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TECHNICAL MEMORANDUM

To: Patrick Brown, Soitec
From: Jennifer Longabaugh, Environmental Planner
David Deckman, Director of Air Quality Services
Subject: Supplemental Air Quality Analysis – Project Changes
Date: October 29, 2014

1.0 INTRODUCTION

This memorandum provides information regarding project changes to the Soitec Solar Development Project (Proposed Project) that were not analyzed in the Draft Program Environmental Impact Report (DPEIR) dated January 2014. Three primary changes to the Proposed Project are presented in this memorandum: 1) a reduction in solar trackers including tracker reductions for the Tierra del Sol solar farm from 2,657 to 2,586 trackers, and tracker reductions for the Rugged solar farm from 3,588 to 3,468 trackers; 2) reduced ground disturbance area as a result of tracker reductions; and 3) increased water demand that would result in additional truck trips for water transport to the Tierra del Sol solar farm and Rugged solar farm. This memorandum describes these three project changes, analyzes its potential to have a significant environmental impact related to air quality, and concludes that the Proposed Project changes would not affect the conclusions of the DPEIR prepared and circulated for the development of the Proposed Project.

2.0 PROJECT DESCRIPTION

Tracker Reductions

The Tierra del Sol solar farm would include the removal of trackers for the implementation of Mitigation Measure M-AE-1 as provided in the DPEIR. With implementation of Mitigation Measure M-AE-1, approximately 71 CPV trackers would be removed from the Tierra del Sol solar farm to incorporate landscape screens along Tierra Del Sol Road reducing on-site trackers from 2,657 to 2,586. The approximate number of CPV tracker to be installed on the Tierra del Sol solar farm as reflected in the DPEIR (2,657) does not reflect the removal of trackers necessary to implement Mitigation Measure M-AE-1.

Similarly, the approximate number of CPV trackers to be installed on the Rugged solar farm as reflected in the DPEIR (3,588) does not reflect the removal of trackers necessary to implement Project Design Feature PDF-AE-1 and Mitigation Measure M-AE-1 and does not address other project refinements. Approximately 31 CPV trackers would be removed to incorporate landscape screens west of McCain Valley Road and 65 CPV trackers would be removed from the topographical saddle occurring at the southeastern boundary of the central subarea of the Rugged solar farm. In addition, 24 CPV trackers would be removed for other project refinements. A total reduction of 120 trackers from the originally-proposed 3,588 trackers would occur resulting in a total of 3,468 trackers at the Rugged solar farm.

Reduction in Ground Disturbance due to Tracker Reductions

As a result of the removal of 71 trackers from the Tierra del Sol solar farm, the overall acreage required for grading activities would be marginally reduced from 31.5 acres to 31.2 acres. Additionally, total site disturbance for site preparation activities (clear and grubbing) would be reduced from 420 acres to 390 acres.

Removal of 120 trackers from the Rugged solar farm would result in a reduction of overall acreage required for grading activities from 41.91 to 41.65. Additionally, total site disturbance for site preparation would be reduced from 516 acres to 505 acres.

Water Demand Increase

The anticipated increase in water demand for the Proposed Project is discussed in common response WR1 in Chapter 9.0, Responses to Comments, of the Final Program Environmental Impact Report (FPEIR). As stated in the air quality technical reports prepared for the Proposed Project (Appendices 2.2-1 and 2.2-2 of the DPEIR), it was originally assumed that the approximately 32 acre-feet of water that would be required for on-site dust control during site preparation activities (constituting the peak water demand period) for the Tierra del Sol project site could be imported from Padre Dam Municipal Water District (PDMWD) or other local water purveyors including Jacumba Community Service District (JCSD), a much closer water purveyor. The increase in off-site water demand would result in an increase from 32 acre-feet to 43 acre-feet for off-site water demand during the peak period. The revised total water demand (43 acre-feet) would equate to an average daily demand of 241,579 gallons per day during the peak demand period, depending on specific construction activities occurring on any given day. It is assumed for the purposes of accommodating the increase in water importation that the additional 11 acre-feet of off-site water required for site preparation would come from JCSD.

For the Rugged solar farm, it was originally assumed that the approximately 16 acre-feet of water that would be required for on-site dust control during site preparation activities could be

imported from PDMWD or other local water purveyors including JCSD. The additional off-site water demand for the Rugged solar farm would increase from 16 acre-feet to 29 acre-feet during the peak demand period as described in common response WR1 (Chapter 9.0 of the FPEIR) resulting in an average water demand of 136,952 gallons per day during the peak demand period, depending on specific construction activities occurring on any given day. It is assumed for the purposes of accommodating the increase in water importation that 12 acre-feet of off-site water required for site preparation would come from PDMWD, and 17 acre-feet of imported water would come from JCSD and/or Pine Valley Mutual Water Company (PVMWC).

No Construction Worker Carpooling

The DPEIR originally assumed that 30% of the construction worker crew would carpool to each respective construction site each work day as described in project design feature (PDF) AQ-2. For the purposes of a conservative analysis, this assumption has now been removed to reflect no carpooling during construction would occur.

3.0 ANALYSIS

Construction Impacts

Tierra Del Sol Solar Farm

Total construction emissions as analyzed in the DPEIR for the Tierra del Sol solar farm are provided in Table 1.

Table 1
Estimated Maximum Daily Construction Emissions (pounds/day)
Tierra del Sol Solar Farm

	VOC	NO_x	CO	SO_X	PM_{10}	$PM_{2.5}$
2014	15.45	247.16	107.69	0.46	75.50	21.99
2015	7.24	93.85	59.53	0.23	5.29	3.67
Maximum Daily Emissions	***15.45***	***247.16***	***107.69***	***0.46***	***75.50***	***21.99***
Pollutant Threshold	*75*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	No	No	No	No	No	No

Source: See Attachment 1 for complete results.

As shown, daily construction emissions would not exceed the significance thresholds for VOC, NO_x, CO, SO_X, PM_{10}, or $PM_{2.5}$; therefore, impacts during construction were found to be less than significant.

Tracker Reduction

It was assumed 1.25 round trips or 2.5 one-way trips would be required per tracker during tracker deliveries to the site as analyzed in the DPEIR dated January 2014. It was assumed that tracker material deliveries would originate from Rancho Bernardo in San Diego County. The reduction of 71 trackers from the originally-analyzed Rugged solar farm would result in a reduction of approximately 89 total round trips during the overall construction period. The reduction in trips was distributed evenly across the material deliveries anticipated over the course of construction (260 days during tracker deliveries). When revised delivery trip generation was averaged over the material delivery period, the average daily trip count did not change; therefore, no change in emissions as originally disclosed in the DPEIR as a result of tracker deliveries would occur. Construction personnel, equipment, and hours of operation would be consistent with that discussed in the DPEIR; refer to Chapter 1.0, Project Description.

Reduction in Ground Disturbance

As previously discussed, as a result of the removal of 71 trackers from the Tierra del Sol solar farm, the overall acreage required for grading activities would be marginally reduced from 31.5 acres to 31.2 acres. Additionally, total site disturbance for site preparation activities (clear and grubbing) would be reduced from 420 acres to 390 acres.

As stated in the air quality technical reports prepared for the Proposed Project (Appendices 2.2-1 and 2.2-2 of the DPEIR), fugitive dust emissions during clear and grub activities were estimated using the default emission factor of 20 pounds per acre-day from the URBEMIS 2007, Version 9.2.4, land use and air emission model (Jones & Stokes 2007) because extensive earthmoving would not be conducted. For road construction, fugitive dust emissions were estimated using a "worst-case" emission factor of 38.2 pounds per acre-day, which is recommended in URBEMIS 2007 for grading that involves substantial earthmoving activity. The clear and grub operation would involve nearly the entire project site of 390 acres. Proposed grading for road construction would involve approximately 9,429 cubic yards of balanced cut and fill on an estimated 31.2 acres. Road construction would not require extensive soil hauling throughout the project site.[1] Rather, cut-and-fill activities would primarily consist of excavation using scrapers and bulldozers and localized recompaction of the top 8 inches of soil at the point of cut. The basis for the URBEMIS 2007 fugitive dust factor also accounts for dust generated by equipment and vehicles traveling on unpaved roads and surfaces at a construction site; thus, a separate calculation has not been

[1] The "low level of detail" factor in URBEMIS 2007 is based on cut and fill for projects involving extensive transport of soil using haul trucks on unpaved roads over large construction sites. This factor would overestimate fugitive dust emissions for the construction activities to be conducted for the Proposed Project, which would involve localized transport using scrapers and bulldozers.

performed. The revised average daily disturbed area would be 7.8 and 3.9 acres, respectively, for the clear-and-grub activities and grading for road construction.

Entrained road dust emissions for vehicles traveling off site on local roads were estimated using calculations in Section 13.2.1 (Paved Roads) of the EPA's *Compilation of Air Pollutant Emission Factors* (EPA 2011). VMT for paved road travel by workers is assumed to be approximately 35 miles based on local workforce from Alpine, El Centro, and surrounding areas,[2] and equipment delivery truck VMT are based on 85-mile one-way routes from Rancho Bernardo where equipment deliveries would originate.[3]

Water Demand Increase

As stated previously, the increase in off-site water demand would result in an increase from 32 acre-feet to 43 acre-feet for off-site water demand during the peak period. Appendix 2.2-1 conservatively assumed all off-site water demand trips would come from PDMWD, which is the water source furthest from the site. The assumption that all truck trips for water importation would come from PDMWD as analyzed in Appendix 2.2-1 of the DPEIR did not result in a significant impact to air quality (when combined with all other construction emissions during that period). More specifically, 35 round trips per day for water trucks were originally estimated for off-site water importation from PDMWD; however, many of these trips could potentially come from JCSD, a much closer water purveyor. Therefore, it is assumed for the purposes of accommodating the increase in water importation that the additional 11 acre-feet of off-site water required for site preparation would come from JCSD. The revised total water demand (43 acre-feet) would equate to an average daily demand of 241,579 gallons per day during the peak demand period, depending on specific construction activities occurring on any given day. As a result, a total of 30 round trips per day originally assumed from PDMWD and an additional 11 round trips per day from JCSD (to accommodate the 11 acre-feet increased demand during the peak period) were evaluated. This still constitutes a conservative analysis because, as indicated in the groundwater analysis, 29 acre-feet would be imported from PDMWD and 14 acre feet would be imported from JCSD; see Section 9.0, Table 9-3a in the FPEIR. The air quality analysis assumes the entire original 32 acre-feet would be imported from PDMWD and the additional 11 acre-feet would be imported from JCSD.

It should be noted that for the air quality analysis, truck trips for water import were assigned from PDMWD as a worse-case scenario because the distance from PDMWD to the Tierra del

[2] The average of the distances from Alpine and El Centro is 46 miles. This distance was reduced by 25% to reflect worker commute trips from local housing (temporary or permanent) for an average worker commute distance of 35 miles.

[3] VMT = one-way miles × 2 × number of trips.

Sol solar farm is greater than that from other water purveyors, including JCSD. The scenarios evaluated for the air quality analyses maximize the amount of water that would come from distant sources; whereas the scenarios evaluated for the groundwater analyses (Appendix 3.1.5-5, 3.1.5-7 and 3.1.5-8 of the DPEIR) maximize the amount of water to come from on-site production wells. Both the air quality and groundwater analyses use an accurate account of water demand as revised in common response WR1, but differ in assumptions only to the extent that they ensure a conservative impact analysis for each environmental area. Both analyses account for the full construction water demand of each project and neither exceed the volume of water that may be supplied by either on-site or off-site wells.

Revised Criteria Pollutant Emissions Estimates

Table 2 shows the revised maximum daily construction emissions as a result of the changes to the Tierra del Sol solar farm as described above including tracker reductions, reductions in site disturbance area, increase in off-site water demand and no construction worker carpooling.

Table 2
Revised Estimated Maximum Daily Construction Emissions (pounds/day)
Tierra del Sol Solar Farm

	VOC	NO_x	CO	SO_X	PM_{10}	$PM_{2.5}$
2014	15.62	240.08	110.97	0.45	70.81	20.92
2015	7.70	94.29	63.85	0.24	5.59	3.76
Maximum Daily Emissions (Revised)	***15.62***	***240.08***	***110.97***	***0.45***	***70.81***	***20.92***
*TDS DPEIR Emissions**	***15.45***	***247.16***	***107.69***	***0.46***	***75.50***	***21.99***
Emission Threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	No	No	No	No	No	No

Source: See Attachment 1 for complete results.
*See Table 1.

As shown in Table 2, the project changes would not result in a significant air quality impact and would not substantially increase the severity of air quality impacts as identified in the DPEIR. Impacts would remain less than significant as previously concluded in the DPEIR.

Rugged Solar Farm

Total construction emissions as analyzed in the DPEIR for the Rugged solar farm are provided in Table 3.

Table 3
Estimated Maximum Daily Construction Emissions (pounds/day)
Rugged Solar Farm

	VOC	NO_x	CO	SO_X	PM_{10}	$PM_{2.5}$
2014	17.94	248.95	127.07	0.46	98.53	26.64
2015	14.26	177.05	107.48	0.38	26.09	9.97
Maximum Daily Emissions	***17.94***	***248.95***	***127.07***	***0.46***	***98.53***	***26.64***
Emission Threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	No	No	No	No	No	No

Source: See Attachment 1 for complete results.

As shown, daily construction emissions would not exceed the significance thresholds for VOC, NO_x, CO, SO_X, PM_{10}, or $PM_{2.5}$; therefore, impacts during construction was found to be less than significant.

Tracker Reduction

Similar to the analysis conducted for the Tierra del Sol solar farm, it was assumed 1.25 round trips or 2.5 one-way trips would be required per tracker during tracker deliveries to the site as analyzed in the DPEIR dated January 2014. It was assumed that tracker material deliveries would originate from Rancho Bernardo in San Diego County. The reduction of 120 trackers from the Rugged solar farm configuration would result in a reduction of 150 total round trips during the tracker delivery period. The reduction in trips was distributed evenly across the material deliveries anticipated over the course of construction (278 working days during tracker deliveries) which would result in less than 1 fewer round delivery trip per day. As a result, emissions generated from tracker deliveries would be reduced by a marginal degree.

Construction personnel, equipment, and hours of operation would be consistent with that discussed in the DPEIR; refer to Chapter 1.0, Project Description.

Reduction in Ground Disturbance

As previously discussed, removal of 120 trackers from the Rugged solar farm would result in a reduction of overall acreage required for grading activities from 41.91 to 41.65. Additionally, total site disturbance for site preparation would be reduced from 516 acres to 505 acres.

As stated in the air quality technical reports prepared for the Proposed Project (Appendices 2.2-1 and 2.2-2 of the DPEIR), fugitive dust emissions during clear and grub activities were estimated using the default emission factor of 20 pounds per acre-day from the URBEMIS 2007, Version 9.2.4, land use and air emission model (Jones & Stokes 2007) because extensive

earthmoving would not be conducted. For road construction, fugitive dust emissions were estimated using a "worst-case" emission factor of 38.2 pounds per acre-day, which is recommended in URBEMIS 2007 for grading that involves substantial earthmoving activity. The clear and grub operation would involve an estimated 505 acres. Proposed grading for road construction would involve approximately 29,834 cubic yards of balanced cut and fill on an estimated 41.65 acres. Road construction would not require extensive soil hauling throughout the project site.[4] Rather, similar to soil disturbance for the Tierra del Sol solar farm, cut-and-fill activities would primarily consist of excavation using scrapers and bulldozers and localized recompaction of the top 8 inches of soil at the point of cut. The basis for the URBEMIS 2007 fugitive dust factor also accounts for dust generated by equipment and vehicles traveling on unpaved roads and surfaces at a construction site; thus, a separate calculation has not been performed. The revised average daily disturbed area would be 8.4 and 4.6 acres, respectively, for the clear-and-grub activities and grading for road construction.

Entrained road dust emissions for vehicles traveling off site on local roads were estimated using calculations in Section 13.2.1 (Paved Roads) of the EPA's *Compilation of Air Pollutant Emission Factors* (EPA 2011). VMT for paved road travel by workers is assumed to be approximately 35 miles based on local workforce from Alpine, El Centro, and surrounding areas,[5] and equipment delivery truck VMT are based on 85-mile one-way routes from Rancho Bernardo where equipment deliveries would originate.[6]

Water Demand Increase

The additional off-site water demand for the Rugged solar farm would increase from 16 acre-feet to 29 acre-feet during the peak demand period as described in common response WR1 (Chapter 9.0 of the FPEIR) resulting in an average water demand of 136,952 gallons per day during the peak demand period, depending on specific construction activities occurring on any given day. Appendix 2.2-2 conservatively assumed 16 acre-feet of water required for site preparation would come from PDMWD (which would equate to 15 round trips per day from PDMWD); however, there are sufficient local water sources to support the entire off-site water demand during the peak period for the Rugged site, including supplies from JCSD and Pine Valley Mutual Water Company (PVMWC), much closer water purveyors. PDMWD as a water source is analyzed as a contingency or worst-case scenario for the purposes of the air quality

[4] The "low level of detail" factor in URBEMIS 2007 is based on cut and fill for projects involving extensive transport of soil using haul trucks on unpaved roads over large construction sites. This factor would overestimate fugitive dust emissions for the construction activities to be conducted for the Proposed Project, which would involve localized transport using scrapers and bulldozers.

[5] The average of the distances from Alpine and El Centro is 46 miles. This distance was reduced by 25% to reflect worker commute trips from local housing (temporary or permanent) for an average worker commute distance of 35 miles.

[6] VMT = one-way miles × 2 × number of trips.

analysis and groundwater analysis. However, as indicated in the groundwater analysis it is not anticipated that water from PDMWD would be required for construction of the Rugged solar farm; see Section 9.0, Table 9-3b of the FPEIR. For the purposes of this air quality analysis, trips are still assumed from PDMWD to maintain a conservative analysis. A realistic scenario was developed based on available water from the three water purveyors. Therefore, it is assumed that a maximum of 24 round trips per day would accommodate the total 29 acre-feet of off-site water required for site preparation, including 10 round trips to import 12 acre-feet from PDMWD and 14 round trips to import 17 acre-feet from JCSD and/or PVMWC. This maintains a conservative analysis because the distance from PDMWD to the Rugged solar farm is greater than that from other water purveyors, including JCSD (available to supply water to both the Tierra del Sol and Rugged solar farms) and PVMWC (available to supply water for the Rugged site only).

Both the air quality and groundwater analyses use an accurate account of water demand as revised in common response WR1, but differ in assumptions only to the extent that they ensure a conservative impact analysis for each environmental area. Both analyses account for the full construction water demand of each project and neither exceed the volume of water that may be supplied by either on-site or off-site wells.

Revised Criteria Pollutant Emissions Estimates

Table 4 shows the revised maximum daily construction emissions as a result of the changes to the Rugged solar farm as described above including tracker reductions, reductions in site disturbance area, increase in off-site water demand and no construction worker carpooling.

Table 4
Revised Estimated Maximum Daily Construction Emissions (pounds/day)
Rugged Solar Farm

	VOC	NO_x	CO	SO_X	PM_{10}	$PM_{2.5}$
2014	18.56	240.80	134.95	0.46	97.36	26.32
2015	15.12	176.49	115.95	0.39	26.63	10.12
Maximum Daily Emissions (Revised)	***18.56***	***240.80***	***134.95***	***0.46***	***97.36***	***26.32***
*Rugged DPEIR Emissions**	***17.94***	***248.95***	***127.07***	***0.46***	***98.53***	***26.64***
Emission Threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	No	No	No	No	No	No

Source: See Attachment 1 for complete results.
*See Table 3.

As shown in Table 4, changes to the project would not result in a significant air quality impact and emissions would be slightly reduced compared to that previously analyzed in the DPEIR. Impacts would remain less than significant as previously concluded in the DPEIR.

Proposed Project

Total construction emissions as analyzed in the DPEIR for the Proposed Project are provided in Table 5.

Table 5
Estimated Maximum Daily Construction Emissions (pounds/day)
Proposed Project

	VOC	NO_x	CO	SO_X	PM_{10}	$PM_{2.5}$
Tierra del Sol – Grading Phase or Clear/Grub	15.45	247.16	107.69	0.46	75.50	21.99
Rugged – Tracker Installation Phase	14.87	189.10	111.96	0.38	26.49	10.38
Maximum Daily Emissions	***30.32***	***436.26***	***219.65***	***0.84***	***101.99***	***32.37***
Emission Threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	No	**Yes**	No	No	**Yes**	No

Source: See Attachment 1 for complete results.
Note: The table shows the maximum daily emissions for each criteria pollutant, which generally occur during the Tierra del Sol grading phase and the Rugged tracker installation phase which occur concurrently. Therefore, these two construction phases were aggregated to represent maximum daily construction emissions, except for PM_{10} and $PM_{2.5}$. Maximum daily emissions for PM_{10} and $PM_{2.5}$ would occur during the Tierra del Sol clearing/grubbing phase and the Rugged tracker installation phase. Therefore, these two construction phases were aggregated to represent maximum daily construction fugitive dust emissions.

As shown in Table 5, daily construction emissions would not exceed the significance thresholds for VOC, CO, SO_X, or $PM_{2.5}$; therefore, impacts during construction were found to be less than significant. Daily construction emissions for NO_x and PM_{10} would exceed significance thresholds and therefore, impacts during construction were found to be significant.

Revised Criteria Pollutant Emissions Estimates

Table 6 shows the revised maximum daily construction emissions as a result of the changes to the Proposed Project as described previously including tracker reductions, reductions in site disturbance area, increase in off-site water demand and no construction worker carpooling. For comparison purposes, Table 6 includes maximum daily construction emissions as analyzed in the DPEIR for the Proposed Project.

Table 6
Revised Estimated Maximum Daily Construction Emissions (pounds/day)
Proposed Project Comparison

	VOC	NO_x	CO	SO_X	PM_{10}	$PM_{2.5}$
Revised Proposed Project						
Tierra del Sol – Grading Phase or Clear/Grub	15.62	240.08	110.97	0.45	70.81	20.92

Rugged – Tracker Installation Phase	15.81	188.41	121.37	0.39	27.02	10.52
Maximum Daily Emissions (Revised)	***31.43***	***428.49***	***232.34***	***0.84***	***97.83***	***31.44***
Emission Threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	No	**Yes**	No	No	No	No
DPEIR Proposed Project						
Tierra del Sol – Grading Phase or Clear/Grub	15.45	247.16	107.69	0.46	75.50	21.99
Rugged – Tracker Installation Phase	14.87	189.10	111.96	0.38	26.49	10.38
Maximum Daily Emissions (DPEIR)	***30.32***	***436.26***	***219.65***	***0.84***	***101.99***	***32.37***
Emission Threshold	*137*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	No	**Yes**	No	No	**Yes**	No

Source: See Attachment 1 for complete results.
*See Table 5.
Note: The table shows the maximum daily emissions for each criteria pollutant, which generally occur during the Tierra del Sol grading phase and the Rugged tracker installation phase which occur concurrently. Therefore, these two construction phases were aggregated to represent maximum daily construction emissions, except for PM_{10} and $PM_{2.5}$. Maximum daily emissions for PM_{10} and $PM_{2.5}$ would occur during the Tierra del Sol clearing/grubbing phase and the Rugged tracker installation phase. Therefore, these two construction phases were aggregated to represent maximum daily construction fugitive dust emissions.

As shown, the reduction in trackers and associated delivery trips, reduction in site disturbance area, and increase in off-site water demand and associated water truck delivery trips would not substantially increase the severity of a significant air quality impact associated with the Proposed Project as identified in the DPEIR. Proposed Project construction emissions for VOC and CO and would marginally increase as a result of Proposed Project changes; however, NO_x, PM_{10} and $PM_{2.5}$ emissions would decrease as a result of reduced site disturbance activities associated with fewer tracker installations. SO_x emissions would not change. Due to the decrease in overall site disturbance and therefore, decrease in fugitive dust emissions, changes associated with the Proposed Project would result in the reduction of a significant and unavoidable impact to PM_{10} as identified in the DPEIR to a less than significant impact.

In addition to changes in truck trip estimates as a result of tracker reductions and revised water demand quantities, the overall construction schedule would be delayed by approximately one year. The construction scenario and schedule analyzed as part of the Proposed Project's air quality analysis is considered conservative because emissions for both the construction and operational scenario would decrease over time due to more stringent air quality standards implemented each year, vehicle fleet turnover to more efficient engines, fuel mix, and other factors that would reduce air emissions in future years. Because the duration of construction period would not change (i.e., construction phase durations would not change, and the overall construction schedule would occur over a 16-month period for Tierra del Sol and a 12-month period for Rugged regardless of start date), the scenario analyzed as part of the original air quality analysis is considered conservative and remains valid for the purposes of quantitatively analyzing air quality impacts.

Operational Impacts

Operational activities would remain consistent for all project components to that discussed in the DPEIR; refer to Chapter 1.0, Project Description

4.0 CONCLUSIONS

A minor decrease in daily material deliveries and site disturbance would occur as a result of the reduction of trackers from the originally-analyzed site configurations for the Tierra del Sol and Rugged solar farms in the DPEIR. An increase in water truck trip deliveries would occur as a result of increase off-site water demand. As a result, daily criteria pollutant emissions would not substantially change, and all criteria pollutant emissions would remain below the thresholds for each project individually during construction. The temporary significant and unavoidable construction impacts identified under the Proposed Project in the DPEIR would not substantially increase in severity as a result of project changes, nor would they result in an extension of the duration of the impacts. Additionally, PM_{10} emissions under the Proposed Project were found to exceed the threshold during construction activities as identified in the DPEIR, resulting in a temporary significant and unavoidable impact during construction; however, due to the reduction in site disturbance on both the Tierra del Sol solar farm and Rugged solar farm sites, PM_{10} emissions would decrease and would be below the threshold with implementation of project changes. As such, PM_{10} impacts would be less than significant with the Proposed Project changes. Upon completion of construction activities, the significant and unavoidable NO_x construction impact as identified in the DPEIR would cease, along with all construction-related emissions. Operational impacts would remain less than significant as originally identified in the DPEIR.

5.0 CERTIFICATION

This memorandum has been prepared by Ms. Jennifer Longabaugh and Mr. David Deckman. Mr. David Deckman is a County of San Diego approved CEQA Consultant for Air Quality.

David Deckman
Director of Air Quality Services

ATTACHMENT 1

Revised Air Quality Emission Estimates

Tierra del Sol Solar Farm Project
Emissions Summary - Revised

CONSTRUCTION

ROG

	2014 Emissions (lbs/day)						2015 Emissions (lbs/day)										
Activity	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**
Offroad Emissions																	
Mobilization and Clean Up			0.21	0.21													
Site Clearing/Grubbing/Grinding				1.94	1.94	1.94											
Grading/Road Construction						4.13											
Underground Electric/Communications Cable Installation					0.42	0.42	0.42	0.42									
Tracker Installation Project 1a (30 MW)					3.41	3.41	3.38	3.38	3.38								
Tracker Installation Project 1b (15 MW)													3.38	3.38	3.38		
Tracker Installation Project 2 (15 MW)																3.38	3.38
Substation Construction				0.91	0.91												
O&M Building Construction										0.79	0.79	0.79	0.79				
Gen-Tie Line Construction	4.48	4.48	1.32														
OFFROAD MONTHLY TOTAL (max daily)	**4.48**	**4.48**	**1.32**	**2.85**	**5.77**	**7.96**	**3.79**	**3.79**	**3.38**	**0.79**	**0.79**	**0.79**	**3.38**	**3.38**	**3.38**	**3.38**	**3.38**
Onroad Emissions	**0.73**	**0.73**	**0.78**	**5.14**	**7.43**	**7.65**	**3.90**	**3.90**	**3.90**	**0.97**	**0.86**	**0.86**	**0.86**	**4.26**	**4.26**	**4.26**	**4.26**
MAX DAILY EMISSIONS	**5.20**	**5.20**	**2.11**	**7.99**	**13.20**	**15.62**	**7.70**	**7.70**	**7.28**	**1.76**	**1.66**	**1.66**	**4.24**	**7.64**	**7.64**	**7.64**	**7.64**

CO

	2014 Emissions (lbs/day)						2015 Emissions (lbs/day)										
Activity	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**
Offroad Emissions																	
Mobilization and Clean Up			2.25	2.25													
Site Clearing/Grubbing/Grinding				17.67	17.67	17.67											
Grading/Road Construction						28.06											
Underground Electric/Communications Cable Installation					4.50	4.50	4.46	4.46									
Tracker Installation Project 1a (30 MW)					31.43	31.43	31.21	31.21	31.21								
Tracker Installation Project 1b (15 MW)													31.21	31.21	31.21		
Tracker Installation Project 2 (15 MW)																31.21	31.21
Substation Construction				8.34	8.34												
O&M Building Construction										5.18	5.18	5.18	5.18				
Gen-Tie Line Construction	39.11	39.11	11.50														
OFFROAD MONTHLY TOTAL (max daily)	**39.11**	**39.11**	**11.50**	**26.01**	**53.60**	**63.99**	**35.67**	**35.67**	**31.21**	**5.18**	**5.18**	**5.18**	**31.21**	**31.21**	**31.21**	**31.21**	**31.21**
Onroad Emissions	**4.09**	**4.09**	**6.46**	**27.24**	**45.84**	**46.98**	**28.18**	**28.18**	**28.18**	**7.43**	**6.94**	**6.94**	**6.94**	**31.99**	**31.99**	**31.99**	**31.99**
MAX DAILY EMISSIONS	**43.19**	**43.19**	**17.96**	**53.25**	**99.44**	**110.97**	**63.85**	**63.85**	**59.39**	**12.61**	**12.12**	**12.12**	**38.15**	**63.20**	**63.20**	**63.20**	**63.20**

NOx

	2014 Emissions (lbs/day)						2015 Emissions (lbs/day)										
Activity	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**
Offroad Emissions																	
Mobilization and Clean Up			2.53	2.53													
Site Clearing/Grubbing/Grinding				28.18	28.18	28.18											
Grading/Road Construction						61.71											
Underground Electric/Communications Cable Installation					5.07	5.07	4.93	4.93									
Tracker Installation Project 1a (30 MW)					48.79	48.79	47.18	47.18	47.18								
Tracker Installation Project 1b (15 MW)													47.18	47.18	47.18		
Tracker Installation Project 2 (15 MW)																47.18	47.18
Substation Construction				12.33	12.33												
O&M Building Construction										10.29	10.29	10.29	10.29				
Gen-Tie Line Construction	63.63	63.63	21.56														
OFFROAD MONTHLY TOTAL (max daily)	**63.63**	**63.63**	**21.56**	**40.51**	**82.03**	**115.57**	**52.11**	**52.11**	**47.18**	**10.29**	**10.29**	**10.29**	**47.18**	**47.18**	**47.18**	**47.18**	**47.18**
Onroad Emissions	**13.45**	**13.45**	**5.45**	**102.66**	**119.79**	**124.52**	**42.18**	**42.18**	**42.18**	**8.58**	**6.31**	**6.31**	**6.31**	**40.64**	**40.64**	**40.64**	**40.64**
MAX DAILY EMISSIONS	**77.08**	**77.08**	**27.01**	**143.17**	**201.82**	**240.08**	**94.29**	**94.29**	**89.35**	**18.86**	**16.60**	**16.60**	**53.49**	**87.82**	**87.82**	**87.82**	**87.82**

Tierra del Sol Solar Farm Project
Emissions Summary - Revised

SOx

	2014 Emissions (lbs/day)						2015 Emissions (lbs/day)										
Activity	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**
Offroad Emissions																	
Mobilization and Clean Up			0.00	0.00													
Site Clearing/Grubbing/Grinding				0.04	0.04	0.04											
Grading/Road Construction						0.07											
Underground Electric/Communications Cable Installation					0.01	0.01	0.01	0.01									
Tracker Installation Project 1a (30 MW)					0.10	0.10	0.10	0.10	0.10								
Tracker Installation Project 1b (15 MW)													0.10	0.10	0.10		
Tracker Installation Project 2 (15 MW)																0.10	0.10
Substation Construction				0.02	0.02												
O&M Building Construction										0.02	0.02	0.02	0.02				
Gen-Tie Line Construction	0.09	0.09	0.04														
OFFROAD MONTHLY TOTAL (max daily)	**0.09**	**0.09**	**0.04**	**0.06**	**0.15**	**0.18**	**0.11**	**0.11**	**0.10**	**0.02**	**0.02**	**0.02**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**
Onroad Emissions	**0.03**	**0.03**	**0.02**	**0.21**	**0.27**	**0.28**	**0.13**	**0.13**	**0.13**	**0.03**	**0.02**	**0.02**	**0.02**	**0.13**	**0.13**	**0.13**	**0.13**
MAX DAILY EMISSIONS	**0.12**	**0.12**	**0.06**	**0.27**	**0.42**	**0.45**	**0.24**	**0.24**	**0.23**	**0.05**	**0.04**	**0.04**	**0.12**	**0.23**	**0.23**	**0.23**	**0.23**

PM10

	2014 Emissions (lbs/day)						2015 Emissions (lbs/day)										
Activity	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**
Offroad Emissions																	
Mobilization and Clean Up			0.17	0.17													
Site Clearing/Grubbing/Grinding				1.32	1.32	1.32											
Grading/Road Construction						2.78											
Underground Electric/Communications Cable Installation					0.34	0.34	0.33	0.33									
Tracker Installation Project 1a (30 MW)					2.45	2.45	2.38	2.38	2.38								
Tracker Installation Project 1b (15 MW)													2.38	2.38	2.38		
Tracker Installation Project 2 (15 MW)																2.38	2.38
Substation Construction				0.63	0.63												
O&M Building Construction										0.55	0.55	0.55	0.55				
Gen-Tie Line Construction	3.02	3.02	0.90														
OFFROAD MONTHLY TOTAL (max daily)	**3.02**	**3.02**	**0.90**	**1.95**	**4.11**	**5.57**	**2.72**	**2.72**	**2.38**	**0.55**	**0.55**	**0.55**	**2.38**	**2.38**	**2.38**	**2.38**	**2.38**
Onroad Emissions	**0.60**	**0.60**	**0.47**	**4.26**	**5.86**	**6.01**	**2.87**	**2.87**	**2.87**	**0.68**	**0.62**	**0.62**	**0.62**	**3.14**	**3.14**	**3.14**	**3.14**
Fugitive Dust	**—**	**—**	**—**	**60.84**	**60.84**	**58.10**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
MAX DAILY EMISSIONS	**3.62**	**3.62**	**1.37**	**67.05**	**70.81**	**69.68**	**5.59**	**5.59**	**5.25**	**1.23**	**1.17**	**1.17**	**3.00**	**5.52**	**5.52**	**5.52**	**5.52**

PM2.5

	2014 Emissions (lbs/day)						2015 Emissions (lbs/day)										
Activity	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**
Offroad Emissions																	
Mobilization and Clean Up			0.16	0.16													
Site Clearing/Grubbing/Grinding				2.56	2.56	1.21											
Grading/Road Construction						2.56											
Underground Electric/Communications Cable Installation					0.32	0.32	0.31	0.31									
Tracker Installation Project 1a (30 MW)					2.25	2.25	2.19	2.19	2.19								
Tracker Installation Project 1b (15 MW)													2.19	2.19	2.19		
Tracker Installation Project 2 (15 MW)																2.19	2.19
Substation Construction				0.58	0.58												
O&M Building Construction										0.51	0.51	0.51	0.51				
Gen-Tie Line Construction	2.78	2.78	0.83														
OFFROAD MONTHLY TOTAL (max daily)	**2.78**	**2.78**	**0.83**	**3.14**	**5.13**	**5.13**	**2.50**	**2.50**	**2.19**	**0.51**	**0.51**	**0.51**	**2.19**	**2.19**	**2.19**	**2.19**	**2.19**
Onroad Emissions	**0.33**	**0.33**	**0.20**	**2.43**	**3.09**	**3.19**	**1.26**	**1.26**	**1.26**	**0.29**	**0.24**	**0.24**	**0.24**	**1.32**	**1.32**	**1.32**	**1.32**
Fugitive Dust	**—**	**—**	**—**	**12.70**	**12.70**	**12.13**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
MAX DAILY EMISSIONS	**3.11**	**3.11**	**1.03**	**18.28**	**20.92**	**20.45**	**3.76**	**3.76**	**3.46**	**0.79**	**0.75**	**0.75**	**2.44**	**3.52**	**3.52**	**3.52**	**3.52**

Tierra del Sol Solar Farm Project
Emissions Summary - Revised

CO2

Activity	2014 Emissions (tons/yr)		2015 Emissions (tons/yr)
Offroad Emissions			
Mobilization and Clean Up	1.01		—
Site Clearing/Grubbing/Grinding	93.35		—
Grading/Road Construction	26.29		—
Underground Electric/Communications Cable Installation	20.54		19.74
Tracker Installation Project 1a (30 MW)	206.13		331.60
Tracker Installation Project 1b (15 MW)	—		179.24
Tracker Installation Project 2 (15 MW)	—		179.24
Substation Construction	25.50		—
O&M Building Construction	—		57.35
Gen-Tie Line Construction	134.71		—
OFFROAD ANNUAL TOTAL	**507.53**		**415.84**
Onroad Emissions	**1109.51**		**1,382.83**
ANNUAL EMISSIONS	**1,617.04**		**1,798.67**

Notes:
1. Emissions per month reflect worst-case daily emissions accounting for construction phases occuring concurrently.

OPERATION

Vehicle Type	ROG	CO	NOx	SOx	PM10	PM2.5
Solar Farm						
Employee Vehicles	0.23	2.19	0.22	0.00	0.15	0.05
Personnel Transport Vehicles	0.01	0.09	0.01	0.00	0.01	0.00
Washing Vehicles	0.01	0.04	0.17	0.00	0.01	0.00
Satellite Washing Vehicles	0.01	0.09	0.01	0.00	0.01	0.00
Service Trucks	0.00	0.05	0.01	0.00	0.00	0.00
Emergency Generators	1.02	11.01	19.30	0.02	0.63	0.62
Gen-Tie Line						
Pole/Structure Brushing	0.12	1.10	0.11	0.00	0.08	0.02
Herbicide Application	0.12	1.10	0.11	0.00	0.08	0.02
Equipment Repair	0.15	1.47	0.15	0.00	0.10	0.03
Equipment Repair	0.10	0.45	2.08	0.00	0.08	0.04
Helicopter Inspection	0.99	19.09	11.89	1.08	0.00	0.00
Maximum Daily Emissions	**2.75**	**36.67**	**34.05**	**1.12**	**1.14**	**0.80**

Rugged Solar Farm Project
Emissions Summary - Revised

CONSTRUCTION

ROG

	2014 Emissions (lbs/day)						2015 Emissions (lbs/day)					
Activity	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**
Offroad Emissions												
Mobilization and Clean-Up	0.35											
Site Clearing/Grubbing/Grinding	1.94	1.94	1.94									
Grading/Road Construction			4.70									
Underground Electric/Communications Cable Installation				2.42	2.42	2.42	2.40					
Tracker Installation		4.64	4.64	4.64	4.64	4.64	4.58	4.58	4.58	4.58		
Substation Construction	0.91	0.91										
O&M Building Construction					0.81	0.81	0.79	0.79				
OFFROAD MONTHLY TOTAL (max daily)	**2.85**	**6.57**	**9.34**	**7.06**	**7.87**	**7.87**	**7.76**	**5.37**	**4.58**	**4.58**		
Onroad Emissions	**4.84**	**7.51**	**7.62**	**6.35**	**6.35**	**6.35**	**5.75**	**5.75**	**5.75**	**6.41**	**2.57**	**0.66**
Concrete Batch Plant	**1.60**	**1.60**	**1.60**	**1.60**	**1.60**	**1.60**	**1.60**	**1.60**	**1.60**	**1.60**		
MAX DAILY EMISSIONS	**9.29**	**15.68**	**18.56**	**15.00**	**15.81**	**15.81**	**15.12**	**12.72**	**11.93**	**12.59**	**2.57**	**0.66**

CO

	2014 Emissions (lbs/day)						2015 Emissions (lbs/day)					
Activity	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**
Offroad Emissions												
Mobilization and Clean-Up	3.75											
Site Clearing/Grubbing/Grinding	17.67	17.67	17.67									
Grading/Road Construction			34.06									
Underground Electric/Communications Cable Installation				21.12	21.12	21.12	20.84					
Tracker Installation		40.27	40.27	40.27	40.27	40.27	39.90	39.90	39.90	39.90		
Substation Construction	8.34	8.34										
O&M Building Construction					5.31	5.31	5.18	5.18				
OFFROAD MONTHLY TOTAL (max daily)	**26.01**	**57.94**	**74.33**	**61.40**	**66.71**	**66.71**	**65.92**	**45.08**	**39.90**	**39.90**		
Onroad Emissions	**28.13**	**51.73**	**52.78**	**46.83**	**46.83**	**46.83**	**42.19**	**42.19**	**42.19**	**48.46**	**15.23**	**6.27**
Concrete Batch Plant	**7.84**	**7.84**	**7.84**	**7.84**	**7.84**	**7.84**	**7.84**	**7.84**	**7.84**	**7.84**		
MAX DAILY EMISSIONS	**61.98**	**117.51**	**134.95**	**116.06**	**121.37**	**121.37**	**115.95**	**95.11**	**89.93**	**96.20**	**15.23**	**6.27**

Rugged Solar Farm Project
Emissions Summary - Revised

NOx

Activity	2014 Emissions (lbs/day)						2015 Emissions (lbs/day)					
	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Offroad Emissions												
Mobilization and Clean-Up	4.22											
Site Clearing/Grubbing/Grinding	28.18	28.18	28.18									
Grading/Road Construction			68.47									
Underground Electric/Communications Cable Installation				34.59	34.59	34.59	33.74					
Tracker Installation		63.60	63.60	63.60	63.60	63.60	61.57	61.57	61.57	61.57		
Substation Construction	12.33	12.33										
O&M Building Construction					10.55	10.55	10.29	10.29				
OFFROAD MONTHLY TOTAL (max daily)	**40.51**	**91.78**	**132.07**	**98.19**	**108.74**	**108.74**	**105.59**	**71.85**	**61.57**	**61.57**		
Onroad Emissions	**85.61**	**97.20**	**97.31**	**68.25**	**68.25**	**68.25**	**59.48**	**59.48**	**59.48**	**60.11**	**42.25**	**0.63**
Concrete Batch Plant	**11.42**	**11.42**	**11.42**	**11.42**	**11.42**	**11.42**	**11.42**	**11.42**	**11.42**	**11.42**		
MAX DAILY EMISSIONS	**137.54**	**200.40**	**240.80**	**177.86**	**188.41**	**188.41**	**176.49**	**142.75**	**132.46**	**133.09**	**42.25**	**0.63**

SOx

Activity	2014 Emissions (lbs/day)						2015 Emissions (lbs/day)					
	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Offroad Emissions												
Mobilization and Clean-Up	0.01											
Site Clearing/Grubbing/Grinding	0.04	0.04	0.04									
Grading/Road Construction			0.08									
Underground Electric/Communications Cable Installation				0.06	0.06	0.06	0.06					
Tracker Installation		0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12		
Substation Construction	0.02	0.02										
O&M Building Construction					0.02	0.02	0.02	0.02				
OFFROAD MONTHLY TOTAL (max daily)	**0.06**	**0.16**	**0.20**	**0.18**	**0.19**	**0.19**	**0.19**	**0.14**	**0.12**	**0.12**		
Onroad Emissions	**0.18**	**0.24**	**0.24**	**0.19**	**0.19**	**0.19**	**0.19**	**0.19**	**0.19**	**0.20**	**0.11**	**0.01**
Concrete Batch Plant	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**		
MAX DAILY EMISSIONS	**0.26**	**0.42**	**0.46**	**0.38**	**0.39**	**0.39**	**0.39**	**0.34**	**0.32**	**0.33**	**0.11**	**0.01**

Rugged Solar Farm Project
Emissions Summary - Revised

PM10

Activity	2014 Emissions (lbs/day)						2015 Emissions (lbs/day)					
	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Offroad Emissions												
Mobilization and Clean-Up	0.29											
Site Clearing/Grubbing/Grinding	1.32	1.32	1.32									
Grading/Road Construction			3.24									
Underground Electric/Communications Cable Installation				1.70	1.70	1.70	1.70					
Tracker Installation		3.34	3.34	3.34	3.34	3.34	3.25	3.25	3.25	3.25		
Substation Construction	0.63	0.63										
O&M Building Construction					0.56	0.56	0.55	0.55				
OFFROAD MONTHLY TOTAL (max daily)	**1.95**	**4.66**	**6.58**	**5.04**	**5.61**	**5.61**	**5.50**	**3.80**	**3.25**	**3.25**		
Onroad Emissions	**3.58**	**5.28**	**5.34**	**4.51**	**4.51**	**4.51**	**4.22**	**4.22**	**4.22**	**4.65**	**2.08**	**0.43**
Fugitive Dust	**65.52**	**65.52**	**68.53**									
Concrete Batch Plant	**16.91**	**16.91**	**16.91**	**16.91**	**16.91**	**16.91**	**16.91**	**16.91**	**16.91**	**16.91**		
MAX DAILY EMISSIONS	**87.96**	**92.36**	**97.36**	**26.46**	**27.02**	**27.02**	**26.63**	**24.93**	**24.38**	**24.80**	**2.08**	**0.43**

PM2.5

Activity	2014 Emissions (lbs/day)						2015 Emissions (lbs/day)					
	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Offroad Emissions												
Mobilization and Clean-Up	0.26											
Site Clearing/Grubbing/Grinding	1.21	1.21	1.21									
Grading/Road Construction			2.98									
Underground Electric/Communications Cable Installation				1.56	1.56	1.56	1.53					
Tracker Installation		3.07	3.07	3.07	3.07	3.07	2.99	2.99	2.99	2.99		
Substation Construction	0.58	0.58										
O&M Building Construction					0.52	0.52	0.51	0.51				
OFFROAD MONTHLY TOTAL (max daily)	**1.79**	**4.29**	**6.05**	**4.64**	**5.16**	**5.16**	**5.02**	**3.50**	**2.99**	**2.99**		
Onroad Emissions	**2.05**	**2.67**	**2.69**	**2.10**	**2.10**	**2.10**	**1.84**	**1.84**	**1.84**	**1.97**	**1.03**	**0.13**
Fugitive Dust	**13.68**	**13.68**	**14.31**									
Concrete Batch Plant	**3.26**	**3.26**	**3.26**	**3.26**	**3.26**	**3.26**	**3.26**	**3.26**	**3.26**	**3.26**		
MAX DAILY EMISSIONS	**20.79**	**23.90**	**26.32**	**10.00**	**10.52**	**10.52**	**10.12**	**8.59**	**8.09**	**8.22**	**1.03**	**0.13**

Rugged Solar Farm Project
Emissions Summary - Revised

CO2

Activity	2014 Emissions (tons/yr)		2015 Emissions (tons/yr)
Offroad Emissions			
Mobilization and Clean Up	2.35		—
Site Clearing/Grubbing/Grinding	112.02		—
Grading/Road Construction	34.41		—
Underground Electric/Communications Cable Installation	200.12		56.44
Tracker Installation	613.99		512.59
Substation Construction	35.70		—
O&M Building Construction	20.79		22.23
OFFROAD ANNUAL TOTAL	**1,019.37**		**591.26**
Onroad Emissions	**1,540.79**		**1,180.64**
Concrete Batch Plant	**69.37**		**104.34**
ANNUAL EMISSIONS	**2,629.52**		**1,876.23**

OPERATION

Vehicle Type	ROG	CO	NOx	SOx	PM10	PM2.5
Solar Farm						
Employee Vehicles	0.66	6.27	0.63	0.01	0.43	0.13
Personnel Transport Vehicles	0.01	0.09	0.01	0.00	0.01	0.00
Washing Vehicles	0.01	0.04	0.17	0.00	0.01	0.00
Satellite Washing Vehicles	0.01	0.09	0.01	0.00	0.01	0.00
Service Trucks	0.00	0.05	0.01	0.00	0.00	0.00
Emergency Generators	1.02	19.30	11.01	0.02	0.63	0.62
Maximum Daily Emissions	**1.71**	**25.84**	**11.83**	**0.03**	**1.08**	**0.76**

Notes:
1. Emissions per month reflect worst-case daily emissions accounting for construction phases occurring concurrently.

Concrete Plant PM10 and PM2.5 constants for truck mix emissions

k (PM_{10}) =	0.32	
k ($PM_{2.5}$) =	0.048	15%