

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
81 Higuera Street, Suite 200
San Luis Obispo, California 93401

ORDER NO. R3-2002-0002
NPDES PERMIT NO. CA0049077

WASTE DISCHARGE REQUIREMENTS
FOR
ARCADIS, GERAGHTY, & MILLER, INC.,
(FORMERLY WATKINS-JOHNSON, dba, SILICON VALLEY GROUP, INC.)
440 KINGS VILLAGE ROAD
SCOTTS VALLEY, SANTA CRUZ COUNTY

The California Regional Water Quality Control Board, Central Coast Region (hereafter Board), finds:

1. Silicon Valley Group, Inc., formerly Watkins-Johnson Inc., 440 Kings Village Road, Scotts Valley, California 95066, owns and operates a research and development and manufacturing facility in the City of Scotts Valley, location of which is shown on Attachment "A." A groundwater treatment system is owned and operated by Arcadis Geraghty & Miller, Inc. (hereafter Discharger) at the site, which discharges treated groundwater into nearby Bean Creek. 0.380 MGD, which is the most efficient, removing the most pollutants with the least amount of water. In the past year, the discharge to surface water averaged approximately 0.185 MGD as a portion of water was used onsite and another portion of water was injected into the upper perched zone to aid the remediation. A maximum discharge average of 0.202 MGD is considered under this Order because the injection to the perched zone has been discontinued.
2. Groundwater underlying the site has been contaminated with chlorinated hydrocarbons. Three cleanup or abatement orders have been issued to Watkins Johnson, dba, Silicon Valley Group, Inc. In 1986 the U.S. Environmental Protection Agency (EPA) placed the site on the National Priorities List. EPA is now responsible for all remedial activities at the site. The Regional Board role is limited to permitting and monitoring the off-site discharge to Bean Creek.
3. Remediation of the groundwater contamination is being addressed by means of an extraction and treatment system. The treatment system, which consists of two 20,000-pound granulated activated carbon adsorption units in series, has a design capacity of 0.612 million-gallons-per-day (MGD). Previously, the system had been adjusted to an optimal extraction rate of
4. Treated water is discharged to Bean Creek, a water of the State, at 37°3'33" N. Latitude, 122°1'38" W. Longitude. The creek and discharge point are about 800 feet north of the plant's northernmost building as shown in Attachment "B." The creek flows westerly at this location.
5. Best available technology economically achievable for the synthetic organic compounds in the groundwater at this site is packed tower aeration and/or granular activated carbon. The treatment method installed at this site is capable of achieving 99 percent contaminant removal and an effluent limit of non-detectable for each synthetic organic compound.
6. An application for authorization to discharge wastes under the National Pollutant

Item No. 7 Attachment No. 1
March 20-21, 2008 Meeting
General NPDES Permit
Watkins-Johnson, Santa Cruz

- Discharge Elimination System (NPDES), was originally submitted by Watkins-Johnson on April 14, 1986, and a NPDES permit (No. CA0049077) was issued December 4, 1987 (Order No. 87-181). The NPDES permit was renewed on February 5, 1993 and September 5, 1997, upon the Watkins-Johnson's applications.
7. The Board adopted Waste Discharge Requirements, Order No. 87-42, on March 13, 1987, for discharge of domestic waste and discharge of cooling and rinse waters from plating and tube production shops to septic tank leachfield systems.
 8. The Water Quality Control Plan, Central Coastal Basin (Basin Plan), was adopted by the Board on November 17, 1989 (revised on September 8, 1994), and approved by the State Water Resources Control Board (State Board) on August 16, 1990. The Basin Plan incorporates State Board plans and policies by reference and contains a strategy for protecting beneficial uses of State waters.
 9. Present and anticipated beneficial uses of groundwater downgradient of the discharge include domestic, agricultural, and industrial supply, and surface water recharge.
 10. Present and anticipated beneficial uses of Bean Creek that could be affected by the discharge include:
 - a. Municipal & Domestic supply;
 - b. Agricultural supply;
 - c. Water contact recreation;
 - d. Non-contact water recreation;
 - e. Industrial service supply;
 - f. Groundwater recharge;
 - g. Wildlife habitat;
 - h. Cold freshwater habitat;
 - i. Fish Migration; and
 - j. Fish spawning.
 11. Adoption of waste discharge requirements for this discharge is exempt from the provisions of the California Environmental Quality Act, (Public Resources Code, Section 21100 et seq.) in accordance with Section 13389 of the California Water Code.
 12. The Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709, also referred to as the "Migden Bill") became effective January 1, 2000. This Act requires the Regional Board to impose mandatory penalties for chronic and serious violations. Failure to comply with NPDES requirements and conditions may result in enforcement action by the Regional Board.
 13. The Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (40 CFR Part 131, also referred to as the "California Toxics Rule"), became effective May 18, 2000. The Rule establishes ambient water quality criteria for priority toxic pollutants in the State of California.
 14. The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (adopted by the State Water Resources Control Board, Resolution No. 2000-015), became effective March 2, 2000. The Policy details how water quality criteria will be implemented through NPDES Permits, waste discharge requirements, and other regulatory approaches. The Policy also requires additional monitoring to determine if an effluent limitation for a California Toxics Rule criterion is needed. For low volume discharges, the policy also provides that the Regional Board may choose to exempt low volume discharges, determined to have no significant adverse impact on water quality, from this monitoring requirement.
 15. The Order complies with Water Code section 13263, and contains effluent limitations that implement water quality objectives in the Basin Plan. These include the anti-degradation policy, numeric water quality objectives, and narrative water quality objectives.
 16. A permit and the privilege to discharge waste into waters of the State is conditional upon the discharge complying with provisions of Division 7 of the California Water Code and the Clean Water Act (as amended or as supplemented by implementing guidelines and regulations) and with any more stringent effluent

limitations necessary to implement water quality control plans, to protect beneficial uses, and to prevent nuisance.

17. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act. Compliance with this Order should assure conditions are met and mitigate any potential changes in water quality due to the project.
18. On October 19, 2001, the Board notified the Discharger and interested persons of its intent to reissue waste discharge requirements for the discharge, provided them with an opportunity to submit their written views and recommendations, and scheduled a public hearing.
19. In a public hearing on March 22, 2002, the Board heard and considered all comments pertaining to the discharge and found this order consistent with the above findings.

IT IS HEREBY ORDERED, pursuant to authority in Section 13377 of the California Water Code, Arcadis Geraghty & Miller, its agents, successors, and assigns, may discharge waste from the above described groundwater treatment system providing it complies with the following:

(General permit conditions, definitions and the method of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for National Pollutant Discharge Elimination System Permits," dated January, 1985. Applicable paragraphs are referenced in paragraph D.3. of this Order.)

A. Discharge Prohibitions

1. Discharge of treated wastewater at a location other than 37°3'33" N. Latitude, 122°1'38" W. Longitude, is prohibited.
2. Discharge of effluent to the west branch of Bean Creek, which does not meet the requirements established in Effluent Limitation B.2, below, is prohibited.
3. Addition of chemicals to the extracted water is prohibited unless essential to maintain

compliance with this Order and to protect all beneficial uses. Approval from the Executive Officer is required prior to any chemical addition to the extracted water.

4. Adverse effects of the discharge to beneficial uses of water or threatened or endangered species is prohibited.

B. Effluent Limitations

1. Discharge shall not exceed 0.202 MGD, or the optimal effective extraction rate as determined by computer modeling and adjusted according to results of subsequent monitoring.
2. Discharge shall not exceed the following Effluent Limitations:

Constituent	Unit	Maximum Daily Effluent Limitation
TCE	µg/L	5
PCE	µg/L	1.61*
1,1-DCE	µg/L	0.11*
1,1-DCA	µg/L	5.0
Trans 1,2-DCE	µg/L	5.0
1,1,1-TCA	µg/L	0.44*

* : Calculated California Toxics Rule Limit, which is lower than other limitations such as MCL or WQO.

3. Discharge or reuse shall be discontinued immediately if effluent concentrations are found to exceed limits established in Effluent Limitations, above.
4. Discharge during initial, and any subsequent startup period, shall not occur without approval of the Executive Officer. Startup period duration for sampling purposes must also receive Executive Officer approval.

C. Receiving Water Limitations

(Receiving water quality is a result of many factors, some unrelated to the discharge. This permit considers these factors and is designed to minimize the influence of the discharge on the receiving water.)

Discharge shall not cause:

1. The dissolved oxygen of Bean Creek to be depressed below 5.0 mg/L.
2. The pH of Bean Creek to fall below 6.5, exceed 8.3, or vary more than 0.5 units from the natural pH of the creek.
3. The ambient temperature of Bean Creek to rise more than 5°F above normal.
4. Floating particulates, foam, or grease and oil to be visible on the surface of receiving waters.
5. Aesthetically undesirable discoloration of receiving waters.
6. Turbidity of receiving waters to increase more than 20 percent.
7. Sludge deposits in receiving waters.
8. Objectionable aquatic growth or degradation of the indigenous biota of receiving waters.

D. Provisions

1. Requirements prescribed by this Order supersede requirements prescribed by Order No. 87-181, adopted by the Board on April 14, 1986 and renewed on September 5, 1997. Order No. 87-181 is hereby rescinded.
2. The Discharger shall comply with "Monitoring and Reporting Program No. 02-003," as ordered by the Executive Officer.
3. The Discharger shall comply with all items of the attached "Standard Provisions and Reporting Requirements for National Pollutant Discharge Elimination System Permits," dated January, 1985 (also referred to as "Standard Provisions"), except Item Nos. A.5, 6, 7, 12, 13; C.3, 9, 17; and D.1.
4. Other volatile organic compounds may be present in the extracted water due to chemical breakdown and the possibility that other compounds were discharged. In addition, research on hazardous compounds is complex and constantly generating new information

that may necessitate a revision of guidelines upon which this order is based. This permit may be reconsidered for additional volatile organics in the aquifer and for updated information on the health risks of the pollutants that are present.

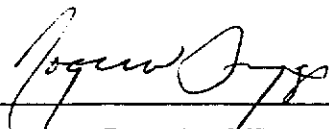
5. If effluent limits are not met, or the treatment system malfunctions, discharge shall cease until the problem is corrected. Notification to the Executive Officer is required within four hours of shut-down or by 9 a.m. the next working day if shutdown is after 5 p.m. Similar notification is required concerning results of investigation into a malfunction, including the necessary corrective action. Discharge shall resume as soon as feasible.
6. Discharger must maintain, and update as necessary, an operation plan that describes the extraction, treatment and disposal processes; assures system reliability through unit redundancy and operating controls; describes maintenance, monitoring and reporting requirements; and provides contingencies for foreseeable emergencies.
7. Operation and maintenance of the extraction, treatment and disposal systems shall conform to specifications contained in the operation plan developed for the system, except where otherwise controlled by this order.
8. The treatment system shall be operated in a manner consistent with manufacturer's recommendations and/or engineering design. Any modifications to the operation plan shall be approved by the Executive Officer prior to implementation.
9. If monitoring data indicates the extraction process is creating a substantial, irreversible impact on the aquifer, as determined by the Executive Officer, this permit shall be suspended and the matter, and a proposed remedy, returned to the Board for review.
10. The Discharger shall restrict access to the extraction and treatment systems to preclude public contact with contaminants.

- 11. Plant use of treated groundwater shall be implemented and optimized where and when feasible to do so.
- 12. This permit may be modified in accordance with the requirements set forth at 40 Code of Federal Regulations, Parts 122 and 124, to include appropriate conditions or limits based on newly available information, or to

implement any EPA-approved new State water quality objectives.

- 13. This Order expires March 22, 2007, and the Discharger must file a Report of Waste Discharge in accordance with Title 23, Chapter 3, Subchapter 9, of the California Code of Regulations, not later than September 1, 2006, if it wishes to continue the discharge.

I, **Roger W. Briggs, Executive Officer**, do hereby certify the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Central Coast Region, on March 22, 2002.



Executive Officer