

TABLE 3

CONSTRUCTION AND OPERATION EMISSIONS SUMMARY FOR THE TIONESTA 3R SITE

Construction Engine Emissions

| SOURCE   | SIZE / GROSS HP | DAILY AMOUNT (1) (hrs or trips) | NUMBER OF DAYS | NUMBER OF UNITS | ONE-WAY DISTANCE (miles) | NO <sub>x</sub> |           |          | ROC   |           |         | PM <sub>10</sub> |           |        | SO <sub>x</sub> |           |         | CO   |           |        | NOTES |     |           |        |
|--|-----------------|---------------------------------|----------------|-----------------|--------------------------|-----------------|-----------|----------|-------|-----------|---------|------------------|-----------|--------|-----------------|-----------|---------|------|-----------|--------|-------|-----|-----------|--------|
|  |                 |                                 |                |                 |                          | EF              | Daily     | Total    | EF    | Daily     | Total   | EF               | Daily     | Total  | EF              | Daily     | Total   | EF   | Daily     | Total  |       | EF  | Daily     | Total  |
|  |                 |                                 |                |                 |                          | (2)             | (lbs/day) | (tons)   | (2)   | (lbs/day) | (tons)  | (2)              | (lbs/day) | (tons) | (2)             | (lbs/day) | (tons)  | (2)  | (lbs/day) | (tons) |       | (2) | (lbs/day) | (tons) |
| <b>Site Grading (390 cy)</b>   |                 |                                 |                |                 |                          |                 |           |          |       |           |         |                  |           |        |                 |           |         |      |           |        |       |     |           |        |
| Backhoe Loader   | 200             | 4                               | 1              | 1               | -                        | 2370            | 20.9      | 0.0104   | 180   | 1.6       | 0.0008  | 15               | 0.13      | 0.0001 | 135             | 1.2       | 0.0006  | 205  | 1.8       | 0.0009 | 6     |     |           |        |
| Vac Truck  | 153             | 2                               | 1              | 1               | -                        | 1660            | 7.3       | 0.0037   | 110   | 0.5       | 0.0002  | 15               | 0.1       | 0.0000 | 105             | 0.5       | 0.0002  | 110  | 0.5       | 0.0002 | 6     |     |           |        |
| Surveying Lt-Heavy Duty Truck  | 117             | 3                               | 1              | 1               | -                        | 780             | 5.2       | 0.0026   | 72    | 0.5       | 0.0002  | 44               | 0.3       | 0.0001 | 85              | 0.6       | 0.0003  | 105  | 0.7       | 0.0003 | 6     |     |           |        |
| Worker Light Truck   | 175             | 1                               | 1              | 1               | 30                       | 18.4            | 2.44      | 0.0012   | 4.4   | 0.58      | 0.0003  | 0.84             | 0.11      | 0.0001 | 0.31            | 0.041     | 0.0000  | 35   | 4.6       | 0.0023 | 6     |     |           |        |
| Semi-end Dump Trucks   | 20 ton          | 3                               | 5              | -               | 100                      | 11.3            | 14.88     | 0.0372   | 2.2   | 2.91      | 0.0073  | 0.59             | 0.78      | 0.0020 | 0.31            | 0.41      | 0.0010  | 14.0 | 18.57     | 0.0464 | 7     |     |           |        |
| Equipment Delivery Truck   | Low boy         | 1                               | 2              | -               | 30                       | 11.3            | 1.5       | 0.0015   | 2.2   | 0.3       | 0.0003  | 0.59             | 0.08      | 0.0001 | 0.31            | 0.04      | 0.0000  | 14.0 | 1.9       | 0.0019 | 7     |     |           |        |
| Worker Light Truck   | Light           | 4                               | 1              | -               | 30                       | 1.0             | 0.53      | 0.0003   | 0.35  | 0.19      | 0.0001  | 0                | 0         | 0      | 0.06            | 0.03      | 0.0000  | 7.22 | 3.8       | 0.0019 | 7     |     |           |        |
| <b>Maxima and Subtotals (Demolition)</b>                                 |                 |                                 |                |                 |                          |                 | 40        | 52.19    |       | 5.4       | 0.0000  |                  | 1.3       | 0.0000 |                 | 1.7       | 0.0000  |      | 26.8      | 0.00   |       |     |           |        |
| <b>Pad Construction (11cy)</b>   |                 |                                 |                |                 |                          |                 |           |          |       |           |         |                  |           |        |                 |           |         |      |           |        |       |     |           |        |
| Cement Truck   | 10 yd3          | 2                               | 1              | -               | 30                       | 11.3            | 3.0       | 0.0015   | 2.2   | 0.6       | 0.0003  | 0.59             | 0.2       | 0.0001 | 0.31            | 0.1       | 0.0000  | 14.0 | 3.7       | 0.0019 | 7     |     |           |        |
| Gravel Truck   | 10 yd3          | 2                               | 1              | -               | 30                       | 11.3            | 3.0       | 0.0015   | 2.2   | 0.6       | 0.0003  | 0.59             | 0.2       | 0.0001 | 0.31            | 0.1       | 0.0000  | 14.0 | 3.7       | 0.0019 | 7     |     |           |        |
| Worker Light Truck   | Light           | 2                               | 3              | -               | 30                       | 1.00            | 0.3       | 0.0004   | 0.35  | 0.1       | 0.0001  | 0                | 0         | 0      | 0.06            | 0.0       | 0.0000  | 7.22 | 1.9       | 0.0029 | 7     |     |           |        |
| <b>Maxima and Subtotals (Pad Construction)</b>                           |                 |                                 |                |                 |                          |                 | 6.2       | 0.003    |       | 1.3       | 0.0007  |                  | 0.31      | 0.0002 |                 | 0.2       | 0.0001  |      | 9.3       | 0.01   |       |     |           |        |
| <b>Trenching &amp; Utility Installation (350cy)</b>                      |                 |                                 |                |                 |                          |                 |           |          |       |           |         |                  |           |        |                 |           |         |      |           |        |       |     |           |        |
| Excavator  | 84              | 8                               | 10             | 1               | -                        | 774             | 13.6      | 0.068    | 64    | 1.1       | 0.0057  | 13               | 0.2       | 0.0012 | 58              | 1.0       | 0.0051  | 79   | 1.4       | 0.007  | 6     |     |           |        |
| Equipment Delivery Truck   | Low boy         | 1                               | 2              | -               | 30                       | 11.3            | 1.5       | 0.001    | 2.2   | 0.3       | 0.0003  | 0.59             | 0.1       | 0.0001 | 0.31            | 0.0       | 0.0000  | 14.0 | 1.9       | 0.002  | 7     |     |           |        |
| Worker Light Truck   | Light           | 2                               | 10             | -               | 30                       | 1.00            | 0.3       | 0.001    | 0.35  | 0.1       | 0.0005  | 0                | 0         | 0      | 0.06            | 0.0       | 0.0001  | 7.2  | 1.9       | 0.010  | 7     |     |           |        |
| <b>Maxima and Subtotals (Trenching and Utility Installation)</b>         |                 |                                 |                |                 |                          |                 | 15        | 0.07     |       | 1.5       | 0.0064  |                  | 0.31      | 0.0013 |                 | 1.1       | 0.0052  |      | 5.2       | 0.02   |       |     |           |        |
| <b>Access Road Construction (75cy)</b>                                   |                 |                                 |                |                 |                          |                 |           |          |       |           |         |                  |           |        |                 |           |         |      |           |        |       |     |           |        |
| Grader   | 200             | 4                               | 1              | 1               | -                        | 2370            | 21        | 0.010    | 180   | 1.6       | 0.001   | 15               | 0.13      | 0.0001 | 135             | 1.2       | 0.001   | 205  | 1.8       | 0.001  | 6     |     |           |        |
| Dozer  | 153             | 4                               | 1              | 1               | -                        | 1660            | 15        | 0.007    | 110   | 1.0       | 0.001   | 15               | 0.13      | 0.0001 | 105             | 0.9       | 0.001   | 110  | 1.0       | 0.001  | 6     |     |           |        |
| Gravel Truck   | 10 yd3          | 4                               | 1              | -               | 30                       | 11.3            | 6.0       | 0.0030   | 2.2   | 1.2       | 0.0006  | 0.6              | 0.3       | 0.0002 | 0.3             | 0.2       | 0.0001  | 14   | 7.4       | 0.0037 | 7     |     |           |        |
| Compactor  | -               | 4                               | 1              | 1               | -                        | 1787            | 16        | 0.008    | 71    | 0.6       | 0.000   | 67               | 0.6       | 0.000  | 235             | 2.1       | 0.001   | 128  | 1.1       | 0.001  | 8     |     |           |        |
| Equipment Delivery Truck   | Low boy         | 1                               | 2              | -               | 30                       | 11.3            | 1.5       | 0.002    | 2.2   | 0.3       | 0.000   | 0.6              | 0.08      | 0.0001 | 0.3             | 0.0       | 0.000   | 14   | 1.9       | 0.002  | 7     |     |           |        |
| Worker Light Truck   | Light           | 4                               | 1              | 2               | 25                       | 1.0             | 0.9       | 0.000    | 0.35  | 0.31      | 0.000   | 0                | 0         | 0      | 0.06            | 0.1       | 0.000   | 7.2  | 6.4       | 0.003  | 7     |     |           |        |
| <b>Maxima and Subtotals (Access Road Construction)</b>                   |                 |                                 |                |                 |                          |                 | 29        | 0.03     |       | 3.4       | 0.00    |                  | 0.5       | 0.0008 |                 | 1.4       | 0.002   |      | 17.5      | 0.01   |       |     |           |        |
| <b>Shelter Placement</b>   |                 |                                 |                |                 |                          |                 |           |          |       |           |         |                  |           |        |                 |           |         |      |           |        |       |     |           |        |
| Crane  | 150 ton         | 4                               | 1              | 1               | -                        | 576             | 5.1       | 0.003    | 82    | 0.7       | 0.0004  | 64               | 0.6       | 0.000  | 41              | 0.4       | 0.000   | 1624 | 14.3      | 0.007  | 8     |     |           |        |
| Equipment Delivery Truck   | Low boy         | 1                               | 2              | -               | 60                       | 11.3            | 3.0       | 0.003    | 2.2   | 0.6       | 0.001   | 0.59             | 0.2       | 0.000  | 0.31            | 0.1       | 0.000   | 14.0 | 3.7       | 0.004  | 7     |     |           |        |
| Worker Light Truck   | Light           | 4                               | 1              | -               | 30                       | 1.00            | 0.5       | 0.0003   | 0.35  | 0.2       | 0.00009 | 0                | 0         | 0      | 0.06            | 0.0       | 0.000   | 7.2  | 3.8       | 0.002  | 7     |     |           |        |
| <b>Maxima and Subtotals (Shelter Placement)</b>                          |                 |                                 |                |                 |                          |                 | 8.6       | 0.006    |       | 1.5       | 0.001   |                  | 0.72      | 0.000  |                 | 0.5       | 0.00    |      | 21.9      | 0.01   |       |     |           |        |
| <b>General Construction Activities</b>                                   |                 |                                 |                |                 |                          |                 |           |          |       |           |         |                  |           |        |                 |           |         |      |           |        |       |     |           |        |
| Compactor  | <25 hp          | 6                               | 10             | 1               | -                        | 8               | 0.11      | 0.00054  | 227   | 3.0       | 0.0150  | 1.4              | 0.02      | 0.0001 | 0               | 0.0       | 0.0000  | 6350 | 84.0      | 0.420  | 8     |     |           |        |
| Equipment Delivery Truck   | Low boy         | 1                               | 2              | -               | 30                       | 11.3            | 1.5       | 0.0015   | 2.2   | 0.3       | 0.0003  | 0.59             | 0.1       | 0.0001 | 0.31            | 0.0       | 0.0000  | 14.0 | 1.9       | 0.002  | 7     |     |           |        |
| Construction Generator   | <50 hp          | 8                               | 12             | 1               | -                        | 0.02            | 0.0003    | 0.000002 | 0.002 | 0.00004   | 0.0000  | 0                | 0         | 0      | 0.00            | 0.0       | 0.0000  | 0.01 | 0.0002    | 0.000  | 8     |     |           |        |
| Water Truck  | 4500 gal.       | 1                               | 2              | -               | 30                       | 11.3            | 1.5       | 0.001    | 2.2   | 0.29      | 0.0003  | 0.59             | 0.08      | 0.0001 | 0.31            | 0.04      | 0.00004 | 14.0 | 1.9       | 0.002  | 6     |     |           |        |
| Worker Light Truck   | Light           | 1                               | 16             | -               | 30                       | 1.0             | 0.13      | 0.0011   | 0.35  | 0.05      | 0.0004  | 0                | 0         | 0      | 0.06            | 0.0       | 0.0001  | 7.2  | 1.0       | 0.008  | 7     |     |           |        |
| <b>Maxima and Subtotals (General Construction)</b>                       |                 |                                 |                |                 |                          |                 | 1.7       | 0.00     |       | 3.3       | 0.0160  |                  | 0.1       | 0.0002 |                 | 0.0       | 0.0001  |      | 86.8      | 0.43   |       |     |           |        |
| <b>Maxima and Subtotals, Construction Engine Emissions<sup>(3)</sup></b> |                 |                                 |                |                 |                          |                 | 40        | 0.17     |       | 6         | 0.036   |                  | 1         | 0.005  |                 | 1.7       | 0.01    |      | 87        | 0.53   |       |     |           |        |
| <b>Total Construction Emissions (Fugitive plus exhaust)</b>              |                 |                                 |                |                 |                          |                 |           | 0.17     |       |           | 0.036   |                  | 25        | 0.25   |                 |           | 0.0102  |      |           | 0.534  |       |     |           |        |
| <b>Construction Thresholds</b>   |                 |                                 |                |                 |                          |                 |           | 55       |       |           | 55      |                  | 150       |        |                 | 150       |         |      | 550       |        |       |     |           |        |
| <b>Insignificant Impact<sup>(9)</sup></b>                                |                 |                                 |                |                 |                          |                 | Yes       |          |       | Yes       |         | Yes              |           | Yes    |                 | Yes       |         | Yes  |           | Yes    |       |     |           |        |

Construction Fugitive Dust Emissions

| SOURCE   | DAILY AMOUNT (hours) | DAYS OF ACTIVITY | AREA OF GRADING / TRENCHING | PM <sub>10</sub> EMISSIONS |             |              | NOTES |
|--|----------------------|------------------|-----------------------------|----------------------------|-------------|--------------|-------|
|  |                      |                  |                             | EF                         | (daily lbs) | (total tons) |       |
|  |                      |                  |                             | Site Grading               | 8           | 5            |       |
| Access Road Construction & Use   | 8                    | 16               | 0.46 acres                  | 39.4 lb/acre-day           | 18.1        | 0.145        | 14    |
| Trenching - Cable Installation   | 8                    | 10               | -                           | 0.51 lb/hr                 | 4.1         | 0.020        |       |
| Wind Erosion   | 24                   | 15               | 0.83 acres                  | 6.6 lb/acre-day            | 5.5         | 0.041        | 11    |
| <b>Subtotal, Construction Fugitive Emissions<sup>(3)</sup></b>                       |                      |                  |                             |                            | 24          | 0.24         | 13    |
| <b>Total PM10 Construction Emissions (Engine Exhaust and Fugitive)<sup>(3)</sup></b> |                      |                  |                             |                            |             | 0.25         |       |

(Continued)

Operation Emissions <sup>(4)</sup>

| SOURCE  | SIZE /<br>GROSS HP | DAILY<br>AMOUNT<br>(hours) | DAYS<br>OF<br>ACTIVITY | NUMBER<br>OF UNITS | ONE-WAY<br>DISTANCE<br>(miles) | NO <sub>x</sub>       |           |             | ROC                   |           |             | PM <sub>10</sub>      |           |             | SO <sub>x</sub>       |           |             | CO                    |           |             | NOTES |
|---|--------------------|----------------------------|------------------------|--------------------|--------------------------------|-----------------------|-----------|-------------|-----------------------|-----------|-------------|-----------------------|-----------|-------------|-----------------------|-----------|-------------|-----------------------|-----------|-------------|-------|
|   |                    |                            |                        |                    |                                | EF                    | Daily     | Annual      | EF                    | Daily     | Annual      | EF                    | Daily     | Annual      | EF                    | Daily     | Annual      | EF                    | Daily     | Annual      |       |
|   |                    |                            |                        |                    |                                | (g/hr) <sup>(2)</sup> | (lbs/day) | (tons/year) | (g/hr) <sup>(2)</sup> | (lbs/day) | (tons/year) | (g/hr) <sup>(2)</sup> | (lbs/day) | (tons/year) | (g/hr) <sup>(2)</sup> | (lbs/day) | (tons/year) | (g/hr) <sup>(2)</sup> | (lbs/day) | (tons/year) |       |
| Emergency Generator                             | 587<br>(400 kW)    | 0.5                        | 60                     | 1                  |                                | 3,550                 | 4         | 0.12        | 36                    | 0.04      | 0.00        | 59                    | 0.07      | 0.002       | 410                   | 0.45      | 0.014       | 568                   | 0.6       | 0.02        | 6,12  |
| Worker Light Truck                              | Light              | -                          | 60                     | 1                  | 30                             | 1.0                   | 0.13      | 0.004       | 0.35                  | 0.05      | 0.001       | 0                     | 0         | 0           | 0.06                  | 0.01      | 0.0002      | 7.2                   | 0.96      | 0.03        | 7     |
| <b>Total Operation Emissions <sup>(5)</sup></b> |                    |                            |                        |                    |                                |                       | 4         | 0.12        |                       | 0.09      | 0.00        |                       | 0.07      | 0.002       |                       | 0.46      | 0.014       |                       | 1.6       | 0.05        |       |
| <b>Operation Thresholds</b>                     |                    |                            |                        |                    |                                |                       | Exempt    |             |                       | Exempt    |             |                       | Exempt    |             |                       | Exempt    |             |                       |           |             |       |
| <b>Insignificant Impact <sup>(10)</sup></b>     |                    |                            |                        |                    |                                |                       | Yes       |             |                       | Yes       |             |                       | Yes       |             |                       | Yes       |             |                       |           |             |       |

'- = Not applicable

Unit abbreviations: g/hr = grams per hour, lb/day = pounds per day, tpy = tons per year, tpq = tons per quarter

(1) Daily amount is measured in hours for off-road construction equipment (e.g., grader), and in number of trips for on-road vehicles (e.g., worker light-truck).

(2) Emission factors are in grams per hour for off-road equipment, and in grams per mile for on-road vehicles.

(3) Construction engine emission subtotals are for the complete project. Major pieces of construction off-road equipment (e.g., grader, dozer) are used consecutively, not concurrently.

(4) Operation and construction will not occur simultaneously, and hence, the emissions are not additive.

(5) Operational emission totals are for the project. Only one generator will be tested on a single day.

(6) Emission factors are from Caterpillar Corp.

(7) EMFAC7G Emission Factors (1998, 15mph, 75°F)

(8) SCAQMD CEQA Handbook, Table A9-8-B

(9) Construction emissions have insignificant impact when no emission of a major piece of off-road equipment exceeds threshold (i.e., major pieces are used consequently, not concurrently).

(10) Operation emissions have an insignificant impact if emergency generators are exempt from regulatory limits or if no regulations apply.

(11) Number of days subject to wind erosion equal to days for trenching.

(12) The 25-minute test cycle will be conducted mostly at 50 percent load. To be conservative, the horsepower is stated and emissions are calculated at 75 percent load.

(13) Daily construction fugitive emissions includes the specific activity plus wind erosion.

(14) Access road assumed to be 1000 feet long and 10 feet wide.

(15) Area to be graded is sum of 125 by 56 foot equipment yard, 94 by 48 foot 3R structure, and 10-foot perimeter band.