REQUEST FOR APPROVAL

To: Matt Henigan, Deputy Director
Materials Management and Local Assistance Division

From: Clark Williams, Branch Chief
Statewide Technical and Analytical Resources Branch

Request Date: February 11, 2020

Decision Subject: Approval of Scope of Work Regarding Reduction of Volatile Organic Compounds Emissions from Composting Operations Contract (Greenhouse Gas Reduction Fund, FY 2018/19)

Action By: February 20, 2020

Summary of Request:

Staff requests approval of the Scope of Work (SOW) for a research contract that will (1) produce a guidance document to assist local air districts in reviewing applications and developing permit conditions for composting facilities, (2) develop technical guidance for compost facility operators regarding strategies to maximize compost system performance while minimizing air emissions, and (3) educate air district staff and compost facility operators through a series of workshops strategically located around the State.

Recommendation:

Staff recommends approval of the SOW for the Reduction of Volatile Organic Compounds Emissions from Composting Operations Contract in an amount of $200,000.

Funding Information:

Fiscal Year	Fund Source	Amount Available	Amount to Fund Item	Amount Remaining	Line Item
2018/19	GGRF	$200,000	$200,000	$0	Composting VOC Emission Guidance

Deputy Director Action:

On the basis of the information and analysis in this Request for Approval, I hereby approve the SOW for the Reduction of Volatile Organic Compounds Emissions from Composting Operations Contract and authorize staff to proceed with the contracting process. This contract will research and develop a guidance document for reducing

VOC emissions from composting facilities and present the findings in a series of workshops. Funding shall not exceed two hundred thousand dollars ($200,000).

Dated: February 19, 2020

Signed by Matt Henigan, Deputy Director

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Matt Henigan
Deputy Director

Attachments:

1. Scope of Work
2. Request for Approval for Allocation for the Greenhouse Gas Reduction Fund Grant Programs From Remaining Fiscal Year (FY) 2018-19 Funds and New FY 2019-20 Funds (Greenhouse Gas Reduction Fund, FYs 2018-19 and 2019-20) (https://www2.calrecycle.ca.gov/PublicNotices/Documents/11208)

Background Information, Analysis, and Findings:

VOC emissions from composting operations fluctuate both from one facility to the next as well as during the composting process. These variations are influenced by factors such as composting technology, feedstock mix, and operational parameters (initial grind, porosity, saturation, aeration, etc.). This contract will produce a guidance document to (1) aid local air districts in reviewing and developing permit conditions for composting facilities, (2) assist compost facility operators with maximizing composting system performance while minimizing air emissions, and (3) fund a series of workshops to share the results of this contract with both air district staff and compost facility operators.

The decomposition of organic materials results in VOC emissions. When organic materials are aggregated and processed at a composting facility, these emissions can be regulated under the federal Clean Air Act (CAA) because they are a precursor to ground-level ozone, a component of smog and an air pollutant with serious health affects for humans as well as negative impacts on other natural processes such as crop growth. By manipulating the composting process via specific management practices, VOC emissions may be reduced by 60 to 92 percent compared to organic materials that degrade naturally in an unmanaged process (Buyuksonmez, 2007). Source test data for air emissions performed over the past 20 years to permit existing composting facilities contain information about the impact of composting systems and management practices on emissions. However, there has never been a coordinated effort to synthesize that information, determine data gaps, and identify and recommend specific operational

parameters, feedstock blends, and technologies that provide the highest level of VOC emission controls.

In California, local air districts have the primary responsibility for implementation of the New Source Review (NSR) program, which regulates emissions from stationary sources of air pollution. The California NSR permit program is derived from the CAA. Specific to NSR, each air district must include in its air quality attainment plan a stationary source control program designed to achieve no net increase in emissions of nonattainment pollutants or their precursors for all new or modified sources that exceed a specific emissions threshold. These thresholds vary between districts and are based on the non-attainment status of the particular district, with the most polluted (and generally most populous) districts having the lowest threshold.

As part of the permitting process, a project is subject to the rules of each individual air district. If an air district's NSR rules require it, a project must calculate emissions from each individual component source and total emissions to determine the applicability of various permitting requirements. In addition, the applicant may be required to conduct a survey to determine what methods, measures, or control technologies are available for controlling emissions. During the permit process, an air district prepares an engineering analysis that includes emission calculations, an analysis of whether the project will meet district, state, and federal air quality regulations, assumptions used to evaluate the acceptability of the project, and required conditions of design and operation to achieve and maintain compliance.

The air district engineering analysis will be used to calculate an estimate of how many emission reductions credits (offsets) a composting project will need in order to be permitted. Offsets, when available, are purchased in an open market from willing sellers which can be expensive. Having a better understanding of potential emissions from all stages of the composting process can provide applicants with a pathway to ensure they maximize operational performance and limit the need for offset purchases.

This contract directly helps California achieve the requirements of Senate Bill 1383 (Lara, Chapter 395, Statutes of 2016) which requires a reduction in the disposal of organic materials in landfills by 50 percent by 2020 and 75 percent by 2025. CalRecycle estimates the state will need between 75 and 100 new or expanded compost and anaerobic digestion facilities to recycle sufficient organic materials to achieve SB 1383 goals. State agencies, air districts, the composting industry, and other stakeholders have acknowledged the challenges inherent in siting and permitting new and expanded organics recycling facilities. In response to these challenges, CalRecycle and ARB convened a Compost Working Group, which also includes many of the air districts and their association, the California Air Pollution Control Officers Association.

Under this contract, the contractor shall collect and compile existing VOC emissions data from all publicly available sources to determine whether specific operational parameters can be linked to specific VOC emission rates, conduct field research to fill in data gaps, and prepare a guidance document which can be used by air district permitting staff and facility operators. To promote the document and its findings, the contractor will conduct workshops in California to (1) inform air district staff on the permit conditions which operators can readily control to minimize VOC emissions and (2) educate compost operators about strategies within their compost systems to maximize VOC emission reductions and avoid commonly made mistakes. The guidance document will be published and serve as the final report for this contract.