



## FACT SHEET

June 24, 2009

### Background

- Pacific Steel Casting Company (PSC) is located at Gilman and Second Streets near Highway 80, in Berkeley. PSC produces steel castings for a variety of uses including bridges, truck parts, agricultural equipment, valves for sanitary sewers, public water systems, and the oil and gas industry. The company was founded in 1934 and has grown steadily throughout the years, producing custom castings ranging in various sizes at its three plants as follows:
  - Site #A0187, Plant 1 began operations in the 1930's making medium sized castings using primarily the Green Sand molding process. The binder for green sand molds is a combination of clay, water, and cornstarch compacted to form the molds.
  - Site #A0703, Plant 2 began operations in 1975. This plant uses a Shell process for the molding system. This sand molding process uses a binder mixed with the sand and is baked to form the molds and cores for the castings.
  - Site #A1603, Plant 3 began operations in 1981. This plant primarily uses a phenolic urethane binder mixed with the sand.
- Recycled scrap steel and other metals are turned into parts by: (1) creating a mold, which consists of sand bound together in a specific shape (the sand is mixed with binder material for this purpose), (2) melting the metal in an electric arc furnace, (3) pouring the molten metal into the cavity of the mold, and waiting for the metal to cool and harden, (4) removing the cast component by shakeout of the sand mold, and (5) various finishing steps which can include grinding and heat treating of steel parts.
- The District has a long history of regulating PSC's three steel foundry plants. From 1981 to 1991, the District took numerous enforcement actions to resolve odor problems, including obtaining an Order of Abatement in December 1984 from the Hearing Board. PSC installed odor abatement equipment (carbon adsorption units) in Plant 1 in 1985, and in Plant 2 in 1991, and odor complaints dropped off significantly. From 1991 until November 2000, when the District Hearing Board removed the Order of Abatement, the District issued no public nuisance Notice of Violations (NOVs).

## Pacific Steel Casting Company Fact Sheet

June 24, 2009

- Starting in 2005, odor complaints began to increase, apparently as a result of increased foundry production in Plant 3, and PSC was issued six NOVs for causing public nuisances for “burnt pot handle” odors, the first on March 23, 2005. Three more NOVs were issued (two for permit condition violations and one for an opacity violation) for a total of nine NOVs that year.
- In December of 2005, the District entered into a settlement agreement to resolve the nine NOVs. The District obtained a commitment from PSC to install odor abatement equipment at Plant 3, and prepare an Odor Management Plan to address odorous emissions from the facility. The Plant 3 odor abatement equipment included the installation of a fugitive emissions enclosure in the pouring and cooling area, a carbon adsorption unit, and continuous monitoring to determine the need for carbon change-out. On October 15, 2006, PSC completed the installation of the Plant 3 carbon adsorption unit. Through this process the District was able to obtain a binding commitment to install abatement equipment on Plant 3 within 10 months, whereas installation of other controls took over 10 years for Plant 1 and Plant 2.
- The increase in Plant 3 production levels also resulted in the requirement for PSC to prepare a facility-wide Health Risk assessment (HRA) under the requirement of the State Air Toxic Hot Spots Program. The District notified PSC of this requirement in April 2005. The HRA was preceded by a comprehensive supplemental emissions testing program for the purpose of refining and improving the facility’s air toxic emissions inventory. In order to provide the community with a public input process, the District provided a public comment period for the HRA, and three preceding documents that establish the technical basis for the HRA (i.e., the HRA protocol, the supplemental emissions testing protocol, and the updated emissions inventory report).

### Public Comments/Issues

- Community members have expressed a variety of concerns over odors and health effects from PSC’s emissions. The District held or participated in six community meetings in West Berkeley to discuss these issues over the last four years. The most recent meeting was held on January 9, 2008.
- Community members requested that ambient air monitoring be conducted in the vicinity of PSC. In response, the District installed a comprehensive air monitoring station located near the intersection 6<sup>th</sup> Street and Camelia Street in Berkeley, which became operational on December 12, 2007. On January 8, 2008, District staff conducted an informational meeting and tour for interested community members. The District also provided funding for the non-profit organization Global Community Monitor to collect air samples for various metals near PSC, but this monitoring provided very limited data and was not conducted in a manner necessary to evaluate health risks associated with PSC.

## Pacific Steel Casting Company Fact Sheet

June 24, 2009

- Community members have expressed concern over a USA Today Special Report: "The Smokestack Effect: Toxic Air and America's Schools" which listed three schools in Berkeley as being in the 1<sup>st</sup> percentile for outdoor air toxics risk. PSC and four of the Bay Area refineries are listed as the polluters most responsible for air toxic risks at these schools. Manganese (85% of total) and nickel (11% of total) are listed as the toxics responsible for the greatest contributions to health risks at these schools. District staff has determined that the USA Today risk figures for the Berkeley schools are in error based on incorrect emissions of manganese and nickel reported by PSC to the Toxics Release Inventory (TRI). PSC has indicated that the correct emissions will be reported to the TRI for their next update due on July 1, 2009. EPA has decided that Berkeley schools will not be included in their plans to monitor the air outside 62 schools in 22 states.
- Some community members, and an environmental advocacy group, have requested that the District lower risk reduction thresholds used for the Air Toxics Hot Spots Program by a factor of ten, to a cancer risk of 10 in a million and a non-cancer hazard index of one. This would require PSC to complete a risk reduction audit, and implement a plan to reduce risks below these thresholds. The commenters indicate that the District should incorporate these more stringent standards into District regulations.

### Facility Status

- District inspection staff continues to conduct frequent compliance inspections of PSC. Air pollution complaints from the public have decreased since the installation of the carbon adsorption unit at Plant. 3. The District continues to respond and investigate the public's air pollution complaints.
- District inspection staff issued two public nuisance Notices of Violation, and two permit condition Notices of Violation in 2008. One of the permit violations was discovered during an odor complaint investigation at Plant 1.
- On October 3, 2008, the District approved PSC's Odor Management Plan (OMP), the last requirement of PSC's 2005 Settlement Agreement with the District. District staff continues to track and monitor PSC's OMP to improve the control of odorous emissions from PSC.
- The District approved PSC's final HRA on November 24, 2008. The maximum health risks are below levels that require mandatory risk reduction measures under District policies and procedures. However, public notification of health risks is required, and PSC has begun the required quarterly mailing of notices of health risk results. The notification area includes nearby businesses and one live\work complex which the HRA indicates have risks above notification thresholds.
- Within the last two years, PSC has implemented three significant emission reduction projects, which PSC identifies in their HRA as "Future Controlled Conditions." These

projects are: (1) in Plant 1, the upgrade of capture and control of fugitive emissions from the electric arc furnace tap-out area (the final phase of this project is underway with estimated completion by the end of 2009), (2) in Plant 3, an upgrade project to abate fugitive emissions at the electric arc furnace, and (3) in Plant 3, a switch to a binder containing less volatile organic compounds. As evaluated in the HRA, these projects have collectively reduced maximum cancer risks by 32%. The chronic non-cancer risks at the maximum residential and worker receptor locations have been reduced by 41% and 17%, respectively. The maximum health risks with these control projects in place are as follows: cancer risk = 21 in a million, chronic non-cancer hazard index = 1.5, acute non-cancer hazard index = 0.83. These maximum risks are for adjacent worker receptor sites for the 12 a.m. to 8 a.m. work shift (except for the acute hazard index, which is at an adjacent point of maximum impact). These risks are based on production levels during 2005 – 2006, which are higher than what has occurred since the current economic downturn.

- The District intends on developing a rule delineating risk reduction requirements under the Air Toxics Hot Spots Program, and will consider adopting more stringent thresholds than those that currently exist. This rule would be developed concurrently with upcoming OEHHA revisions to cancer risk assessment procedures that are intended to provide a greater margin of safety for protecting children. Based on discussions with OEHHA staff, it is possible that these revisions could increase calculated residential cancer risks by a factor of three or more from existing risk assessment procedures. OEHHA does not expect that these risk assessment guideline revisions will be finalized for some time, perhaps late in 2010. District staff believes that it may be appropriate to seek reductions in risks from PSC in a more timely manner than could be achieved through adoption of a new risk reduction rule, and is considering the development of a source-category-specific rule to ensure that Bay Area steel foundries use best practices to minimize emissions and reduce health risks. District staff believes that such a rule could be developed and brought to the Board of Directors for consideration of adoption in one year or less.
- On April 14, 2009, District staff completed a summary and analysis of the 2008 West Berkeley Air Monitoring Station data. The summary report included: 1) analysis of criteria pollutants measured at the West Berkeley monitoring site compared to the State and National Ambient Air Quality Standards, 2) toxic air contaminant monitoring results for West Berkeley in comparison to several other sites in the Bay Area and the South Coast AQMD, 3) estimated cancer risk associated with lifetime exposure to the measured levels of toxic air contaminants, 4) estimated chronic non-cancer risk, 5) estimated 8-hour chronic non-cancer risk, and 6) estimated acute non-cancer risk.
- For the year 2008, the Summary and Analysis indicates that West Berkeley air quality met all of the applicable State and National Ambient Air Quality Standards, with the exception of the 24-hour national PM<sub>2.5</sub> standard and the very stringent annual State PM standards, similar to most other Bay Area locations.

## Pacific Steel Casting Company Fact Sheet

June 24, 2009

- West Berkeley air quality was also below all of the acute and chronic Reference Exposure Levels (RELs) established by OEHHA. RELs are concentrations at or below which no adverse non-cancer health effects are anticipated in the general human population. RELs are designed to protect the most sensitive individuals in the population by the inclusion of margins of safety.
- Average concentrations of manganese at the West Berkeley monitoring site were higher than other monitoring sites, most likely due to the proximity of the PSC facility. The observed manganese concentrations were, however, well below the revised RELs adopted by OEHHA on December 19, 2008. These revised RELs explicitly include consideration of possible differential effects on the health of infants, children and other sensitive subpopulations, in accordance with the mandate of the Children's Environmental Health Protection Act.
- District staff calculated cancer risks associated with lifetime exposure to the monitored levels of toxic air contaminants using cancer potency factors established by OEHHA. Although no standards have been set for overall cancer risk associated with exposure to toxic air contaminants, the risk at the West Berkeley site is not elevated above typical levels observed in the Bay Area. The toxic air contaminants that contribute most to cancer risk at the West Berkeley site are diesel PM, benzene, 1,3-butadiene. This is consistent with other monitoring sites. These pollutants are emitted primarily from mobile sources.
- The District will continue operation of the West Berkeley monitoring site for a second year during Calendar Year 2009.
- District staff is preparing revisions to PSC's Synthetic Minor Operating Permit (SMOP) that will provide additional limits and monitoring to assure that the emissions of regulated air pollutants from all three plants do not exceed Major Facility thresholds.