CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2004-0107

WASTE DISCHARGE REQUIREMENTS

FOR
THE BOEING COMPANY
ADMINISTRATION AREA, INACTIVE RANCHO CORDOVA TEST SITE
GROUNDWATER TREATMENT SYSTEM
SACRAMENTO COUNTY

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

1. On 8 March 2004, the Boeing Company (hereafter Discharger) submitted a Report of Waste Discharge (RWD) to revise their Waste Discharge Requirements, Order No. R5-2002-0008, for a groundwater treatment facility to treat and dispose of groundwater extracted at the Administration Area at the Inactive Rancho Cordova Test Site (IRCTS). The Boeing Company has constructed and is operating the groundwater treatment facility and Automotive Importing and Manufacturing (AIM) owns the land on which the treated water will be discharged. The revisions involve the construction of a recharge well and additional extraction wells.

2. For the purposes of this Order, the groundwater treatment facility (GWTF) shall mean the groundwater extraction wells, groundwater treatment plant, and the designated recharge facilities. The facility site location is shown on Attachment A, which is attached hereto and made part of this Order by reference.

3. The GWTF is located at 3920 Security Park Drive, Rancho Cordova, in Section 10, T8N, R7E MDB&M. Agricultural and industrial activities border the GWTF. The facility site plan is shown on Attachment B, which is attached hereto and made part of this Order by reference.

4. The treatment facility is Assessor's Parcel No. 072-037-066, and the recharge area is on Assessor's Parcel No. 072-037-067.

Initial Groundwater Treatment Facility and Discharge

5. The existing groundwater treatment facility treats groundwater from a single extraction well, EX-18, in the vicinity of the Administration Area at the IRCTS. The initial flow from the well was approximately 5 gallons per minute (gpm). However, the well experienced biofouling problems and the extraction rate reduced to less than 1 gpm. The treated groundwater groundwater is discharged to a single dry wells designed according to the County of Sacaramento Guidelines regarding clear infiltration rates.

6. The current groundwater treatment processes include an influent holding tank, a particulate filter, two 200-pound granular activated carbon (GAC) vessels connected in series, and an infiltration system. The initial infiltration system will consists of two, 3-foot diameter by 40-feet dry wells. The dry wells are filled with washed cobbles or drain rock as required by the County of Sacramento

Deparment of Health, Environmental Health Department, Rules and Regulations regarding construction of individual sewage disposal systems. A schematic of the treatment facility is shown on Attachment C, which is attached hereto and made part of this Order by reference.

7. Groundwater containing volatile organic contaminants (VOCs) is extracted from depths up to approximately 300-feet below ground surface for removal by the GAC vessels prior to recharge. Concentrations of VOCs measured in the groundwater to be extracted are trichloroethylene (TCE) at 380 micrograms per liter (µg/l), cis-1,2-Dichloroethene (cis-1,2-DCE) at 35 µg/l, and Freon®113 at 12.9 µg/l. VOCs will be removed to less than 0.5 µg/l (the detection limit) prior to recharge. Primary Drinking Water Standards for those three VOCs are 5 µg/l for TCE, 6 µg/l for cis-1,2-DCE, and 1200 µg/l for Freon®113.

8. The GAC vessels are operated in series. When concentrations of contaminants exceed approximately two times the respective Primary Drinking Water Standards, the lag vessel is switched to the lead mode and the other vessel becomes the lag vessel after having replaced the carbon. The spent carbon is transported to a permitted facility for reactivation and destruction of the adsorbed VOCs.

Modifications to Requirements

9. The Discharger has constructed three additional groundwater extraction wells, EX-20, EX-21 and EX-22 and recharge well IW-01. See Attachment D, which is attached hereto and made part of this Order by reference. Those wells will be used to help control the flow of pollutants in the groundwater while the final remediation system is being designed and installed. EX-18 will not be used due to the limited flow and effectiveness of the well. In addition, the dry well will not be used for discharge of the treated groundwater. Treated groundwater will be discharged to IW-01 for recharge into the aquifer.

10. The discharge will initially consist of the flow from the aquifer tests conducted on EX-20, EX-21 and EX-22. The aquifer tests will consist of 8-hour step-drawdown and 5-day constant-rate tests for each of the three wells. The step drawdown tests will be run at approximately 40-100 gpm, with the constant-rate tests running between 50 and 75 gpm. The water will be treated using the exisiting treatment system modiified to allow for additional flow through the GAC vessels.

11. Recharge Well IW-01 is screened from 290 to 390 feet below ground surface in the Mehrten Formation. The extracted groundwater is taken from the Laguna and Mehrten Formations, as well as, the transition zone between the formations. The quality of the injected water is essentially equivqlent to that found in the receiving formation.

12. After completion of the aquifer tests, the system will be operated in a longer-term mode for approximately 2 years with a combination of all three extraction wells pumping. The total flow from the wells will be between 250-300 gpm. The system will continue operating in that mode until the final system has been designed and constructed. Modification of the requirements will be made at that time to accommodate the full-scale extraction and treatment system.

Groundwater Degradation

13. State Water Resources Control Board (SWRCB) Resolution No. 68-16 (hereafter Resolution 68-16 or the "Antidegradation Policy") requires the Board in regulating the discharge of waste to maintain high quality waters of the state (i.e., background water quality) until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Board's policies (e.g., quality that exceeds water quality objectives).

14. The discharge will consist of extracted groundwater being, treated to remove the VOCs, and recharged back to the aquifers whence it was extracted. The recharge water will be of similar quality as the groundwater to which it is being recharged. Therefore, no degradation of the groundwater will occur due to the discharge. Accordingly, the discharge is consistent with the antidegradation provisions of Resolution 68-16.

15. This Order does not require that the Dischargers conduct groundwater monitoring. Groundwater monitoring and analyses are already required under orders issued by the Department of Toxic Substances Control (DTSC), with oversight by DTSC and Board staff.

Basin Plan, Beneficial Uses, and Regulatory Considerations

16. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board. These requirements implement the Basin Plan.

17. Surface water drainage is to Morrison Creek, tributary to Stone Lakes, tributary to the Sacramento River River. The beneficial uses of the San Joaquin River are municipal and domestic supply; agricultural irrigation and stock watering supply; process and service industrial supply; contact recreation, other noncontact recreation; warm and cold freshwater habitat; warm and cold migration; warm water spawning; wildlife habitat; and navigation.

18. The beneficial uses of the underlying groundwater are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

19. The Basin Plan establishes numerical and narrative water quality objectives for surface and groundwater within the basin, and recognizes that water quality objectives are achieved primarily through the Board's adoption of waste discharge requirements and enforcement orders. Where numerical water quality objectives are listed, these are limits necessary for the reasonable protection of beneficial uses of the water. Where compliance with narrative water quality objectives is required, the Board will, on a case-by-case basis, adopt numerical limitations in orders, which will implement the narrative objectives to protect beneficial uses of the waters of the state.

20. The Basin Plan identifies numerical water quality objectives for waters designated as municipal supply. These are the maximum contaminant levels (MCLs) specified in the following provisions

of Title 22, California Code of Regulations: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Table 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) of Section 64449. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.

21. The Basin Plan contains narrative water quality objectives for chemical constituents, tastes and odors, and toxicity. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants or animals. The chemical constituent objective requires that groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses. The tastes and odors objective requires that groundwater shall not contain tastes or odors producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

22. Section 13241 of the Water Code requires the Regional Board to consider various factors, including economic considerations, when adopting water quality objectives into its Basin Plan. Water Code Section 13263 requires the Regional Board to address the factors in Section 13241 in adopting waste discharge requirements. The State Board, however, has held that a Regional Board need not specifically address the Section 13241 factors when implementing existing water quality objectives in waste discharge requirements because the factors were already considered in adopting water quality objectives. These waste discharge requirements implement adopted water quality objectives. Therefore, no additional analysis of Section 13241 factors is required.

23. On date 1 December 2001, in accordance with the California Environmental Quality Act (CCR, Title 14, Section 15261 et. seq.), the Department of Toxic Substances Control certified a final Class 6 Categorical Exemption for the GWTF.

24. Section 13267(b) of the California Water Code provides that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports." The monitoring and reporting progam and technical reports required by this Order and the attached "Monitoring and Reporting Program, Order No. R5-2004-0107" are necessary to assure compliance with these waste discharge requirements. The Dischargers operate the facility that discharges the waste subject to this Order.

25. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81*

(December 1981). These standards, and any more stringent standards adopted by the Dischargers or county pursuant to CWC Section 13801, apply to all extraction and monitor wells.

26. State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27. While the wastewater treatment facility is exempt from Title 27, the data analysis methods of Title 27 are appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.

27. Pursuant to California Water Code Section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

Public Notice

28. The Board considered all the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, in establishing the following conditions of discharge.

29. The Board has notified the Dischargers and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

30. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Order No. R5-2002-0008 is rescinded and that The Boeing Company, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.

2. Bypass or overflow of untreated or partially treated waste is prohibited.

3. Discharge of waste classified as 'hazardous' under Section 2521, Chapter 15 of Title 23 or 'designated', as defined in Section 13173 of California Water Code is prohibited.

B. Discharge Specifications

1. The daily average flow shall not exceed shall not exceed 432,000 gpd.

2. Objectionable odor originating at the facility shall not be perceivable beyond the limits of the property owned by the Dischargers.

C. Effluent Limitations

1. Treated effluent discharged from the treatment plant to the recharge field shall be less than the following limits:

Constituent	Units	30-Day Average	Daily Maximum
TCE	µg/l	0.5	0.7
cis-1,2-DCE	µg/l	0.5	1.0
Freon®113	µg/l	0.5	1.0

D. Activated Carbon Disposal Specifications

1. Transportation and disposal of GAC shall be only by a permitted hauler and disposed at a permitted regeneration/disposal facility.

E. Provisions

1. All of the following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared as described by Provision 4.

   a. By **15 August 2004**, the Dischargers shall submit an Operation and Maintenance (O&M) Plan for the groundwater treatment facility. The O&M Plan shall instruct field personnel on how to manage the day-to-day discharge operations to comply with the terms and conditions of this Order and how to make field adjustments, as necessary. A copy of the O&M Plan shall be kept at the facility for reference by operating personnel. Key personnel shall be familiar with its contents.

OTHER REPORTS

2. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain work plans for, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Dischargers shall contain a statement of qualifications of the responsible licensed professional(s) as well as the professional's signature and/or stamp of the seal.

3. The Dischargers shall comply with the Monitoring and Reporting Program No. R5-2004-0107, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

4. The Dischargers shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."

5. The Dischargers shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with discharge limits specified in this order.

6. As described in the Standard Provisions, the Dischargers shall report promptly to the Board any material change or proposed change in the character, location, or volume of the discharge.

7. The Dischargers shall report to the Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."

10. The Dischargers shall submit to the Board on or before each compliance report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Dischargers shall state the reasons for such noncompliance and provide an estimate of the date when the Dischargers will be in compliance. The Dischargers shall notify the Board in writing when it returns to compliance with the time schedule.

11. In the event of any change in control or ownership of land or waste discharge facilities described herein, the Dischargers shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

12. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Dischargers shall notify the Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.

13. The Dischargers must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or recession of this Order.

14. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

15. The Board will review this Order periodically and will revise requirements when necessary.

I, THOMAS R. PINKOS, 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 Valley Region, on 9 July 2004.

_____
THOMAS R. PINKOS, Executive Officer

Revised 5/27/04:AMM

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2004-0107

FOR
THE BOEING COMPANY
ADMINISTRATION AREA, INACTIVE RANCHO CORDOVA TEST SITE
GROUNDWATER TREATMENT SYSTEM
SACRAMENTO COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring a groundwater extraction and treatment system. This MRP is issued pursuant to Water Code Section 13267. The Dischargers shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. Regional Board staff shall approve specific sample station locations prior to implementation of sampling activities.

All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

Field test instruments (such as those used to test pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

AQUIFER TEST MONITORING

Samples during aquifer test monitoring shall taken from the influent and effluent from the treatment system according to the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Influent Flow	gpd	Meter	Continuously	Quarterly
Weekly Average Daily Flow	gpd	Calculated	Weekly	Quarterly
VOCs[1]	µg/l	Grab	Weekly	Quarterly
pH	pH units	Grab	Weekly	Quarterly

[1] Volatile organic contaminants by EPA Method 8260 or 601/602, or an equivalent method with a reporting limit of no greater than 0.5 µg/l. Values between the detection level and the reporting level should be reported as trace.

INFLUENT MONITORING

During regular operation samples for influent monitoring shall be collected at a point prior to the lead GAC unit. Influent monitoring shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Influent Flow	gpd	Meter	Continuously	Quarterly
Monthly Average Daily Flow	gpd	Calculated	Monthly	Quarterly
VOCs[1]	µg/l	Grab	Monthly	Quarterly
pH	pH units	Grab	Monthly	Quarterly

[2] Volatile organic contaminants by EPA Method 8260 or 601/602, or an equivalent method with a reporting limit of no greater than 0.5 µg/l. Values between the detection level and the reporting level should be reported as trace.

EFFLUENT MONITORING

During regular operation effluent samples shall be collected before discharge to the recharge wells and shall be representative of the volume and nature of the discharge. Effluent monitoring shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Effluent Flow	gpd	Meter	Continuously	Quarterly
Monthly Average Daily Flow	gpd	Calculated	Monthly	Quarterly
VOCs[1] in Effluent	µg/l	Grab	Monthly	Quarterly
VOCs[1] between GAC Vessels	µg/l	Grab	Bi-Weekly	Quarterly
pH	pH units	Grab	Monthly	Quarterly

1 Volatile organic contaminants by EPA Method 8260 or 601/602, or an equivalent method with a reporting limit of no greater than 0.5 µg/l. Values between the detection level and the reporting level should be reported as trace.

REPORTING

In reporting monitoring data, the Dischargers shall arrange the data in tabular form so that the date, sample type (e.g., effluent, pond, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Regional Board.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all Groundwater Monitor Reports shall be prepared under the direct supervision of a Registered Engineer or Geologist and signed by the registered professional.

A. Quarterly Monitor Reports

Daily, bi-weekly, and monthly monitoring data shall be reported in quarterly monitor reports. Monthly reports shall be submitted to the Regional Board by the **1st day of the second month after the quarter** (i.e. the January-March Report is due by 1 May). At a minimum, the Quarterly reports shall include:

1. Results of influent and effluent monitoring:
2. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
3. If requested by staff, copies of laboratory analytical report(s); and
4. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.
5. A log of GAC replacement, along with transportation date(s) and destination of disposal.

A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Dischargers have previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Dischargers, or the Dischargers' authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

The Dischargers shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

9 July 2004
(Date)

Revised 3/11/04:AMM

INFORMATION SHEET

ORDER NO. R5-2004-0107
THE BOEING COMPANY
SACRAMENTO COUNTY

Background

The Boeing Company, as directed by the Board and the Department of Toxic Substances Control, is initiating cleanup of groundwater beneath the Inactive Rancho Cordova Test Site (IRCTS). The IRCTS consists of approximately 4000 acres in eastern Sacramento County to the east of Sunrise Boulevard, south of White Rock Road, and north of Douglas Road. Past rocket testing operations and disposal practices by The McDonnell-Douglas Corporation and/or The Aerojet-General Corporation, have caused the groundwater beneath the IRCTS to have become polluted with volatile organic contaminants (VOCs) and perchlorate. The Administrative Area is comprises approximately 70 acres in the south-east corner of the IRCTS.

Groundwater beneath the Administrative Area is contaminated by VOCs. The primary VOCs in the groundwater are trichloroethylene (TCE) and cis-1,2-Dichloroethylne (cis-1,2-DCE) at concentrations up to 380 micrograms per liter (µg/l) and 25 µg/l, respectively. Concentrations of TCE up to 710 µg/l and have been found in perchred groundwater beneath the site.The Boeing Company has completed a Remedial Investigation/Feasibility Study for the vadose zone at the Administrative Area. Interim remedial measures, consisting of soil vapor extraction, to reduce the concentration of VOCs in the vadose zone have removed about 6,200 pounds of VOCs, a reduction of an estimated 90% of the original mass in the vadose zone. The SVE system continues to operate to reduce the mass in the vadose zone and minimize the impact to groundwater quality from the VOCs.

The Boeing Company is in the process of determining the extent of groundwater contamination extending from the Administration Area south and southwest onto private lands. While that investigation is proceeding, The Boeing Company was directed to initiate an interim removal action to reduce the concentrations of VOCs in groundwater that are migrating from the Administration Area. In October 2001, The Boeing Company developed a Removal Action Workplan, pursuant to a Department of Toxic Substances Control Imminent and Substantial Endangerment Order, proposing groundwater extraction and treatment at the southern edge of the Administration Area. Pursuant to that Workplan, the Boeing Company constructed and operated an interim groundwater extraction and treatment system as described below. The extraction came from a single extraction well with an initial flowrate of 5 gallons per minute (gpm). The extracted groundwater was treated using granular activated carbon and dischrged under Waste Discharge Requirements, Order No. R5-2002-0008.While this interim system was operated, The Boeing Company investigated the extent of This interim removal action will later be expanded to include the entire plume of contaminated groundwater extending south from the Administration Area, and south across Douglas Road from other source areas on the IRCTS.

Interim Removal Action

The interim removal action consists of one extraction well, piping from the well to a treatment system at the Administration Area, piping to a subsurface recharge system, and a single dry wells to percolate the water back to the groundwater..

The initial extraction rate was 5 gallons per minute (gpm), but eventually decreased to less than 1 gpm due to persistent biofouling of the well. Groundwater treatment processes include an influent holding tank, a particulate filter, two 200-pound granular activated carbon (GAC) vessels connected in series, and an infiltration system. The initial infiltration system will consists of two, 3-foot diameter by 40-feet dry wells. The dry well is on property owned by the Aerojet-General Corporation. The dry well is filled with washed cobbles or drain rock as required by the County of Sacramento Department of Health, Environmental Health Department, Rules and Regulations regarding construction of individual sewage disposal systems. The design of the well is also based on the existing sewage disposal system operated by the businesses at the Administration Area. The dry well includes high level switches that will shutdown the transfer pump providing flow from the holding tank to the GAC vessels.

The GAC removes the VOCs to below 0.5 µg/l (the detection limit) prior to recharge of the treated water. Primary Drinking Water Standards are 5 µg/l for TCE and 6 µg/l for cis-1,2-DCE. In addition, by default the GAC units also reduce concentrations of dissolved solids in the extracted groundwater. Thus, the water being recharged back to the aquifer upgradient of the extraction field isof better quality than the existing water quality.

GAC is replaced when VOCs are detected in the effluent from the lead vessel. The carbon in the lead vessel is replaced and the former lead vessel is moved to the lag position with the former lag GAC vessel being moved to the lead position. Spent GAC is transported by an apporpriate hauler to a permitted company for disposal/treatment of the GAC.

Revisions

The Boeing Company has constructed three extraction wells south of the Administration Area and one recharge well on the Administration Area property. The water generated from aquifer tests conducted on the three wells will be discharged to a revamped GWTP that will enable it to handle the higher flows. The aquifer tests will consist of 8-hour step-drawdown and 5-day constant-rate tests for each of the three wells. The drawdown test will be run at approximately 40-100 gpm, with the constant-rate tests running between 50 and 75 gpm. The treated groundwater will run through the treatment system to remove the VOCs and discharged back to the groundwater via the recharge well (IW-01). After completion of the aquifer tests, the system will be operated in a longer-term mode for approximately 2 years with an estimated total flow of 250-300 gpm from the three extraction wells. The system will continue to operate in that mode until the final remdiation system has been designed and constructed.

Basin Plan, Beneficial Uses, and Regulatory Considerations

Surface water drainage from the WWTF is to the San Joaquin River. The *Water Quality Control Plan for the California Regional Water Quality Control Board Central Valley Region, Fourth Edition* (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 maximum contaminant levels (MCLs) for drinking waters. The Basin Plan sets forth the applicable beneficial uses (industrial, agricultural, and domestic supply in this instance) of groundwater,

procedure for application of water quality objectives, and the process for and factors to consider in allocating waste assimilation capacity.

Antidegradation

The antidegradation directives of Section 13000 of the California Water Code 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 No. 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California," or "Antidegradation" Policy).

Resolution 68-16 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 CWC 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 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 (CWC 13263(b)) and must consider other waste discharges and factors that affect that capacity.

As stated above, groundwater will be extracted, treated to remove VOCs and recharged back to the aquifer. The water returned to the aquifer will be as good a quality, if not better, than the background groundwater at the site. No degradation should occur as a result of the discharge.

Title 27

Title 27, CCR, section 20380 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.

Proposed Order Terms and Conditions

Discharge Prohibitions and Specifications

The proposed Order establishes a discharge flow limit of 432,000 gpd. The proposed Order's discharge specifications for VOCs are based on the treatment technologies employed and to maintain all beneficial uses of the groundwater.

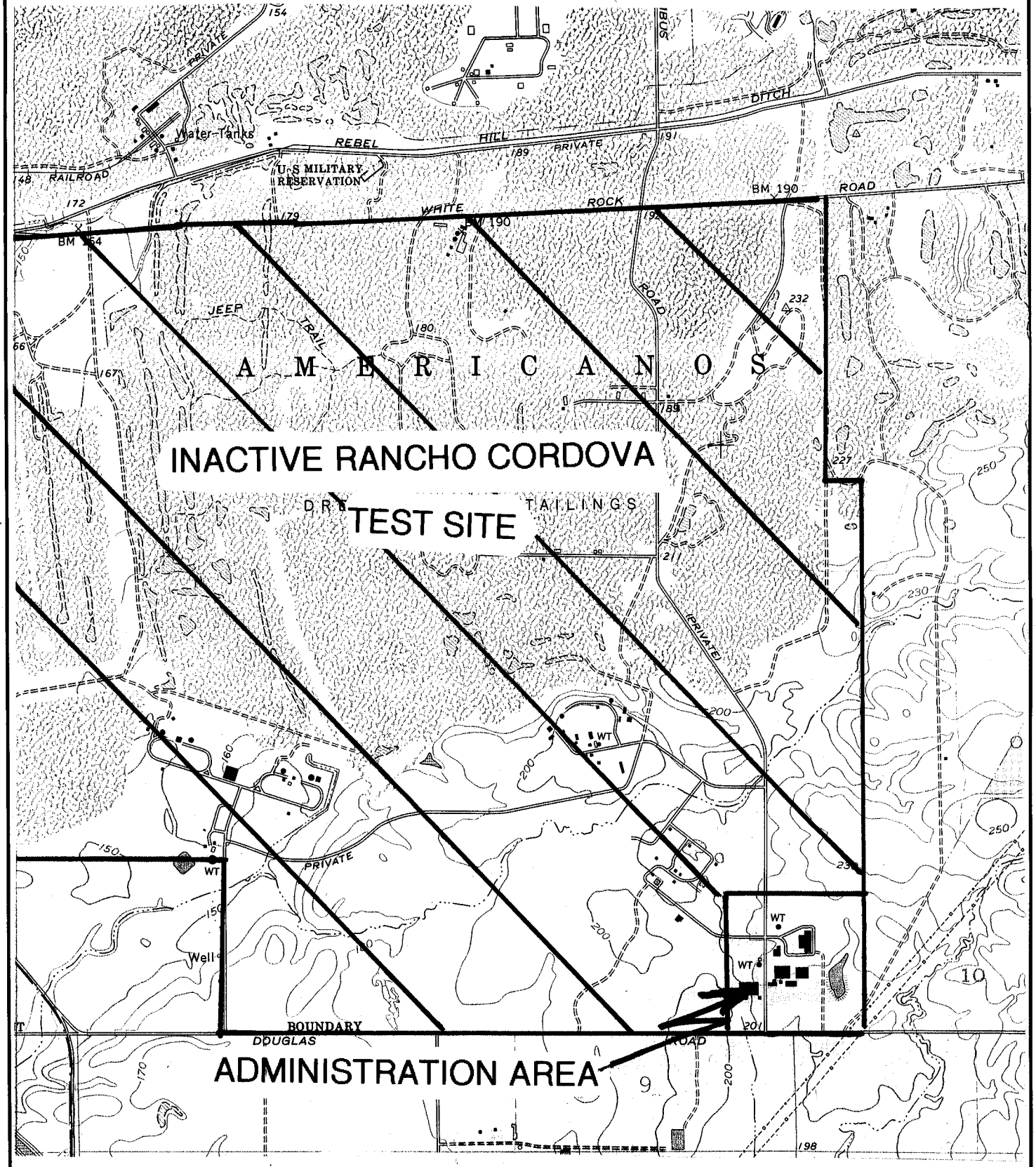
Monitoring Requirements

Section 13267 of the CWC 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. Section 13268 of the CWC authorizes assessment civil administrative liability where appropriate.

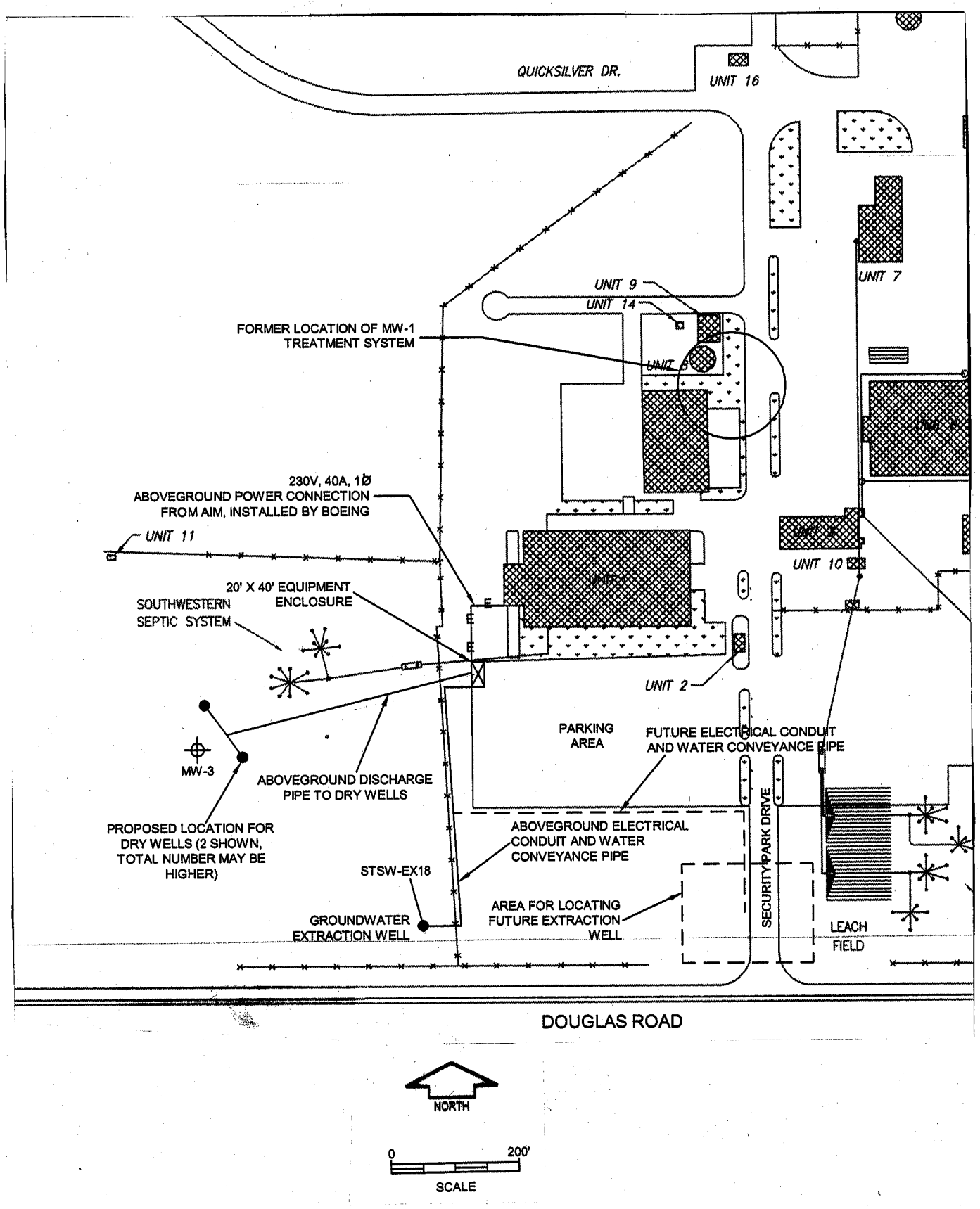
This Order requires influent and effluent monitoring requirements, including flow rates. In order to adequately characterize its effluent, the Discharger is required to monitor for VOCs and pH.

The Discharger need not conduct groundwater monitoring under this Order. Groundwater monitoring is already being performed pursuant to the Imminent and Substantial Endangerment Order. Effects of the discharge on groundwater need not be monitored under this Order as the water being returned to the aquifer from whence it came after removal of VOCs, resulting in a betterment of water quality.

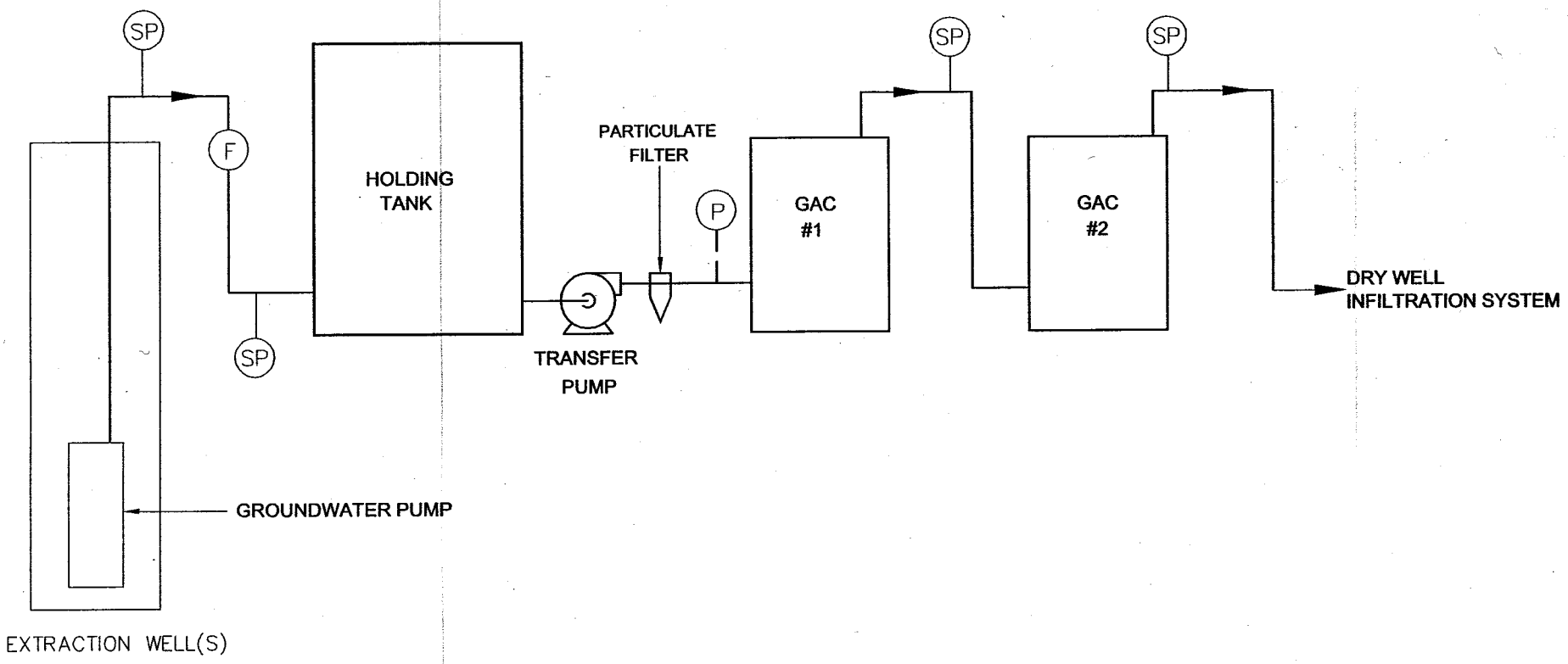
AMM:05/27/04



Administration Area GWTF - Attachment A
Sectoin 10, T8N, R7E MDB&M
U.S.G.S. 7.5 min Buffalo Creek Quad



Administration Area GWTF - Attatchment B
Site Location



LEGEND:

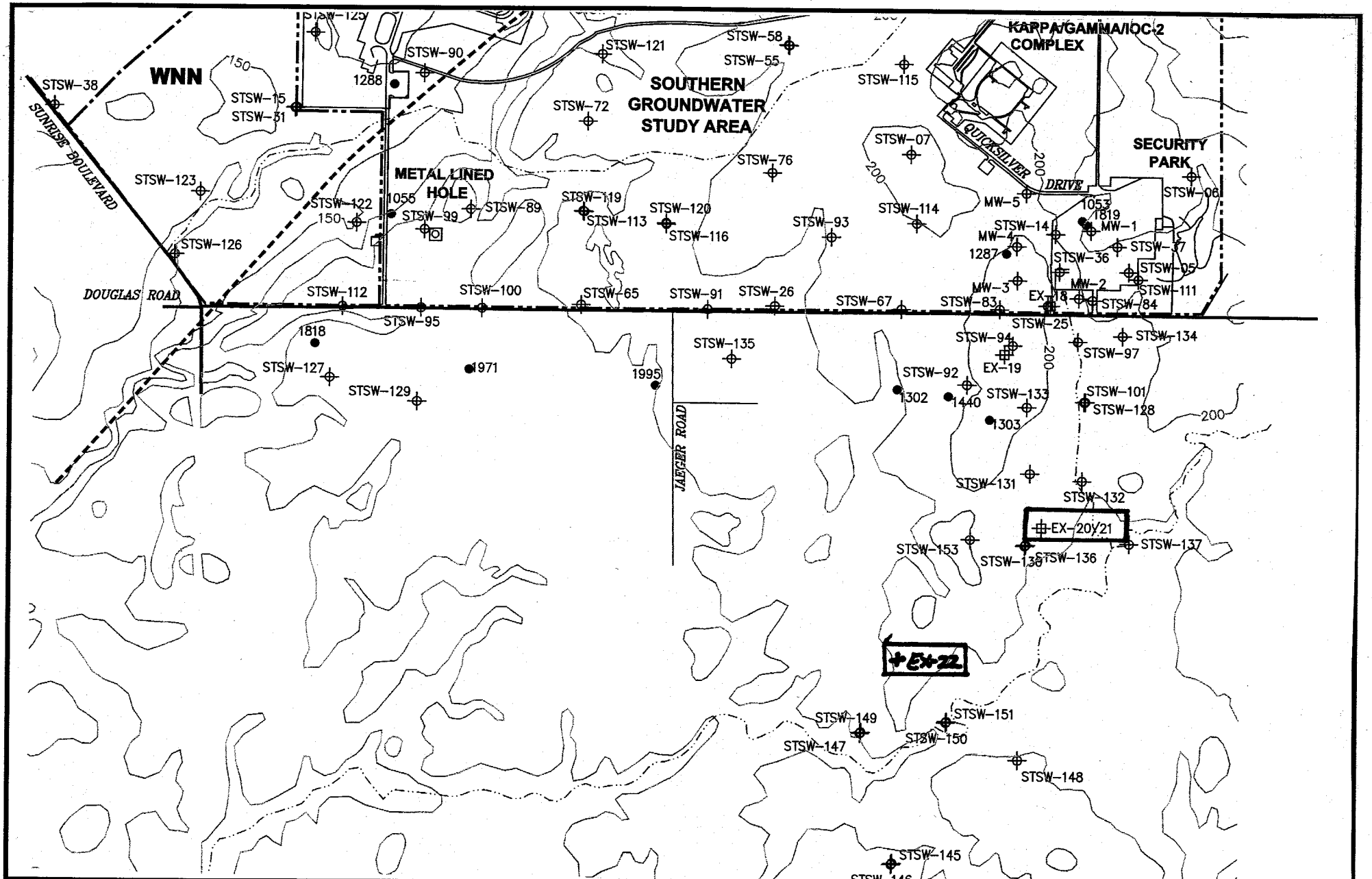
———	PROCESS PIPING
(SP)	SAMPLING PORT
(P)	PRESSURE SWITCH
(F)	FLOW TOTALIZER
GAC	GRANULAR ACTIVATED CARBON

ENSR Consulting and Engineering

FIGURE VI-2
PROCESS SCHEMATIC
ADMINISTRATION AREA
INACTIVE RANCHO CORDOVA TEST SITE
RANCHO CORDOVA, CALIFORNIA

DRWN: A. Churchill	DATE: 11/1/01	PROJECT NO: 04523587-000
FILE: J:\Projects\04523\587\Working\fiigure VI-2		

Administration Area GWTF - Attatchment C
Process Schematic



Administration Area GWTF - Attachment D
EX-20, EX-21, and EX-22