sub> from the proposed project and related projects were not included in the cumulative impacts discussion in the Draft SEIR. There is no quantitative total of mass emission rates for PM<sub>2.5</sub> and PM<sub>10</sub> because emissions data were not available for all cumulatively related projects. The mass emission rates for PM<sub>2.5</sub> from the proposed project were concluded to be significant and, therefore, cumulatively considerable, as is presented in Section 5.3.2 of the Draft SEIR. As a reminder, the 1999 Final SEIR for the SCLF analyzed emission impacts from five flares at peak production of LFG. Emissions from all equipment subject to permit conditions have previously been offset pursuant to federal offset requirements, so, in effect, mass emissions of all nonattainment pollutants and nonattainment pollutant precursors, as of 1999 including PM<sub>10</sub>, have been or would be offset to zero for the existing landfill, as an essential public service as indicated in Section 5.3.2. Therefore, there would be no regional contribution of PM<sub>10</sub> from the existing landfill.

With regard to PM<sub>2.5</sub>, the national ambient air quality standard was first promulgated in 1997. Because PM<sub>2.5</sub> is a fraction of PM<sub>10</sub>, no approved methodologies for analyzing PM<sub>2.5</sub> became available until 2006. As a result, PM<sub>2.5</sub> impacts were not required to be analyzed in the 1999 Final SEIR. It is for this reason PM<sub>2.5</sub> emission impacts are not available from the SCLF. PM<sub>2.5</sub> emissions for the SCLF were not created because, pursuant to CEQA case law<sup>19</sup>, it is presumed that previously prepared CEQA documents, even if challenged, are adequate. Therefore, lead agencies relying on that document must presume that the document is adequate. Further, lead agencies are not required to prepare additional analyses on the project analyzed in the previously prepared CEQA document.

It should be noted, however, that emission reduction credits used to offset PM<sub>10</sub> are derived from over control of PM<sub>10</sub> emissions from stationary source equipment or equipment shutdowns. In the case of over control of PM<sub>10</sub> emissions, the same technology used to control PM<sub>10</sub> emissions is used to control PM<sub>2.5</sub> emissions. Since the PM<sub>2.5</sub> fraction of PM<sub>10</sub> emissions from stationary sources is as high as 99 percent for combustion equipment, in a sense, the application of PM<sub>10</sub> emission reduction credits also serves to at least partially offset PM<sub>2.5</sub> emissions. Similarly,

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<sup>19</sup> *City of Redding v. Shasta County Local Agency Formation Commission*, 209 Cal. App. 3d 1169 (3d Dist. 1989)

emission reduction credits derived from equipment shutdowns follow the same logic, i.e., eliminating PM<sub>10</sub> emissions also usually eliminates PM<sub>2.5</sub> emissions. Because the district is nonattainment for PM<sub>2.5</sub>, the SCAQMD has taken a more conservative approach by requiring PM<sub>2.5</sub> offsets in addition to PM<sub>10</sub> offsets for major stationary sources that generate 100 tons per year or more of PM<sub>2.5</sub> emissions.

In addition, the comment states that there was no risk assessment performed for the cumulative impacts of the gas to be collected and destroyed at the proposed project and the SCLF at maximum capacity. That comment is incorrect. Table 5-5 of Section 5.3.3 presents a description of the cumulative potential risks from gas collected and destroyed from the proposed project and SCLF.

Additionally, this comment states that the proposed project should not be considered a new project. As already noted, the 1999 Final SEIR prepared for SCLF that was certified in December 1999, analyzed emission impacts from five flares at peak production of LFG. In addition, that document also contemplated that some of the LFG would be diverted from flaring to LFG to energy projects such as the proposed SGPREP. The currently proposed project would implement an LFG to energy project as contemplated in the 1999 Final SEIR and is undergoing appropriate CEQA analysis. Because the proposed project is considered a modification to project analyzed in the 1999 Final SEIR, the environmental review for the proposed project has been prepared as a *Subsequent* Environmental Impact Report to the 1999 Final SEIR, as discussed in Section 2.5 of the Final SEIR. At the time the Draft SEIR was prepared there were only three flares operating at the SCLF. Since February 32012, four flares have been in operation. Even with the installation of new flare #9, the proposed project is considered within the context of the existing City/County Landfill project. However, the analysis in the Draft SEIR took a more conservative approach by treating emissions from SGPREP greater than the baseline as new emissions, subject to federal offset requirements, rather than simply reporting that impacts from the LFG to energy project were previously addressed in the 1999 Final SEIR.

Lastly, this comment states that it is inconsistent with the SCAQMD's goals of reducing pollution to replace the existing control technology with a less efficient technology. The proposed project complies with all applicable SCAQMD rules and regulations. For example, Rule 1150.1 – Control of Gaseous Emissions from Municipal Solid Waste Landfills, specifically identifies gas turbine devices used to convert LFG to energy, such as those included as part of the SGPREP, as appropriate LFG control devices. As indicated in Chapter 2 of the Draft SEIR, the gas turbines included as part of the proposed project are subject to the BACT requirements in Rule 1303 – Requirements, which requires implementing control equipment with the lowest emissions achieved in practice. As noted in the technology survey performed for the proposed project (Attachment A to this Appendix), emissions from the proposed SGPREP project are substantially less than required under current BACT provisions.

In addition to complying with all applicable rules and regulations, the proposed project is consistent with the goals and policies of the *AQMD Air Quality-Related Energy Policy* (Energy Policy) adopted by the SCAQMD Governing Board in September 2011. For example, Energy Policy #6 promotes renewable electricity generation to reduce reliance on energy imports or central power plants and to minimize the air quality, climate and cross-media environmental impacts of traditional power generation. LFG is considered to be a renewable fuel so the SGPREP, an LFG to energy project, is consistent with Policy #6. Similarly, Energy Policy



Action #5 directs the SCAQMD Governing Board staff to proceed with further development and demonstration of low emitting biogas technologies producing clean energy sources, including electricity. Since LFG is considered a biogas, the proposed SGPREP is consistent with Energy Policy Action #5. Lastly, the proposed project is consistent with the goals identified in the State of California's Renewable Portfolio Standard.

It is important to consider the benefits of the proposed project in addition to the significant PM<sub>2.5</sub> and GHG emissions. As discussed in Section 5.3.2 of the Draft SEIR, the proposed project would utilize LFG for energy production rather than flaring it, which has no beneficial use. Additionally, some percentage of electricity generated by SGPREP may displace electrical generation from higher emitting fossil fueled generation facilities in the area, at least in the near term, and some percentage would be expected to accommodate population growth. In the near term the proposed SGPREP could reduce the need to dispatch electricity from fossil fuel generated power plants. To the extent that the proposed project displaces electricity generation in the region and electricity generation emissions are less than utility power generating emissions on a megawatt to megawatt basis, from an area-wide perspective, the proposed project could result in a net decrease in overall emissions of criteria pollutants, which would be a beneficial cumulative air quality impact of the proposed project in the near term. However, no credit was taken for offsetting emissions from higher emitting fossil fueled generation facilities in the area.

Review of other cumulatively related projects, including the newly identified projects in Subsection 5.2.2, indicated that they would not create significant adverse operational air quality impacts. As discussed in the Final SEIR, operational NO<sub>x</sub>, SO<sub>x</sub>, CO, PM<sub>10</sub> and VOC emissions would not exceed the applicable operational project-specific thresholds. In addition, the comparison conducted in the Draft SEIR compares potential maximum emissions (permit limits) with actual emissions. Actual emissions from the proposed project would be lower. Operational air quality impacts from PM<sub>2.5</sub> would exceed project-specific thresholds and would be cumulatively significant. GHG emissions from the proposed project were also concluded to be cumulatively significant, even though GHG emissions from the proposed SGPREP at peak LFG production would be similar to LFG emissions if the proposed project were not built and SCLF continued to flare the LFG (see Final SEIR Chapter 6 – Project Alternatives). Additionally, with the implementation of new mitigation measure GHG-3, all construction GHG emissions are expected to be mitigated through funding provided by the project proponent to the SCAQMD's Rule 2702 – Greenhouse Gas Reduction Program.

### **RESPONSE 13B-10**

This comment states agreement with the statement that the No Project Alternative is the environmentally superior alternative. The No Project Alternative would eliminate many of the impacts identified in the Draft SEIR. However, as noted in response to Comment No. 6-1, the large majority of the increase in GHG emissions reported in the Draft SEIR over baseline conditions results from the increased LFG produced by the SCLF. Increasing LFG at SCLF is also expected to increase criteria pollutant emissions because the SCLF will still be subject to SCAQMD Rule 1150.1, which requires collection and control of LFG at landfills. As a result, under the No Project Alternative, LFG would continue to be flared without the benefit of energy production. LFG to energy projects are one component of California's Renewable Portfolio Standard, which is intended to reduce reliance on non-renewable fossil fuels, a large amount of which must be imported from overseas, and reduce GHG emissions. Thus, the selection of the

No Project Alternative would also result in increased emissions compared to the baseline and a missed opportunity to generate electricity from a renewable energy source.

Additionally, the comment includes an assertion that there has been a failure to consider alternative technologies, such as LFG to CNG or LNG. Projects that would use LFG to produce CNG or LNG are not simply alternative technologies, they are different projects outside the scope of the proposed project. The decision on what type of project to pursue is a business decision and the SCAQMD has no authority to require a project proponent to pursue one type of business project over another. The SCAQMD's authority is to promulgate and enforce air quality rules and regulations. As long as a proposed project submitted to the SCAQMD complies with all applicable regulatory requirements, including CEQA, then state law requires the SCAQMD to approve the air quality permit applications. As proposed, the SGPREP would comply with all relevant regulatory requirements. With regard to alternative air pollution control technologies, as discussed in detail in Response 4-3, SCAQMD requested that SGP conduct a study to evaluate alternative control devices to identify further emissions controls that may be feasible for the proposed project. No feasible control technologies were identified during this study that would further reduce emissions. In many cases, the technologies evaluated would create new environmental impacts not evaluated in the Draft SEIR or make existing significant adverse impacts substantially worse.

#### **RESPONSE 13C-1**

This June 20, 2011 comment letter on the Draft SEIR from Ms. Anne Ziliak was previously submitted to the SCAQMD during the public review period and is addressed in Responses to Comment Letter No. 4.

#### **RESPONSE 13D-1**

This February 10, 2012 letter from Mr. Jay Chen to Mr. Anthony Bertrand summarizes the evaluation of the existing LFG control system and the STAOA. This comment letter does not pertain to the CEQA process for the proposed project and requires no further response.

#### **RESPONSE 13E-1**

This June 23, 2012 comment letter on the Draft SEIR from Mr. Wayde Hunter to Mr. Jeffery Inabinet was previously submitted to SCAQMD during the public review period and is addressed in Responses to Comment to Letter No. 6.

#### **RESPONSE 13F-1**

This 2012 article from California Watch, *Southern Californians at Risk of Death from Air Pollution, EPA Says*, argues that Southern Californians are among the highest risk of death from particulate and ozone air pollution. The SCAQMD is aware of the health effects of particulate matter and ozone. The 2007 Air Quality Management Plan (AQMP) is the SCAQMD's blueprint for attaining state and national standards for nonattainment pollutants (which are health-based standards), primarily particulates and ozone. As indicated in Subsection 4.2.3.1 of the Final SEIR, because the proposed project would comply with applicable SCAQMD rules and regulations, it is consistent with implementation of the AQMP and, therefore, would not hinder progress in attaining the standards for nonattainment pollutants.

The article also discusses potential health effects of exposure to LFG. The proposed project would not emit LFG. Instead, it would combust LFG provided by SCLF, pursuant to SCAQMD Rule 1150.1. Consequently, the U.S. EPA reference is not relevant to the proposed project. No further response is required.

**RESPONSE 13G-1**

This 2012 article by Fann, et al., from *Risk Analysis* Volume 32, Number 1, 2012, discusses the public health burden associated with ambient PM<sub>2.5</sub> and ozone using national air quality data from 2005 to 2007. This article is unrelated to impacts analyzed for the proposed SGPREP and, therefore, does not require a response.

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February 29, 2012

South Coast Air Quality Management District  
Mr. Jeffrey Inabinet  
CEQA Section, Planning, Rule Development and Area Sources  
21865 Copley Drive  
Diamond Bar, CA 91765-4178

**RE:** Comments upon Draft Subsequent Environmental Impact Report for the Sunshine Gas Producers Renewable Energy Project, SCH No. 9204153, Sunshine Canyon Landfill

Dear Mr. Inabinet:

I write respectfully to submit the further comments of my client, the North Valley Coalition, on the above-referenced Draft Subsequent Environmental Impact Report. The DSEIR is intended as an analysis of a proposed landfill gas energy project at Sunshine Canyon Landfill near Granada Hills, California.

14-1

The EIR is inadequate in several areas. In general it fails to properly evaluate the baseline conditions at the landfill. The stench of landfill gas from the landfill is a horrendous environmental condition for those who live around the landfill, including the members of the North Valley Coalition.

As is known to the Air Quality Management District, landfill gas has generated odors many times that of other landfills, resulting in between 12 and 15 times the odor complaints of other landfills, according to the SCAQMD's December 7, 2011 task force summary. Of all odor complaints received by the AQMD, 20 percent are from the Sunshine Canyon Landfill.

14-2

This is not a new situation, but one which AQMD has recognized at least since 2009. Yet, AQMD has accepted a draft environmental impact report for the proposed energy project which ignores this very significant environmental impact. It fails to describe how the proposed project will potentially worsen this already acute condition.

According to AQMD's own experts, the landfill gas fired turbines to be used by the project run only eight hours per day, with less emissions efficiency than the existing flares. Any efforts to bring the impact of odors below the currently significant level will thus be thwarted or delayed by replacing flares with turbines.

Nor does the EIR address that the AQMD issued an amended Abatement Order for Odors on December 3, 2011, now being instituted, which includes among other things: another flare, 70 more wells, new headers and new piping. The EIR fails to analyze the energy projects' effect on these efforts.

14-3

The potentially significant adverse environmental impact of the failure to integrate the gas collection with the energy project is well documented in AQMD's own records. Instead of dealing with the real current conditions, the project EIR analyzes as current conditions only those conditions from 2007-2009. DSEIR page 4-3.

The DSEIR discussion of odors at section 4.2.3.8, page 4-26, fails to analyze any of these factors in concluding that the project odor impacts would not be significant.

The EIR avoids these issues by stating, at page 3-14: "Landfill gas control and destruction devices are not considered to be a source of odors at landfills." According to the DSEIR then: landfill gas control doesn't create odors, landfills do.


14-4

But that is not the point here. The landfill gas odors are indisputably a significant environmental impact. The landfill gas control, existing and planned, was ordered by AQMD to control the impacts. The energy project interferes with that effort by resulting in greater odor.

The Draft Supplemental Environmental Impact Report should be rejected.

14-5

Thank you for your attention to this matter.

Sincerely,  
  
KELLY T. SMITH

**COMMENT LETTER NO. 14****KELLY T. SMITH****FEBRUARY 29, 2012****RESPONSE 14-1**

The comment notes that the Draft SEIR analyzes the LFGTE project at the SCLF. No response is required.

**RESPONSE 14-2**

SCAQMD staff disagrees with the opinion expressed in this comment that the Draft SEIR is inadequate. The comment states that the Draft SEIR fails to properly evaluate the baseline conditions at the landfill. As required by CEQA Guidelines §15125(a), “An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective.” Baseline conditions (existing setting), for those environmental topics that may be adversely affected by the proposed project, are clearly identified in Chapter 3. Further, “[t]his environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.” This means that once the baseline has been established, impacts from a proposed project are based on changes from the baseline conditions caused by the project during full operation. Any changes from the baseline are compared to relevant significance thresholds to determine whether or not the changes from baseline conditions are significant. The Draft SEIR followed this approach and, therefore, is consistent with the CEQA statutes and guidelines for analyzing impacts from a proposed project.

This comment regarding the odors associated with the SCLF was previously submitted and a response was prepared. Please see Response 11-2.

This commenter states that the turbines associated with the proposed project would operate only eight hours per day and would, therefore, have “less emissions efficiency than the existing flares.” This statement is not correct; the LFG turbines would operate 24 hours per day. The existing flares (as well as new Flare 9), would also be maintained and would operate during any times that the turbines are not operating as a result of maintenance, and would also flare any collected gas in excess of the turbines’ capacity.

**RESPONSE 14-3**

With regard to the STAOA, please see response to Comment 11-2.

It is assumed that the reference to “current conditions” means baseline or existing setting. With regard to the reference to conditions from 2007-2009, this refers to the data collection period used to establish the baseline (normal existing operations of the SCLF). As stated in CEQA Guidelines § 15125(a), “An EIR must include a description of the physical environmental

conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to an understanding of the significant effects of the proposed project and its alternatives.” It is generally recognized that the physical environmental conditions include both the natural environment and the man-made or built environment (Guide to the California Environmental Quality Act, Remy, Thomas, Moose and Manley, 1999, p. 163). Just as there are cycles and fluctuations over time in the natural environment that must be reflected in the baseline (e.g., seasonal variations, drought cycles, 100-year floods, etc.), so too there are temporal variations and cycles in the man-made or built environment (e.g., seasonal cycles in agriculture and tourism, business cycles, etc.). Because, production of LFG varies over time, the baseline was established from direct measurements taken for years 2007 through 2009 for the existing three enclosed SCLF flares (see Chapter 3, Subsection 3.2.1.5). This approach is consistent with CEQA requirements and CEQA case law for establishing the baseline.

#### **RESPONSE 14-4**

The comment states that the Draft SEIR discussion of odors fails to analyze the history of odors at the landfill when it concludes that the project odor impacts would not be significant. Please see responses to comments 11-2, 14-2, 14-3.

The comment goes on to say that the EIR avoids odor issues by stating that landfill gas control devices are not considered to be a source of odors at landfills. That statement is correct. The sources of odor highlighted in the Draft SEIR include LFG that evades capture by the LFG collection system, and operational issues at the SCLF dealing with waste transport and placement. The proposed project would be required to comply with Rule 1150.1 – Control of Gaseous Emissions from Municipal Solid Waste Landfills, which specifically identifies gas turbine devices used to convert LFG to energy, such as those included as part of the SGPREP, as appropriate LFG control devices. Further, pursuant to SCAQMD Rule 1150.1, LFG control devices (e.g., flares or turbines) are required to control non-methane organic compounds by at least 98 percent and methane by 99 percent. There is no indication in the public record that the destruction of LFG adds to any existing odor issues and the commenter has not provided any data or other information to support this opinion. In fact, contrary to the assertion that the gas turbines contribute to existing odors at the SCLF, the destruction of landfill gas transforms odoriferous compounds, such as hydrogen sulfide, mercaptans and ammonia-based compounds into compounds that have little to no odor, such as oxides of sulfur and nitrogen. Accordingly, LFG destruction devices, such as the flares that currently exist at the landfill and the proposed turbines, control odors collected from the landfill. The substitution of one LFG destruction device (turbines) for another (flares) will have no impact on odors at the landfill. Hence, the impacts for odors are less than significant. Accordingly, contrary to the assertion in this comment, the energy project does not interfere with the existing and planned LFG control ordered by SCAQMD and will not result in significant odor impacts.



**RESPONSE 14-5**

The comment states that the Draft SEIR should be rejected. The decision on whether the Final SEIR should be certified rests with the decision making body, which is required to consider the Final SEIR, including comments and responses to comments, before making a decision on whether to certify the CEQA document.

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February 29, 2012

South Coast Air Quality Management District

Mr. Gaurang Rawal

Air Quality Engineer

Engineering and Compliance, South Coast Air Quality Management District

21865 Copley Drive

Diamond Bar, CA 91765-4182

**RE: NOTICE OF INTENT TO ISSUE "PERMIT TO CONSTRUCT" PURSUANT TO RULE 212 AND TITLE V PERMIT PURSUANT TO RULE 3006: SUNSHINE GAS PRODUCERS, LLC. (Facility ID 139938): 480567 through 480572, 482510 AND 480628: 14747 San Fernando Road (at Sunshine Canyon Landfill), Sylmar, CA**

Mr. Mr. Gaurang Rawal :

Thank you for the opportunity to comment on the Draft Subsequent Environmental Impact Report.

Members of the GHNNC Planning and Land Use Management (PLUM) Committee discussed changes to the above referenced project on Monday, February 27, 2012 with the representative for the Sunshine Gas Producers Renewable Energy Project. We were happy to hear that the some of the emissions could be reduced. However, the PM2.5 emissions which are especially detrimental to our stakeholders could still not be reduced. Offset pollution credits will not mitigate the impact to our stakeholders and at this time no meaningful mitigation has been proposed.

15-1

For the protection of our stakeholders the we can not support this project as revised. On February 27, 2012 at a duly noticed meeting the Granada Hills North Neighborhood Council voted to resubmit our original letter of opposition dated 6/20/2011, and to submit a new letter to the SCAQMD in response to their Notice of Intent To Issue a "Permit to Construct" to Sunshine Gas Producers LLC for their Gas-to-Energy project at Sunshine Canyon Landfill, reaffirming our continued opposition to the project unless it results in a reduction of local pollutants without the use of offset pollution credits.

15-2

Respectfully,

Anne Ziliak, Planning and Land Use Chair, Granada Hills North Neighborhood Council  
For Kim Thompson, President, Granada Hills North Neighborhood Council

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June 20, 2011

South Coast Air Quality Management District  
Mr. Jeffrey Inabinet  
c/o CEQA Section, Planning, Rule Development and Area Sources  
21865 Copley Drive  
Diamond Bar, CA 91765-4178

RE: Draft Subsequent Environmental Impact Report for The Sunshine Gas Producers Renewable Energy Project (SCH No. 9204153) at Sunshine Canyon Landfill

Mr. Jeffrey Inabinet:

Thank you for the opportunity to comment on the Draft Subsequent Environmental Impact Report.

The Granada Hills North Neighborhood Council (GHNNC) was certified by the City of Los Angeles on September 10, 2002, and has had a duly elected and installed Board of Directors since March 31, 2003. The area it represents and services is bounded by the Los Angeles City/County line and I-5 (Golden State Freeway) to the north, the 405 (San Diego Freeway) to the east, the 118 (Ronald Reagan Freeway) to the south, and to Aliso Canyon in the west. It is composed of 3 districts. District 1 - Sunshine Canyon Landfill, District 2 - DWP/MWD, and District 3 - All Residential Areas to the south encompassing approximately 28,600 stakeholders.

The GHNNC Planning and Land Use Management (PLUM) Committee discussed the above referenced project on Monday, May 16, 2011. For the protection of our stakeholders the GHNNC PLUM recommended that our Board oppose this project as proposed. Based on the information included in the document that stated that: "compared to the existing environmental setting, the proposed project would increase GHG emissions and would exceed the SCAQMD significant threshold." We were faced with a choice of a project that might have been a worthy project versus one with excessive CO and PM2.5 emissions which are especially detrimental to our stakeholders, that could not even be mitigated with the use of pollution credits (which we also oppose), and which furthered the degradation of the local environment and the air we breathe.

At a duly noticed meeting on May 23, 2011 the GHNNC Board agreed with the PLUM recommendation to oppose The Sunshine Gas Producers Renewable Energy Project (SCH No. 9204153) at Sunshine Canyon Landfill unless it results in a reduction of local pollution, without the use of offset of pollution credits. However, if this project is approved we must insist that the most efficient equipment available be used, that an analysis of the use of additional equipment such as scrubbers be included to make sure that this purported beneficial use does not make our existing air quality any worse than it is.

Respectfully,

Anne Ziliak, Planning and Land Use Chair, Granada Hills North Neighborhood Council  
For Kim Thompson, President, Granada Hills North Neighborhood Council

15-3

**COMMENT LETTER NO. 15**  
**GRANADA HILLS NORTH NEIGHBORHOOD COUNCIL**  
**FEBRUARY 29, 2012**

**RESPONSE 15-1**

The comment acknowledges the decrease in some emissions over that described in the Draft SEIR, and also notes that the revised project does not decrease PM<sub>2.5</sub> from that described in the Draft SEIR. With regard to the effects of PM<sub>2.5</sub> on residents in the vicinity of the SCLF, based on the dispersion modeling, concentrations of PM<sub>10</sub> at the nearest sensitive receptors were estimated and presented in Table 4-9, Results of Criteria Pollutants Air Quality Modeling, of the Draft SEIR. As shown in Table 4-9, localized PM<sub>10</sub> air quality impacts to sensitive receptors were concluded to be less than significant. Since all PM<sub>2.5</sub> is a fraction of PM<sub>10</sub>, the PM<sub>10</sub> analysis provides an accurate surrogate for a PM<sub>2.5</sub> analysis. In addition, because the localized air quality significance threshold for PM<sub>2.5</sub> is the same as the localized air quality significance threshold for PM<sub>10</sub>, if PM<sub>10</sub> emissions do not exceed the significance threshold at the sensitive receptor, then PM<sub>2.5</sub> emissions would not exceed the significance threshold, at the sensitive receptor. A technology survey was performed (Attachment A to this appendix) in an attempt to further reduce emissions from the project. Because emissions from the proposed project are substantially lower than currently required by SCAQMD BACT requirements, no technologies were identified that could further reduce emissions from the proposed project that would not otherwise create new significant adverse impacts or substantially worsen existing adverse impacts.

**RESPONSE 15-2**

The comment notes that GHNNC issued a letter to affirm their continued opposition to the project. No further response is required.

**RESPONSE 15-3**

This comment consists of a letter previously submitted to the SCAQMD, which is currently Comment Letter No. 4. Please see the responses to that comment letter.

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**ATTACHMENT A**

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**AIR EMISSIONS REDUCTION ASSESSMENT FOR SUNSHINE CANYON LFGTE PLANT**



Air Emissions Reduction  
Assessment  
For Sunshine Canyon LFGTE Plant

Prepared for:  
**Sunshine Gas Producers**  
Ann Arbor, MI

Prepared by:  
**ENVIRON International Corporation**  
San Francisco, California

Date:  
**March 2012**

Project Number:  
**03-26912B**





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## Executive Summary

Emission control requirements for the Sunshine Gas Producers (SGP) landfill gas to energy (LFGTE) project analyzed in the May 2011 Draft Subsequent Environmental Impact Report (SEIR), resulted in lower emissions than currently established best available control technology (BACT) requires. In response to comments received on the May 2011 Draft SEIR emissions controls beyond BACT and further emission reductions over and above those committed to in the recent permit application and Draft SEIR were reviewed for the SGP LFGTE) project to evaluate the possibility that the emissions could be reduced even further from the current design, which includes 40% lower nitrogen oxides (NO<sub>x</sub>) and 69% lower carbon monoxide (CO) emissions than current BACT levels. SGP contacted the turbine manufacturer and was able to obtain manufacturer guarantees for even lower emissions from the turbines than evaluated in the May 2011 Draft SEIR. Additional controls that were considered to be the most likely technologies to achieve further emission reductions from the proposed project are considered to be Selective Catalytic Reduction (SCR) for NO<sub>x</sub> control, combined with an oxidation catalyst for CO and volatile organic compound (VOC) control. However, a thorough technical review reveals that there are many additional impacts and technical challenges associated with the use of an SCR/CO system, which have precluded further consideration of the system for SGP's operations including: the introduction of ammonia emissions, secondary PM<sub>2.5</sub> formation associated with SCR ammonia emissions; potential increase in odors associated with ammonia; potential increases in solid and hazardous waste generation and disposal; and potential increase in truck traffic. These potential adverse environmental impacts are outside the scope of the environmental analysis in the May 2011 Draft EIR. There is no demonstrated or achieved in practice landfill gas-fired turbine with or without SCR and/or an oxidation catalyst that has lower sustained CO or NO<sub>x</sub> emissions than the proposed SGP project. Lastly, because of the very limited space in the SGP site, there is no room to install SCR with (or without) an oxidation catalyst. Additional controls for PM emissions were found to be technically infeasible and/or would not materially reduce PM emissions from this project. It is not feasible for SGP to materially reduce the emissions below the currently proposed revised emission levels identified in the Final SEIR.



# 1 Introduction

The Sunshine Gas Producers, L.L.C. (SGP) has proposed a project to utilize landfill gas (LFG) generated at the Sunshine Canyon Landfill (SCLF) to produce renewable electricity for use in California. The proposed landfill gas to energy (LFGTE) project includes installation of five Solar Mercury 50 turbine-generators, and associated LFG processing and conditioning equipment. The proposed LFGTE project is undergoing environmental analysis pursuant to the California Environmental Quality Act (CEQA).

A Draft Subsequent Environmental Impact Report for the Sunshine Gas Producers Renewable Energy Project was released for public review in May 2011 (May 2011 Draft SEIR). Emission control requirements for the Sunshine Gas Producers (SGP) landfill gas to energy (LFGTE) project analyzed in the May 2011 Draft SEIR, produced lower emissions than currently established best available control technology (BACT) requires. In response to comments received on the May 2011 Draft SEIR, the SCAQMD requested that SGP perform a technology survey to evaluate whether additional emission reductions are achievable for the proposed project beyond those already accounted for in the present design, and beyond those required by the United States Environmental Protection Agency (EPA) and SCAQMD rules and regulations. The intent of the technology survey was to identify potential strategies to achieve further emission reductions from the proposed project, without having to completely redefine and reengineer the project design, which could entail other environmental impacts not evaluated in the May 2011 Draft SEIR or cause substantial delays initiating the proposed project.

SGP met with the turbine manufacturer and was able to obtain guarantees for further emission reductions beyond BACT requirements and the emission levels analyzed in the May 2011 Draft SEIR. As a result, SGP has prepared and submitted a Permit to Construct (P/C) application to the South Coast Air Quality Management District (SCAQMD) for the construction of this equipment with modifications based on the new manufacturer guarantees, which demonstrate that the project goes beyond BACT requirements and includes 40% lower NO<sub>x</sub> and 69% lower CO emissions in the latest P/C application beyond those required by SCAQMD regulations, included in the original application, and analyzed in the May 2011 Draft SEIR.

In addition to examining the potential for add-on controls where such controls are not required by the rules, alternatives to the controls originally proposed and recently modified, as well as alternative operating practices, were investigated. SGP and ENVIRON have based their assessment of whether there is potential to achieve greater emissions reductions on the following: whether or not additional significant adverse environmental impacts may be generated, existing significant adverse impacts are made substantially worse, and/or technical feasibility of alternative emission control measures given the SGP basic equipment and site space availability.

Obtaining manufacturer guarantees for lower emissions than originally analyzed in the May 2011 Draft SEIR does not constitute substantial new information that would require recirculation of the Draft SEIR (CEQA Guidelines §15088.5) for the following reasons. There are no changes to the actual equipment that was analyzed in the May 2011 SEIR. The new manufacturer guarantees are based on data that were not previously available that shows that the Solar Mercury 50 turbine-generators evaluated in the May 2011 Draft SEIR can sustain operation at

lower emission levels: 40% lower for NO<sub>x</sub> and 69% lower for CO. Based on the new manufacturer guarantees, operational CO emissions would no longer be significant. These lower NO<sub>x</sub> and CO levels will be included as permit conditions that would be enforceable by SCAQMD inspectors.

In addition, to the new manufacturer guarantees identified above, SGP evaluated other available air pollution control devices (APCD) that are considered to be BACT for a similar type of turbine operating on LFG or an emission control or process modification that may be feasible for SGP to incorporate into the LFGTE project. The technology survey focused primarily on potential pollutant reductions for NO<sub>x</sub> and CO. The potential for further emission reductions from the following pollutants was also considered: reactive organic gases (ROG, equivalently identified as volatile organic compounds, or VOCs, in this document), particulate matter (PM; PM<sub>10</sub> and PM<sub>2.5</sub> are identical for this project and thus, throughout this report, are referred to as PM), and sulfur oxides (SO<sub>x</sub>) emissions. To determine the feasibility of installing APCDs to obtain further emission reductions from the proposed project, the following factors were also considered: potential secondary environmental impacts generated by the APCDs and surveyed and physical constraints of the proposed project site. In general, the cost of installation and economic feasibility of alternative technologies for the proposed project were not the primary considerations when determining feasibility of the APCDs.

## 2 Sunshine Gas Producers Project

As analyzed in the May 2011 Draft SEIR, SGP proposes to construct and operate five Solar Mercury 50 turbines which would be fueled exclusively by LFG received from the existing collection system at the SCLF. The plant design also includes a siloxane removal system and associated enclosed flare that would combust the siloxane removal system regeneration air.

### 2.1 Proposed Project Emissions

Emissions from the SGP project include combustion emissions from operation of the five Solar Mercury 50 turbines and the siloxane regeneration flare. Solar is one of the leading manufacturers of small to mid-size turbines (1 – 20 MW). A survey of emission rates for various Solar turbines that use LFG as a combustion fuel is shown below (Table 1). Solar Mercury 50 turbines have substantially lower emissions than other turbines of a similar size. After receiving comments on the Draft SEIR about emissions from the facility, at SCAQMD staff’s request DTE returned to the manufacturer to find if the manufacturer would guarantee lower emission rates for the turbines. As a result of recent test data, Solar has guaranteed emission rates for SGP far lower than any LFGTE facility currently operating in SCAQMD, and those new lower emissions rates are reflected in the Final SEIR and the revised P/C application.

<b>Turbine Model</b>	<b>Power Output (MW)</b>	<b>NO<sub>x</sub> (ppm)</b>	<b>CO (ppm)</b>
Mercury 50	4.6	15	25
Mercury 50 (before revision)	4.6	25	65
Centaur 40	3.5	42	250
Centaur 50	4.6	42	200
Taurus 60	5.7	42	150
Taurus 70	7.5	80	100
Mars 100	11.4	72	100
Titan 130	15.0	80	100

Notes:  
<sup>1</sup> Solar Turbines Incorporated, *PIL 173 Emissions Signature for Landfill and Digester Gas Fuels*, February 3, 2011

One important issue related to equipment life and use of air pollution controls on LFG-fired equipment is the presence of siloxanes in collected LFG. Siloxanes present in the LFG are converted to silicon dioxide (SiO<sub>2</sub>) particulates when combusted. These particulates plate out almost immediately upon being formed on any nearby surface. In turbines, the deposits have an adverse impact on combustion efficiency, resulting in increased emissions, as well as degradation of the equipment. In order to extend the life of the turbine recuperator by preventing coating, the siloxane concentration in the LFG is reduced to less than 5.0 mg Si/m<sup>3</sup> using a regenerating siloxane removal system with a dedicated flare. The different types and concentrations of siloxanes vary from one landfill to another and are a function of the waste disposed of at the landfill. At each landfill, the siloxane concentrations can also vary over time depending on the decomposition of particular waste types, especially at large landfills. In



general, siloxane levels in landfills are on the rise due to these chemicals gaining wider use and acceptance in the marketplace.<sup>1</sup> Dow Corning, for instance, shows over 10,000 uses for siloxanes in the industry which is predicted to increase by ten-fold in the next five years.<sup>2</sup> Appendix A provides a summary of LFG siloxane concentration data from previous tests of SCLF's gas which shows recent silica concentration sampling results of 47 mg/m<sup>3</sup>. In addition, the proposed siloxane regenerating system is expected to achieve 90% removal of VOCs and H<sub>2</sub>S (which when combusted converts to SO<sub>2</sub>) from the LFG.

The emission rates or concentrations proposed for the turbines and siloxane regeneration flare are listed in Table 2. The project emission rates are based on emissions limits used for permitting purposes as an upper bound and to provide a conservative analysis in the SEIR. In order to prevent exceedances of the permitted emission rates, the actual operational emissions rates for the proposed project would be lower than those listed in Table 2. These proposed emission rates account for additional emission reductions proposed in the June 2009 permit application by SGP compared to earlier versions of the application which included higher emission rates of 25 ppm NO<sub>x</sub>, 80 ppm CO, and 0.021 lb/MMBtu PM<sub>10</sub>. Due to response to comments received on the May 2011 Draft SEIR, SGP worked with Solar to obtain manufacturer guarantees of lower emission rates for the proposed project's turbines than what was originally analyzed in the May 2011 Draft SEIR or required by BACT or other SCAQMD rule and regulation requirements.

<b>Table 2: Proposed Project Emission Limits</b>		
<b>Pollutant</b>	<b>Proposed Project Emission Limits</b>	
	<b>Turbines</b>	<b>Siloxane Regeneration Flare</b>
NO <sub>x</sub>	15 ppm at 15% O <sub>2</sub>	0.025 lb/MMBTU
CO	25 ppm at 15% O <sub>2</sub>	0.060 lb/MMBTU
PM <sub>10</sub>	0.015 lb/MMBTU	2.4 lb as Si/MMscf
PM <sub>2.5</sub>	0.015 lb/MMBTU	--
VOC	98% Control <sup>1</sup>	0.018 lb/MMBTU
SO <sub>x</sub>	< 150 ppm <sup>2</sup>	0.064 lb/MMBTU

Notes:  
<sup>1</sup> Anticipated uncontrolled concentrations of 8,600 ppmv. Accounting for the Mercury 50 fuel consumption rate and 98% control, hourly VOC emissions are estimated to be about 0.88 lb/hr  
<sup>2</sup> The magnitude of the sulfur oxide emissions is dependent on the concentration of the sulfur present in the LFG as opposed to the combustion technology and controls

<sup>1</sup> Mark Hughes, Solar Turbines. *Siloxanes in Fuel Gas*. Solar Turbines Production Information Letter PIL 176, April 20, 2011.

<sup>2</sup> Fabio Pelizzari, Progeco. *Biogas Pre-Treatment Technologies before Utilization*, IWES 3<sup>rd</sup> Annual Waste Technologies Symposium and Exhibition, Istanbul, Turkey, November 2, 2011. [http://iwes.com.tr/2011sunumlar/O06\\_Fabio\\_Pelizzari.pdf](http://iwes.com.tr/2011sunumlar/O06_Fabio_Pelizzari.pdf)

The current proposed project provides the lowest permitted emission rate for CO and NO<sub>x</sub> of any known permitted LFGTE turbine operating in the SCAQMD jurisdiction (Table 3).

Landfill	NO <sub>x</sub>	CO	PM
Sunshine Canyon (proposed)	0.067	0.068	0.019 1
Calabasas	0.103	0.302	0.017
Chiquita Canyon	0.098	0.289	0.023
Bowerman	0.108	0.209	0.021

Notes:  
<sup>1</sup>. The PM emissions are slightly higher than the Calabasas project; however, this may be due to the higher siloxane present in the landfill at SCLF which would result in higher PM emissions

For the SGP proposed project, the majority of the NO<sub>x</sub> and CO emissions are associated with the turbines with 23% of the PM emissions due to the siloxane regeneration flare whereas the majority of the VOC and SO<sub>2</sub> emissions are associated with the siloxane regeneration flare (total emissions are summarized in the P/C application). Although the majority of the SO<sub>2</sub> emissions are associated with the regeneration flare, the SO<sub>2</sub> emissions will be a function of the H<sub>2</sub>S concentration in the LFG which varies (discussed in more detail in the following sections). The potential post-combustion controls and/or process modifications that may be technologically feasible for the turbines and flare are discussed separately below.

### 3 Achieved in Practice

ENVIRON surveyed the literature and government clearinghouses for emissions rates for projects that are very similar to the proposed SGP LFGTE Project. The two main emission sources evaluated for potential additional emission reductions are the turbines that combust LFG and the siloxane regeneration unit, which utilizes a flare. ENVIRON's assessment of emission reductions that have been achieved in practice focused on these LFG combustion processes. Based on a review of LFG-fired turbine BACT and Lowest Achievable Emission Rate (LAER) requirements, ENVIRON has not identified any achieved in practice emission rates, with or without add-on controls, which will achieve greater reductions than those proposed for this project that already go beyond current SCAQMD rule requirements, in particular BACT requirements. SGP's proposed emissions limits in Table 2 are similar to or below those identified at other operating or proposed facilities for all pollutants.

ENVIRON reviewed SCAQMD and Bay Area Air Quality Management District (BAAQMD) BACT determinations for turbines combusting LFG, searched the EPA RACT/BACT/LAER Clearinghouse (RBLC)<sup>3</sup> for projects that include combined cycle turbines < 25 MW, burning landfill\digester\bio-gas within "All States", and searched individual state air agency websites for applicable BACT listings or relevant permit conditions.

Only a few states had information available on-line for review. The Texas Commission on Environmental Quality (TCEQ)<sup>4</sup> and Massachusetts Department of Environmental Protection (MADEP)<sup>5</sup> provide BACT guidance for combustion sources; however, BACT for turbines firing LFG were not included. In addition, an on-line search of available permits or permit applications was conducted. A number of example permits and permit applications were identified, some which correspond to those listed on the EPA RBLC. Table 4 provides a summary of the BACT listings identified.

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<sup>3</sup> EPA Technology Transfer Network, Clean Air Technology Center – RACT/BACT/LAER Clearinghouse, <http://cfpub.epa.gov/rblc/index.cfm?action=Search.BasicSearch&lang=eg>, September 29, 2011.

<sup>4</sup> Texas Commission on Environmental Quality, *BACT Guidelines for Combustion Sources*, [http://www.tceq.state.tx.us/permitting/air/nav/air\\_bact\\_combustsources.html](http://www.tceq.state.tx.us/permitting/air/nav/air_bact_combustsources.html)

<sup>5</sup> Massachusetts Department of Environmental Protection, *Top Case BACT Available Control Technology (BACT) Guidelines – Combustion Sources*, <http://www.mass.gov/dep/air/approvals/bact.htm>.

<b>Table 4: Summary of Published BACT Determinations for LFG-Fired Turbines</b>							
<b>Source</b>	<b>Company</b>	<b>Turbine Fuel &amp; Unit Size</b>	<b>NO<sub>x</sub> Limit<sup>1</sup></b>	<b>CO Limit<sup>1</sup></b>	<b>Fuel Sulfur or SO<sub>2</sub> Limit</b>	<b>PM<sub>10</sub> Limit</b>	<b>VOC Limit</b>
SCAQMD	LA County Sanitation District	Landfill or digester gas fired; 9.9 MW (Solar Mars 90)	25 ppm	60 ppm	1.3 lb/hr	5.7 lb/hr	4.5 lb/hr as C
	Unknown (Minor Source BACT Guidelines)	Landfill or digester gas fired	25 ppm	130 ppm	Compliance with Rule 431.1	Fuel gas treatment	Not listed
BAAQMD	Vasco Road Sanitary Landfill	Landfill gas fired	25 ppm (water or steam injection, or low-NO <sub>x</sub> turbine design)	200 ppm	150 ppmv sulfur as H <sub>2</sub> S	Fuel gas treatment	Not listed
EPA RBLC	Okeechobee Landfill (Florida)	Landfill gas fired (Solar Titan 130)	72 ppm	100 ppm	Not listed	2.8 lb/hr	Not listed
		Landfill gas fired (Solar Centaur)	42 ppm	250 ppm	Not listed	2.8 lb/hr	Not listed
SCAQMD Permit Evaluation	Olinda Landfill/ Ridgewood Power	Landfill gas fired (Solar Taurus 60); 5.6 MW	25 ppm with SCR (42 ppm without)	95% destruction (oxidation catalyst)	Not listed	Not listed	Not listed
Rhode Island Permit Application	Rhode Island Central Genco	Landfill gas fired (Solar Taurus 60); 6 MW	25 ppm with SCR	100 ppm	100 ppmv sulfur as H <sub>2</sub> S	0.0238 lb/MMBTU	20 ppm @ 15% O <sub>2</sub>
<sup>1</sup> At 15% O <sub>2</sub>							

As shown in Table 4, SGP was able to identify two proposed LFG-fired turbine projects that utilize selective catalytic reduction (SCR) for NO<sub>x</sub> control and an oxidation catalyst for CO control. Installation of SCR and oxidation catalysts is planned for the turbines at the Central Landfill in Rhode Island and the Olinda Landfill in California, although these plants are not scheduled to be in operation until the fall of 2012. Because they are not operating, the use of SCR for NO<sub>x</sub> control and oxidation catalyst for CO control of LFG-fired turbines has not been demonstrated. Even with these proposed controls, the emission limits these facilities expect to meet are still higher (Table 4) than those proposed by SGP. *Emission concentrations proposed by SGP of 15 ppm NO<sub>x</sub> and 25 ppm CO are the lowest emission limits for any existing or proposed LFG-fired turbine operating in SCAQMD or elsewhere in the U.S. based on a BACT/LAER search.*

SGP has also identified facilities that utilize oxidation catalysts as a means to control CO emissions and SCR catalyst to control NO<sub>x</sub> emissions from LFG-fired engines, such as the Ox Mountain Landfill in California, operated by Ameresco Half Moon Bay, LLC. Because SCR technology on LFG-fired engines has not been achieved in practice, the SCR at Ox Mountain is currently being operated on a trial basis. However, even with an SCR, the permit limit for NO<sub>x</sub> emissions is 25 ppm. This is higher than the proposed SGP emission limit without SCR, although this is likely due in part to the much higher uncontrolled emissions from a reciprocating engine as compared to a turbine. In addition to its use for NO<sub>x</sub> reduction, the system at Ox Mountain is being used to reduce high concentration CO emissions from engines, typically 500-700 ppmv, down to permit required limits of approximately 100 ppmv. The controlled emission concentration from Ox Mountain's engines is much higher than what SGP is proposing to achieve using the Solar Mercury 50 turbine alone. To SGP's knowledge, even with the engines, the oxidation catalyst has not yet been proven to be successful at controlling CO emissions to the permitted level.

## 4 Technological Feasibility

SGP has also evaluated the technological feasibility of add-on controls or process modifications for further emission reductions. The sections below discuss the potential feasibility of further emission reduction options for both the turbines and the siloxane regeneration flare

### 4.1 Solar Mercury 50 Gas Turbine

The Solar Mercury 50 is an inherently low NO<sub>x</sub> emitting gas turbine designed by Solar Turbines in collaboration with the US Department of Energy (DOE) as part of the Advanced Turbine Systems program to design a 21<sup>st</sup> century turbine that is more efficient, cleaner and less expensive to operate. The Solar Mercury 50 is designed as a stand-alone unit that achieves lower NO<sub>x</sub>, CO and CO<sub>2</sub> emissions than any other turbine in its class. It is specifically designed to obviate the need for post combustion NO<sub>x</sub> and CO control, reducing unit size, hardware, parts, installation cost, maintenance cost and reduce risk associated with transport of reagents to the installation site.

The Solar Mercury 50 is a “recuperated gas turbine” that incorporates Solar’s “Ultra-Lean Premix” (ULP) combustion system. The technologies incorporated into the ULP system that improve the turbine’s efficiency and reduce pollutants’ emissions include ULP injectors which maintain a stable flame near the lean limit of combustion limiting available nitrogen, augmented backside cooling (ABC) with a thermal barrier coating (TBC) on the combustion liner that reduces combustion chamber temperature limiting NO<sub>x</sub> formation, an air diverter valve (ADV) placed upstream of the combustor to vary flow distribution within the combustion system to improve fuel combustion and the recuperator, which increases the combustion inlet air temperature, allowing a lower flame temperature and, thus, reducing NO<sub>x</sub> formation. The addition of blade cooling allows increased density of compressed inlet air, resulting in more efficient operation. The Mercury 50 combustion nozzle design maintains a stable flame at the lean limit of combustion even when operating on low Wobbe Index<sup>6</sup> fuels such as LFG. When combusting natural gas in the Mercury 50, Solar guarantees a NO<sub>x</sub> emission limit of 5 ppm. However, when combusting lower thermal quality LFG, Solar only guarantees a 15 ppm NO<sub>x</sub> emission concentration, 10 ppm below current BACT requirement for a LFG-fueled turbine. Specific to LFG combustion, Solar warrants their turbines to meet the emission levels summarized in Table 5.

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<sup>6</sup> The Wobbe Index indicates the interchangeability of fuel gases and is the best indicator of the similarity between natural gas and a specific fuel gas or fuel gas mixture. Since the Wobbe index relates heating characteristics of blended fuel gases it can be used to obtain constant heat flows from gases of varying compositions. [http://www.engineeringtoolbox.com/wobbe-index-d\\_421.html](http://www.engineeringtoolbox.com/wobbe-index-d_421.html).

**Table 5: Typical Solar Mercury 50 Emission Warranty Levels- Landfill Gas<sup>7</sup>**

Pollutant	Concentration (ppm)	Concentration (mg/nm <sup>3</sup> )
NO <sub>x</sub>	15	30
CO	25	32
Uncombusted hydrocarbons	25	18

## 4.2 Post Combustion NO<sub>x</sub> Controls

Nitrogen oxides emitted by the SGP LFGTE project are due exclusively to combustion air nitrogen reacting with oxygen in the turbine and regeneration flare combustion zone; nitrogen is not a component of the LFG. Therefore, the options for achieving further NO<sub>x</sub> emission reductions are to either control the NO<sub>x</sub> emissions at the point of generation, with low NO<sub>x</sub> combustion technology, and/or to use post combustion technology to remove generated NO<sub>x</sub> from the exhaust gas stream. As shown in Tables 1 and 3, the Solar Mercury 50 turbines proposed for this project already achieve the lowest NO<sub>x</sub> emissions compared to other available Solar turbines and compared to other turbines in operation or proposed using LFG, even when post-combustion emissions control is used. Therefore, the analysis of the possible NO<sub>x</sub> emission reduction technologies includes the control technology inherent to the Solar Mercury 50 as compared with post combustion add-on controls and their corresponding feasibility of use for the SGP LFGTE project.

### 4.2.1 Selective Catalytic Reduction (SCR)

The SCR process for a simple cycle system involves addition of ammonia (or urea) into the turbine combustion exhaust stream in the presence of a catalyst (which is composed of heavy metal oxides, typically vanadium and/or titanium). In the reaction, ammonia selectively reduces NO<sub>x</sub> to N<sub>2</sub> and water vapor. The reaction requires use of a catalyst in the presence of excess oxygen and temperatures between 480 °F and 800 °F. SCR can achieve reduction efficiencies in excess of (70%) on inlet NO<sub>x</sub> concentrations as low as 20 ppm.<sup>8</sup>

To maximize the NO<sub>x</sub> reduction reaction, ammonia may be injected into the flue gas at a slightly greater ammonia to NO<sub>x</sub> molar ratio than the normal stoichiometric ratio 1:1. As a result, exhaust emissions may contain excess unreacted ammonia, which is referred to as “ammonia slip.” Ammonia slip exits the system into the atmosphere where it can serve as a precursor to secondary particulate matter formation in the form of ammonium sulfate, ammonium nitrate, and ammonium chloride. One of the SCR manufacturers, Peerless Manufacturing Company (Peerless), which provided a proposal for an SCR system, indicates a 5 ppmv at 15% oxygen ammonia slip level, typical for SCR systems. The formation of the corresponding secondary PM is a function of the availability of sulfuric acid vs. nitric acid. Sulfuric acid rich environments have a PM formation rate on the order of 1:1 ammonia to sulfate salt PM on a unit weight basis. Nitric

<sup>7</sup> Witherspoon, L. “Mercury 50 Gas Turbine Emissions Signature,” Solar Turbines Incorporated, Product Information Letter 205, June 9, 2011.

<sup>8</sup> EPA Clean Air Technology Center, *Air Pollution Control Technology Fact Sheet*, Selective Catalytic Reduction, EPA-452/F-03-032, July 2003, <http://www.epa.gov/ttn/catc/dir1/fscr.pdf>

acid rich environments have a PM formation rate on the order of 1:4.7 ammonia to nitrate salt PM on a unit weight basis. The Los Angeles basin is somewhere in the middle, likely leaning to the nitric acid rich side. ENVIRON estimates that secondary PM formation due to the potential ammonia slip of 5 ppm for the input gas flow rates given for the proposed system range from 47 lb/day to 221 lb/day. The details are presented in Appendix B.

Two manufacturers of SCR equipment were contacted to investigate successful applications on similar LFG-fired turbine sources. Both Peerless and Mitsubishi Power Systems provided proposals for SCR as an add-on to SGP's turbines. Each vendor proposed one SCR/CO catalyst system for each turbine capable of meeting a 7 ppm NO<sub>x</sub> emission concentration summarized in Table 6. Each system would use aqueous ammonia as the reagent. The Peerless system would use a catalyst containing vanadium and titanium. The footprint of each of the five systems is estimated to be 15 feet wide by 45 feet long, with an estimated 30 foot tall exhaust stack. The space considerations for this system are further discussed in Section 5. The additional space required is approximately equivalent to the space required for three of the five Mercury 50 turbines, not including additional space for maintenance access to the SCR systems.

Peerless also provided information on alternative, "in-stack" SCR systems. According to Peerless, the "in-stack" system is primarily used to provide control on retrofit projects, where control is needed on an existing source and space is limited. As opposed to the traditional, preferred horizontal installation, it involves installation of a vertical system, which is custom designed on a case-by-case basis. Also, the vertical installation would very likely require a taller exhaust stack to accommodate the 'stacked' chemical addition/mixing and catalyst components of the system. The proposed project specifies a stack height of 30 feet for each of the turbines. However, initial modeling runs conducted by DTE found that due to site topography, stack heights greater, but not substantially greater, than those specified in the proposed project would actually result in increased ground level pollutant concentrations. Unlike the vast majority of situations where an increase in stack height will result in lower ground level concentrations, the topography at SGP is such that this traditional assumption is not valid due to the close proximity of the Flare 8 ridge to the southwest and a ridge to the northwest. Therefore, because SCR in general has the potential to generate additional secondary PM impacts and the in-stack system in particular has the potential to increase ground level pollutant concentrations, it does not achieve the main goal of this technology survey, that is, to further reduce emissions from the proposed SGP project.

Another potential concern with the use of an add-on SCR on LFG-fired turbines is the presence of siloxanes, organic compounds present in consumer products that are disposed of in landfills and present in LFG. Siloxane compounds present in LFG have auto ignition temperatures from 644 °F to 752 °F and, thus, under the proposed turbine conditions, siloxanes entering the turbine will be converted to SiO<sub>2</sub> particles. The industry standard for SiO<sub>2</sub> control is pretreatment of LFG for siloxane removal such as the system proposed by SGP, which is 95+% efficient. This level of control is intended to reduce the potential of turbine degradation, but is insufficient to prevent catalyst degradation, as is discussed below.



The SCR catalyst (and CO catalyst discussed in Section 4.3.2) provides a high surface area for adsorption of particles, which even at the siloxane levels remaining after the removal system, would likely result in fouling the catalyst, rendering it less effective for NO<sub>x</sub> (or CO) conversion. In addition, other LFG constituents, including the remaining 10% of the H<sub>2</sub>S after pretreatment, can also poison downstream catalysts. Other additional pretreatment systems are needed to protect the catalyst from exposure to silica, phosphorous, sulfur, and chlorinated and fluorinated VOCs, compounds which, upon combustion, can form solid particles that can foul the catalyst surface, masking it from reacting with exhaust gases and in extreme cases, plugging catalyst channels. The catalyst effectiveness relies on the very large surface area provided by the micropore structure. The micropores can be blocked with very small amounts of siloxane.

The turbine is more tolerant to particle exposure due to the more open design. However, it is not immune to particle buildup. Particle buildup due to siloxane combustion coats the recuperator over time. The coating acts as an insulator, and prevents proper heat transfer. It also reduces the available air flow area, resulting in backpressure on the turbine which lowers the turbine efficiency. For this reason, shut down and maintenance every few years is required to remove the silicon build-up in the turbine.

ENVIRON explored with Cormetech the availability of commercial products for preventing SiO<sub>2</sub> in the post combustion gases from fouling the catalysts, such as a sacrificial barrier placed ahead of the SCR catalyst. No such devices were identified. As a result, since no types of barriers were identified, it would be difficult, if not impossible, to quantify effectiveness of such a device.

Solar data indicates that in the absence of airborne siloxanes, the exhaust is suitable for NO<sub>x</sub> reduction using SCR (O<sub>2</sub> concentration sufficient and the temperature is between 730 °F and 740 °F). The performance of the SCR systems from each manufacturer proposal is summarized in Table 6. The SCR vendor proposals indicate that NO<sub>x</sub> reductions to a 7 ppm emission concentration are technically feasible for LFG-fired turbines if the exhaust gas meets the required specifications and the siloxane combustion products do not coat the catalyst.

**Table 6: Comparison of Performance for SCR Systems**

Parameter	Peerless	Mitsubishi PS
Back Pressure	< 10 inches w.c.	Not stated
NO <sub>x</sub> Reduction	15 to < 6.9 ppmv	15 to < 6.9 ppmv
Ammonia slip	5 ppmv	Not stated

Use of an SCR catalyst will require that the LFG fuel silica concentration be treated to below a concentration range of 5-50 micrograms per cubic meter (µg/m<sup>3</sup>). The SCLF siloxane levels are higher than any other LFG projects owned by DTE; 2009 sampling results from 16 other DTE project sites ranged from 8.9 to 34.0 mg/m<sup>3</sup> compared to SCLF siloxane level of 47 mg/m<sup>3</sup> as summarized in Appendix A. The SGP siloxane removal system is only capable of achieving silica levels around 1-5 mg/m<sup>3</sup> based on recent vendor quotes, approximately 1,000 times higher than the maximum SCR requirement. Additional treatment of the LFG would be required in addition to the current proposed siloxane removal system to reduce total silica concentrations

down to the range of 5-50  $\mu\text{g}/\text{m}^3$  to protect the catalyst from being masked or poisoned. The effectiveness of additional filtering treatment to this level has not been demonstrated in practice on siloxane removal systems treating LFG for use in gas turbines. In comparison, SGP anticipates that the Olinda and Central landfills are able to propose using SCR (and oxidation catalysts) on their LFG-fired turbines due to having an initially higher  $\text{NO}_x$  emission rate (e.g. use of a Solar Taurus vs. Mercury turbine) and, thus, not requiring as low a siloxane concentration because they are not attempting to achieve  $\text{NO}_x$  emission rates similar to SGP's emissions. Unlike the Taurus turbines used by Olinda and Central, the Mercury 50 turbines proposed by SGP, which already achieve much lower  $\text{NO}_x$  emission rates than the Taurus, has a recuperator that is susceptible to siloxane coating resulting in lower heat transfer and higher back pressure conditions on the turbine. The siloxane coating in the recuperator results in lower efficiency for the turbine. The Solar Taurus units do not have the recuperator and do not have the ultra-low  $\text{NO}_x$  combustion nozzles that are present in the Mercury 50 turbine.

In addition to the siloxane levels of LFG, the SCLF site has significant site constraints. The addition of the SCR systems would require space for five, 15 feet wide by 45 feet long units plus room for the ammonia storage system. As discussed in Section 5, the space required for the SCR treatment system is not available; additional area would be needed.

Based on the above information, which is summarized in the following key points, installation of an SCR system is not appropriate for SGP's proposed project because it does not achieve the main goal of this technology survey, which is to provide further reductions in emissions from the proposed project. Some characteristics of the SCLF and the SCR technology indicate that, for the proposed project, installation of SCR is not considered technologically feasible:

- Addition of SCR increases the project's potential air quality impacts to the environment through the addition of ammonia to the process stream.
- Addition of an SCR system would provide, at best, only negligible environmental benefits due to the substantial increase in  $\text{PM}_{2.5}$  emissions relative to the minor reduction in  $\text{NO}_x$  emissions from use of the additional control system;
- "In-stack" systems would require a vertical configuration which is not optimal from an engineering standpoint and would require a higher stack which, based on air dispersion modeling conducted in support of this project's air permit application, would result in higher ground level concentrations of pollutants emitted from the stack;
- The required siloxane levels needed to avoid masking or poisoning the SCR catalyst and assure continuous predictable benefit of the reduced emissions is not achievable using the proposed treatment system due to the typical SCLF LFG siloxane levels; and

In addition to the above air quality impacts that may be generated from installing SCR as part of the proposed project, there are the following additional concerns pertaining to use of the SCR system:

- Spent SCR catalysts are typically disposed of after use, especially in the case of  $\text{SiO}_2$  caking which greatly hinders regeneration. The catalyst and waste may require disposal in a hazardous waste landfill resulting in additional potential environmental impacts due to the deposition of materials present in the LFG. Typically the hazardous airborne

concentrations are very small; however, the materials accumulate on the catalyst media affecting its service life. Airborne concentrations of siloxanes and hazardous materials vary in LFG, therefore, optimal service life cannot be predicted. The concentration of siloxanes expected with the SGP project, necessitates more frequent catalyst replacement than for conventional SCR systems, which will significantly increase the operating costs and the quantity of potentially hazardous waste.

- Use of SCR would result in power loss from the additional pressure loss associated with the SCR system. The power loss is anticipated to be approximately 75 kW per turbine for a combined reduction of 375 kW (1.6% of 23.5 MW).
- Additional trucking would be required to transport ammonia to the site. The potential hazards associated with the trucking of ammonia are outside the scope of issues analyzed in the Draft SEIR.

The space requirement for installation and operation of five SCR units, if an in-stack system is not used, is not available at the existing site, for the reasons discussed in Section 5 of this report.

#### **4.2.2 Selective Non-Catalytic Reduction (SNCR)**

Similar to SCR, SNCR is based on the chemical reduction of NO<sub>x</sub> molecules to N<sub>2</sub> and water vapor. The NO<sub>x</sub> control efficiency of SNCR is substantially less than SCR, approximately 30 to 50 percent. As with SCR, a reagent such as ammonia or urea is injected into the post combustion flue gas. However, instead of using a catalyst to promote the NO<sub>x</sub> reduction reaction, SNCR relies on relatively high temperatures to promote the NO<sub>x</sub> reduction reaction. The reduction reaction of NO<sub>x</sub> occurs in a relatively narrow temperature range of 1,600 °F to 2,100 °F.<sup>9</sup> Below this temperature window, there would be an increase in the levels of ammonia slip beyond that for SCR and, thus, an increase in corresponding higher levels of secondary PM formation and a decrease in NO<sub>x</sub> destruction efficiency. ENVIRON has found use of SNCR as an add-on control to not be feasible due to the exhaust temperatures of 730 °F to 740 °F associated with the Solar Mercury 50 turbines compared to the required exhaust temperature for adequate emission control using SNCR.

#### **4.3 CO Controls**

Carbon monoxide emitted by the SGP LFGTE project is due almost exclusively to combustion occurring in the turbine and regeneration flare; it is only a minor component of the LFG. The options for achieving further CO emission reductions are to either control the CO emissions at the point of generation and/or to use post combustion technology to remove generated CO from the exhaust gas stream. As shown in Tables 1 and 3, the Solar Mercury 50 turbines proposed for this project already achieve the lowest CO emissions compared to other available Solar turbines and compared to other turbines in operation or proposed firing LFG. Therefore, the analysis of the possible CO emission reduction technologies is limited to post combustion add-

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<sup>9</sup> EPA Clean Air Technology Center, *Air Pollution Control Technology Fact Sheet, Selective Non-Catalytic Reduction*, EPA-452/F-03-031, July 2003, <http://www.epa.gov/ttn/catc/dir1/fsncr.pdf>.

on controls of the turbine. Below is a discussion of the potential add-on controls and the corresponding feasibility for use on the SGP turbines.

### 4.3.1 Solar Mercury 50 Gas Turbine

The Solar Mercury 50 is an inherently low CO emitting gas turbine designed by Solar Turbine in collaboration with the US DOE. Without going into the detail presented in Section 4.1, the Mercury 50 incorporates a number of design features that enable more complete combustion of fuel resulting in low CO emissions. Specifically, the Mercury 50 incorporates improved combustor nozzles and an ADV placed upstream of the combustor to vary flow distribution within the combustion system to improve fuel air mixture resulting in more complete combustion. This feature incorporated with blade cooling results in more efficient turbine operation. When combusting low thermal quality LFG, Solar guarantees a 25 ppm CO emission rate.

### 4.3.2 Catalytic Oxidation

The CO catalytic oxidation process for simple cycle systems involves passing the exhaust through a catalyst bed in the presence of excess oxygen at a temperature of about 600 °F. CO oxidation is a passive process only requiring contact time, elevated temperature and oxygen. No reagent or mixing chamber is required.

As with SCR for NO<sub>x</sub> removal discussed in Section 4.2.1, a concern with the use of oxidation catalysts on LFG-fired turbines is the presence of siloxanes present in LFG. Siloxane compounds present in LFG have auto ignition temperatures from 644 °F to 752 °F and, thus, under the turbine conditions, siloxanes entering the turbine will be converted to SiO<sub>2</sub> particles. The CO catalyst provides a high surface area for adsorption of these particles, which results in fouling of the catalysts, rendering them ineffective for CO conversion. Pretreatment systems would be needed to protect the catalyst from exposure to silica, phosphorous, sulfur, and chlorinated and fluorinated VOCs.

Two manufacturers of CO oxidation catalyst equipment were contacted to investigate successful applications on similar LFG-fired turbine sources. Both Peerless and Mitsubishi Power Systems provided proposals for an oxidation catalyst as an add-on to SGP's turbines. Each vendor proposed one SCR/CO catalyst system for each turbine capable of meeting lower CO emissions shown in Table 7. The Peerless system would use an oxidation catalyst containing platinum and palladium. The footprint of each of the five systems as discussed in Section 4.2.1 is estimated to be 15 feet wide by 45 feet long, with an estimated 30 foot tall exhaust stack. As discussed in Section 5, the additional space required is approximately equivalent to the space required for three of the five Mercury 50 turbines, not including additional space for maintenance access to the CO systems.

Parameter	Peerless	Mitsubishi PS
Back Pressure	< 10 inches w.c.	Not stated
CO Reduction	25 to < 11.5 ppmv	25 to < 11.5 ppmv
Back Pressure	< 10 inches w.c.	Not stated

The vendor proposals indicate that CO reductions to an 11.5 ppm emission concentration are technically feasible for LFG-fired turbines if the exhaust gas meets the required specifications and the siloxane combustion products do not coat the catalyst. However, as with the SCR, additional treatment to reach the required siloxane inlet levels has not been achieved in practice for this application. In addition, many catalyst manufacturers recommend complete removal of silica compounds to prevent masking of the catalyst. For this reason, oxidation catalyst treatment is not yet technologically feasible on projects using LFG or other siloxane-containing gas as the combustion fuel when attempting to reach similar emission rates as SGP. In comparison, SGP anticipates that the Olinda and Central landfills are able to propose using oxidation catalysts on their LFG-fired turbines due to having an initially higher CO emission rate (e.g. use of a Solar Taurus vs. Mercury turbines) and, thus, not requiring as low a siloxane concentration because they are not attempting to achieve CO emission rates similar to SGP's emission level. Unlike the Taurus turbines used by Olinda and Central, the Mercury 50 turbine proposed by SGP, which already achieves much lower CO emission rates than the Taurus, has a recuperator that is susceptible to siloxane coating resulting in lower heat transfer and higher back pressure conditions on the turbine. The siloxane coating in the recuperator results in lower efficiency for the turbine. The Solar Taurus units do not have the recuperators that are on the Mercury 50 turbine.

Installation of a CO oxidation system is not considered to be feasible for SGP's operations based on the following key points and, therefore, does not achieve the major goal of this technology survey – further reductions in emissions.

- The required siloxane levels needed to avoid masking or poisoning the CO catalyst is not achievable using the proposed treatment system due to the typical SCLF LFG siloxane levels; and
- Even if the installation of CO catalysts did not result in masking or poisoning the CO catalyst, addition of after treatment CO controls on the Mercury 50 would provide marginal to no additional CO emission reduction benefit at a substantial cost for the overall system.

In addition, there are additional concerns pertaining to use of an oxidation catalyst system, including the following:

- Spent CO catalysts are typically disposed of after use, especially in the case of siloxane caking which greatly hinders regeneration. The catalyst and waste may require disposal in a hazardous landfill resulting in additional potential environmental impacts due to the deposition of materials present in the LFG. As previously mentioned, a hazardous designation is a result of accumulation of adsorbed material from the LFG. In the presence of siloxanes as is the case with the SGP LFGTE project, the oxidation catalyst will require more frequent replacement which would significantly increase the operating costs and the amount of heavy metals being disposed.
- Use of a CO oxidation catalyst would result in power loss from the additional pressure loss associated with the oxidation catalyst system. The power loss is anticipated to be approximately 30 kW per turbine for a combined reduction of 150 kW (0.6% of 23.5 MW).
- The space requirement for installation and operation of five CO units is not available at the existing site (see Section 5).

## 4.4 PM Controls

Particulate matter generated in the SGP LFGTE project is due both to process and combustion related activities. The options for achieving further PM emission reductions are to either control the PM emissions associated with the process, and/or to use post combustion technology to remove generated PM from the exhaust gas stream. For the SGP LFGTE project, it is assumed that all the PM emissions from both the turbine and siloxane regeneration flare can be classified as PM<sub>2.5</sub>. Of the total PM emissions, approximately 75% is emitted by the five turbines, and the balance is emitted by the siloxane regeneration flare.

### 4.4.1 Cyclones

Cyclones provide a low-cost, low-maintenance method of removing larger particulates from a gas stream. The general removal principle is inertia separation where particulate-laden gas is forced to change direction. As gas changes direction, the inertia of the particles causes them to continue in the original direction and be separated from the gas stream. The walls of the cyclone narrow toward the bottom of the unit, allowing the particles to be collected in a hopper. The cleaner air leaves the cyclone through the top of the chamber, flowing upward in a spiral vortex, formed within a downward moving spiral.

Cyclones are primarily used to remove particulate matter greater than 10 µm in diameter<sup>10</sup>, and are not very efficient with smaller particles. Although cyclones may be used to control sources with PM<sub>2.5</sub> emissions, the conventional system can only achieve a 0-40% control efficiency with a 20-70% control efficiency possible for high efficiency cyclones. However, higher efficiency cyclones result in higher pressure drops (8 – 10 inches of water) and thus, substantially higher energy costs to move the exhaust through the cyclone if an induced draft fan were used, or substantial reductions in power output and efficiency if no fan were used. High throughput cyclones are only guaranteed to remove particles greater than 20 µm, with only a 0-10% removal efficiency for PM<sub>2.5</sub>.<sup>11</sup>

Cyclones can experience a number of problems including particles recirculating from the hopper, and erosion and corrosion of the cyclone internals due to the nature of the material being collected (corrosive and/or abrasive). Heavy dust at the inlet of the cyclone can also lead to plugging of the cyclone hopper. Any of these factors may serve to reduce the overall control effectiveness of the cyclone.

Installation of a cyclone would not achieve the major goal of this technology survey – further reductions in emissions for the following reasons:

- Because of the small particle size of the PM from the Mercury 50, installing a cyclone would provide marginal to no additional PM emission reduction benefits, especially for particulates smaller than PM<sub>10</sub>; and.
- It is possible that the siloxanes or other LFG constituents could lead to plugging.

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<sup>10</sup> EPA Clean Air Technology Center, *Air Pollution Control Technology Fact Sheet*, EPA-452/F-03-005, July 2003, <http://www.epa.gov/ttn/catc/dir1/fcyclon.pdf>

<sup>11</sup> Cheremisinoff, Nicholas P. *Handbook of Air Pollution Prevention and Control*, Butterworth-Heinemann, 2002.

In addition, there are additional concerns pertaining to use of a cyclone system, as shown in the following bullet points

- There are solid wastes generated by a cyclone system designed to control particulates. This could lead to solid waste impacts from disposal of the collected PM;
- There would also be space constraints, as the cyclones would have to be very large to handle the exhaust airflow.

#### 4.4.2 Baghouses

Most baghouses use long, cylindrical bags (or tubes) made of woven or felted fabric as a filter medium. (For applications where there is relatively low dust loading and gas temperatures are 250°F or less, pleated, nonwoven cartridges are sometimes used as filtering media instead of bags)<sup>12</sup>. Dust-laden gas or air enters the baghouse through hoppers (large funnel-shaped containers used for storing and dispensing particulate) and is directed into the baghouse compartment. The gas is drawn through the bags, either on the inside or the outside depending on cleaning method, and a layer of dust accumulates on the filter media surface until air can no longer move through it. When sufficient pressure drop occurs, the cleaning process begins.

Fabric filter or cartridge filter baghouses are capable of removing PM<sub>2.5</sub> emissions. However, in the case of simple cycle gas turbines, baghouses would require filter fabrics with membranes such as PTFE (Teflon™) due to the low PM loading and resulting inability to quickly build sufficient filter cake, which is the filter bag's primary filtration mechanism. Although baghouse filter fabrics are available that have temperature tolerance to gas turbine exhaust temperatures, filter membranes and their laminates have a sustained upper temperature limit of only 500 °F, accommodating short-term temperature excursions up to 525 °F.<sup>13 14</sup> Dilution or spray coolers would be necessary to bring exhaust temperature within baghouse membrane tolerance.

Water spray coolers could be used to reduce the temperature of the exhaust gas stream; however, there are no known applications of this technology for gas turbines.<sup>15</sup> In addition, this technology has potential to create additional salt particulate matter, increasing turbine PM emissions and has the potential to produce stickier particle cake that would increase bag blinding, increase pressure drop and reduce the service life of the filter bag.

ENVIRON found no applications of baghouses on simple cycle gas turbines either powered by LFG or any gaseous fuel, as the technology is designed for combustion of high ash content solid fuels such as coal and to a lesser extent fuel oil that have significantly higher PM emission

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<sup>12</sup> Courtenay, John and Michael Bryant. 2008. *Pleated cartridges provide increased baghouse capacity and improved filter performance*. Aluminium Times. August. <http://www.mqpltd.com/cms-files/Pages%20from%2010%203%20Aluminium%20Times.pdf>. and Cartridge Collectors. <http://www.baghouse.com/products/dust-collection-systems/cartridge-collectors/>

<sup>13</sup> EPA Clean Air Technology Center, *Air Pollution Control Technology Fact Sheet, Fabric Filter*, EPA-452/F-03-024, July 2003, <http://www.epa.gov/ttn/catc/dir1/ff-shaker.pdf>

<sup>14</sup> Telephone conversation, D. Park, ENVIRON International Corporation with J. Darrow, W.L. Gore & Associates, November 10, 2011.

<sup>15</sup> Ibid.

rates.<sup>16</sup> As such, manufacturers will not guarantee that their baghouse technology would reduce turbine PM emissions below the current turbine outlet concentration, as these concentrations are at the removal limit of baghouse membrane technology. In the specific case of SCLF, which has a predicted PM emission rate of 0.015 lb/MMBTU, after dilution,<sup>17</sup> exhaust PM concentrations are expected in the range of 10 mg/m<sup>3</sup> to 12 mg/m<sup>3</sup>. PTFE (Teflon) baghouse membranes have a lower filter rate of 10mg/m<sup>3</sup>, which is the detection limit of in-use control efficiency performance tests.<sup>18</sup>

Depending on the type of baghouse technology, equipment may consist of many moving parts and require frequent maintenance. To accommodate frequent maintenance, baghouse operators would need large numbers of filter bags. Further, during maintenance, personnel must enter the baghouse to replace bags, potentially creating for exposure to toxic dust.

Installation of a baghouse is not considered to be feasible for the following reasons:

- A baghouse is not a feasible alternative for the SGP LFGTE project due to the high exhaust temperatures (730 °F to 740 °F) associated with the Solar Mercury 50 turbines relative to the sustained upper temperature limit of a baghouse (500 °F);
- No technologies were identified that could be used to reduce the temperature of the exhaust gas stream that would enable the use of a baghouse;
- ENVIRON found no commercial baghouse product available for use with simple cycle combustion turbines such as the Solar Mercury 50; and
- Even if a baghouse could be installed, because of the inherent particulate control efficiency of the Mercury 50, installing a baghouse would provide marginal to no additional PM emission reduction benefits, especially for particulates smaller than PM<sub>10</sub>.

Because a baghouse is not considered to be a feasible control technology, no further evaluation of this technology will be performed.

#### 4.4.3 Wet Scrubbers

Wet scrubbers remove pollutant gases by *dissolving* or *absorbing* them into the liquid. In a wet scrubber, the polluted gas stream is brought into contact with the scrubbing liquid, by spraying it with the liquid, by forcing it through a pool of liquid, or by some other contact method, so as to remove the pollutants. Various types of wet scrubbers can be used to remove PM<sub>2.5</sub> including fiber-bed, impingement plate, filter bed, mechanically aided, packed bed, spray chamber, and venturi wet scrubber. Packed-bed/tower wet scrubbers require an inlet temperature of 40 to 700°F in which PM is to be controlled, although other wet scrubbing techniques may require a much lower temperature range.<sup>19</sup> However, other types of wet scrubbers have no temperature

<sup>16</sup> Separate telephone conversations between D. Park, ENVIRON International Corporation and J. Darrow, W.L. Gore & Associates and L. Crumacher, Menardi, November 10, 2011.

<sup>17</sup> In order to bring turbine exhaust temperature from 850°F to 500°F a dilution air flow rate equal to about 60 percent of the Solar Mercury 50 turbine exhaust gas flow rate is required.

<sup>18</sup> Telephone conversation, J. Darrow, W.L. Gore & Associates, November 10, 2011.

<sup>19</sup> EPA Clean Air Technology Center, *Air Pollution Control Technology Fact Sheet, Packed-Bed/Paced-Tower Wet Scrubber*, EPA-452/F-03-015, July 2003, <http://www.epa.gov/ttn/catc/dir1/fpack.pdf>; *Fiber-Bed Scrubber*, EPA-



limits<sup>20</sup>, although spray coolers may need to be employed to reduce the inlet gas temperature to within appropriate temperatures. Venturi scrubbers, for example, may have a particle removal efficiency of 95%.

Wet scrubbers can experience a number of problems including corrosion of the internals due to the nature of the material being collected (corrosive and/or abrasive). In addition, depending on the type of wet scrubber, there could be substantial pressure drop, as shown in the following bullets, which could reduce the electricity generated by the overall project.

- Low-energy scrubbers have pressure drops of less than 12.7 cm (5 in) of water.
- Medium-energy scrubbers have pressure drops between 12.7 and 38.1 cm (5 and 15 in) of water.
- High-energy scrubbers have pressure drops greater than 38.1 cm (15 in) of water.

Additional concerns with wet scrubbers is that they could require substantial amounts of water and they could substantially increase demand for potable water beyond what was analyzed in the Draft SEIR. Further, wastewater produced by a wet scrubber could require that a new treatment facility be built and that treated wastewater may need to be transported to the local sanitation district. Furthermore, there would be solid waste generated by the slurry that would also need to be treated and disposed. Similarly, wastewater impacts from wet scrubbers are outside the scope of the hydrology and water quality analysis in the Draft SEIR. In both cases, increased water demand and generation of wastewater slurry, addition of a wet scrubber to the proposed project has the potential to increase water demand and wastewater impacts that are currently concluded to be less than significant to significant adverse impacts.

Installation of a wet gas scrubber would not achieve the major goal of this technology survey – further reductions in emissions for the following reasons:

- Water and dissolved pollutants can form highly corrosive acid solutions;
- The higher the gas temperature, the lower the absorption rate;
- Some types of wet scrubbers would require lower exhaust temperatures than are achieved with a Mercury turbine;
- Wet scrubbers are highly unlikely to reduce PM emissions from the gas turbine given the very low concentrations present in the flue gas.
- Use of a wet gas scrubber would result in power loss from the additional pressure loss associated with the system, which is especially acute the smaller the PM size being controlled.

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452/F-03-011, <http://www.epa.gov/ttn/catc/dir1/fiberbed.pdf> ; *Mechanically-Aided Scrubber*, EPA-452/F-03-013, <http://www.epa.gov/ttn/catc/dir1/fmechcal.pdf>

<sup>20</sup> Wet Scrubber. [http://en.wikipedia.org/wiki/Wet\\_scrubber](http://en.wikipedia.org/wiki/Wet_scrubber).

In addition, there are additional concerns pertaining to use of a wet gas scrubber, including the following:

- Wet gas scrubbers could generate substantial water demand impacts that were not analyzed in the Draft SEIR;
- Wet scrubbers have the potential to generate substantial solid waste and wastewater impacts that were not analyzed in the Draft SEIR;
- Treatment facilities would need to be constructed to treat solid waste wastewater to reduce its corrosivity. This potential impact was not analyzed in the Draft SEIR;
- Construction of treatment facilities could create substantial construction air quality impacts that were not analyzed in the Draft SEIR;
- Wet scrubbers could create substantial energy demand and generation reduction impacts that were not addressed in the Draft SEIR;
- The very large exhaust gas volumes from the turbines would result in scrubbers that are larger than the turbines and could not be accommodated in the project site as discussed in Section 5.

#### **4.4.4 Wet Electrostatic Precipitators (ESP)**

A wet electrostatic precipitator is a particle control device that uses electrical charges to move particles out of the exhaust stream onto into a wet medium or collector plate. Particles are given an electric charge that forces them to adhere to the wet medium. For new wet ESPs, the PM control efficiency ranges from 99% to 99.9%. While several factors affect wet ESP collection efficiency, size of the wet ESP is most important. Size determines the treatment time; the longer the particulate remains in the wet ESP, the greater the probability it will be collected.

Wet ESPs can experience a number of problems including corrosion at the top of the electrical wires because of air leakage and acid condensation. Water and dissolved pollutants can form highly corrosive acid solutions. Wet ESPs could generate substantial water demand and wastewater quality impacts from acid condensation, resulting in the need for onsite water treatment facilities.

Further, this technology is limited to a maximum operating temperature of 190 °F,<sup>21</sup> much lower than the exhaust temperatures anticipated for the turbines. The same cooling systems discussed in Section 4.4.2 of this report would be required, and would not be feasible for wet ESPs for the same reasons mentioned in that subsection.

Installation of a wet ESP is not considered to be feasible because its maximum operating temperature is substantially lower than the exhaust temperatures from the turbines. Because a wet ESP is not considered to be a feasible control technology, no further evaluation of this technology will be performed.

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<sup>21</sup> EPA Clean Air Technology Center, *Air Pollution Control Technology Fact Sheet, Wet Electrostatic Precipitator (ESP) Wire-Pipe Type*, EPA-452/F-03-029, July 2003, <http://www.epa.gov/ttn/catc/dir1/fwespwpi.pdf>

#### 4.4.5 Dry ESP

Dry ESPs operate on the same principle as wet ESPs, except that water is not used so charged particulates are attracted to dry collector plates or wires. The PM control efficiency for new dry ESPs is similar to wet ESPs, ranging from 99% to 99.9%.

Like wet ESPs, dry ESPs can experience a number of problems including corrosion at the top of the electrical wires because of air leakage and acid condensation. Also, as long weighted wires tend to oscillate, the middle of the wire can approach the pipe causing increased sparking and wear, which has potential hazard impacts.

Dry ESPs, which are effective on PM<sub>2.5</sub>, can operate at temperatures up to 1,300 °F.<sup>22</sup> The typical inlet loading to a dry ESP is 1 to 10 g/m<sup>3</sup>, compared to the PM exhaust concentrations of 0.007 g/m<sup>3</sup> expected for this project. In addition, ESPs require relatively large spaces for installation to obtain the low gas velocities needed for efficient PM collection.<sup>22</sup>

Installation of a dry ESP would not achieve the major goal of this technology survey – further reductions in PM emissions because of the inherently low PM concentrations in the exhaust from the turbines. Further, dry ESPs have the following additional concerns:

- Dissolved pollutants can form highly corrosive acid solutions;
- Dry ESPs have high power requirements.

In addition, there are additional concerns pertaining to use of a dry ESP, including the following:

- Dry ESPs have the potential to generate solid waste impacts that were not analyzed in the Draft SEIR;
- Dry ESPs have potential hazard impacts from sparks created by oscillation of collection wires that were not analyzed in the Draft SEIR; and
- Dry ESPs could create substantial energy demand impacts that were not addressed in the Draft SEIR.

#### 4.5 SO<sub>x</sub> Controls

Sulfur oxide emissions from the proposed project are solely a by-product of the combustion processes. Unlike the other combustion products discussed, the SO<sub>x</sub> formed through combustion is dependent on the concentration of the reduced sulfur (e.g. primarily H<sub>2</sub>S) in the LFG. The H<sub>2</sub>S concentration in the LFG is dependent upon the types of waste placed in the landfill, how long the wastes have been in place, and geological and hydrogeological characteristics of the landfill. The exhaust SO<sub>x</sub> emissions will be a function of the varying H<sub>2</sub>S concentration of the LFG. The proposed siloxane regeneration flare is expected to remove up to 90% of the H<sub>2</sub>S from the LFG which is then emitted in the form of SO<sub>x</sub> during media regeneration and flaring. Therefore, to further control SO<sub>x</sub> emissions, alternative pre-treatment

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<sup>22</sup> EPA Clean Air Technology Center, *Air Pollution Control Technology Fact Sheet, Dry Electrostatic Precipitator (ESP) Wire-Pipe Type*, EPA-452/F-03-027, July 2003, <http://www.epa.gov/ttn/catc/dir1/fdespwpi.pdf>

processing of the LFG would need to be explored. Potential add-on SO<sub>x</sub> controls were also assessed.

#### 4.5.1 Scrubbers

As with the scrubbers assessed for PM controls, a wet scrubber could be used to control SO<sub>x</sub> emissions generated during the turbine combustion process. A scrubbing system may consist of three main modules: 1) a spray tower module; 2) a filtering module; and, 3) a droplet separator module. The flue gas enters the spray tower module, which is an open tower with multiple layers of spray nozzles. The nozzles supply a high density stream of caustic water that is directed in a countercurrent flow to the gas flow and encircles, encompasses, wets, and saturates the flue gas. Multiple stages of liquid/gas absorption occur in the spray tower module and SO<sub>2</sub> and acid mist are captured and converted to sulfites and sulfates.

Another important design consideration associated with wet FGD systems is that the flue gas exiting the absorber is saturated with water and still contains some SO<sub>2</sub>. These gases are highly corrosive to any downstream equipment such as fans, ducts, and stacks. In addition, use of wet scrubbers has the potential to create water demand and waste impacts from the scrubbing reagents. As a result, a wet scrubber would also require additional water and water treatment facilities, which are not currently present at the site. Space limitations of the site as discussed in Section 5 would preclude the installation of scrubbers and the associated water supply and water treatment facilities necessary for this type of alternative SO<sub>x</sub> control.

A packed-bed/tower scrubber would require an inlet temperature for optimal SO<sub>x</sub> control of 40 to 100°F.<sup>16</sup> The turbine exhaust temperature of 730 °F to 740 °F is significantly higher than the maximum temperature requirement for SO<sub>x</sub> control using a scrubber. Similar to that discussed in Section 4.4.2, spray coolers would need to be employed to reduce the inlet gas temperature to the optimal temperature for use of the wet scrubber. However, there are no known applications of this technology on simple cycle turbines.<sup>23</sup> This technology has the potential to create additional salt PM, increasing the turbine PM emissions, which would require additional PM controls that have been found to be technologically infeasible for this project.

Installation of a wet scrubber is not considered to be feasible because its maximum operating temperature is substantially lower than the exhaust temperatures from the turbines. In addition, it would not achieve the major goal of this technology survey – further reductions in emissions.

Installation of a wet scrubber would not be technologically feasible as an add-on SO<sub>x</sub> control for the SGP turbines due to high exhaust temperature of the Mercury turbines relative to the requirements for inlet temperature for a scrubber to function correctly; lack of space required for the associated scrubbers; and the additional need for water supply and water treatment facilities. Further, this technology has the potential to increase PM emissions. Because a wet scrubber is not considered to be a feasible control technology, as explained above, no further evaluation of this technology will be performed. If it were feasible to install a wet scrubber, similar environmental impacts as those described in Section 4.4.3, would also occur.

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<sup>23</sup> Ibid.

#### 4.5.2 Non-Regenerating Reduced Sulfur Media

Removal of reduced sulfur ( $H_2S$ ) from the LFG prior to the siloxane system through the use of a non-regenerating media could potentially reduce  $SO_x$  emissions generated from combustion. The preferred sulfur removal method for LFG involves a non-regenerating, iron-based media, such as SulfaTreat. SulfaTreat converts hydrogen sulfide in various gas streams into elemental sulfur and water by catalytic oxidation with air. The SulfaTreat process uses a patented proprietary mixture of ferric oxide and triferric oxide to react with  $H_2O$  to sweeten gas streams. In the SulfaTreat process the iron oxides are supported on the surface of an inert, inorganic substrate forming a granular material. According to one manufacturer, SulfaTreat can convert up to 90% of the  $H_2S$  into elemental sulfur and water in a single pass with greater than or equal to 99% selectivity to elemental sulfur. The leading manufacturer of iron-based sulfur removal media, SulfaTreat, was contacted to assess the applicability of this process to SGP's LFGTE project.

SulfaTreat evaluated the equipment that are part of the proposed project, modeled the emissions, and provided a proposal that would treat 65% of the LFG flow using three trains of lead/lag pressure vessels. To properly accommodate the proposed project, each vessel was sized to hold 62,000 pounds of media. According the manufacturer's evaluation, change-out of the lag vessel would be expected to occur every 172 days during which time the system is designed to reduce  $H_2S$  levels from 150 ppm to 5 ppm or less, which equates to greater than 96% removal efficiency. We would expect that  $SO_x$  emissions would also decrease by a similar amount. This process is estimated to generate 442,000 pounds of spent media per year requiring disposal. The media is normally removed and tested to confirm that it is non-hazardous and temporarily stored on site prior to disposal. The spent media may be designated as a hazardous waste as a result of accumulation of adsorbed metals from the LFG.

Change-out of SulfaTreat media has been associated with odor complaints in other facilities. As analyzed in the Draft SEIR, the proposed project is not expected to generate any odors, while combustion of the LFG in the gas turbines could serve to reduce odors. The currently proposed project does not include any odor generating equipment or materials, therefore, odor impacts were concluded to be less than significant. Given the current concerns about odors from the landfill, SulfaTreat could generate potential odor impacts, thus, exacerbating current concerns about odors from the overall SCLF.

The SulfaTreat vessels would also require a water wash to remove caked-on media. This would require additional space for installation of a wastewater treatment system in order to treat the water before being sent off site for disposal; as with the spent media, the wastewater is expected to potentially contain hazardous materials found in the LFG. The site does not currently have an industrial wastewater treatment system or an industrial sewer connection, and thus, a new sewer connection for industrial waste or truck shipments for off-site disposal would be needed.

The SulfaTreat system would require a 50 foot by 55 foot area for installation including room around the unit for maintenance activities and but not including storage for spent media disposal. Treatment of a greater fraction of the inlet gas would require even more room.

Installation of a SulfaTreat system may not be feasible for the reasons listed above and would not achieve the major goal of this technology survey – further emission reductions (other than small reductions in SO<sub>x</sub> emissions) and would have the following additional concerns:

In addition, there are additional concerns pertaining to use of a SulfaTreat, including the following:

- Generation of new odor impacts in addition to those occurring at the SCLF from change-out of the spent iron media, that were not analyzed in the Draft SEIR;
- SulfaTreat has the potential to generate water demand and water quality impacts from the water wash system that were not evaluated in the Draft SEIR;
- Generation of a wastewater stream from the SulfaTreat system may be characterized a hazardous waste;
- Construction air quality impacts would be generated from the construction of a new industrial wastewater treatment system or an industrial sewer connection that were not evaluated in the Draft SEIR;
- Potential impacts to publicly owned treatment works could occur as a result of the wastewater generated by the SulfaTreat process that were not evaluated in the Draft SEIR;
- SulfaTreat has the potential to generate solid waste impacts that were not analyzed in the Draft SEIR;
- Due to the metals present in the LFG, the spent media may need to be managed as a hazardous material, requiring temporary storage as hazardous and testing prior to disposal;
- SulfaTreat has the potential to generate transportation/circulation impacts from transport of media to the project and removal of spent media to an appropriate landfill or transport of sewage to a publicly owned treatment works that were not analyzed in the Draft SEIR; and
- Because of the large size of the media storage vessels, it is unlikely that the SulfaTreat equipment could be accommodated on the project site as discussed in Section 5.

#### **4.6 VOC Controls**

VOC emissions from the proposed project are largely a result of the composition of the LFG, the majority of which is destroyed in the combustion process. In addition, prior to combustion in the turbines, the VOCs present in the LFG are reduced by 90% using the regenerating siloxane removal pretreatment system. SCAQMD and EPA New Source Performance Standard (NSPS) regulations require that 98% of the VOC present in LFG be destroyed during combustion. The VOC emission rate from the turbines is expected to meet the 98% reduction efficiency required as BACT by the SCAQMD and under NSPS Subpart WWW.

The most likely candidate for VOC control would be installation of an oxidation catalyst as described in Section 4.3.2. Because of the high VOC control efficiency that would be achieved first by the pretreatment system and then by the turbines, additional VOC emission reductions from an oxidation catalyst, for example, are unlikely. Further, there is a lack of data demonstrating that additional VOC controls are feasible for a simple cycle LFG turbine.

Installation of an oxidation catalyst system is not considered to be feasible for SGP's operations Draft SEIR for the same reasons identified in Section 4.3.2. In particular, this technology would not achieve the major goal of this technology survey – further reductions in VOC emissions. Further, SGP would be faced with similar space limitations as seen with other possible add-on controls (see the discussion in Section 5).

#### 4.6.1 Regenerative Thermal Oxidizer (RTO)

An RTO could be used in place of the enclosed flare as a control device for VOC emissions from the siloxane regeneration system. An RTO system uses a bed of ceramic material to absorb heat from the exhaust gas and then uses the captured heat to preheat the incoming process gas stream. Recovered heat from the ceramic material enhances the destruction efficiency compared to the afterburner alone. RTOs typically operate within a temperature range of 1,400 °F to 1,800 °F.<sup>24</sup>

An RTO is not considered to be a feasible VOC control technology for the proposed project because the RTO operates at substantially higher temperatures, 1,400 °F to 1,800 °F, than the exhaust temperatures associated with the Solar Mercury 50 turbines, 730 °F to 740 °F. Further, this technology would not achieve the major goal of this technology survey – further reductions in VOC emissions. RTOs typically achieve a destruction efficiency from approximately 95% up to at approximately 98%, but in most cases no greater than the levels expected at the outlet of the turbine. For these reasons, no further evaluation of this technology was undertaken.

#### 4.7 Siloxane Regeneration Flare

The current project design includes use of a regenerating temperature swing adsorption media to remove siloxanes to protect the turbine from SiO<sub>2</sub> deposits. This process also incidentally removes VOCs (see Section 4.6) and H<sub>2</sub>S from the LFG, with an overall siloxane control efficiency of 95+%.

The system is composed of two units in parallel. When the removal media in one unit is spent; that vessel is isolated; the LFG flows through the second vessel to remove the siloxanes; and the media in the first vessel is regenerated by passing a hot air stream through it, which purges accumulated H<sub>2</sub>S, VOCs and siloxanes. The associated gas coming off the regenerating media bed is combusted in an enclosed flare to destroy VOC and H<sub>2</sub>S (converting it to SO<sub>2</sub>) that are collected along with the siloxanes. The regeneration flare operates intermittently, only when the siloxane removal media is being regenerated. The combustion in the regeneration flare results in additional emissions of VOC, SO<sub>2</sub> and PM (as well as NO<sub>x</sub> and CO). Because add-on controls are currently not considered to be feasible on a flare, alternative methods for reducing emissions using other types of pre-treatment controls that may be more effective in reducing H<sub>2</sub>S and VOC combustion emissions than the currently proposed siloxane regeneration flare were surveyed. The following subsection discusses one potential alternative to the currently proposed siloxane regeneration flare

<sup>24</sup> Davis, Wayne, T., ed. 2000. Air Pollution Engineering Manual, Second Edition. John Wiley & Sons, Inc.

#### 4.7.1 Non-Regenerating Siloxane Removal with H<sub>2</sub>S Filtration

Use of activated carbon was considered as an alternative option to the current plan for siloxane treatment. Activated carbon adsorbs pollutants from a gaseous stream onto its surface. Because activated carbon is very porous, it has a large surface area onto which the pollutant can adhere. The adsorption capacity of a unit is a function of the following parameters; amount of carbon, carbon characteristics, gas stream temperature and humidity, pollutant concentration, and inherent characteristics of the pollutant under consideration.

Venture Engineering was contacted to provide a system design for an activated carbon adsorption system to remove siloxanes and incidentally remove VOCs. This system would also need to include a SulfaTreat system (see Subsection 4.5.2) to remove some of the H<sub>2</sub>S loading to the carbon media. Three parallel trains of lead/lag media vessels would be used to remove siloxanes, VOCs and additional H<sub>2</sub>S.

With the H<sub>2</sub>S pretreatment (e.g., SulfaTreat), siloxane breakthrough on the activated carbon will control media change-out and is expected to be at a frequency of 68 days based on the design siloxane levels. This option would require annual disposal of 442,000 lbs. of spent sulfur removal media. It would also consume 1,162,000 lbs. of activated carbon which is exchanged by the supplier for offsite regeneration. On site regeneration at landfills is not industry standard due to the volume of carbon used.<sup>25</sup> Regeneration of spent carbon occurs by stripping VOCs or other pollutants with steam or high-temperature nitrogen. In either case, use of a boiler to produce steam or use of a heater to increase the temperature of nitrogen, combustion emissions would occur as part of the regeneration process.

The SulfaTreat vessels would also require a water wash to remove caked-on media. This would require additional space for installation of a wastewater treatment system in order to treat the water before being sent off site for disposal; as with the spent media, the wastewater is expected to potentially contain hazardous materials found in the LFG. The site does not currently have an industrial wastewater treatment system or an industrial sewer connection, and thus, a new sewer connection for industrial waste or truck shipments for off-site disposal would be needed.

The spent media would also need to be tested to assess whether it is potentially hazardous due to the deposition of metals and other potential hazards in the LFG so that it can be disposed of in the appropriate manner; DTE has experienced occasional samples with detectible levels of hazardous materials at other sites requiring hazardous material disposal. In addition, the SulfaTreat vessels would require a water wash to remove caked-on media. This would require additional space for installation of a wastewater treatment system in order to treat the water before being sent off site for disposal; as with the spent media, the wastewater is expected to potentially contain hazardous materials found in the LFG. The site does not currently have an industrial wastewater treatment system or an industrial sewer connection, and thus, a new sewer connection for industrial waste or truck shipments for off-site disposal would be needed.

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<sup>25</sup> Telephone conversation, D.Park ENVIRON International Corporation and N. Grindheim, Calgon Carbon Corporation, November 11, 2011.



Lastly, as discussed in Subsection 4.5.2, change out of the spent media from the SulfaTreat system could result in potential odor concerns. A flare may still be needed to control off-gassing emissions during media change out.

As with the SulfaTreat system alone, discussed in Section 4.5.2, the SulfaTreat/carbon bed system will require additional space for installation. Space would be needed for the SulfaTreat unit and carbon bed (total 95 ft. by 55 ft.), for maintenance activities, and for storage of spent media in shipping containers. Further, collection and treatment of wastewater would require additional space that is not available and/or additional truck traffic. The space needed for the treatment system is approximately the space allocated for the footprint of four of the turbines. As discussed in Section 5, this additional space is not available at the site.

Installation of a non-regenerating siloxane removal system with H<sub>2</sub>S filtration may not be a feasible alternative to the proposed siloxane pretreatment system for the SGP LFGTE project for the reasons listed above and would not achieve the major goal of this technology survey – further emission reductions. Of particular concern are the following issues:

- Change out of the spent media has historically been a potential source of odor concerns. As a result, this technology has the potential to generate new odor impacts in addition to those occurring at the SCLF from change-out of the spent media, that were not analyzed in the Draft SEIR;
- Due to the metals present in the LFG, the spent media and generated wastewater may need to be managed as a hazardous material, requiring temporary storage as hazardous and testing prior to disposal;
- This alternative results in the generation of a wastewater stream that may be characterized a hazardous waste; and
- The footprint of the non-regenerating system and the associated wastewater treatment facility that would be required is greater than the space available at the site (see Section 5).

See Subsection 4.5.2 for additional concerns regarding the SulfaTreat technology.

## 5 SGP Site Layout and Constraints

As discussed in the Draft SEIR, SGP proposes to construct and operate five Solar Mercury 50 turbines which will be fueled by LFG received from the existing collection system at the SCLF. The plant design also includes a siloxane removal system and associated enclosed flare that will combust the siloxane removal system regeneration air. The location of the SGP facility was selected following a careful and thorough investigation of available land within the landfill property boundaries, taking into consideration approved grading limits, terrain limitations, environmental concerns and integration into the landfill's long-term plan for gas collection and flaring. The terrain and existing landfill location at the SCLF severely limit SGP plant site options.

The site constraints include requirements that the plant must be connected to both the SCLF landfill gas collection system for fuel and the Southern California Edison (SCE) 66kV subtransmission line to export the electricity produced. Accordingly, locations near both the subtransmission line and the LFG collection system minimizes disturbances of construction, as analyzed in the DRAFT SEIR. The 66 kilovolt (kV) line is currently located along the city limits of Los Angeles through the middle of the landfill property from the northeast to the southwest. The SCLF and SCE are planning to relocate the 66kV line to follow the limits of the county side of the landfill along the northern side of the landfill. The selected site for the proposed project will be adjacent to the relocated 66kV line route allowing for interconnection to the SCE electric system; hence the site must be located on the northern boundary of the fill area. To the southeast of the plant will be the SCE Sunshine switchyard and the relocated SCE 66kV subtransmission line. The switchyard has size constraints and required clearances from the overhead 66 kV subtransmission lines set by SCE for safe operation of the switchyard and the SCE electric grid. The facility layout is show on Figure 1, and in more detail in Figure 2.

The proposed project site is bounded to the northeast by an existing mountain slope, as shown in Figure 1. The filing and grading of the canyon to an elevation of 1,900' for the plant site is planned to be consistent with the approved landfill grading limits on the mountain slope. The grading limits were reviewed and approved in previous EIRs and constrain the project site. As shown in Figure 1, the proposed project site is bounded on the west by the Flare 8 hill; SCLF is currently planning to install an additional LFG flare on a graded area at the 1,900' level. The project boundary has been limited to the Flare 8 hill as expanding the site in the direction of the Flare 8 hill would require significant grading which would increase construction emissions, and require further geotechnical studies to ensure that the final grades on the ridge above the plant meet the LA County design factor of safety standards to prevent landslides. Figure 1 also shows that the proposed project site is bounded on the south by the limits of the landfill's liner and access roads and the route for the 66kV line and SCE switchyard. The switchyard is a 115' by 95' area which includes a required 10' maintenance area around the facility for vehicle access. The switchyard is located between the mountain to the northeast, the landfill to the southwest, and the SGP plant site to the northwest. The southeast side is the access road into the switchyard. The switchyard was positioned to allow for the utility easements to be outside of the landfill liner to prevent conflicts with landfill operations and such that the 66 kV lines are not overhead of the switchyard equipment for safe operation of the SCE subtransmission system. If the power lines were installed over the lined landfill area, the power lines would potentially conflict with the landfill activities and further grades of the lined area.

The landfill is currently open and receiving waste. The landfill lined area adjacent to the plant site and the switchyard has waste under the surface. The SGP plant and the switchyard cannot be placed onto the lined area of the landfill as the municipal solid waste is still in the process of decaying and settling and the surface can not be engineered to support equipment. Locating the facility on the lined area of the landfill would also interfere with the process of closing the landfill and installing the final cover at a later date.

Emissions modeling for the proposed project at its final elevation was performed to comply with SCAQMD rules and regulations. These constraints, the Flare 8 hill, the mountain slope, landfill liner, the SCE switchyard and the 66 kV line, prevent site expansion beyond the current size.

Most of the alternative or additional compliance options considered in this would require substantially more space than is currently available on the site. The areal extent of control equipment is shown in Figure 2. As can be seen, the site does not have sufficient room to add a carbon absorber, Sulfatreat or SCR equipment. To expand the area of the proposed project site, substantial cut-and-fill operations in addition to those already described in the Draft SEIR would be necessary; additional grading would be necessary, and stabilized area beyond the current proposed area would need to be acquired, which is not available, to accommodate any additional equipment. The following describes how the SGP site was selected.

## **5.1 Site Selection**

The SGP site is provided by Republic under the terms of a Gas Rights Agreement ("GRA"). SGP evaluated three sites as is shown in Figure 3. Most of the SCLF area is covered by fill area or steep slopes. The three sites that were considered exist within the allowable grading area, and had relatively shallow slopes .

### **Site 1.**

The original site evaluated is located in the northwest corner of the landfill property as shown in Figure 3. This site is bounded by canyon walls on three sides and the landfill cell on the remaining side. Substantial effort was spent evaluating site configurations that would allow the emissions from the proposed project to comply with applicable air quality rules and regulations. Because of the high canyon walls surrounding the site, it was not feasible to install the equipment at this site and comply with applicable SCAQMD rules and regulations. The topography of the canyon is such that an exhaust stack would need to be designed and installed that would exceed good engineering practices in order for the emission modeling results to be below the allowable limits. In addition, this type of stack would probably need to be constructed on the mountain side with fans added to push the exhaust out of the canyon. Following SGP's evaluation, this site was abandoned and subsequently, Republic assigned it for its own use.

### **Site 2.**

Following evaluation of Site 1, SGP discussed the possibility of locating the facility on the top of the Flare 8 ridge as shown Figure 3. This site was attractive because air modeling of emissions impacts indicated that the project would meet all of the SCAQMD's rules and regulations. There were substantial space limitations as the current graded area at the top of the ridge is ~330' long, ~120' at the widest, and ~50' at

the narrow end to the southeast. The SCLF landfill Flare 8 currently occupies ~5,300 sq. ft. of the top of the ridge. The limited space means that the top of the Flare 8 area would need additional grading work that would have required relocating Flare 8 and/or the use of a temporary flare during the construction. The effective space including the area currently fenced for Flare 8 is approximately 29,700 sq. ft., approximately 16,700 sq. ft. less than the current ~46,500 sq. ft. required for the SGP plant and the SCE switchyard.

In evaluating the site, the access road was reviewed and it was determined that there was not a practical means of delivering the turbines to the top of the ridge. Each turbine weighs approximately 105,000 lbs., is 36.5' long and 10.6' wide. Delivering the turbine to the site requires specialized equipment that would be unable to negotiate the turns and grades on the access road up to the top of the Flare 8 ridge. This was considered a major issue for both the initial construction and the long term operation and maintenance of the plant as highway trucks will need to access the site for occasional deliveries of equipment and materials. If Site 2 was used, there was a potential visual impact from the Interstate 5 corridor for a short section of the highway where Flare 8 is currently partially visible. Additional aesthetic impacts would have to be evaluated because the five turbines and associated equipment would be larger than the current Flare 8, potentially causing a significant aesthetic impact on Interstate 5. After evaluations by design and construction engineers it was determined that the site was not large enough to allow the facility to be located here.

### **Site 2A**

Following evaluation of Site 2, SGP considered splitting the facility between Site 2 and Site 3 (see Figure 3) at the base of the Flare 8 ridge. In this configuration, the turbines would be located at the top of the Flare 8 ridge and the remainder of the facility equipment would be located at the base of the ridge between the canyon wall and the active fill. The benefit of this configuration would be that the impacts of the turbine exhaust would comply with SCAQMD rules and regulations. However, the following issues ultimately made this configuration unviable. Specifically, the delivery of the large and heavy equipment to the top of the Flare 8 ridge was impractical as noted in the discussion above for Site 2 and the cost of constructing and operating essentially two separate sites raised operational concerns as the operators would need to drive between each portion of the plant site multiple times per day and potentially would result in longer periods of outages and increased labor costs compared to a single plant. This configuration would also require aesthetic visual impact assessments but with some of the equipment located at the lower site, the impact would be less than the impact expected with Site 2.

### **Site 3**

Ultimately, a site layout was developed that allowed the entire project to be located in the space available at the base of the Flare 8 ridge. Site 3 was thus chosen and analyzed as the project location in the Draft SEIR. The gas treatment, compression, electric generation and power conditioning equipment require a total of ~36,000 sq. ft. In addition the Southern California Edison (SCE) substation required for interconnection

into the SCE local distribution system requires an additional ~10,500 sq. ft. There is no additional space left for add-on controls as discussed in below.

## 5.2 Site Constraints

The facility as currently proposed, (Site 3) would be laid with the minimum spacing between equipment to maintain safe and effective operation as shown in Figure 2. Space is required between turbine generation containers to allow access for maintenance equipment. Likewise, compression and gas treatment equipment require access space between the equipment for operation and maintenance activities. Because of the limited space available at Site 3 as discussed in Section 5 above equipment spacing is as compact as feasible for safe and effective operation. There is no potential to expand Site 3 because the distance between the ridge walls at Site 3 is from 620' at the mouth of the canyon after grading to 1,900', tapers to ~135' at the top of the retaining basin at the northwest end of the canyon, and has a ~245' usable length of canyon. With cut-and-fill activities the total area is ~35,900 sq. feet. For comparison, the County of Los Angeles Sanitation Department operates a three Mercury 50 facility at the Calabasas landfill that is installed in approximately 59,000 square feet. The facility shapes and plant areas are partly driven by the mountainous terrain along with requirements for maintenance access to equipment. Because of the slope of the ridges, no equipment can be placed outside the boundaries of the site area without additional cut-and-fill and slope stabilization, etc. Additional cut-and-fill, grading, and slope stabilization, would create more/substantially greater construction air quality impacts; soil hauling, resulting in greater on-road mobile source air quality impacts during construction; greater traffic impacts, etc.

As discussed above, the Site 3 footprint was arranged to fit in the space available between the canyon wall to the east of the landfill property, the landfill cell to the south and west and the Flare 8 ridge to the west and north (see Figure 1). Expansion into the landfill cell or off of landfill property is not available. The new Flare 9 is being installed at a new graded area at 1,900' elevation and the SGLF project will be changing the existing road up to the Flare 8 as part of that project. The area being used for Flare 9 is adjacent to the SGP plant site. Following installation of the new Flare 9 by Republic, Flare 8 will be taken out of service and the Flare 8 Ridge will be graded to allow space for Republic to locate additional flares adjacent to the new Flare 9 to handle all the gas ultimately forecast to be generated at the landfill. At this time, no additional space is available for expansion of the SGP footprint at Site 3.

The plant must be connected to both the SCLF landfill gas collection system for fuel and the SCE 66kV subtransmission line to export the electricity produced. The 66 kilovolt (kV) line is currently located along the city limits of Los Angeles through the middle of the landfill property from the northeast to the southwest. The SCLF and SCE are planning to relocate the 66kV line to follow the limits of the county side of the landfill along the northern side of the landfill. The selected site will be adjacent to the relocated 66kV line route allowing for interconnection to the SCE electric system. To the southeast of the plant will be the SCE Sunshine switchyard and the relocated SCE 66kV subtransmission line. The switchyard has size constraints as noted above and required clearances from the overhead 66 kV subtransmission lines set by SCE for safe operation of the switchyard and the SCE electric grid

## 6 Conclusion

As requested by the SCAQMD, ENVIRON has conducted a thorough review of potential add-on controls or pre-combustion process modifications as potential means to further reduce the LFGTE project emissions. As discussed in Section 2.1 and shown in Table 3, the currently proposed project provides the lowest permitted emission rates for CO, NO<sub>x</sub>, and PM of any known permitted LFGTE turbine operating in the SCAQMD jurisdiction, which are substantially lower than current BACT requirements, and lower than which was analyzed in the DSEIR for CO and NO<sub>x</sub>. In addition, the VOC emissions would comply with current BACT requirements. The emissions rate for SO<sub>x</sub> is governed by the amount of reduced sulfur in the LFG and, therefore, SGP's proposed LFGTE project will not cause a change in SO<sub>x</sub> emissions compared to SO<sub>x</sub> emissions from Flare 8. Based on ENVIRON's review, no additional controls or pre-process modifications were identified to further reduce emissions beyond those proposed in the revised analysis in the Final SEIR that are feasible for this project. A summary of the results is provided in Table 8.

<b>Table 8: Summary of the Feasibility of Air Emissions Reductions Alternatives</b>								
<b>Pollutant</b>	<b>Technology</b>	<b>Achieved in Practice?</b>	<b>Technologically Feasible?</b>	<b>Waste Generated</b>	<b>Size/Area Required</b>	<b>Pre or Post Combustion Treatment?</b>	<b>Destruction/Capture Efficiency</b>	<b>Comments</b>
<b>Turbines</b>								
NO <sub>x</sub>	Solar Mercury 50	Yes	Yes	15 ppm NO <sub>x</sub>	46,000 sq. ft.	N/A	N/A	SGP Preferred Option. Turbines provide inherently low NO <sub>x</sub> at current BACT.
	SCR	No	No	Spent catalysts and additional emissions of ammonia and secondary formation of PM <sub>2.5</sub> of 47 to 221 lbs./day due to ammonia slip	5 units of 15' x 45' plus additional space for aqueous ammonia storage	Post-combustion	Up to 70% destruction	Budgetary proposals were received from two manufacturers for five SCR/CO systems. Will result in secondary PM <sub>2.5</sub> emissions due to secondary particulate formation. Along with the additional emissions impacts, space limitations and siloxane levels preclude this from being a feasible option. Additional truck traffic impacts due to aqueous ammonia deliveries
	SNCR	No	No	Uncharacterized additional secondary PM <sub>2.5</sub> emissions due to ammonia slip		Post-combustion		Turbine exhaust temperature too low for technology

<b>Table 8: Summary of the Feasibility of Air Emissions Reductions Alternatives</b>								
<b>Pollutant</b>	<b>Technology</b>	<b>Achieved in Practice?</b>	<b>Technologically Feasible?</b>	<b>Waste Generated</b>	<b>Size/Area Required</b>	<b>Pre or Post Combustion Treatment?</b>	<b>Destruction/Capture Efficiency</b>	<b>Comments</b>
<b>Turbines</b>								
CO	Solar Mercury 50	Yes	Yes	25 ppm CO	46,000 sq. ft.	N/A	N/A	SGP Preferred Option. Turbines provide inherently low CO at current BACT.
	Oxidation Catalyst	No	No	Spent catalysts	5 units of 15' x 45'	Post-combustion	Designed for 46% reduction	Turbines provide inherently low CO. Budgetary proposals were received from two manufacturers for five SCR/CO systems. Siloxane levels preclude this from being a feasible option.
PM	Cyclones	No	No	Solid waste from captured particulate material		Post-combustion		This technology not effective for removal of PM <sub>2.5</sub> . Potential solid waste and siloxane/LFG constituent plugging impacts.
	Baghouse	No	No	Spent filtration media and additional particulate emissions if spray coolers are used		Post-combustion		No commercial product exists for the application. This technology alone will not be able to withstand the high temperatures from the turbine exhaust. Spray coolers and dilution air



Table 8: Summary of the Feasibility of Air Emissions Reductions Alternatives								
Pollutant	Technology	Achieved in Practice?	Technologically Feasible?	Waste Generated	Size/Area Required	Pre or Post Combustion Treatment?	Destruction/Capture Efficiency	Comments
								are not feasible alternatives to lower the exhaust temperature to acceptable levels for a baghouse. Would provide only marginal to no additional PM emission reduction benefits, especially for particulates smaller than PM <sub>10</sub> .
	Wet Scrubber	No	No	Slurry requiring onsite treatment for offsite disposal and additional secondary particulate emissions		Post-combustion		This technology alone will not materially reduce PM emissions from the gas turbine. This is in part because it would not be able to withstand the high temperatures from the turbine exhaust, or the substantial pressure drop. Dilution air could be used to cool the stream, but the resulting PM concentrations are so low that a baghouse would not further reduce the emissions. Spray

Table 8: Summary of the Feasibility of Air Emissions Reductions Alternatives								
Pollutant	Technology	Achieved in Practice?	Technologically Feasible?	Waste Generated	Size/Area Required	Pre or Post Combustion Treatment?	Destruction/Capture Efficiency	Comments
								coolers are not feasible to lower the exhaust temperature to acceptable levels for a baghouse without causing severe operating problems. Would create additional PM emissions due to salts in the water.
	Wet ESP	No	No			Post-combustion		Due to the operating temperature requirements of the wet ESP, this technology would not be able to function with the exhaust temperatures anticipated for the turbines. Spray coolers and dilution air are not feasible alternatives to lower the exhaust temperature to acceptable levels for ESPs.
	Dry ESP	No	No			Post-combustion		Dry ESPs are not effective at the expected concentration of 7 mg/m <sup>3</sup> expected for

Table 8: Summary of the Feasibility of Air Emissions Reductions Alternatives								
Pollutant	Technology	Achieved in Practice?	Technologically Feasible?	Waste Generated	Size/Area Required	Pre or Post Combustion Treatment?	Destruction/Capture Efficiency	Comments
								this project. In addition, ESPs are difficult to install at sites, such as the SCLF, which have limited space, the dissolved pollutants can form highly corrosive acid solutions, and dry ESPs have high power requirements.
SO <sub>x</sub>	Scrubbers	No	No	Slurry requiring onsite treatment for offsite disposal and additional secondary particulate emissions		Post-combustion		Turbine exhaust temperature is significantly higher than the optimal conditions for scrubbers. As with the PM controls, spray coolers or dilution air would not be feasible methods to lower the exhaust temperature to acceptable levels for scrubbers. Would create additional secondary PM emissions due to salts in the water.
	Non-Regenerating	No	No	442,000 lbs./yr. of spent media	50'x55'	Pre-combustion	~65% of H <sub>2</sub> S in LFG	Environmental disbenefit in production of solid

Table 8: Summary of the Feasibility of Air Emissions Reductions Alternatives								
Pollutant	Technology	Achieved in Practice?	Technologically Feasible?	Waste Generated	Size/Area Required	Pre or Post Combustion Treatment?	Destruction/Capture Efficiency	Comments
	Sulfur Media			requiring disposal in landfill, waste water generated from cleaning tanks during media replacement requiring onsite treatment for offsite disposal				waste and waste water, and potential odor concerns, among others.
VOC	Proposed Siloxane Treatment System	Yes	Yes	Flare gas emissions 0.018 lb/MMBTU SO <sub>x</sub>	~55'x20'	Pre-Combustion	90%	SGP Preferred Option
	Oxidation Catalyst	No	No			Post-Combustion	95%	Additional VOC emission reductions are unlikely beyond those already achieved by the pretreatment system and turbines. Lack of data demonstrating that additional VOC controls are feasible for a simple cycle LFG turbine.
	RTO	No	No			Post-Combustion	95-98%	Operates at much higher temperature than turbine exhaust temperature.

Table 8: Summary of the Feasibility of Air Emissions Reductions Alternatives								
Pollutant	Technology	Achieved in Practice?	Technologically Feasible?	Waste Generated	Size/Area Required	Pre or Post Combustion Treatment?	Destruction/Capture Efficiency	Comments
								Further emission reductions beyond those achieved by the flare are not expected.
<b>Flares</b>								
All Pollutants	Proposed Siloxane Treatment System	Yes	Yes	Flare gas emissions 0.025 lb/MMBTU NO <sub>x</sub> ; 0.060 lb/MMBTU CO; 2.4 lb/MMscf PM; 0.018 lb/MMBTU VOC; 0.064 lb/MMBTU SO <sub>x</sub>	~55'x20'	Pre-Combustion	90%	SGP Preferred Option
	Non-Regenerating Siloxane Removal with H <sub>2</sub> S Filtration	No		442,000 lbs./yr. of spent Sulfatreat media requiring disposal in landfill, and 1,162,000 lbs./yr. of spent activated carbon to be		Pre-combustion		Environmental disbenefit in production of solid waste and waste water, and potential odor concerns.

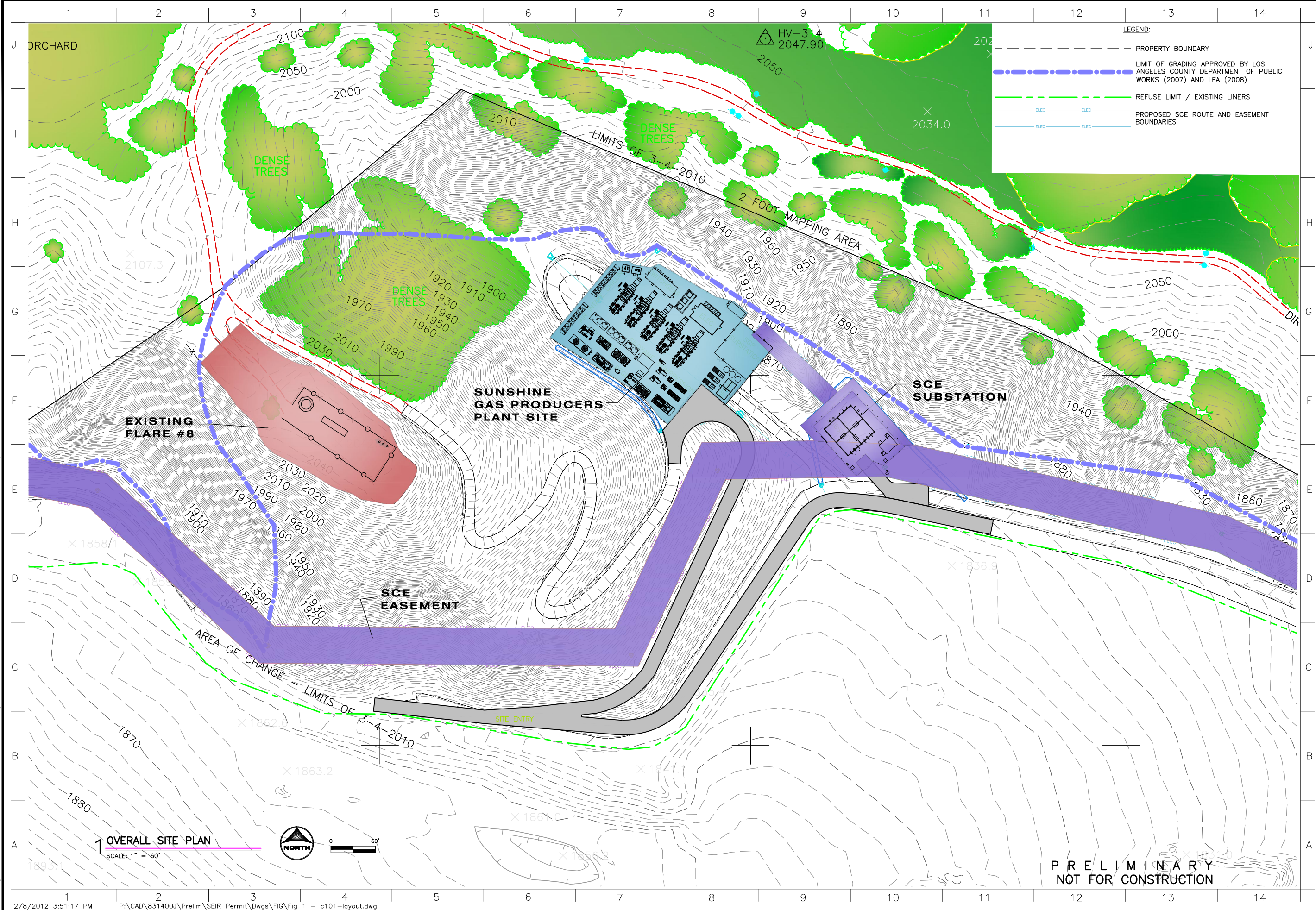
<b>Table 8: Summary of the Feasibility of Air Emissions Reductions Alternatives</b>								
<b>Pollutant</b>	<b>Technology</b>	<b>Achieved in Practice?</b>	<b>Technologically Feasible?</b>	<b>Waste Generated</b>	<b>Size/Area Required</b>	<b>Pre or Post Combustion Treatment?</b>	<b>Destruction/Capture Efficiency</b>	<b>Comments</b>
				disposed of in landfill or shipped off-site for regeneration, waste water generated from cleaning tanks during media replacement requiring onsite treatment for offsite disposal				



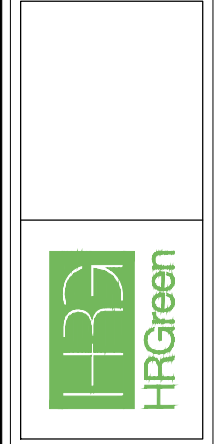
## Figures







NO.	DATE	BY	REVISION DESCRIPTION



**SUNSHINE GAS PRODUCERS  
LANDFILL GAS TO ENERGY PROJECT  
SUNSHINE CANYON, CALIFORNIA  
SGPREP Site Layout and Area Constraints**

BAR IS ONE INCH ON OFFICIAL DRAWINGS  
0 1"  
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY

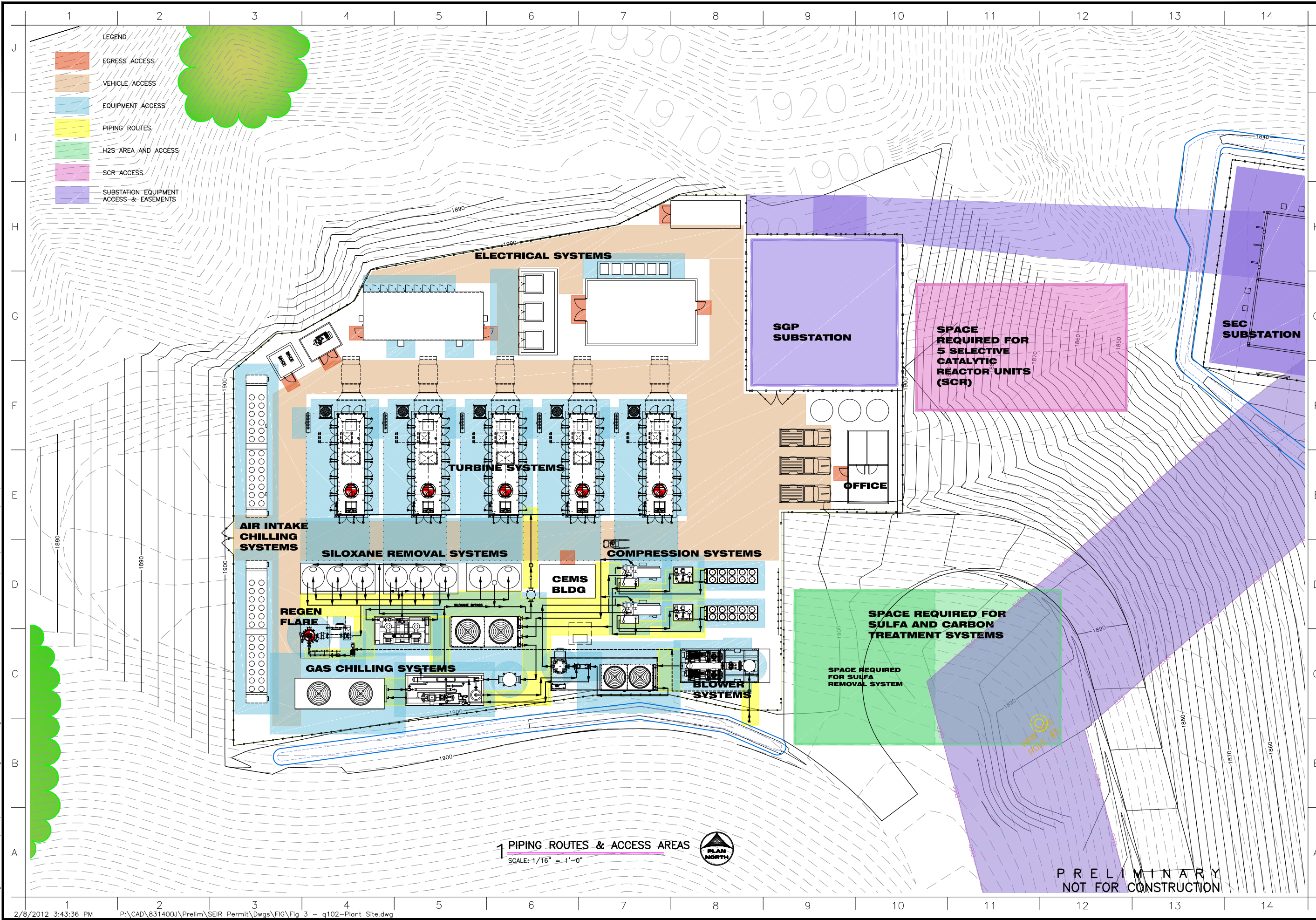
DRAWN BY: JJC  
APPROVED: JDC  
JOB DATE: 2011  
JOB NO: 831400J

DRAWING  
**FIGURE 1**

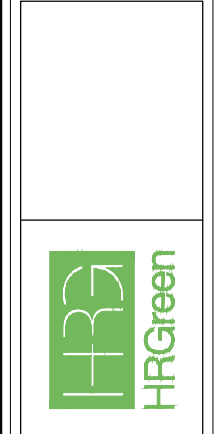
Xrefs: Xgt-1-dw01; xc-0-base; xc-0-dsgn; xc-0-cont; xq-1-p01; xc-0-util-SCE Poles; xc-0-limits; xq-1-p01-Areas



Xrefs: Xgt-1-dv01; xq-1-p01; xc-0-dsgr; xc-0-grd; xc-0-uti; xp-1-p01-tln; xq-1-p01-areas; xc-0-base; xc-0-cont



NO.	DATE	BY	REVISION DESCRIPTION



**SUNSHINE GAS PRODUCERS**  
**LANDFILL GAS TO ENERGY PROJECT**  
 SUNSHINE CANYON, CALIFORNIA  
**Detailed Site Layout and Space Requirements**  
**for Control Devices**

BAR IS ONE INCH ON OFFICIAL DRAWINGS  
 0" = 1"  
 IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY

DRAWN BY: JWK  
 APPROVED: JAP  
 JOB DATE: 2011  
 JOB NO: 831400J

DRAWING  
**FIGURE 2**

THIS DRAWING IS THE PROPERTY OF HR GREEN, INC. AND IS SUBJECT TO RETURN ON DEMAND. NO PART OF THE INFORMATION CONTAINED WITHIN THIS DRAWING MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM, ELECTRONIC, MECHANICAL, PHOTOCOPYING OR OTHERWISE, WITHOUT WRITTEN CONSENT OF HR GREEN, INC.



**Figure 3: Sites Evaluated for SCLF LFGTE Plant**





## **Appendix A**

### **SCLF LFG Siloxane Results**





## Appendix A: SCLF LFG Siloxane Results

### Air Permit (December 2007):

Compound	Formula	MW	Vapor Pressure (mmHg, 77 °F)	Abbreviation	Boiling Point (°F)	Auto Ignition (°F)	Water Solubility (mg/L, 25 °C)	Concentration		
								Average ppmv	mg/m <sup>3</sup>	mg Si/nm <sup>3</sup>
Hexamethylcyclotrisiloxane	C12H18O3Si <sub>3</sub>	222	10	D3	275		1.56	0.17	1.54	0.59
Octamethylcyclotetrasiloxane	C8H24O4Si <sub>4</sub>	297	1.3	D4	348	752	0.056	1.92	23.32	8.83
Decamethylcyclopentasiloxane	C10H30O5Si <sub>5</sub>	371	0.4	D5	412	738	0.017	3.54	53.71	20.34
Dodecamethylcyclotrisiloxane	C12H36O6Si <sub>6</sub>	445	0.02	D6	473		0.005		0.00	0.00
Hexamethyldisiloxane	C6H18OSi <sub>2</sub>	162	31	L2, MM	224	644	0.93	1.02	6.76	2.34
Octamethyltrisiloxane	C8H24O2Si <sub>3</sub>	236	3.9	L3, MDM			0.035	0.06	0.58	0.21
Decamethyltetrasiloxane	C10H30O3Si <sub>4</sub>	310	0.55	L4, MD2M				0.06	0.76	0.28
Dodecamethylpentasiloxane	C12H36O4Si <sub>5</sub>	384	0.07	L5, MD3M					0.00	0.00
Trimethylsilanol	C3H10OSi	90	19	TMS	210	644	42000	4.4	16.19	5.06
Tetramethylsilane	C4H12Si	88.2	11.66		82		20	0.17	0.61	0.98
<b>Total</b>								<b>11.34</b>	<b>103</b>	<b>38.6</b>

### Most Recent Sampling (April 2011):

Compound	Formula	MW	Vapor Pressure (mmHg, 77 °F)	Abbreviation	Boiling Point (°F)	Auto Ignition (°F)	Water Solubility (mg/L, 25 °C)	Concentration		
								Average ppmv	mg/m <sup>3</sup>	mg Si/nm <sup>3</sup>
Hexamethylcyclotrisiloxane	C12H18O3Si <sub>3</sub>	222	10	D3	275		1.56	0.17	1.54	0.59
Octamethylcyclotetrasiloxane	C8H24O4Si <sub>4</sub>	297	1.3	D4	348	752	0.056	1.04	12.63	4.78
Decamethylcyclopentasiloxane	C10H30O5Si <sub>5</sub>	371	0.4	D5	412	738	0.017	0.36	5.46	2.07
Dodecamethylcyclotrisiloxane	C12H36O6Si <sub>6</sub>	445	0.02	D6	473		0.005	0.13	2.37	0.90
Hexamethyldisiloxane	C6H18OSi <sub>2</sub>	162	31	L2, MM	224	644	0.93	0.99	6.56	2.28
Octamethyltrisiloxane	C8H24O2Si <sub>3</sub>	236	3.9	L3, MDM			0.035	0.03	0.29	0.10

**Air Permit (December 2007):**

Compound	Formula	MW	Vapor	Abbreviation	Boiling	Auto	Water	Concentration		
	3									
Decamethyltetrasiloxane	C <sub>10</sub> H <sub>30</sub> O <sub>3</sub> Si <sub>4</sub>	310	0.55	L4, MD2M				0	0.00	0.00
Dodecamethylpentasiloxane	C <sub>12</sub> H <sub>36</sub> O <sub>4</sub> Si <sub>5</sub>	384	0.07	L5, MD3M				0	0.00	0.00
Trimethylsilanol	C <sub>3</sub> H <sub>10</sub> O <sub>Si</sub>	90	19	TMS	210	644	42000	4.82	17.74	5.54
Tetramethylsilane	C <sub>4</sub> H <sub>12</sub> Si	88.2	11.66		82		20	0	0.00	0.00
<b>Total</b>								<b>7.54</b>	<b>47</b>	<b>16.2</b>

**Appendix B**  
**Sunshine Canyon GTE Plant Exhaust Gas Calculations**  
**(Five Solar Mercury 50 Turbines)**



**Appendix B: Sunshine Canyon Landfill GTE Project Exhaust Gas Calculations (Five Solar Mercury 50 Turbines)**

Parameter	Value	Units	Source
<b>Inputs</b>			
GT heat input	216	MMBtu/hr LHV	SGP Permit Table 4.2 (fuel equivalent calculated using LHV)
Fuel LHV	385	Btu/scf @ 60 F	based on 42.2% methane per SGP Permit.
Fuel LHV	4890	Btu/lb	based on 42.2% methane per SGP Permit.
Fuel LHV/HHV	0.9003	Btu/Btu	Calculated
EPA M19 Fd (using HHV)	10,624	dscf/MMBtu @ 68 F	derived from SGP permit table 4.2 adjusted for LHV/HHV.
Exhaust O2, dry	15.0	%vd as measured	Assumed
Exhaust MW (wet)	28.6	lb/lb-mole	assumed (from recent gas turbine PM tests, but could be calculated)
Ammonia in stack gas	5	ppmvd as measured	given
PM emissions	0.015	lb/MMBtu	per SGP from Solar guarantee; assume based on HHV
MW ammonia	17	lb/lb-mole	given
Standard Temperature	60	°F	assumption; SCAQMD standard T
<b>Calculated (rounded)</b>			
Fd (using LHV @ std T)	11,622	dscf/MMBtu @ 60 F	calculated from above
Fuel flow rate	562,100	scf/hr @ 60 F	calculated; not used for other calculations
Fuel flow rate	9,370	scf/min @ 60 F	calculated; not used for other calculations
Fuel flow rate	44,250	lb/hr	calculated; not used for other calculations
Heat input	5,194	MMBtu/day LHV	calculated from above
Exhaust gas flow rate dry	8,910,000	dscf/hr @ 60 F	calculated from above
Exhaust gas flow rate dry	148,500	dscf/min @ 60 F	calculated from above
Exhaust gas flow rate dry	213,800,000	dscf/day @ 60 F	calculated from above
Ammonia gas flow rate	1069	dscf/day @ 60 F	calculated from above
<b>Ammonia gas flow rate</b>	<b>47.2</b>	<b>lb/day</b>	calculated from above
PM exhaust concentration	0.0028	grains/dscf @ 60 F	calculated from above
PM exhaust concentration	6.39	mg/dscm @ 60 F	calculated from above
PM emission rate	3.551	lb/hr	calculated from above
PM emission rate	77.9	lb/day	calculated from above
Exhaust H2O	4.9	%v @ 15% O2	O2 above and 42.2% methane per SGP Permit
Exhaust gas flow rate wet	707,000	lb/hr	calculated from above
Exhaust gas flow rate wet	321,200	kg/hr	calculated from above