

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2004-0086

WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF AUBURN
AUBURN PLACER DISPOSAL SERVICE
AUBURN LANDFILL
CLASS III LANDFILL
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION
PLACER COUNTY

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

1. The City of Auburn owns, and Auburn Placer Disposal Service operates, the Auburn Landfill, a closed, unlined Class III landfill on Shale Ridge Road approximately three miles north of the City of Auburn and one-half mile east of Highway 49. The facility is in the northwest $\frac{1}{4}$ of Section 28, T13N, R8E Mount Diablo Base and Meridian (MDB&M), as shown in Attachment A, which is incorporated herein and made part of this Order. The City of Auburn and Auburn Placer Disposal Service are hereafter collectively referred to as "Discharger".
2. The 41-acre site includes the landfill (including northern and southern disposal areas), associated access roads, parking and bin storage areas, a former Class II-1 disposal area immediately north of the landfill (as described in Finding 10), and undeveloped space, as shown in Attachment B: Site Map, which is incorporated herein and made a part of this Order. The landfill facilities include precipitation and drainage controls, gas monitoring probes, groundwater monitoring wells, and a french drain system and collection sump. Immediately west of the site is a transfer station operated by Auburn Placer Disposal Service.
3. The 28-acre landfill operated from 1958 until September 1983, accepting household refuse and nonhazardous industrial wastes from the City of Auburn and surrounding unincorporated areas. The landfill also accepted hazardous asbestos wastes from 1976 to 1977. The landfill stopped accepting wastes in 1983 and was closed in 1984.
4. The landfill was previously regulated under Waste Discharge Requirements (WDRs) Order No. 93-243. These revised WDRs prescribe updated requirements for post-closure maintenance and corrective action of the closed landfill.
5. Effective 18 July 1997, the water quality regulations for Class II and Class III disposal facilities formerly contained in Chapter 15, Title 23, California Code of Regulations (CCR), and the solid waste regulations formerly in Title 14, CCR, were consolidated into Chapters

1 through 7, Subdivision 1, Division 2, Title 27, CCR (Title 27). These WDRs reference Title 27 regulations.

6. On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated regulations (Title 40, Code of Federal Regulations, Parts 257 and 258, "federal municipal solid waste (MSW) regulations" or "Subtitle D") that apply, in California, to Dischargers who own or operate Class II or Class III landfill units at which MSW is discharged. The Auburn landfill is not subject to federal Subtitle D regulations because it ceased accepting wastes before 9 October 1991.

WASTES AND UNIT CLASSIFICATION

7. The landfill was a Class II-2 unit under former Subchapter 15 regulations and ceased accepting wastes prior to 27 November 1984. The unit accepted Group II and III wastes as defined under Subchapter 15, corresponding to wastes defined as "hazardous" under Section 2521 of Chapter 15 and "nonhazardous" and "inert" under Sections 20220 and 20230 of Title 27, respectively. The hazardous waste was limited to asbestos. In 1993, the Regional Board adopted revised WDRs that reclassified the landfill as a Class III WMU under Chapter 15. The landfill is therefore an existing, closed reclassified Class III WMU under Section 20080(g) of Title 27.
8. The landfill includes the northern and southern fill areas as shown in Attachment B. Most of the southern fill area (i.e. the western and central portions) was filled during historical operations from 1958 through 1979. The northern fill area served as a borrow source for southern area during this period. The northern disposal area and the remainder of the southern disposal area were filled from 1979 to 1983.
9. Approximately 750,000 cubic yards (375,000 tons) of solid waste were discharged to the landfill. Waste disposal was by the cut and fill method. The base of fill ranges from about 1,420 feet MSL in the southwestern corner of the site to about 1,485 feet MSL in the northern fill area. Fill depths in the southern fill area ranged from about 5 feet (central portion) to 60 feet (northwestern portion). The maximum depth of waste in the northern fill area was about 44 feet in the crest area.
10. Prior to 1979, wastes were also discharged to an area immediately north of the landfill, classified as a Class II-1 unit under former Subchapter 15 regulations. The unit accepted limited Group I wastes and Group II and III wastes as defined as under Subchapter 15. These wastes corresponded to wastes defined as "hazardous" under Section 2521 of Chapter 15 and "nonhazardous" and "inert" under Sections 20220 and 20230 of Title 27, respectively. The unit included five clay-lined ponds for the disposal of liquid and

semisolid wastes. Approximately 200,000 cubic yards of limited Group 1 phenolic wastes were discharged to this unit. In 1979, the Regional Board adopted revised WDRs reclassifying the landfill facility as Class II-2 and prohibiting the further discharge of hazardous and limited Group 1 waste to this area. Available information indicates the unit ceased accepting wastes in 1979 and was subsequently covered with at least one foot of soil.

SITE DESCRIPTION

11. The landfill is on a relatively flat plateau in the west-sloping foothills belt of the Sierra Nevada Mountains. The topography in the area surrounding the site is low rolling foothill terrain with elevations ranging from about 1420 feet MSL southwest of the site to 1540 feet MSL northeast of the site.
12. Land within 1000 feet of the site is used for agricultural, commercial, residential, industrial, and recreational purposes. These uses include a transfer station and a convalescent hospital to the west, a small airport to the east, a commercial storage facility to the south, and a private residence to the north.
13. The site is not within the 100-year floodplain.
14. The site receives an average of 34.3 inches per year of precipitation as determined from Rainfall Depth Duration Frequency data provided by the State Department of Water Resources for the Auburn Station. The 100-year, 24-hour precipitation event for this station is 5.6 inches.
15. Surface water drainage in the site area is to Rock Creek (including Rock Creek Lake) about 3,000 feet south of the site. Rock Creek flows to the northwest into Dry Creek, tributary to Coon Creek, which flows into the Sacramento River.
16. The beneficial uses of surface waters are domestic and municipal supply, agricultural irrigation, industrial supply, recreation, and ground water recharge.

GEOLOGY

17. The landfill is on a relatively flat plateau in the west-sloping foothills belt of the Sierra Nevada Mountains. The site is underlain by a complex series of sedimentary and metamorphosed mafic volcanic rock formations and recent alluvial deposits, consisting primarily of sandy silt and sandy clay. Surface soils are relatively thin, averaging 1 1/2 feet in thickness.
18. In the northeastern portion of the site is a northwest-southeast aligned channel composed of

sand and gravel. The deposit is up to 40 feet thick of which the upper 10 to 15 feet is typically well cemented. Much of this deposit was excavated during construction of the landfill.

19. There are no active faults within a one-mile radius of the site.

WASTE MANAGEMENT UNIT DESIGN

20. The southern fill area was excavated to bedrock or close to bedrock (i.e. within 10 feet of bedrock) in most areas prior to waste filling. Excavation depths ranged from about 5 feet in the central portion of the southern fill area to about 40 feet in the northern portion of the southern fill area. The eastern portion of the southern fill area was developed concurrent with the northern disposal area.
21. Approximately 150,000 cubic yards was excavated from the northern fill area and eastern portion of the southern fill area prior to waste filling. Up to 35 feet of soil was excavated from the northern fill area. The excavation depth was limited by a requirement in previous WDRs (Order No. 79-136) that there be at least ten feet of separation between the base of wastes and seasonal high groundwater. After excavation to base grade, an additional three feet of the channel deposit gravel was excavated and replaced with compacted soil in preparation of the subgrade. The base was graded at a minimum slope of one percent and the side slopes excavated to a maximum slope of 1.5H:1V.
22. The landfill is unlined and does not have a leachate collection and recovery system (LCRS) to prevent vertical migration of leachate. A system of French drains was installed in phases at certain interior and perimeter locations of the landfill (as shown in Attachment C: Facility Map) as the southern and northern fill areas were filled. The interior drains are partially cut into the subgrade while the exterior run along the intersection of the subgrade surface and excavation slopes. Each drain consists of a minimum of one foot of pea gravel (4 to 6 square feet in cross sectional area) packed around a perforated four inch PVC pipe. Riser pipes were also installed at two locations to allow for monitoring flow in the drains.
23. The drains are plumbed to an old collection sump installed in the southwest corner of the site sometime prior to 1979. The sump includes a dedicated pump and flow meter. Liquid collected in the sump is pumped into the City sanitary sewer system using a nearby manhole. Approximately 1.5 million gallons of liquid was pumped from the sump during the Fourth Quarter 2003. It is unknown whether or to what extent this volume represents infiltrated groundwater.
24. The excavation depths and base of waste in the former Class II-1 waste disposal area are unknown.

LANDFILL CLOSURE

25. The landfill was closed in 1984 in accordance with a November 1979 Final Closure Plan (*Geotechnical Investigation and Operation and Closure Plan, Auburn Class II-2 Disposal Site*, prepared by Emcon Associates). Since the landfill was also an existing, inactive facility under former Chapter 15 regulations, it was not required to have a prescriptive low permeability cover and a prescriptive cover was not installed. The Final Closure Plan (FCP) included the following elements:
- Placement and compaction of two feet of borrow soil over existing intermediate cover soil.
 - Grading to minimum slopes of two percent (i.e. on the northern and southern area cover decks) and maximum side slopes of 3:1 horizontal-to-vertical (3H:1V).
 - Establishment of vegetative cover consisting of native grass

The landfill cover soil included sandy silt and sandy clay from onsite borrow sources, and clay from a borrow source immediately east of the landfill. Laboratory permeabilities of the cover soil ranged from 1×10^{-5} cm/sec to 1×10^{-8} cm/sec when compacted to 90% of maximum dry density.

26. From the crest area in the northern part of the site (about 1535 feet MSL in 1984), the landfill cover was graded about 5H:1V to the west (toward the former Class II-1 waste disposal area) and about 10H:1V (i.e 10 percent) to the south toward the lower deck. The lower deck in the southern disposal area (about 1494 feet MSL in 1983) was graded at a 2 percent slope to the western, southern and southeastern side slopes. The side slope grades ranged from 5H:1V to the west to about 3H:1V to the south and southeast except for an offsite area between the landfill (approximately 200 feet x 350 feet) and airport runway, which was graded at 50H:1V to provide an overrun for the airport runway.
27. Precipitation and drainage facilities installed as part of landfill closure included unlined drains along the northern, western, and eastern perimeter of the southern disposal area, and an interior drain constructed in the landfill cover in the northeastern portion of the southern disposal area, as shown in Attachment C: Facility Map. The northern perimeter ditch (a "V"-shaped ditch about 1.5 feet deep and 3 feet wide) was installed to divert runoff from the land north of the southern disposal area, including the former Class II-1 disposal area. The northern perimeter drain flows joins the western perimeter drain, which drains runoff from the western slopes of the southern disposal area and discharges into the City storm drain along Shale Ridge Road. The interior drain (also a 1.5 x 3 foot "V" ditch) drains the southern portion of the northern fill area and the northern portion of the southern fill area and flows to the eastern perimeter ditch. The eastern perimeter ditch, a 10-foot wide, flat-bottom ditch about 1 foot high, drains the interior ditch in the northern portion of the

southern disposal area, the southeastern slopes of the northern area, and the eastern/southeastern slopes of the southern fill area. This drain also discharges to the City storm drain along Shale Ridge Road, at a point near the southeastern corner of the site.

28. There are 12 landfill gas monitoring wells at the site (P-1A, 3A, 4A, 5A, 6, 7A, and 8 through 13), as shown in Attachment C. Methane has been regularly detected at concentrations above the lower explosive limit (LEL) in one of these wells, P-5A, along the eastern perimeter of the northern fill area. Historical gas sampling results for this well indicate methane concentrations up to 60 percent by volume. No landfill gas collection or venting facilities have been installed at the landfill. No methane has been detected in offsite gas wells 75 to 150 feet east of the landfill (i.e. P-9 through 13).

POST-CLOSURE MAINTENANCE

29. An aerial site survey conducted in July 2003 indicated that the northern disposal area has settled significantly since closure in 1984. The survey showed a crest elevation of 1512 feet MSL, compared to 1535 MSL in 1984, and reduced crest slopes (i.e. 3 percent) compared to 1984 (10 to 20 percent). The measured cover elevations in the lower deck area were generally the same as in 1984, except for areas of differential settlement.
30. A 20 March 2003 site inspection conducted by Regional Board staff indicated that the landfill cover was not adequately shedding water. Numerous areas of thin vegetation were noted in the northern disposal area and ponding was noted in the hummocky areas of the cover the southern disposal area. In response to the inspection, the Discharger submitted and Regional Board staff approved a 30 June 2003 *Workplan for Drainage and Cover Improvements*. The work plan included an aerial site survey (noted above) and field inspection to identify specific areas of the cover and drainage facilities in need of repair. The Discharger submitted the results of this work in a 4 November 2003 report *Recommendations for Final Cover/Drainage Corrective Measures, City of Auburn Landfill* prepared by SCS Engineers. The report included recommendations for both interim and long term cover repairs. The recommended interim repairs included the following:
- a. Inspection of the cover surface for ponding immediately after storm events and removal of ponded water.
 - b. Repair of minor erosion damage
 - c. Filling in rodent burrows.
 - d. Re-establishing vegetation over distressed/repared areas.

The proposed long term repair measures included the following:

- a. Construction of a new soil-lined V-ditch along top deck to divert run-on.
- b. Placement and compaction of approximately 5,200 cubic yards of imported soil in areas of settlement on top and northeast decks.
- c. Re-grading the cover to a minimum slope of 2% to restore drainage.
- d. Surveying to verify cover grades.
- e. Re-establishing vegetation over repaired areas.

The report proposed completion of southern disposal area deck repairs by November 2004 and northern disposal area repairs by November 2005.

GROUNDWATER

31. The beneficial uses of the ground water are domestic, municipal, agricultural, and industrial supply.
32. Groundwater levels are influenced by fractures within the bedrock. The elevation of the uppermost aquifer ranges from about 1,475 feet MSL in the northern fill area (i.e. within sheared shale and sandstone) to about 1,425 feet MSL in the southwestern portion of the southern fill area (i.e. within weathered shale and sandstone or fractured greenstone bedrock). Groundwater elevations vary seasonally about 3 feet. Based on reported base refuse elevations and groundwater elevation monitoring data, seasonal high groundwater is likely coming into contact with landfill wastes in the southwestern portion of the landfill. Groundwater may also be entering the collection sump in this area.
33. Groundwater flow at the site is to the southwest at a gradient of approximately 0.03 ft/ft. The permeability of the weathered/fractured bedrock is estimated to be about 1×10^{-4} cm/sec.
34. There are currently eight onsite monitoring wells (MWs-1, C, E, E-1, E-4, E-11, E-12, and LFW-2) and four offsite monitoring wells (MWs-A, B, D and E-1). Two of these wells are down gradient compliance wells (MWs-D and LFW-2), seven are side gradient compliance wells (MWs- 1, C, E, E-1, E-4, E-11, and E-21) and two are background wells (E-12 and MW-A).
35. A 1987 Solid Waste Assessment Test (SWAT) investigation revealed the presence of volatile organic compounds (VOCs) in the groundwater at the site. VOCs were also detected in the collection sump liquid. The maximum concentrations of VOCs historically detected in groundwater and/or the sump liquid have been:

<u>VOC</u>	<u>Concentration</u> (µg/L)	<u>Monitoring Point</u>
Benzene	4	Sump
Chlorobenzene	6	Sump
Chloroethane	6	1 and E-12
1,1-Dichloroethane	4	1, C, E-1, E-4 and E-21
1,4-Dichlorobenzene	6	Sump
Dichlorodifluoro- methane	23	1, D, E, E-12, LFW-2 and sump
Vinyl Chloride	3	D and Sump

The concentration of VOCs detected in groundwater at the site have generally declined since 1987 and since 1998 have been detected only sporadically at low to trace concentrations. With the exception of vinyl chloride, the same VOCs continue to be detected in the sump liquid at relatively constant concentrations since 1987, except for seasonal variations. Vinyl chloride has not been detected in the sump liquid since 1998.

36. The 1987 SWAT investigation also showed elevated concentrations of inorganic constituents in groundwater at the site, including Chloride, Total Dissolved Solids (TDS) and Electrical Conductivity (EC). Time series plots show that the concentrations of inorganic constituents detected down gradient have increased since 1987, as follows:

<u>Constituent</u>	<u>Units</u>	<u>Background</u> ¹	<u>Down Gradient</u> ²	
			<u>1987</u>	<u>2004</u>
Chloride	mg/L	10	140	260
TDS	mg/L	270	870	1,100
EC	µmhos/cm	320	1,100	1,970

1. Based on historical monitoring data from upgradient well MW-A.
2. Based on historical monitoring data from compliance well D. Similar elevated concentrations also detected in well LFW-2.

The concentrations of these inorganic constituents detected in the groundwater have increased to levels historically detected in collection sump liquid at the site.

37. Previous MRP No. 93-243 required that the Discharger monitor groundwater for Total Phenols (i.e. by EPA Method 420.1). Analysis of groundwater samples by this method typically showed Total Phenols averaging about 12 µg/L. In 2001, the Discharger discontinued using EPA Method 420.1 and began analyzing for phenols by EPA Method 8270B. No phenols have been detected in groundwater since the Discharger began analyzing by EPA Method 8270B, indicating that the previous detections by EPA

Method 420.1 may have been false-positives caused by matrix interferences. The MRP with this Order no longer requires that the Discharger monitor groundwater for phenols by EPA Method 420.1, however phenols are included in the list of constituents of concern that require five year monitoring by EPA Method 8270B (see Attachment E).

38. Groundwater elevation data indicate that seasonal high groundwater may come into contact with landfills waste and/or the collection sump in the southwestern part of the landfill. Sump monitoring data further show that up to two million gallons of liquid are commonly pumped from the sump each quarter during the wet season. It is not currently known whether, or to what extent, the high volume of liquid pumped from the sump during the wet season is the result of groundwater infiltration into the sump.
39. The Discharger submitted a Sampling and Analysis Plan that describes the sampling protocols and data analysis methods used for groundwater monitoring pursuant to Sections 20415(e)(4) and 20415 (e)(7) of Title 27. The data analysis methods are summarized as follows:

<u>COC Group</u>	<u>Data Analysis Method</u>	<u>Trigger^{1,2}</u>	<u>Needed for Confirmation¹</u>
VOCs & other organics	Nonstatistical	1 ≥ PQL or 2 ≥ MDL	Same COC(s) triggered in at least 1 of 2 retest samples
Inorganic COCs, < 10% in background	Nonstatistical	1 ≥ PQL	
Inorganic COCs, ≥ 10% in background	Statistical (Tolerance Interval)	1 > Concentration Limit	Not applicable
Trend analysis: Monitoring Parameters COCs	Mann-Kendall test Time series plots	At least 4 historical detections >PQL for each COC ³	

1. Notification and retest not required for tentatively indicated constituents previously confirmed as part of the release at a given monitoring point (these exceedances shall be assumed confirmed without retest).
2. "1" and "2" in listed trigger criteria refer to number of monitoring parameters or COCs.
3. Trigger for performing trend analysis not for a release.

40. Previous WDR Order No. 93-243 required that the Discharger submit an Engineering Feasibility Study (EFS), Corrective Action Program (CAP) and Article 5 monitoring program to address groundwater impacts at the landfill. In response, the Discharger submitted a 27 January 1994 *Amendment to Report of Waste Discharge* report containing a proposed EFS, CAP and Article 5 groundwater monitoring program for the site. The EFS considered the following conceptual alternatives for remediation of VOCs in groundwater at the site:

- A. Natural Attenuation - No action except continued groundwater monitoring of natural attenuation of VOCs;
- B. Source Control - Construction of a prescriptive low permeability cover ($k < 1 \times 10^{-6}$ cm/sec) over the entire landfill as a source control measure to reduce infiltration and leachate production;
- C. Active Remediation - Installation of a groundwater extraction and treatment system to remove VOCs from the groundwater;
- D. Slurry Wall - Installation of a low permeability slurry wall (about 2,600 feet long by 85 feet deep) along the down gradient perimeter of the landfill as a barrier to prevent further down gradient migration of impacted groundwater.
- E. In Situ Remediation – Air and/or methane sparging and soil vapor extraction, or bioventing, to enhance biological degradation of VOCs in groundwater.

The EFS concluded that Options A and B were readily implementable options and proposed Option A based on a conclusion that groundwater monitoring data showed declining VOC concentrations due to natural attenuation. The EFS included a plan to reconsider the other options in the event the VOC release increased. The EFS/CAP did not consider corrective action measures for inorganic constituents in groundwater and neither the EFS/CAP nor the Article 5 report were approved by Regional Board staff. Consequently, the Discharger continued groundwater monitoring under with MRP No. 93-243.

COST ESTIMATES AND FINANCIAL ASSURANCES

- 41. The Discharger is not required to demonstrate financial assurances for post-closure maintenance to the California Integrated Waste Management Board since the landfill ceased operations prior to January 1, 1988, per Section 22210(b) of Title 27. The Discharger is also not required to demonstrate financial assurances for corrective action to the California Integrated Waste Management Board, since pursuant to Section 22220(b), the landfill ceased operations prior to July 1, 1991.

CEQA AND OTHER CONSIDERATIONS

- 42. This action to revise WDRs for this facility is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.), in accordance with Title 14, CCR, Section 15301.
- 43. This order implements:
 - a. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition; and

- b. Chapter 15, Title 23, California Code of Regulations (CCR); and
 - c. Chapters 1 through 7, Subdivision 1, Division 2, Title 27, of the California Code of Regulations, effective 18 July 1997, and subsequent revisions.
44. Section 13267(b) of California Water Code provides that: "In conducting an investigation specified in subdivision (a), the Board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed 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 program required by this Order and the attached Monitoring and Reporting Program Order No. R5-2004-0086 are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

PROCEDURAL REQUIREMENTS

45. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
46. The Regional Board notified the Discharger 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.
47. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
48. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with Sections 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at http://www.swrcb.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED, pursuant to Sections 13263 and 13267 of the California Water Code, that Order No. 93-243 is rescinded, and that the City of Auburn and Auburn Placer

Disposal Service, Inc., and their agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted there under, shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. The discharge of any additional waste at this site is prohibited.
2. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.
3. The discharge of treated or untreated wastewater, sump liquid, or groundwater to any surface water or any surface water drainage course is prohibited without a National Pollutant Discharge Elimination System (NPDES) permit authorizing the discharge.
4. Neither the treatment nor the discharge of wastes shall cause a pollution or a nuisance, as defined by the California Water Code, Section 13050.

B. DISCHARGE SPECIFICATIONS

1. The discharge shall remain within the designated disposal area at all times.
2. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.
3. Storm water runoff from the facility shall be discharged in accordance with Monitoring and Reporting Program No. R5-2004-0086 and applicable storm water regulations.
4. The depth of fluid in the drain sump shall be kept at or just above the minimum needed to ensure safe pump operation.
5. A minimum separation of five feet shall be maintained between wastes or leachate and the highest anticipated elevation of underlying groundwater per Section 20240(c) of Title 27.

C. POST-CLOSURE SPECIFICATIONS

1. The Discharger shall maintain waste containment facilities, the landfill final cover, precipitation and drainage controls, monitoring wells, and shall continue to monitor

ground water and surface waters per Monitoring and Reporting Program No. R5-2004-0086 throughout the post-closure maintenance period.

2. All final cover slopes shall be capable of withstanding a maximum probable earthquake.
3. In spite of differential settlement, the final cover shall be graded and maintained to prevent ponding, promote lateral runoff, and prevent soil erosion due to high run-off velocities.
4. The vegetative cover layer shall be maintained with native or other vegetation capable of providing effective erosion resistance.
5. The Discharger shall conduct an aerial site survey for the purpose of updating the topographic map for the site at least every five years.
6. Precipitation and drainage control systems shall be operated and maintained to convey peak flows from a 100-year, 24-hour storm event.
7. Annually, prior to the anticipated rainy season but no later than **31 October**, any necessary erosion control measures shall be implemented and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent storm water flows from:
 - a. Contacting or percolating through wastes,
 - b. Causing erosion or inundation of the landfill cover or other areas of the site, or
 - c. Causing sedimentation and clogging of the storm drains.

D. FACILITY SPECIFICATIONS

1. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements. All storm water controls, including drainage facilities, shall be maintained so that they function effectively during precipitation events.
2. All wells within 500 feet of the waste management units shall have sanitary seals that meet the requirements of the Placer County Department of Health and Human Services or shall be properly abandoned. A record of the sealing and/or abandonment of such wells shall be sent to the Regional Board and to the State Department of Water Resources.

3. The Discharger or persons employed by the Discharger shall comply with all notice and reporting requirements of the State Department of Water Resources with regard to construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this Order or with Monitoring and Reporting Program No. R5-2004-0086, as required by Section 13750 through 13755 of the California Water Code.

E. MONITORING SPECIFICATIONS

1. The Discharger shall conduct groundwater and surface water monitoring, as specified in Monitoring and Reporting Program (MRP) No. R5-2004-0086. Groundwater monitoring shall include background monitoring and corrective action monitoring. Background monitoring shall be conducted for the purpose of monitoring water quality upgradient of the landfill and updating concentration limits, as necessary, as part of the Water Quality Protection Standard per Section 20400(a) of Title 27. Corrective action monitoring shall be conducted for the purpose of monitoring the nature and extent of the release (Section 20425(a)(2)), assessing the progress of corrective action measures (Section 20430(d)), and designing any necessary additional corrective action measures (Section 20425(a)(2)).
2. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to Monitoring and Reporting Program No. R5-2004-0086.
3. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program No. R5-2004-0086 and Title 27 CCR Section 20415(e).
4. Background for water samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point).
5. The Discharger shall provide Regional Board staff a minimum of one week notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices, and a minimum 48 hour notification prior to the collection of samples associated with a detection monitoring program, evaluation monitoring program, or corrective action program.

6. For inorganic monitoring parameters and COCs for which at least 10% of the data from background samples equal or exceed their respective MDL, the Discharger shall use the Tolerance Interval statistical method for corrective action monitoring, or an alternate statistical method approved by the Executive Officer in accordance with Section 20415(e)(8)(E). Concentration limits shall be updated at least annually. The Discharger shall use the following trigger for these constituents:
 - a. From the constituent of concern or monitoring parameter list, identify each analyte in the current sample that exceeds its PQL. The Discharger shall conclude that the exceedance provides a preliminary indication [or, for a retest, provides measurably significant evidence] of the release (i.e. existing or new constituent) at that monitoring point, if the data contains an analyte that exceeds its concentration limit.

Any analyte that triggers a discrete retest per this method shall be added to the monitoring parameter list such that it is monitored during each regular monitoring event.

7. The statistical method shall account for data below the PQL with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Title 27 CCR Section 20415(e)(7) that is used in the statistical method shall be the lowest concentration (or value) that can be reliably achieved within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Title 27 CCR Section 20415(e)(7), shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, CCR, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or down-gradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".
8. For inorganic monitoring parameters and COCs for which less than 10% of the data from background samples equal or exceed their respective MDL, the Discharger shall use a nonstatistical data analysis method for corrective action monitoring. The Discharger shall use the following trigger for these constituents:

- a. From the constituent of concern or monitoring parameter list, identify each analyte in the current sample that exceeds its MDL. The Discharger shall conclude that the exceedance provides a preliminary indication [or, for a retest, provides measurably significant evidence] of the release (i.e. existing or new constituent) at that monitoring point, if the data contains an analyte that exceeds its PQL.

Any analyte that triggers a discrete retest per this method shall be added to the monitoring parameter list such that it is monitored during each regular monitoring event.

9. For VOCs and other organic COCs the Discharger shall use a nonstatistical data analysis method for corrective action monitoring. The Discharger shall use the following trigger these constituents:
 - a. From the constituent of concern or monitoring parameter list, identify each analyte in the current sample that exceeds either its respective MDL or PQL. The Discharger shall conclude that the exceedance provides a preliminary indication [or, for a retest, provides measurably significant evidence] of the release (i.e. existing or new constituent) at that monitoring point, if either:
 - 1) The data contains two or more analytes that equal or exceed their respective MDLs; or
 - 2) The data contains one analyte that equals or exceeds its PQL.

Any analyte that triggers a discrete retest per this method shall be added to the monitoring parameter list such that it is monitored during each regular monitoring event.

10. If the above statistical or non-statistical trigger procedures used for groundwater monitoring data analysis provide a preliminary indication of previously undetected or unconfirmed constituents of the release, the Discharger shall immediately notify Regional Board staff by phone or e-mail and, within 30 days of such indication, shall collect *two* new (retest) samples from the monitoring point where the release is preliminarily indicated.

- a. For any given retest sample, the Discharger shall include, in the retest analysis, only the laboratory analytical results for those analytes detected in the original sample. As soon as the retest data are available, the Discharger shall apply the same tests [i.e. 6.a for statistical constituents, 8.a or 9.a for non-statistical constituents], to separately analyze each of the two suites of retest data at the monitoring point where the release is preliminarily indicated.
- b. If either (or both) of the retest samples trips the applicable trigger above (6.a, 8.a or 9.a), then the Discharger shall conclude that there is measurably significant evidence of a release at that monitoring point for the analyte(s) indicated in the validating retest sample(s) and shall:
 - 1) Immediately notify the Regional Board about the constituent verified to be present at the monitoring point, and follow up with written notification submitted by certified mail within seven days of validation; and
 - 2) Comply with 11, below.

Constituents that have been previously confirmed at a given monitoring point as part of the release, including both regularly detected monitoring parameters/COCs and sporadically detected monitoring parameters/COCs (e.g. as a result of seasonal or lateral fluctuations in the plume or landfill gas), shall be considered confirmed without notification and retest. Exceedances that the Discharger otherwise demonstrates (per Section 20420(k)(7) of Title 27) are the result of sample corruption, laboratory interferences, error, natural variation in the groundwater or other cause not associated with a release from the unit shall not trigger notification of a tentative release, and shall not trigger a retest unless a retest is necessary to make the demonstration.

11. If the Discharger determines that there is measurably significant evidence of a new release from the Unit at any monitoring point, the Discharger shall **immediately** implement the requirements of **Response To A Release**, contained in the Standard Provisions and Reporting Requirements (August 1997).
12. The data analysis methods for corrective action monitoring shall also include trend analysis (i.e. control charts, Mann-Kendall) and an evaluation of the water chemistry by appropriate methods (i.e. Schoeller plots, ion balance, Stiff diagram etc) to monitor the effectiveness of corrective action measures in accordance with Section D.3.C of the MRP. The trigger requirement for performing trend analysis shall be as specified in Finding 39.

F. REPORTING REQUIREMENTS

1. The Discharger shall comply with the reporting requirements specified in this Order, in Monitoring and Reporting Program Order No. R5-2004-0086 and in the Standard Provisions and Reporting Requirements dated August 1997.

2. The Discharger shall immediately notify the Regional Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
3. The Discharger shall notify the Regional Board in writing of any proposed change in ownership or responsibility for construction or operation of the landfill. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Regional Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Board, and a statement. The statement shall comply with the signatory requirements contained in Reporting Requirement F.9 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Regional Board.
4. The discharger shall **mail a copy of each monitoring report** and any other reports required by this Order to:

California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670
(or the current address if the office relocates)

G. PROVISIONS

1. The Discharger shall maintain a copy of this Order and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.
2. The Discharger shall comply with the Monitoring and Reporting Program No. R5-2004-0086, which is attached to and made part of this order. A violation of the MRP is a violation of these waste discharge requirements.

3. The Discharger shall comply with the Standard Provisions and Reporting Requirements (Standard Provisions), dated August 1997, which are hereby incorporated into this Order. The Standard Provisions contain important provisions and requirements with which the Discharger must comply. A violation of any of the Standard Provisions and Reporting Requirements is a violation of these waste discharge requirements.
4. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, Monitoring and Reporting Program No. R5-2004-0086, and the Standard Provisions and Reporting Requirements, dated August 1997.
5. By **10 September 2004**, the Discharger shall submit a work plan and schedule for the installation of additional monitoring wells necessary to define the extent of groundwater impacts from inorganic constituents described in Finding No. 36 herein.
6. By **31 December 2004**, the Discharger shall submit a revised (or amended) preliminary Engineering Feasibility Study/Corrective Action Plan (EFS/CAP) that identifies corrective action options and proposes short term and long-term corrective action measures for the groundwater impacts from inorganic constituents described in Finding No. 36 herein.
7. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.
8. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of the Order.
9. The Discharger shall also notify the Regional Board of any proposed land use or closure plan changes. This notification shall be given 90 days prior to the effective date of the change and shall be accompanied by an amended Report of Waste Discharge and any technical documents that are needed to demonstrate continued compliance with these waste discharge requirements.
10. The Regional Board will review this Order periodically and will revise these requirements when necessary.

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2004-0086
CITY OF AUBURN
AUBURN PLACER DISPOSAL SERVICE
AUBURN LANDFILL
PLACER COUNTY

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I, THOMAS R. PINKOS, Executive Officer, do hereby certify that 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 4 June 2004.

THOMAS R. PINKOS, Executive Officer

JDM

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2004-0086
MONITORING AND REPORTING PROGRAM
CITY OF AUBURN
AUBURN PLACER DISPOSAL SERVICE
AUBURN LANDFILL
CLASS III LANDFILL
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION
PLACER COUNTY

The 28-acre closed landfill includes northern and southern fill areas. Both areas accepted primarily household refuse and nonhazardous industrial wastes. The western and central portions of the southern fill area were filled from 1958 through 1979. The northern disposal area and the eastern portion of the southern disposal area were filled from 1979 to 1983. Phenolic wastes were also discharged to an area immediately north of the landfill (classified as a Class II-1 disposal unit under former Subchapter 15 regulations), which was closed in 1979.

A 1987 Solid Waste Assessment Test (SWAT) investigation revealed the presence of volatile organic compounds (VOCs) and elevated concentrations of inorganic constituents in the groundwater and collection sump liquid. The VOCs commonly detected included Benzene, Chlorobenzene, Chloroethane, 1,1-Dichloroethane, 1,4-Dichlorobenzene, Dichlorodifluoromethane, and Vinyl Chloride. The concentrations of these VOCs have generally declined since 1987 and they are now only sporadically detected at low levels. Elevated concentrations of inorganic constituents continue to be detected in the groundwater, however, including Chloride (up to 260 mg/L), Total Dissolved Solids (TDS, up to 1,160 mg/L), and Electrical Conductivity (EC, up to 1,970 mg/L). Background concentrations of these constituents are about 10 mg/L, 270 mg/L and 320 mg/L, respectively. The concentration of these inorganic constituents in the groundwater have increased since 1987.

Pursuant to Section 20080(g) of Title 27, the Discharger shall maintain water quality monitoring systems for background and corrective action monitoring. Compliance with this MRP is ordered by Waste Discharge Requirements (WDRs) Order No. R5-2004-0086.

A. SUMMARY OF MONITORING & REPORTING FREQUENCIES

Table A

Section	Reporting	Frequency
B.	1. Semiannual Report	Semiannually
	2. Annual Summary Report	Annually
	3. Constituents of Concern Report	Every 5 years
C.	Water Quality Protection Standard Report	Update as necessary
Section	Monitoring	Frequency
D.	Leachate Monitoring	Same as F.1
E.	Groundwater Monitoring:	
	1. Elevation	Quarterly
	2. Background & Corrective Action Monitoring	Semiannually
	3. Constituents of Concern	Every 5 years

- | | | |
|----|----------------------------|--|
| F. | Facility Monitoring: | |
| | 1. Standard Observations | |
| | A. Wet Season | Monthly |
| | B. Dry Season | Quarterly |
| | 2. Maintenance Inspections | Quarterly |
| | 3. After Storm Events | Within 7 Days After Significant Storm
Event |
| | 4. Site Winterization | Annually |

B. REPORTING

1. Semiannual Reports

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required under Order No. R5-2004-0086 and the Standard Provisions and Reporting Requirements (August 1997). Reports shall be submitted **semiannually**. Each semiannual monitoring report shall include the following information:

- A. A compliance evaluation summary for the monitoring period.
- B. A tabular summary of well information from the installation logs, including well name, top-of-casing elevation, total depth, depths/elevations of screened interval, aquifer or zone (i.e. uppermost), and soil type(s) over the screened interval.
- C. The results of groundwater elevation monitoring.
- D. Tabular summaries of corrective action monitoring data for each unit showing sampling dates, well, constituents, concentrations, and concentration limits. The table shall also clearly show whether new monitoring data exceedances occurred during the monitoring period (i.e. highlight exceedances).
- E. Contaminant contour maps of representative corrective action monitoring data, showing the estimated extent of the contaminant plume.
- F. Tables of historical monitoring data for each unit showing well, sampling dates, constituents, concentrations, and concentration limits. The data shall be presented so as to clearly show historical concentrations at each well.
- G. Plots, graphical summaries and a narrative discussion of the results of correction action monitoring, as specified in Section E.3 herein.
- H. Field and laboratory tests sheets.
- I. An electronic copy of the data in a digital format acceptable to the Executive Officer.

At least one semiannual monitoring report each year shall include a copy of the Sample Collection and Analysis Plan (sampling plan) referenced in the Standard Provisions (Provision 1, *Provisions for Monitoring*).

2. Annual Monitoring Summary Report

An Annual Monitoring Summary Report (Annual Report) shall also be prepared and submitted in accordance with this section of the MRP and Standard Provisions (*Provision 4, Reports to be Filed with the Board, REPORTING REQUIREMENTS*). The report shall summarize monitoring results for the prior year and include a

discussion of compliance with the WDRs and the Water Quality Protection Standard. The report shall contain both tabular and graphical summaries, including time series plots of historical monitoring data (including the prior year's data) for each monitoring parameter/COC. For corrective action monitoring data, the report shall also include the following:

- A. A summary of the results of trend analysis performed on each constituent of the release during the prior year
- B. A summary of the results of water chemistry analysis of water quality data collected during the prior year.
- C. Contaminant contour maps for representative constituents (i.e. total VOCs, TDS, Chloride) constructed as part of semiannual reporting during the prior year and a discussion as to whether the size of the plume and concentrations within have increased, decreased, or remained the same since the previous monitoring year.

The Annual Report may be included in the Second Semiannual Report for each year.

Reports which do not comply with the above-required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements. The semiannual and annual reports shall be submitted to the Regional Board in accordance with the following schedule for the calendar period in which samples were taken or observations made:

Table B

<u>Report</u>	<u>End of Reporting Period</u>	<u>Date Report Due</u>
First Semiannual	30 June	31 July
Second Semiannual	31 December	31 January
Annual Report	31 December	31 January

C. WATER QUALITY PROTECTION STANDARD (Section 20390)

The Water Quality Protection Standard (WQPS) shall consist of all Constituents of Concern, Concentration Limits for each constituent of concern, Monitoring Points, Point of Compliance, and the Compliance Period.

1. Constituents of Concern (Section 20395 of Title 27)

The constituents of concern (COCs) for the landfill shall be as follows:

Table C

Constituents of Concern	Units	Test Method
Field Parameters:	See Attachment E	
General Minerals:	See Attachment E	
Inorganics (dissolved)	µg/L	See Attachment E
Volatile Organic Compounds	µg/L	USEPA Method 8260B
Semi-Volatile Organic Compounds	µg/L	USEPA Method 8270
Organophosphorus Pesticides	µg/L	USEPA Method 8141A
Chlorinated Herbicides	µg/L	USEPA Method 8151
Organochlorine Pesticides	µg/L	USEPA Method 8081A

Constituents of Concern	Units	Test Method
Polychlorinated Biphenols (PCBs)	µg/L	USEPA Method 8082

2. Concentration Limits (Section 20400)

- a. For VOCs and other organic COCs the concentration limit shall be the MDL.
- b. For inorganic monitoring parameters and COCs for which at least 10% of the data from background samples equal or exceed their respective MDL, the concentration limit shall be determined as follows:
 - i. Using the Tolerance Interval statistical procedure applied to historical background data, or
 - ii. Using an alternative statistical method approved by the Executive Officer per Monitoring Specification E.6 of the WDRs.
- c. For inorganic monitoring parameters and COCs for which less than 10% of the data from background samples equal or exceed their respective MDL, the concentration limit shall be the PQL.

Prior to calculating tolerance limits, background data shall be screened for significant rising or falling trends. If a significant trend is identified that reflects changes in background conditions, the trend data shall be used to update concentration limits. If not, concentration limits shall be developed only from prior historical data. Tolerance limits shall take into account seasonality.

3. Monitoring Points (Section 20405)

The monitoring points for groundwater monitoring shall be as listed in Table E.3A herein.

4. Point of Compliance (Section 20405)

The point of compliance (POC) for the water standard is a vertical surface located at the hydraulically down gradient limit of each Unit that extends through the uppermost aquifer underlying the Unit. The POC wells shall be MWs-D, E, E-1, LFW-2 and any future wells installed along the POC in the southern or northern fill areas or in the former Class II-1 area.

5. Compliance Period (Section 20410)

The compliance period for each Unit shall be the number of years equal to the active life of the Unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit. The compliance period shall begin anew each time the Discharger confirms a new release from the unit.

D. LEACHATE MONITORING

The Discharger shall monitor the landfill for leachate seeps **monthly** during the wet season and **quarterly** during the dry season as part of standard observations. Any leachate seeps observed during these inspections or at any other time shall be sampled and analyzed for the

constituents of concern referenced in Table C herein. Reporting shall be conducted in accordance with the Standard Provisions (*Provision 3, Reports to be Filed with the Board, REPORTING REQUIREMENTS*).

E. GROUNDWATER MONITORING

1. Groundwater Elevation Monitoring (Section 20415(e)(13))

The groundwater surface elevation (in feet and hundredths, MSL) in all wells and piezometers shall be measured on a **quarterly** basis. Groundwater elevations taken prior to purging the well and sampling for Monitoring Parameters may be used to fulfill this requirement. Groundwater elevations for all upgradient and down gradient wells for a given groundwater body shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater gradient and direction. The results of groundwater elevation monitoring shall be displayed on a water table contour map and/or groundwater flow net for the site and included in each monitoring report. The Discharger shall use the groundwater elevation monitoring data to determine the following:

- A. The groundwater flow velocity
- B. The gradient direction in the upper aquifer, and in any additional zone of saturation monitored pursuant to this MRP
- C. Times of highest and lowest elevations of the water levels in the wells
- D. Separation of groundwater from the lowest point of the unit

The results of these determinations shall be included in the semi-annual reports.

2. Background Monitoring (Section 20415(b)(1)(A))

The Discharger shall install and operate a sufficient number of Background Monitoring Points at appropriate locations and depths to yield ground water samples from the uppermost aquifer that represent the quality of ground water that has not been affected by a release from the units per Section 20415(b)(1)(A) of Title 27.

- A. Monitoring Points: As specified in Table E.3A.
- B. Monitoring Schedule: As specified in Table E.3B.

Background monitoring data analysis shall include developing/updating concentration limits for statistical monitoring parameters and COCs, as necessary.

3. Corrective Action Monitoring (Sections 20425 and 20430)

The Discharger shall install and operate a groundwater corrective action monitoring system for the purpose of monitoring the nature and extent of the release and the progress of corrective action. A sufficient number of samples shall be taken from all Monitoring Points and Background Monitoring Points to satisfy the data analysis requirements for a given Reporting Period, and shall be taken in a manner that ensures

sample independence to the greatest extent feasible. Collection and analysis of samples shall be in accordance with procedures set forth in the Sampling and Analysis Plan per the Standard Provisions (Provision 1, *Provisions for Monitoring*).

- A. The groundwater monitoring points for the Class III landfill and Former Class II-1 disposal area shall be as follows:

Table E.3A
Background and Corrective Action Monitoring Wells¹

Unit	Background	Down Gradient	Side Gradient
Former Class II-1 Area	A, E-12	D, LFW-2 and E-1	1, C, E-4 and E-21
Class III Landfill	A, E-12	D, LFW-2, and E	1, C, E-1, E-4 and E-21

1. Additional monitoring wells will be necessary to define the extent of the release per WDR Provision G.5.

The corrective action monitoring locations for each unit shall also include future wells installed along the point of compliance, down gradient, and/or side gradient of the unit to monitor the nature and extent of the release and/or progress of corrective action.

- B. Monitoring Schedule

Groundwater samples shall be collected and analyzed in accordance with the following schedule:

Table E.3B
Corrective Action Monitoring Schedule

Parameter	Units	Frequency	Monitoring Approach	
			Nature/Extent	Trends
Field Parameters				
Elevation	Feet MSL	Quarterly	---	---
Specific Conductance	µMhos/cm	Semiannually	---	---
pH	pH units	Semiannually	---	---
Temperature	°C	Semiannually	---	---
Turbidity	NTU	Semiannually	---	---
Monitoring Parameters (Attachment D)				

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>	<u>Monitoring Approach</u>	
			<u>Nature/Extent</u>	<u>Trends</u>
General Minerals				
TDS	mg/L	Semiannually	Interwell	Intrawell
Chloride	mg/L	Semiannually	Interwell	Intrawell
Total Alkalinity	mg/L	Semiannually	Interwell	Intrawell
Total Hardness	mg/L	Semiannually	Interwell	Intrawell
Major Anions	mg/L	Annually	Interwell, water chemistry	Intrawell
Major Cations	mg/L	Annually	water chemistry only	
VOCs	µg/L	Semiannually	Intrawell	Intrawell
Dissolved Inorganics	µg/L	Annually	Interwell/Intrawell 1	Intrawell
Constituents of Concern (Attachment E)		Every 5 years	Interwell/Intrawell 1	Intrawell

COC monitoring under this Order shall be conducted within five years of the last COC event under the previous Order and at least every five years thereafter.

C. Monitoring Data Analysis

Monitoring data analysis shall include the following:

- a. Background Data
 - Updating concentration limits for statistical monitoring parameters and COCs, as necessary.
- b. Nature and Extent of Release
 - Comparisons with concentration limit to identify any new or previously undetected constituents at a monitoring point
 - Water chemistry analysis by appropriate methods (i.e. ion balance, Piper diagram, Stiff diagram etc.).
 - Preparation of contaminant contour maps for representative constituents of the release.
- c. Effectiveness of Corrective Action
 - Preparation of time series plots for representative constituents
 - Trend analysis for each constituent using appropriate statistical and graphical methods (i.e., Mann-Kendall).
 - Comparison of contaminant contour maps for representative constituents of the release showing historical changes in plume size and concentrations.

The results of the above analysis, including a narrative discussion, shall be included in each semiannual report and summarized in the Annual Report, as specified under Reporting B.2, above. The semiannual monitoring report shall also include a discussion of the progress of corrective action toward returning to compliance with

the Water Quality Protection Standard, as specified in Section 20430(h) of Title 27.

F. FACILITY MONITORING

1. Standard Observations

Standard Observations shall be performed **monthly** during the wet season (October 1 to April 30) and **quarterly** during the dry season (May 1 to September 30) and shall include those elements identified in Definition 24 of the Standard Provisions. Each monitoring report shall include a summary and certification of completion of all Standard Observations in accordance with the Standard Provisions (*Provision 2h, Reports to be Filed with the Board, REPORTING REQUIREMENTS*). Field logs of standard observations shall also be included in the report.

2. Regular Maintenance Inspections

Landfill facilities (i.e. monitoring wells) shall be inspected **quarterly** to identify the need for maintenance and repairs. Necessary repairs shall be completed within 30 days of each inspection. Field logs of these inspections and documentation of the repairs shall be included in each semiannual monitoring report.

3. After Storm Events

Within seven days following each significant storm event (i.e. one which produces 2.0 inches or more of precipitation within a 24-hour period, as measured at the Auburn Station), the Discharger shall inspect the landfill cover and precipitation and drainage facilities for damage. Areas of erosion or sedimentation observed during the inspection(s) shall be flagged and repaired within seven days of identification. If repairs cannot be completed within the seven-day time frame, the Discharger shall notify the Regional Board of such and provide a schedule for completing necessary repairs. Findings and repairs implemented as a result of these inspections shall be included in each semiannual monitoring report. If no inspection was conducted because there was no significant storm event during the semiannual period, the report shall state such fact.

4. Site Winterization

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility for the purpose of winterizing the site. The inspection shall identify any damage to the landfill cover, grade, precipitation and drainage controls, access roads and other landfill facilities. Any necessary construction, maintenance, or repairs to these facilities shall be completed by **31 October**. The Discharger shall document the results of the winterization inspection and any repair measures implemented in the Annual Report due by **31 January** of each year.

MONITORING AND REPORTING PROGRAM ORDER NO. R5-2004-0086
CITY OF AUBURN
AUBURN PLACER DISPOSAL SERVICE
AUBURN LANDFILL
PLACER COUNTY

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Documentation of the results of the above inspections and any repairs implemented shall include field observations, the location of any damage observed (i.e. on a site map), photographs of the damage, and a description of any repairs implemented, including post-repair photographs.

The Discharger shall implement the above monitoring program on the effective date of this Program.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

4 June 2004

(Date)

Attachments
JDM:

INFORMATION SHEET

ORDER NO. R5-2004-0086
CITY OF AUBURN
AUBURN PLACER DISPOSAL SERVICE
AUBURN LANDFILL
PLACER COUNTY

This Class III landfill comprises 27.5 acres of a 41-acre site and includes northern and southern fill areas. The western and central portions of the southern fill area were filled from 1958 through 1979. The northern disposal area and the eastern portion of the southern disposal area were filled from 1979 to 1983. Approximately 750,000 cubic yards (375,000 tons) of solid waste were discharged to the landfill, primarily household refuse and nonhazardous industrial wastes. Waste disposal was by the cut and fill method. The base of fill ranges from about 1,420 feet MSL in the southwestern corner of the site to about 1,485 feet MSL in the northern fill area. Fill depths in the southern fill area ranged from about 5 feet (central portion) to 60 feet (northwestern portion). The maximum depth of waste in the northern fill area was about 44 feet in the crest area.

Prior to 1979, wastes were also discharged to an area immediately north of the landfill, classified as a Class II-1 unit under former Subchapter 15 regulations. Approximately 200,000 cubic yards of phenolic wastes were discharged to this unit.

The soil at the site consists of a thin (i.e. less than two inch thick) layer of sandy silt and sandy clay alluvium underlain by weathered, partially metamorphosed shale and sandstone. The average depth to bedrock ranges from about 15 feet below ground surface (bgs) along the southwest perimeter of the site to about 65 feet bgs in northern fill area. Bedrock at the site consists of sheared/fractured metavolcanic greenstone or schist and is exposed to the surface in the central and northwestern portions of the site.

Groundwater flow at the site is to the southwest at a gradient of approximately 0.03 ft/ft. Groundwater levels are influenced by fractures within the bedrock. The elevation of the uppermost aquifer ranges from about 1,475 feet MSL in the northern fill area (i.e. within sheared shale and sandstone) to about 1,425 feet MSL in the southwestern portion of the southern fill area (i.e. within weathered shale and sandstone or fractured greenstone bedrock). Groundwater elevations vary seasonally about 3 feet. Based on reported base refuse elevations and groundwater elevation monitoring data, seasonal high groundwater is likely coming into contact with landfill wastes in the southwestern portion of the landfill. Groundwater may also be entering the collection sump in this area.

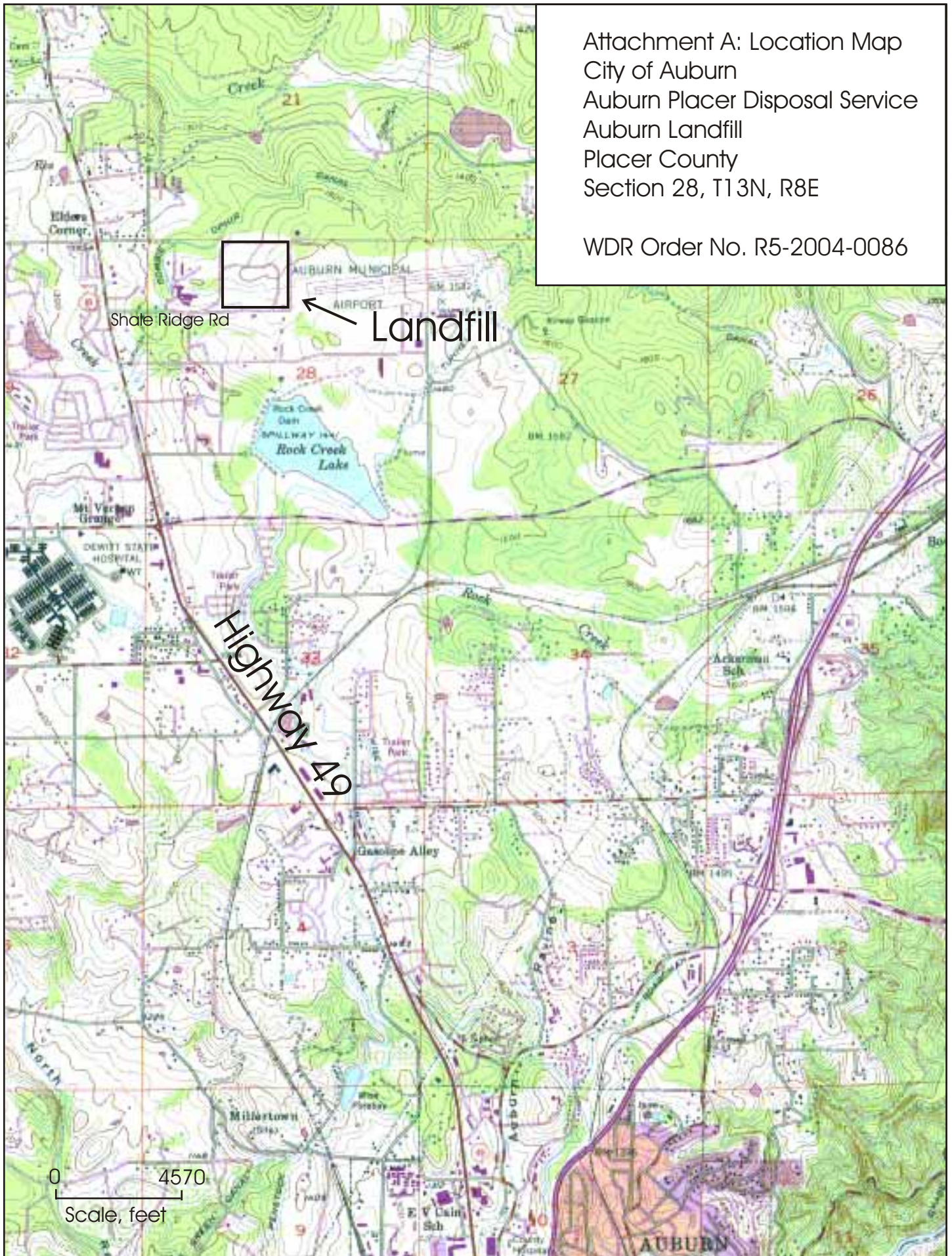
A 1987 Solid Waste Assessment Test (SWAT) investigation revealed the presence of volatile organic compounds (VOCs) and elevated concentrations of inorganic constituents in the groundwater and collection sump liquid. These VOCs included Benzene (up to 4 µg/L) Chlorobenzene (up to 6 µg/L), Chloroethane (up to 6 µg/L), 1,1-Dichloroethane (up to 4 µg/L), 1,4-Dichlorobenzene (up to 6 µg/L), Dichlorodifluoromethane (up to 20 µg/L), and Vinyl Chloride (up to 3 µg/L). The concentration of VOCs detected in groundwater monitoring

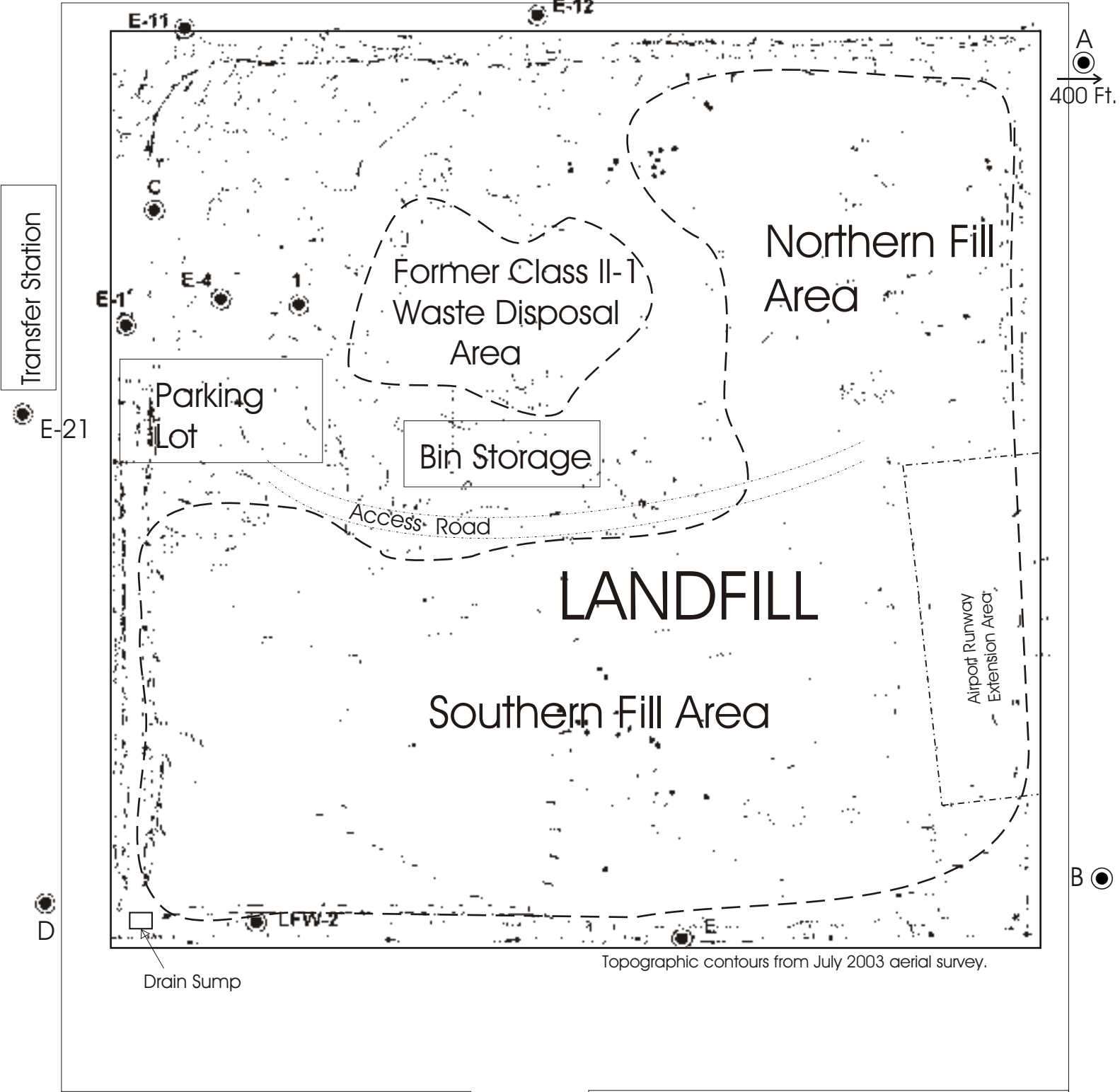
wells at the site have generally declined since 1987 and since 1998 have been detected only sporadically and at low to trace concentrations. With the exception of vinyl chloride, which has not been detected in the sump liquid since 1998, the same VOCs continue to be detected in the sump liquid. Their concentrations have remained relatively constant since 1987 except for seasonal variations. Elevated concentrations of inorganic constituents continue to be detected in the groundwater, however, including Chloride (up to 260 mg/L), Total Dissolved Solids (TDS, up to 1,160 mg/L), and Electrical Conductivity (EC, up to 1,970 mg/L). Background concentrations of these constituents are about 10 mg/L, 270 mg/L and 320 mg/L, respectively. The concentration of these inorganic constituents in the groundwater have increased since 1987.

The site receives an average of 34.3 inches per year. Surface water drainage is to Rock Creek (including Rock Creek Lake) about 3,000 feet south of the site. Rock Creek flows to the northwest into Dry Creek, tributary to Coon Creek, which flows into the Sacramento River.

Attachment A: Location Map
City of Auburn
Auburn Placer Disposal Service
Auburn Landfill
Placer County
Section 28, T13N, R8E

WDR Order No. R5-2004-0086



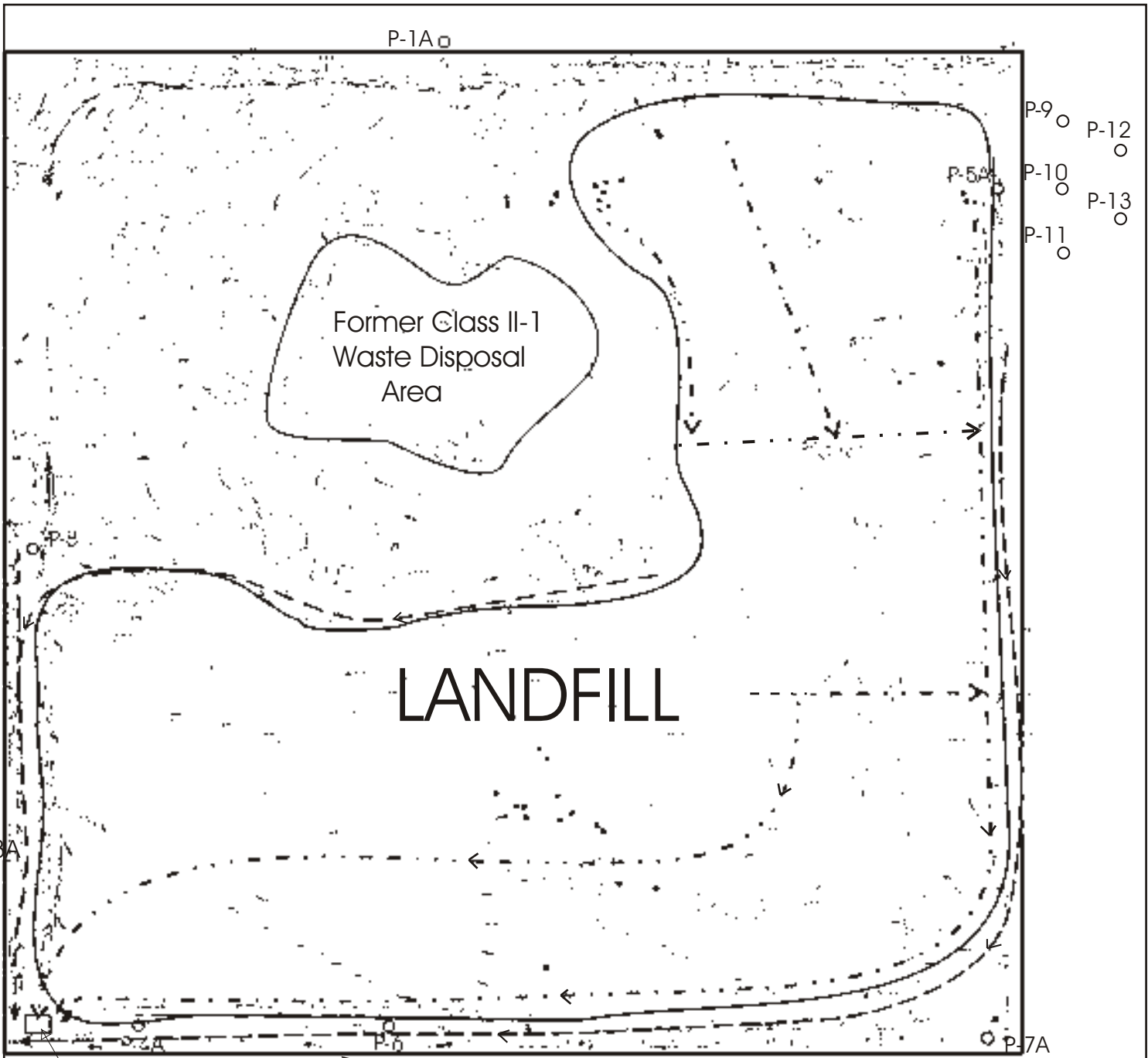


Legend

- Unit Perimeter
 - Site Boundary
 - Groundwater Monitoring Well
- 0 200 400
-
- Scale, Feet



Attachment B: Site Map
 City of Auburn
 Auburn Placer Disposal Service
 Auburn Landfill
 Placer County
 Section 28, T13N, R8E
 WDR Order No. R5-2004-0086



Topographic contours from July 2003 aerial survey.

Drain Sump

Site Boundary

Legend

- Unit Boundary
- <- - - - french drain
- ← - - - Storm Water Drain
- Gas Monitoring Well



Attachment C: Facility Map
 City of Auburn
 Auburn Placer Disposal Service
 Auburn Landfill
 Placer County
 WDR Order No. R5-2004-0086

ATTACHMENT D

MONITORING PARAMETERS & APPROVED USEPA ANALYTICAL METHODS

Field Parameters	USEPA Test Method
pH	----
Specific conductance	----
Temperature	----
Turbidity	----
General Minerals	USEPA Test Method
Total Dissolved Solids (TDS)	2540C
Total Alkalinity	2310B
Total Hardness	2340B
<u>Major Anions</u>	
Bicarbonate	2310B
Chloride	300 (anion scan)
Nitrate – Nitrogen	300 (anion scan)
Sulfates	300 (anion scan)
<u>Major Cations</u>	
Calcium	200.7 (trace method)
Magnesium	200.7 (trace method)
Potassium	200.7 (trace method)
Sodium	200.7 (trace method)
Dissolved Inorganics ¹	USEPA Test Method
Aluminum	200.7/6010
Antimony	200.7/6010
Arsenic	200.9/200.8
Barium	200.7/6010
Beryllium	200.7/6010
Cadmium	200.7/6010
Chromium	200.7/6010
Cobalt	200.7/6010
Copper	200.7/6010
Iron	200.7/6010
Lead	200.9/200.8
Manganese	200.7/6010
Mercury	7470A
Molybdenum	200.7/6010
Nickel	200.9/200.8

ATTACHMENT D (CON'T)

Selenium	200.9/200.8
Silver	200.7/6010
Sulfide	9030
Thallium	200.7/6010
Tin	200.7/6010
Vanadium	200.7/6010
Zinc	200.7/6010

Volatile Organic Compounds² (VOCs) (by USEPA Method 8260B):

Acetone
Acetonitrile
Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Tert-Amyl methyl ether
Benzene
Bromobenzene
Bromochloromethane
Bromodichloromethane
Bromoform (Tribromomethane)
Tert-Butyl alcohol
n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
tert-Butyl ethyl ether
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans-1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC-12)
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1,1 -Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane

ATTACHMENT D (CON'T)

2,2-Dichloropropene
1,1-Dichloropropene
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Ethylbenzene
Ethyl methacrylate
Hexachlorobutadiene
Hexachloroethane
2-Hexanone (Methyl butyl ketone)
Iodomethane (Methyl iodide)
Isobutyl alcohol
di-Isopropyl ether
Methacrylonitrile
Methyl bromide (Bromomethene)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK: 2-Butanone)
4-Methyl-2-pentanone (Methyl isobutylketone)
Methyl tert-butyl ether (MtBE)
Naphthalene
2-Nitropropane
n-Propylbenzene
Propionitrile
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane (Methylchloroform)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Vinyl chloride
Xylenes (total)

-
1. Samples shall be filtered prior to performing dissolved inorganics analysis.
 2. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte per the Standard Provisions (Provision 7, *Sampling and Analytical Methods, PROVISIONS FOR MONITORING*)

ATTACHMENT E

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

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pH	----
Specific conductance	----
Temperature	----
Turbidity	----
General Minerals	USEPA Test Method
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Sodium	200.7 (trace method)
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Antimony	200.7/6010
Arsenic	200.9/200.8
Barium	200.7/6010
Beryllium	200.7/6010
Cadmium	200.7/6010
Chromium	200.7/6010
Chromium VI ⁺	7199/1636
Cobalt	200.7/6010
Copper	200.7/6010
Cyanide	335.4/9010
Iron	200.7/6010
Lead	200.9/200.8
Manganese	200.7/6010
Mercury	7470A
Molybdenum	200.7/6010
Nickel	200.9/200.8

ATTACHMENT E (CON'T)

Selenium	200.9/200.8
Silver	200.7/6010
Sulfide	9030
Thallium	200.7/6010
Tin	200.7/6010
Vanadium	200.7/6010
Zinc	200.7/6010

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Acrylonitrile
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Bromodichloromethane
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n-Butylbenzene
sec-Butylbenzene
tert-Butylbenzene
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Carbon disulfide
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Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans-1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC-12)
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1,1 -Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane
2,2-Dichloropropene

ATTACHMENT E (CON'T)

1,1-Dichloropropene
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Ethylbenzene
Ethyl methacrylate
Hexachlorobutadiene
Hexachloroethane
2-Hexanone (Methyl butyl ketone)
Iodomethane (Methyl iodide)
Isobutyl alcohol
di-Isopropyl ether
Methacrylonitrile
Methyl bromide (Bromomethene)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK: 2-Butanone)
4-Methyl-2-pentanone (Methyl isobutylketone)
Methyl tert-butyl ether (MtBE)
Naphthalene
2-Nitropropane
n-Propylbenzene
Propionitrile
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane (Methylchloroform)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Vinyl chloride
Xylenes (total)

ATTACHMENT E (CON'T)

Semivolatile Organic Compounds² (USEPA Method 8270 - base, neutral, & acid extractables):

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
Bis(2-ethylhexyl) phthalate
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)
4-Bromophenyl phenyl ether
Butyl benzyl phthalate (Benzyl butyl phthalate)
p-Chloroaniline
p-Chloro-m-cresol (4-Chloro-3-methylphenol)
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene
o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Diethyl phthalate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
2,4-Dimethylphenol (m-Xylenol)
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Diphenylamine
Ethyl methanesulfonate

ATTACHMENT E (CON'T)

Famphur
Fluoranthene
Fluorene
Hexachlorobenzene
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isophorone
Isosafrole
Kepone
Methapyrilene
3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)
N-Nitrosodiethylamine (Diethylnitrosamine)
N-Nitrosodimethylamine (Dimethylnitrosamine)
N-Nitrosodiphenylamine (Diphenylnitrosamine)
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)
N-Nitrosomethylethylamine (Methylethylnitrosamine)
N-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
2,4,5-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene

ATTACHMENT E (CON'T)

Organochlorine Pesticides² (USEPA Method 8081A)

Aldrin
 α -BHC
 β -BHC
 γ -BHC (Lindane)
 δ -BHC
Chlorobenzilate
 α -Chlordane
 γ -Chlordane
Chlordane – not otherwise specified
DBCP
4,4'-DDD
4,4'-DDE
4,4'-DDT
Diallate
Dieldrin
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Endrin ketone
Heptachlor
Heptachlor epoxide
Hexachlorocyclopentadiene
Isodrin
Methoxychlor
Toxaphene

Polychlorinated Biphenols² (PCBs, USEPA Method 8082)

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260

Organophosphorus Pesticides² (USEPA Method 8141A):

Chlorpyrifos
Diazinon
Dimethioate
Disulfoton
Ethion
Famphur
Malathion

ATTACHMENT E (CON'T)

Parathion
Parathion-ethyl
Parathion-methyl
Phorate

Chlorinated Herbicides² (USEPA Method 8151A):

2,4-D (2,4-Dichlorophenoxyacetic acid)
Dicamba
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)
MCPA
MCPP
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)
Pentachlorophenol

-
1. Samples shall be filtered prior to performing dissolved inorganics analysis.
 2. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte per the Standard Provisions (Provision 7, *Sampling and Analytical Methods, PROVISIONS FOR MONITORING*)