BOARD MEETING DATE: January 5, 2018 AGENDA NO. 4

PROPOSAL: Transfer and Appropriate Funds, Issue Purchase Orders for Monitoring and Lab Equipment, Approve Surrender of Fixed Assets, and Execute or Amend Contract for Monitoring Services

SYNOPSIS: A variety of field monitoring equipment is used to identify, characterize and quantify emissions. These tools are particularly useful when inspecting sources associated with petroleum production, refining, loading and distribution, which have fugitive emissions and are sometimes the source of public complaints. Additional monitoring services and equipment as well as laboratory supplies are needed to identify potential sources of odors and ensure compliance during routine inspections. This action is to transfer and appropriate funding up to $561,000 from the Rule 1173 Mitigation Fee Special Revenue Fund (44) and $10,000 from the AES Settlement Projects Fund (35) to Compliance & Enforcement's and Science & Technology Advancement's FY 2017-18 Budgets to purchase supplies and issue purchase orders for equipment. These actions are to also issue purchase orders up to $542,000 for equipment and authorize surrender of five existing Toxic Vapor Analyzers (TVAs) for a credit toward new TVAs. Finally, this action is to execute or amend a contract with FluxSense, Inc., in an amount not to exceed $55,000 from the AES Settlement Projects Fund (35) for professional monitoring services related to shoreline odors.

COMMITTEE: Administrative, December 8, 2017; Recommended for Approval

RECOMMENDED ACTIONS:

1. Transfer and appropriate funding up to $561,000 from the Rule 1173 Mitigation Fee Special Revenue Fund (44) to the following FY 2017-18 General Fund Budgets for equipment and training:
   a. Compliance & Enforcement: $426,000 to Capital Outlays Major Object and $19,000 to Services and Supplies Major Object, Training Account.
   b. Science & Technology Advancement: $116,000 to Capital Outlays Major Object.

2. Transfer and appropriate funding up to $10,000 from the AES Settlement Projects Fund (35) to Science & Technology Advancement's FY 2017-18 Budget, Services and Supplies Major Object, Lab Supplies Account, to purchase up to 12 Summa canisters for shoreline odor issues.
3. Authorize the Procurement Manager, in accordance with SCAQMD Procurement Policy and Procedure, to issue sole source purchase orders to the following entities:
   a. FLIR Commercial Systems for the purchase of three optical gas imaging cameras for an amount not to exceed $342,000.
   b. Thermo Environmental Instruments for the purchase of ten TVAs for an amount not to exceed $200,000.
4. Authorize surrender of five existing fixed assets to Thermo Environmental Instruments for a $5,000 credit towards the purchase of the new TVAs.
5. Execute or amend a contract with FluxSense, Inc., in an amount not to exceed $55,000 from the AES Settlement Projects Fund (35) for professional monitoring services related to shoreline odor issues.

Wayne Nastri
Executive Officer

BG:SC

Background

Monitoring and Lab Equipment Purchases

Staff uses various field monitoring equipment to enhance field compliance programs through the ability to more easily identify sources of fugitive emissions as well as to characterize and quantify such emissions. This has been particularly true in recent years, as staff has used new portable technologies to better understand the fugitive emissions from sources and re-evaluate current methodologies and requirements used to identify and mitigate these emissions.

One example is the optical gas imaging (OGI) infrared camera, which has changed the manner in which SCAQMD screens for fugitive VOC emissions. Staff used a camera manufactured by FLIR Commercial Systems (FLIR) to monitor the natural gas emissions at the Southern California Gas (SoCalGas) Aliso Canyon underground reservoir during the leak at Well #SS-25 in 2015-2016. Infrared videos from the OGI camera, displaying an opaque smoke-like material emanating from the leaking well (not visible to the human eye), were often included by media outlets in their reports. The FLIR camera has since been used at petroleum-related facilities to effectively detect VOC fugitive emissions that may have traditionally gone unidentified.

On July 17, 2017, the Office of Administrative Law approved CARB's regulation for Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities. This regulation includes the use of OGI technology to detect fugitive leaks at, among other sources, underground natural gas reservoirs. The SCAQMD will enforce this regulation, establishing further need for the OGI technology. Currently, SCAQMD has a single OGI camera manufactured by FLIR, which has been extremely useful in evaluating VOC emissions from petroleum refining, storage, loading and transportation operations. Staff is requesting to purchase three additional FLIR OGI cameras; one GF320 unit and two GFx320 intrinsically safe cameras (i.e., designed for usability in areas with potentially hazardous/explosive conditions). One GFx320 would be provided to SCAQMD monitoring staff and the remaining two cameras would be assigned to compliance. The GFx320 camera is needed at refineries and select facilities requiring intrinsically safe devices.

Another effective compliance tool in identifying fugitive VOC emissions is the Toxic Vapor Analyzer (TVA), a portable surface gas detection instrument used by SCAQMD since the 1980s to verify compliance at approximately 80 active and 700 inactive landfill sites, approximately 350 petroleum, oil and gas facilities, approximately 80 bulk loading facilities, 7 offshore drilling platforms and 8 petroleum refineries. The SCAQMD currently has 24 TVAs in inventory (including Models 1000B and 2020), all manufactured by Thermo Scientific Instruments (Thermo) and many date back to 2002. Eight of these units (TVA 2020s) were recently purchased and deployed to field staff. These limited monitoring resources are often shared by field compliance staff, which can hinder staff's ability to make timely compliance determinations. The number of available TVAs is reduced further as the older 1000B units are routinely returned to the manufacturer for servicing and repair due to their age. In fact, the manufacturer will discontinue support of these older units within a year, further highlighting the need to replace this old equipment.

The TVA 2020 is both a flame ionizing detector (FID) and photo ionizing detector (PID) and includes global positioning system (GPS) and Bluetooth wireless technologies. The addition of the PID provides staff with the flexibility to use the monitors for multiple applications, reducing the need to acquire a second device. One such application is the monitoring conducted at refineries, during which an FID is typically used to monitor for fugitive VOC leaks. However, the inspection of a refinery's wastewater systems (per Rule 1176) requires that the reading of any fugitive VOC leaks not include methane emissions, which is not possible with an FID. Inspectors encountering a suspect noncompliant fugitive VOC leak are required to obtain and analyze a sample prior to taking compliance action. Methane emissions are typically invisible to the PID, therefore using the dual (FID/PID) detection TVA would provide the inspector with the opportunity to subtract out methane emissions, instantaneously identify potential violations and take immediate compliance action when excessive fugitive leaks are encountered. This would also reduce the number of

samples collected and submitted to the laboratory for analysis, at a significant cost savings to the SCAQMD. The GPS technology pinpoints each sample location, which is necessary to comply with 40 CFR Part 60 requirements for sampling at landfills. Finally, the Bluetooth option would enable staff to upload results directly to a laptop.

Shoreline Odor Events

Between the period January 1, 2016 and September 25, 2017, SCAQMD received over 1,000 complaints from residents in Seal Beach and the immediate areas regarding petroleum odors from unknown, offshore sources. The vast majority of these complaints could not be traced back to any land-based facility or other known source. Staff has established and maintained regular communications with the fire departments and cities in these areas, and provided air sample collection devices to some fire departments and citizens to be used to collect air samples during odor events.

As part of the ongoing investigation of these complaints, staff provided a limited number of Summa canisters to some fire departments in the affected areas. A Summa canister is a stainless steel electropolished passivated vessel used to collect a whole air sample. To collect a sample, the Summa canister valve is opened and the canister is left in a designated area for a period of time to allow the surrounding air to fill the canister and achieve a representative sample. It is anticipated that the deployment of additional units would increase the chances of obtaining needed samples during the odor events to help determine the nature of these emissions. Staff proposes purchasing up to 12 Summa canisters for this purpose and other investigations.

Furthermore, at the September 2017 Board meeting, members of the public shared community concerns about shoreline odor events and requested that monitoring be established on the shorelines in these areas to identify the constituents and concentrations of the odors and to assist in the identification of the sources of these emissions. SCAQMD previously contracted with FluxSense, Inc., to conduct a comprehensive study to characterize and quantify emissions from refineries, tanks farms, oil fields, gas stations, the Ports of Los Angeles and Long Beach, and ship stacks using optical remote sensing (ORS) on a mobile platform. The project resulted in an unprecedented dataset documenting actual emissions of VOCs, NO2, SO2 and air toxics such as benzene from the above-mentioned sources. The project also highlighted the usefulness of conducting mobile survey measurements with optical methods to identify emission sources and hot spots in real time. FluxSense's proprietary Solar Occultation Flux (SOF) method is one of multiple ORS technologies which can be used to identify and quantify VOC emissions from individual sources of various sizes. During this study, in addition to ground-based measurements, SOF was also deployed on a ship to measure VOC emissions from oil islands off the coast of Long Beach. A similar approach can be used to identify and quantify VOC emissions from oil tankers off the coast of Long Beach, Seal Beach, and Huntington Beach. Staff proposes to contract with FluxSense for professional monitoring services related to shoreline odor events.

Proposal

Monitoring and Lab Equipment Purchases

This action is to transfer up to $561,000 from the Rule 1173 Mitigation Fee Special Revenue Fund (44) to the FY 2017-18 General Fund and appropriate up to $445,000 to Compliance & Enforcement's FY 2017-18 Budget, with $426,000 allocated to Capital Outlays Major Object and $19,000 to Services and Supplies Major Object, Training Account, and appropriate up to $116,000 to Science & Technology Advancement's FY 2017-18 Budget, with $116,000 to Capital Outlays Major Object. Sole source purchase orders up to $542,000 will be issued by the Procurement Manager, in accordance with SCAQMD Procurement Policy and Procedure, for monitoring and lab equipment and to authorize the surrender of five existing TVAs for a credit toward new TVAs.

The purchases will include one GF320 infrared camera and two GFx320 intrinsically safe (i.e., ignition-preventive) infrared cameras from FLIR Commercial Systems in an amount not to exceed $342,000. Included in the fund transfer is up to $19,000 to be allocated for staff training on the use of the new cameras. Finally, ten TVAs will be purchased from Thermo in an amount not to exceed $200,000.

For each new TVA 2020 purchased, Thermo will provide the SCAQMD with a $1,000 trade-in allowance for each existing TVA 1000B surrendered to the manufacturer at the time of purchase. Five of the remaining 1000B units purchased from Thermo have a zero-net book value and will be used for this purpose. Since the current TVAs are listed as fixed assets, Board approval is required to remove the following units from the SCAQMD inventory and surrender them to Thermo for a total credit of $5,000 towards the purchase of the ten new TVA 2020 units.

Fixed Assets for Surrender/Disposal

Asset ID	Tag#	Description	Cost	Date Purchased	Net Book Value *	Disposition
000000004138	0016790	Analyzer, Toxic Vapor TVA 1000B	$9,874.21	9/3/2010	$0.00	Scrap
000000003914	0016693	Analyzer, Toxic Vapor TVA 1000B	$9,389.86	12/5/2007	$0.00	Scrap
000000003904	0016690	Analyzer, Toxic Vapor TVA 1000B	$9,388.83	9/25/2007	$0.00	Scrap
000000003915	0016694	Analyzer, Toxic Vapor TVA 1000B	$9,389.85	12/5/2007	$0.00	Scrap
000000003694	0016624	Analyzer, Toxic Vapor TVA 1000B	$9,143.00	4/26/2005	$0.00	Scrap
Total Obsolete or Non-repairable Equipment			**$47,185.75**		$0.00	

* Net Book Value represents historical cost reduced by estimated depreciation. It is expected that these items will be returned for a purchase credit.

Shoreline Odor Events

This action is to transfer up to $10,000 from the AES Settlement Projects Fund (35) to Science & Technology Advancement's FY 2017-18 Budget, Services and Supplies Major Object, Lab Supplies Account, to purchase up to 12 Summa canisters for shoreline odor issues.

Finally, this action is to execute or amend a contract with FluxSense, Inc., in an amount not to exceed $55,000 from the AES Settlement Projects Fund (35) for professional monitoring services related to shoreline odors. FluxSense, Inc., will conduct a two-week monitoring survey of VOC emissions from oil tankers idling off the coast of Long Beach, Seal Beach and Huntington Beach. Mobile land-based (in a van) and off-shore (on a vessel) measurements will be carried out using FluxSense's proprietary SOF method. For the first half of this survey, emissions from individual ships will be studied by an SOF system installed on a boat. VOC emissions from oil tanker ships will be investigated during various types of operations, including fueling, loading/unloading and idling. The second portion of the survey will be for on-land mobile ORS measurements along the coasts of Long Beach, Seal Beach and Huntington Beach. If elevated levels of pollutants are detected, their source(s) will be further investigated. FluxSense's proprietary SOF method is currently the only one on the market capable of performing mobile VOC measurements in real time and is ideal to fulfill the strict technical requirements of this study.

Sole Source Justification

Section VIII.B.2. of the Procurement Policy and Procedure identifies provisions under which a sole source award may be justified. The request for sole source awards in this Board letter is made under the provisions Section VII.B.2.c(1): The unique experience and capabilities of the proposed contractor or contractor team.

FLIR Cameras

For at least a decade, staff have used an OGI camera manufactured by FLIR Commercial Systems (FLIR) to detect fugitive emission leaks at refineries, natural gas storage facilities, and oil and gas production sites. The FLIR camera was an essential tool during the investigation of the SoCalGas Aliso Canyon natural gas leak and has since been deployed on a wider variety of inspections and complaint investigations. SCAQMD currently owns one operational FLIR camera, which was purchased in early 2016 for use in the SoCalGas Aliso Canyon gas leak investigation. The GF320 camera is the only system that meets all of the application requirements for ease of use and seamless integration into SCAQMD's existing programs. In addition, FLIR is the leading manufacturer of this type of equipment in the world, and staff believes that FLIR is best positioned to offer the long-term service and training the SCAQMD needs for this type of equipment. The FLIR cameras can detect the following gases at the minimum detected leak rates (MDLR) as shown in the following table:

Compound	MDLR (grams/hr)	Compound	MDLR (grams/hr)
Methane	0.8	Benzene	3.5
Butane	0.4	Ethane	0.6
Ethanol	0.7	Ethylbenzene	1.5
Ethylene	4.4	Heptane	1.8
Hexane	1.7	Isoprene	8.1
MEK	3.5	1-Pentene	5.6
Methanol	3.8	MIBK	2.1
Octane	1.2	Pentane	3.0

Toxic Vapor Analyzers

Thermo Environmental Instruments is the sales arm of Thermo Fischer Scientific, the manufacturers of the TVA 2020. The SCAQMD has used instruments manufactured by Thermo since the late 1990s to ensure compliance at petroleum-related operations. Staff's comparison of competitive units found the TVA 2020 to be the only FID that includes the PID and GPS functionality. The fully equipped TVA 2020 is approximately the same final cost as the base units of competitors with FID functionality only. Thermo is providing the SCAQMD with a $5,000 trade-in allowance for five older units. The TVA 2020 is a unique product that is only available from a single source.

Contract with FluxSense, Inc.

SCAQMD currently contracts with FluxSense, Inc., to apply next-generation air monitoring methods to characterize hazardous air pollutant emissions from refineries and assess potential impacts to surrounding communities. Given their current work with SCAQMD coupled with their proprietary SOF method, FluxSense possesses unique experience and capabilities to perform the needed professional monitoring services related to shoreline odor issues. Staff may execute a new contract with FluxSense or amend the current contract.

Resource Impacts

Upon Board approval, the amount of $561,000 will be made available from the Rule 1173 Mitigation Fee Special Revenue Fund (44) for the purchase of cameras with related training as well as TVAs; and $65,000 will be made available from the AES Settlement Projects Fund (35) for canisters and the contract with FluxSense, Inc.

Rule 1173 established a mitigation fee payment provision relating to the release of VOC from an atmospheric Pressure Relief Device (PRD) at refineries and chemical plants. The Rule 1173 Mitigation Special Revenue Fund (44) was established specifically for this funding source and is to be used to fund air quality projects which directly benefit the community surrounding the facility, which would apply to the ongoing use of this equipment for field compliance programs. The Rule 1173 Mitigation Fee Special Revenue Fund (44) as of October 2017 has a balance of $3,322,166 excluding any

Board actions that have not been encumbered. Unused funds will be returned to the Rule 1173 Mitigation Fee Special Revenue Fund (44).

The use of the AES Settlement Projects Fund (35) is not restricted by the applicable statutes or settlement agreement. However, while in the past the Board had restricted the use of these funds for fleet rules, they have the authority to direct use of the monies in the AES Settlement Projects Fund (35) for other priorities and have previously done so (i.e., June 2017 action to use funds to procure laboratory and monitoring equipment). The AES Settlement Projects Fund (35) as of October 2017 has a balance of $554,469 excluding any Board actions that have not been encumbered. Unused funds will be returned to the AES Settlement Projects Fund (35).