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MEMO

Date: January 28, 2016

To: **Matthew Gilliland**
David J Powers and Associates

From: James Reyff

RE: **Samaritan Court Medical Office Project and Samaritan Medical Campus
Master Plan Air Quality and Greenhouse Gas Assessment –**

SUBJECT: **Application of New OEHHA Guidance to Cancer Risk Calculations**
Job#15-050

The air quality and greenhouse gas assessment prepared for the project, most recently updated January 28, 2016, included cancer risk calculations attributable to emissions from on- or near-site construction and intermittent operation of diesel generators for testing and maintenance. The cancer risk calculation procedures followed the most up to date published guidelines issued by the Bay Area Air Quality Management District (BAAQMD) as indicated in their BAAQMD Air Toxics NSR Program Health Risk Screening Analysis (HRSA) Guidelines, dated January 2010, and their *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0, dated May 2012*. In March 2015, the Office of Environmental Health Hazard Assessment (OEHHA) updated the guidelines for evaluating cancer risks. This update include specific breathing rates and exposure periods for various age groups of sensitive receptors, which add complexity to the cancer risk calculations. OEHHA, which is the State agency that researches and recommends procedures for calculating health risks from toxic air contaminants (TACs), provides the information that local air districts use to develop their risk management policy. BAAQMD is reviewing OEHHA's recommendations and has not formally adopted any new guidance for calculating cancer risk; however, planning staff at BAAQMD have recommended incorporating these methods into new cancer risk assessments conducted for review under CEQA¹.

Application of the new OEHHA guidance would increase cancer risk predictions for this project. The risk would increase mostly because we would assume a greater intake of TACs by infants and children due to the use of a higher breathing rate. The cancer risk assessment conservatively assumes that infants and children would be present continuously at each residential receptor that is

¹ Personal phone conversation between Virginia Lau (BAAQMD) and James Reyff (Illingworth & Rodkin, Inc.) on November 10, 2015.

exposed to either construction emission of diesel particulate matter or emissions of diesel particulate matter from routine testing and maintenance of emergency generators powered by diesel engines. The effect of the new OEHHA guidance on cancer risk calculations included in October 16, 2015 report are described below.

Construction Impacts

Our report assumed almost continuous infant/child exposure at receptors near the construction sites. The exposure period would be 2016 through 2020, where all construction emissions were conservatively assumed to occur within this 5-year period. The cancer risk calculations included age-sensitivity factors and higher breathing rates for infants/children. The primary effect of the new OEHHA guidance would be to increase the breathing rates substantially for infants. This would result in an approximate doubling of the cancer risks. So, unmitigated cancer risk, assuming infant/children exposure to 5-years of construction, would increase from 33 chances per million to about 66 chances per million at the residential location most affected by project construction. Mitigation Measure AQ-1 and AQ-2 are aggressive measures in reducing TAC emissions from construction. These measures would reduce emissions by over 90 percent. Applied to a cancer risk prediction 66 per million, the risk would be reduced to less than 7 chances per million, which is below the cancer risk threshold of 10.0 chances per million. In conclusion, had the construction risk assessment used the new OEHHA guidance, the same conclusions, in terms of significance, would have been identified and the mitigation measures would not have been different.

Operational Impacts

The project proposes four 750-kilowatt emergency standby generators. These generators are powered by diesel engines that require routine testing and maintenance. Because these engines would be larger than 50 horsepower and use diesel fuel, they are subject to restrictions that limit their use to 50 hours per year for testing and routine maintenance and must meet fine particulate matter emission standards. These assumptions were incorporated into the analysis. Based on discussions with BAAQMD staff, a factor of 1.3744 can be applied to our risk assessment to adjust cancer risk predictions to incorporate the new OEHHA guidance². The cancer risk calculation of 2.3 chances per million would increase to 3.2 chances per million at the residential location most affected by the generators. Again, the effect of this new guidance would not affect the findings of this assessment.

Cumulative Cancer Risk Calculations

The cumulative cancer risk would also increase. However, the new guidance would not increase those levels such that new significant cancer risk impacts would be identified.

² Personal phone conversation between Virginia Lau (BAAQMD) and James Reyff (Illingworth & Rodkin, Inc.) on November 10, 2015. Note this factor applies to sources that have continuous emissions that do not vary over time, unlike traffic emissions that decrease over time.