BOARD MEETING DATE: March 3, 2017 AGENDA NO. 7

PROPOSAL: Add Equipment and Add/Delete Positions to Address Operational Needs in Science and Technology Advancement for Metals Monitoring and Analysis

SYNOPSIS: The elevated levels of hexavalent chromium (Cr6+) that have recently been measured in the City of Paramount have created an urgent need to enhance SCAQMD's air quality monitoring and laboratory analysis capability. This action is to invest in new laboratory and field equipment and better align staffing resources to allow SCAQMD to appropriately address the increasing demand for extensive monitoring of Cr6+ and other toxic metals in the City of Paramount as well as other parts of the Basin.

COMMITTEE: Stationary Source, February 17, 2017; Recommended for Approval

RECOMMENDED ACTIONS:

1. Appropriate up to $35,325 from General Fund Undesignated (Unassigned) Fund Balance and transfer and appropriate up to $35,325 from the Air Toxics Fund (15) to the FY 2016-17 Budget, Capital Outlays Major Object, Capital Outlays Account, to reimburse the following offices for the purchase of an Ion Chromatograph:
   a. Up to $65,337 to District General; and
   b. Up to $5,313 to Information Management.
2. Transfer up to $240,000 from the Air Toxics Fund (15) to the General Fund in FYs 2016-17 and/or 2017-18 (any unused funds will be returned to the Air Toxics Fund) and appropriate up to $240,000 in Science and Technology Advancement's FYs 2016-17 and/or 2017-18 Budget (Org 44), as follows:
   a. Up to $170,000 into the Capital Outlays Major Object, Capital Outlays Account, in accordance with Tables 1A and 1B for laboratory equipment and software; and
   b. Up to $70,000 into Services and Supplies Major Object, Small Tools, Instruments, Equipment Account, for up to 20 integrated filter-based samplers, in accordance with Table 1B.

3. Recognize revenue, upon receipt, and appropriate up to $261,000 in U.S. EPA Section 105 funding as follows:
   a. Up to $131,000 into the Salaries and Employee Benefits Major Object, in accordance with Table 3, to fund three new positions;
   b. Up to $100,000 into the Capital Outlays Major Object, in accordance with Table 1A, to partially fund one Scanning Electron Microscope with Energy Dispersive Spectrometer; and
   c. Up to $30,000 into the Services and Supplies Major Object, Temporary Agency Services account, as needed, to supplement existing monitoring and analysis efforts.
4. Authorize the Procurement Manager, in accordance with SCAQMD Procurement Policy and Procedure, to:
   a. Issue solicitation(s) and purchase orders in an amount not to exceed $200,000 for laboratory equipment as listed in Table 1A; and
   b. Issue purchase orders in an amount not to exceed $140,000 for field equipment and software as listed in Table 1B.
5. Delete two Air Quality Instrument Specialist I positions and one Office Assistant position in Science and Technology Advancement (Atmospheric Measurements Branch-Federal Programs Group) as listed in Table 2.
6. Create and fill the following three new positions in Science and Technology Advancement to support current and future air monitoring and analysis activities in the City of Paramount and other parts of the Basin (Table 3):
   a. One Air Quality Instrument Specialist II in the Atmospheric Measurements Branch (Special Monitoring Group);
   b. One Air Quality Specialist in the Atmospheric Measurements Branch (Special Monitoring Group); and
   c. One Senior Chemist in Laboratory Services and Source Test Engineering.

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Executive Officer

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**Background**

In 2013, the SCAQMD received a series of metallic odor complaints from local community members in the Paramount neighborhood. In response to these complaints, SCAQMD staff conducted an investigation of potential local sources of emissions which included an air sampling study. The purpose of these activities was to determine the source of emissions and potential air pollution control strategies. Within the Paramount area, ambient monitoring of toxic metal emissions began in 2013 and has continued at two sites on Vermont Avenue and California Avenue.

Based on the monitoring results, there were two metals of concern: nickel and hexavalent chromium (Cr6+). In 2014 and 2015, SCAQMD worked with Carlton Forge Works to reduce metal particulate emissions from their grinding operation. Carlton Forge Works implemented a number of voluntary measures that substantially reduced nickel levels. Since these measures did not reduce ambient Cr6+ levels, the SCAQMD needed additional data to identify the source of these emissions. In October 2016, as part of its ongoing investigation to identify and address sources of Cr6+ that may be impacting the nearby communities, SCAQMD staff deployed several additional monitors in the mostly industrial areas of the City of Paramount. Since initial results showed elevated levels of Cr6+ near two metal processing facilities, stipulated Orders for Abatement were agreed upon by the Hearing Board, SCAQMD and Aerocraft Heat Treating Co. Inc. (December 2016) and Anaplex Corp. (January 2017) to reduce Cr6+ emissions from their operations. Since then, SCAQMD has been expanding the monitoring and analysis activities to encompass a larger portion of Paramount and identify other industrial facilities that may be responsible for the elevated levels of Cr6+ and other toxic metals in this area. As a result of this investigation, the SCAQMD is now proposing a new rule to control metal emissions from operations that forge, grind, finish and treat metal, as well as to minimize their impacts into surrounding communities. Because of the increasing demand for more extensive and ongoing monitoring of Cr6+ and other toxic metals in the City of Paramount and other parts of the Basin, staff has identified an urgent need for Science and Technology Advancement to expand its monitoring and analysis capabilities and proposes adjusting staff resources.

**Proposal**

These actions are to appropriate up to $35,325 from the General Fund Undesignated (Unassigned) Fund Balance and transfer and appropriate up to $35,325 from the Air Toxics Fund (15) to the FY 2016-17 Budget to reimburse the purchase of one Ion Chromatograph in Capital Outlays. Additionally, these actions are to transfer up to $240,000 from the Air Toxics Fund (15) into the General Fund in FYs 2016-17 and/or 2017-18, recognize upon receipt $261,000 in revenue from the U.S. EPA Section 105 grant, and appropriate up to $501,000 to Science and Technology Advancement's FYs 2016-17 and/or FY 2017-18 to issue solicitations and purchase orders for laboratory and field equipment as well as software, to provide funding for supplementing existing temporary services, and to delete three vacant positions and add three new positions in Science and Technology Advancement, as described herein and below, and summarized in the attached tables.

Purchase of an Ion Chromatograph

The large number of Cr6+ samples being collected in Paramount exceeded the throughput capacity of the two existing Ion Chromatographs (IC) in the SCAQMD laboratory. These instruments are also being used to analyze samples for other special monitoring projects and the U.S. EPA National Air Toxics Trends Stations (NATTS)

Program. Due to the increased sample analysis demands along with a recent breakdown of an existing IC, it was critical to acquire an additional IC instrument to provide adequate coverage for present and future Cr6+ analysis measurements. The IC was purchased in December 2016 as an urgent need to protect public health as allowed in the SCAQMD Procurement Policies and Procedures; District General and Information Management funds were used to complete the purchase. This action is to appropriate up to $70,650 to the FY 2016-17 Budget, Capital Outlays Major Object, to reimburse offices for the purchase of an IC as follows: up to $65,337 to District General and up to $5,313 to Information Management.

Proposed Purchases through Solicitation Process

*Scanning Electron Microscope with Energy Dispersive Spectrometer (SEM-EDS)*
The SCAQMD uses optical microscopes to analyze metal containing particles collected on deposition plates and identify potential sources of Cr6+ and other air toxic pollutants. This technique does not provide high throughput screening of samples, easy identification of particle composition, or quantification of particle sizes. Scanning SEM-EDS provides high resolution images of particle samples to identify their size, composition and metals content. As special monitoring studies continue in the City of Paramount and expand into other areas of the Basin, this instrument will help the SCAQMD laboratory more quickly identify potential sources of air toxic metals and asbestos. The Procurement Manager will release the appropriate type of solicitation to solicit formal bids, in accordance with SCAQMD's Procurement Policy and Procedure. Based on the results of the formal bid, a purchase order will be issued to purchase a SEM-EDS in an amount not to exceed $200,000 for which $100,000 will be funded by U.S. EPA (Table 1A).

Proposed Purchases through Sole Source Purchase Orders

*Integrated Filter-Based Samplers*
Staff currently operates enough integrated samplers to support the collection of particulate samples for various high profile projects such as Hixson, TAMCO and Paramount. Recently, field activities have expanded to encompass a larger portion of Paramount and provide more comprehensive and ongoing monitoring of the industrial facilities that may be responsible for the elevated levels of Cr6+ and other air toxic metals in this area. The current supply of samplers is becoming old, and many of these units are no longer supported by the manufacturer. Therefore, additional samplers are needed to keep pace with the increasing demand for more extensive metal monitoring in the City of Paramount and in other parts of the Basin. The Procurement Manager will issue a purchase order not to exceed $70,000 for up to 20 integrated filter-based samplers (Table 1B).

*Portable Wind System*
The correct interpretation of the air monitoring data from the Paramount project is dependent upon the availability of accurate wind and weather information. Currently, wind speed and direction are only available at the air monitoring station located in Compton, about two miles west of the City of Paramount. Therefore, staff has recommended the purchase of portable and easily deployable wind systems to collect more representative local weather data. The portable wind system is needed to help expand the monitoring capabilities within Paramount and other potential sites for the monitoring of toxic metals. The Procurement Manager will issue a purchase order not to exceed $20,000 for up to three portable wind systems (Table 1B).

*Chromeleon Software for Ion Chromatographs*
Staff utilizes the Chromeleon software package on numerous pieces of scientific instrumentation to determine the metal content (including Cr6+) of samples collected for the Paramount saturation study and other air monitoring projects. The software operates an instrument that is responsible for over 600 sample analyses per month, most of which require reporting within two days of receipt. The current version of this software is outdated and no longer supported by the manufacturer. Purchasing the latest "enterprise" version of Chromeleon allows for real-time backup of all instrument data (thus ensuring zero data loss) and for remote access to the IC instrument for verification of ongoing analyses from off-site locations and standardize the software running these instruments. The Procurement Manager will issue a purchase order not to exceed $50,000 for one Chromeleon Software for ICs (Table 1B).

Proposed Staffing Adjustments

*Two Air Quality Instrument Specialist I positions and one Office Assistant Position in Federal Programs Group*
The Federal Enhanced Particulate Monitoring Program operates a core air monitoring network on an ongoing basis. The two Air Quality Instrument Specialist I and Office Assistant positions were added for handling special programs and a potential expansion to the network. Since the Enhanced Particulate Network has not expanded and the work load is being handled appropriately with current resources, staff recommends the deletion of these three positions.

*Air Quality Instrument Specialist II in Atmospheric Measurements*
Special monitoring efforts have expanded to respond to community concerns, compliance requests and rules support. These recent and current deployments have better characterized emissions from oil reclamation activities, metal finishing, metal forging and recycling, battery recycling facilities, transfer stations, alternative burning technologies, asbestos sources and natural gas leaks. Also, with recent enhancement to include more real-time monitoring capabilities, the amount of data processing has increased significantly. Therefore, it is necessary to add one additional Air Quality

Instrument Specialist II position within Atmospheric Measurements (Special Monitoring Group) to assist with the expanded air monitoring deployments, method development and documentation, and data analysis, interpretation and visualization related to current and ongoing metals air toxics measurements.

*Air Quality Specialist in Atmospheric Measurements*
During the past few years, the amount of air monitoring data produced by Atmospheric Measurements (Special Monitoring Group) has grown substantially, both in number and complexity. Special monitoring projects, including those in Aliso Canyon and Paramount, require the use of state-of-the-art air monitoring and analysis equipment that often produces real (or near-real) time information such as the near real-time multi-metals system. To efficiently address the expanding ambient monitoring data management requirements for metals measurements and to improve the efficiency with which air quality data are collected, analyzed, validated and reported, comprehensive new analysis and visualization tools and other management systems will need to be implemented. Therefore, there is an urgent need to hire one additional dedicated Air Quality Specialist within the Special Monitoring Group to ensure the successful development, operation and evolution of the near real-time multi-metals instrument and associated data systems, as well as to identify available hardware, software and web- or cloud-based solutions for validating, analyzing, interpreting and mapping air quality data.

*Senior Chemist in Laboratory Services and Source Test Engineering*
Laboratory Services conducts multiple types of analysis that require strict quality assurance and quality control practices be followed. Additionally, the samples the laboratory receives must be tracked with chain of custody forms to ensure samples have been transported, stored and handled properly prior to being analyzed. The data produced by the laboratory needs to be thoroughly reviewed and validated before it can be shared with upper management, other agencies and the public. Furthermore, the laboratory must also follow strong safety protocols and ensure proper safety training happens on a recurring basis. Because of the additional workload generated by the increasing number of air samples analyzed within the Paramount Project and for other special monitoring studies, there is an immediate need to add one additional Senior Chemist position to Laboratory Services to better coordinate the validation, review and analysis of the collected data.

**Sole Source Justification**
Section VIII, B.2 of the Procurement Policy and Procedure identifies four major provisions under which a sole source award may be justified for procurement. The request for sole source purchase of the Integrated Filter-Based Samplers and the Portable Wind System is made under Sections B.2.b and B.2.c of the Procurement Policy and Procedure. Delay of the purchases for the integrated filter-based samplers and portable wind system may endanger public health or property and the systems

utilize proprietary technology. The request for sole source purchase of the Chromeleon Software for Ion Chromatographs is also made under Section B.2.c; the software uses proprietary technology that is only capable with the current laboratory instruments.

**Benefits to SCAQMD**

The purchase of new laboratory and field equipment and software, as well as the reallocation of staff resources in the Monitoring and Analysis Division within Science and Technology Advancement will allow SCAQMD to appropriately address the increasing demand for more extensive monitoring of ambient Cr6+ and other toxic metals in the City of Paramount and in other parts of the Basin as well as greatly enhance the capability of the Monitoring and Analysis Division to respond quickly to current and future air monitoring requests.

**Resource Impacts**

The General Fund Undesignated (Unassigned) Fund Balance and the Air Toxics Fund (15) will be used to reimburse offices for the capital outlay purchase in an amount up to $70,650. The Air Toxics Fund (15) and U.S. EPA Section 105 funding will be used to fund the proposed purchases listed in Tables 1A and 1B, temporary services, and the addition of the three new positions outlined in Table 3. Salaries and benefits for the proposed positions will be in accordance with the Board-approved job classifications, and the annual cost of the proposed positions at Step 5 is approximately $461,000. The proposed deletion of three positions as shown in Table 2 will result in an annual cost reduction of $283,652. The purchases in Tables 1A and 1B will not exceed $340,000 of which $240,000 is funded by the Air Toxics Fund (15). Any unused funds will be returned to the Air Toxics Fund (15).

**Attachments**

Table 1A – Proposed Purchases through Competitive Solicitation Process
Table 1B - Proposed Purchases through Sole Source Purchase Orders
Table 2 - Proposed Staffing Deletions
Table 3 – Proposed Staffing Additions

**Table 1A**
**Proposed Purchases through Competitive Solicitation Process**

| Description | Qty | Estimated Cost |
|---|---|---|
| Scanning Electron Microscope with Energy Dispersive Spectrometer (SEM-EDS) | 1 | $200,000* |
| | | |
| **Total** | | **$200,000** |

*$100,000 is funded from the Air Toxics Fund (15) and $100,000 is funded by U.S. EPA

**Table 1B**
**Proposed Purchases through Sole Source Purchase Orders**

| Description | Qty | Estimated Cost |
|---|---|---|
| Integrated filter-based samplers | Up to 20 units | $ 70,000 |
| Portable wind system | Up to 3 units | $ 20,000 |
| Chromeleon Software for Ion Chromatographs | 1 | $ 50,000 |
| **Total** | | **$140,000** |

**Table 2**
**Proposed Staffing Deletions**

| Title | Qty | Division | Estimated Cost* |
|---|---|---|---|
| Air Quality Instrument Specialist I | 2 | Atmospheric Measurements (Federal Programs Group) | $210,740 |
| Office Assistant | 1 | Atmospheric Measurements (Federal Programs Group) | $ 72,912 |
| **Total Proposed Staffing Deletions** | 3 | | **$283,652** |

*Salaries & Employee Benefits at Step 1 include base salary, retirement cost, insurance, FICA & SDI for a period of 12 months.

**Table 3**
**Proposed Staffing Additions**

| Title | Qty | Division | Estimated Cost* |
|---|---|---|---|
| Air Quality Instrument Specialist II | 1 | Atmospheric Measurements (Special Monitoring Group) | $37,000 |
| Air Quality Specialist | 1 | Atmospheric Measurements (Special Monitoring Group) | $46,000 |
| Senior Chemist | 1 | Laboratory Services and Source Test Engineering | $48,000 |
| **Total Proposed Staffing Additions** | 3 | | **$131,000** |

*Salaries & Employee Benefits at Step 3 include base salary, retirement cost, insurance, FICA & SDI for a period of four months to reflect available U.S. EPA funding.