

***Appendix E***  
***Greenhouse Gases***

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**Greenhouse Gas Appendix**  
**Greenhouse Gas Emissions Report**  
**SDG&E TL674A Reconfiguration and TL666D Removal**  
**Project**  
Compiled June 2018

**TL674A RECONFIGURATION AND TL666D REMOVAL PROJECT**

**Appendix, Greenhouse Gas Emissions Report**

Greenhouse gas helicopter emission estimates during construction of the proposed project.

**Emissions Summary**

Source	CO <sub>2</sub> e (MT)
<b>Total</b>	<b>73.50</b>

**Construction Equipment Summary**

Equipment	Horse-power	Number	Days Used	Hours Used/Day
Hughes 500 Helicopter	317	1	10	8
Kaman K-Max (K-1200) Helicopter	1500	1	10	8

**Construction Equipment Exhaust Emission Factors**

Equipment	Horse-power	CO <sub>2</sub> (lb/hr) <sup>a</sup>
Hughes 500 Helicopter	317	676.039
Kaman K-Max (K-1200) Helicopter	1500	1352.078

<sup>a</sup> CO<sub>2</sub> emissions [lb/hr] = CO<sub>2</sub> emission factor [kg/gal] x 1000 [g/kg] / 453.6 [g/lb] x Fuel use [kg/hr] x 1000 [g/kg] / 453.6 [g/lb] / Fuel density [lb/gal]

CO<sub>2</sub> emission factor = 9.57 kg/gal from Table C.3 from California Climate Action Registry General Reporting Protocol, Version 3.0, April 2008.

Downloaded from [http://www.climateregistry.org/resources/docs/protocols/grp/GRP\\_V3\\_April2008\\_FINAL.pdf](http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf)

Fuel use = 98.8 kg/hr from Guidance on the Determination of Helicopter Emissions

Jet-A density = 6.8 lb/gal for the Hughes 500 Helicopter

The kaman K-Max (K-1200) helicopter is also a single engine helicopter with more horsepower compared to the Hughes 500; therefore, it is assumed that fuel consumption would ensue at a faster rate during use. Hence, Jet-A density is doubled to = 13.6 lb/gal for the Kaman K-Max (K-1200) Helicopter.

**Construction Equipment Total Greenhouse Gas Emissions**

Equipment	CO <sub>2</sub> (MT) <sup>a</sup>	CH <sub>4</sub> (MT)	CO <sub>2</sub> e (MT) <sup>b</sup>
Hughes 500 Helicopter	24.5	0.0	24.5
kaman K-Max (K-1200) Helicopter	49.0	0.0	49.0
<b>Total</b>	<b>73.5</b>	<b>0.0</b>	<b>73.5</b>

<sup>a</sup> Emissions [metric tons, MT] = emission factor [lb/hr] x hours/day x Number x

days used x 453.6 [g/lb] / 1,000,000 [g/MT]

Emission factors are in Table 53

<sup>b</sup> CO<sub>2</sub>-equivalent (CO<sub>2</sub>e) emission factors are CO<sub>2</sub> emissions plus 21 x CH<sub>4</sub> emissions, based on Table C.1 from California Climate Action

Registry General Reporting Protocol, Version 3.0, April 2008, [http://www.climateregistry.org/resources/docs/protocols/grp/GRP\\_V3\\_April2008\\_FINAL.pdf](http://www.climateregistry.org/resources/docs/protocols/grp/GRP_V3_April2008_FINAL.pdf)