

## INFORMATION SHEET

ORDER R5-2011-XXXX  
AEROJET-GENERAL CORPORATION  
WHITE ROCK NORTH DUMP GROUNDWATER TREATMENT FACILITY  
SACRAMENTO COUNTY

### **Background**

The Aerojet-General Corporation (“Aerojet”) and several other responsible parties were issued a Cleanup and Abatement Order in May of 1996, which directed them to determine the extent of pollution on and off the White Rock Road Dump property and to clean up and abate the pollution. Since that time, Aerojet has settled with the other responsible parties and has assumed sole responsibility for completing the cleanup tasks. Aerojet has also purchased the property from the former owner, CLC Investment Corporation.

The White Rock North Dump is at the northwest corner of White Rock Road and Grant Line Road in eastern Sacramento County. To the north of the dump is the Aerojet Superfund site. Wastes have not been disposed of at the site since the late 1960’s. In addition to municipal waste materials, the site also received septic wastes. The site apparently also received some solvent wastes containing volatile organic constituents (“VOCs”). The co-mingling of the septic wastes at the septage receiving area with the solvents resulted in the breakdown of trichloroethylene (“TCE”) and perchloroethylene (“PCE”) into daughter products 1,1-dichloroethylene, (“1,1-DCE”), 1,1-dichloroethane (“1,1-DCA”), 1,2-dichloroethane (“1,2-DCA”), cis-01,2-dichloroethylene (“cis1,2-DCE”) and vinyl chloride. The VOCs entered the groundwater and were transported downgradient to the south. The highest existing measured concentration of TCE in the plume is 190 µg/L (Primary Drinking Water Standard (“MCL”) of 5 µg/L and a California Public Health Goal (“PHG”) of 1.7 µg/L). The other VOCs are generally in the range of 0.5 to 50 µg/L, with MCLs and PHGs in the range of 0.4 to 6 µg/L.

In addition to the VOCs in the plume emanating from the dump, there are two other pollutant plumes adversely impacting the groundwater in the vicinity of the dump. One plume originates on the Superfund site and flows beneath the western portion of the dump before comingling with the dump plume downgradient. That plume consists of TCE (highest measured concentrations south and north of the dump are 1300 µg/L and 3700 µg/L, respectively) and perchlorate, a component of solid rocket propellant. Perchlorate is measured at 2300 µg/L on the dump property and 130,000 µg/L at the source area north of the dump. Perchlorate has an MCL and a PHG of 6 µg/L. The other plume also originates on the Superfund site, but to the north and east of the dump. It consists of VOCs, perchlorate and n-nitrosodimethylamine (“NDMA”). This plume also flows to the south and is undergoing nearly complete capture and remediation by Aerojet’s GET B system. That system is being evaluated to determine if it sufficiently captures the plume and prevent it from impacting water supplies to the south and the dump remedy to the west. NDMA has been found in groundwater below the dump property.

### **Groundwater Remediation Project**

Numerous studies, investigations, and remedy installations have occurred since the issuance of the Cleanup and Abatement Order. The extent of wastes in soil and groundwater has been

defined and Aerojet has constructed two interim remedial systems. The first remedial system consists of five groundwater extraction wells near the dump's southern property and downgradient of the septage disposal area. The five wells pump an average combined flow of approximately 80 gallons per minute ("gpm"). The extracted groundwater is piped back to Aerojet's GET B facility on the Superfund site for removal of VOCs and NDMA and discharged to Rebel Hill Ditch for infiltration back into the groundwater. The second remedial project undertaken by Aerojet was to install a counter-flow air stripper on the water supply well for the Teichert Grant Line Road sand and gravel processing plant. TCE was found in the well and the air stripper is designed to remove TCE and other VOCs to below detection (0.5 µg/L) prior to use at the processing plant. Subsequent to construction of the air stripper, perchlorate was detected in the well. In response, Aerojet constructed a perchlorate-specific resin system to remove the perchlorate from the water produced by the supply well. The resin system can effectively remove perchlorate to less than 4 µg/L.

The final portion of the remedy was recently completed with the construction of two extraction wells at the southern extent of the plumes south of the dump. The wells are placed to intercept the plume emanating from the dump and also the western plume emanating from the Aerojet Superfund site, as described above. These two extraction wells, 4625 and 4702 will pump an estimated flows of 175 gpm and 150 gpm, respectively. The extracted water is piped to the treatment facility at the Teichert supply well. There, VOCs and perchlorate are removed prior to discharging the water. The water is preferentially provided to Teichert for use at their processing facility. If Teichert does not need all or some of the water, the excess water is piped up to Aerojet for discharge to Rebel Hill Ditch with the combined flows from Aerojet's GET A and GET B facilities. If Teichert needs more water than the combined flow from the extraction wells, then the Teichert supply well is operated and the water processed through the treatment system. With a design capacity of 1000 gpm, an additional flow of 575 gpm can be utilized from the supply well. Teichert is in the planning process for construction of a quarry on Scott Road, east of the Grant Line Road facility. The effluent from the treatment facility will also be used in the future to supply operations at the quarry site.

If, in the future, it is determined that additional extraction wells are needed to contain and cleanup the plumes, the flow from those wells will be added to the system. If additional treatment capacity is needed, the waste discharge requirements will be revised to address the new flows that put the discharge over 1000 gpm.

### **Basin Plan, Beneficial Uses, and Regulatory Considerations**

Surface water drainage from the project area is to Morrison Creek, tributary to the Sacramento River. The *Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region*, Fourth Edition, revised September 2009 (the "Basin Plan"), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin. Beneficial uses often determine the water quality objectives that apply to a water body. For example, waters designated as municipal and domestic supply

must meet the MCLs for drinking waters. The Basin Plan sets forth the applicable beneficial uses (industrial, agricultural, and domestic supply in this instance) of groundwater, the procedure for application of water quality objectives, and the process for and factors to consider in allocating waste assimilation capacity.

### **Antidegradation**

The directives of Water Code section 13000 require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Waters can be of high quality for some constituents or beneficial uses, and not others. Policies and procedures for complying with this directive are set forth in the Basin Plan (including by reference State Water Board Resolution 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California," or the "Antidegradation Policy").

The Antidegradation Policy is applied on a case-by-case, constituent-by-constituent basis in determining whether a certain degree of degradation can be justified. It is incumbent upon the Discharger to provide technical information for the Board to evaluate that fully characterizes:

- All waste constituents to be discharged;
- The background quality of the uppermost layer of the uppermost aquifer;
- The background quality of other waters that may be affected;
- The underlying hydrogeologic conditions;
- Waste treatment and control measures;
- How treatment and control measures are justified as best practicable treatment and control;
- The extent the discharge will impact the quality of each aquifer; and
- The expected degradation to water quality objectives.

In allowing a discharge, the Board must comply with Water Code section 13263 in setting appropriate conditions. The Board is required, relative to the groundwater that may be affected by the discharge, to implement the Basin Plan and to consider the beneficial uses to be protected along with the water quality objectives essential for that purpose. The Board need not authorize the full utilization of the waste assimilation capacity of the groundwater (Water Code § 13263(b).) and must consider other waste discharges and factors that affect that capacity.

As stated above, groundwater will be extracted, treated and recharged through the vadose zone and eventually recharge the aquifer. The water quality of the effluent will be at or better than that of the groundwater being extracted as the VOCs and perchlorate are being removed. Groundwater quality is, and will continue to be, monitored to assess to cleanup under the Cleanup and Abatement Order. No degradation should occur as a result of the discharge.

## **Title 27**

California Code of Regulations, title 27, section 20005 et seq. ("Title 27"), contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent is acceptable. The proposed discharge will not degrade groundwater quality. The project will be removing perchlorate and VOCs from the groundwater.

## **Proposed Order Terms and Conditions**

### **Discharge Prohibitions and Specifications**

The proposed Order establishes a discharge flow limit of 1000 gpm from the treatment system. The proposed Order's effluent limitations protect all beneficial uses of the underlying groundwater.

### **Monitoring Requirements**

Water Code section 13267 authorizes the Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the state. In recent years there has been increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Water Code section 13268 authorizes the assessment of civil administrative liability, where appropriate.

This Order requires influent and effluent monitoring requirements, including flow rates. In order to adequately characterize its discharge, Aerojet is required to monitor for VOCs, perchlorate, NDMA and total dissolved solids.

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