

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

RESOLUTION NO. R5-2005-0049

CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS
FOR CITY OF CHICO PARK DEPARTMENT
FOR
CONSTRUCTION AND CLOSURE OF
HORSESHOE LAKE PARKING AREA E
BUTTE COUNTY

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

1. The City of Chico Park Department (City) owns and operates Bidwell Park for recreational activities, such as hiking, biking, equestrian trails, picnicking, and fishing.
2. In Upper Bidwell Park, a pistol range operated south of Big Chico Creek from the mid-1950s until April 1996 and a shooting range operated adjacent to Horseshoe Lake from the 1940s until April 1983. As a result of the activities at the former pistol and shooting range sites, lead and other wastes have contaminated soil in the park.
3. On 15 July 2002, the City entered into Voluntary Cleanup Agreement HSA/A 03/04-001 with the Department of Toxic Substances Control (DTSC) to remediate soil contaminated with polynuclear aromatic hydrocarbons and lead (contaminated soil) located at the former pistol and shooting range sites in accordance with the Health and Safety Code (HSC), Division 20, Chapter 6.8.
4. In June 2004, the City submitted to DTSC a Revised Removal Action Work Plan (RAW) for the former pistol and shooting range sites. The RAW proposes to transport contaminated soil containing polynuclear aromatic hydrocarbons to an approved off-site Class II waste disposal facility and consolidate lead contaminated soil on-site in a new waste management unit (Unit) beneath Horseshoe Lake Parking Area E as shown on Attachment A, which is incorporated herein and made part of this Resolution.
5. On 6 August 2004, the City, as lead agency pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and CEQA guidelines (14 California Code of Regulations Section 15000 et seq.), circulated an Initial Study and Negative Declaration, which evaluated the potential environmental impacts of remediating the two former shooting range sites. The City filed a Notice of Determination on 22 October 2004 in accordance with CEQA and CEQA guidelines.
6. To assist DTSC in evaluating compliance with applicable State and Regional Boards plans, policies, and regulations as required pursuant to HSC Section 25356.1.5, the Regional Board reviewed reports. On 1 September 2004, Regional Board staff requested that the City

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conduct additional soluble lead testing of available soil samples, using deionized water as the extractant (DI-WET), to provide a statistical representation of the contaminated soil proposed for consolidation in the Unit. The RAW specifies that contaminated soil exceeding a total lead concentration of 1,220 mg/Kg and one percent lead shot by volume will be placed in the Unit. The contaminated soil after relocation and consolidation is estimated to result in an average total lead concentration of 4,000 mg/Kg and a DI-WET solubility of 3.17 mg/L. The contaminated soil is considered a waste in accordance with California Water Code (CWC) section 13050. In addition, based upon the DI-WET solubility of the contaminated soil, waste discharges to groundwater or surface water may occur.

7. CWC Section 13260(a) requires that any person discharging wastes or proposing to discharge wastes within the region that could affect the quality of waters of the State, other than into a community sewer system, shall file with the appropriate Regional Board a Report of Waste Discharge containing such information and data as may be required by the Regional Board.

8. On 20 October 2004, the City submitted a Report of Waste Discharge to consolidate lead contaminated waste in the proposed new Unit.

9. The Water Quality Control Plan for the Sacramento River and the San Joaquin River Basin, Fourth Edition (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.

10. Water quality objectives listed in the Basin Plan include numeric water quality objectives for lead, e.g., state drinking water maximum contaminant levels (MCLs) that are incorporated by reference, and narrative water quality objectives, including the narrative toxicity objective and the narrative tastes and odors objective for surface and groundwater. Chapter IV of the Basin Plan contains the *Policy for Application of Water Quality Objectives*, which provides that “[w]here compliance with narrative objectives is required (i.e., where the objectives are applicable to protect specified beneficial uses), the Regional Water Board will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives.” The numerical limits for lead in the following table implements the Basin Plan water quality objectives.

CONSTITUENT	WATER QUALITY OBJECTIVE	LIMIT (µg/L)	REFERENCE FOR LIMIT
Total Lead	Chemical Constituents	15	California Primary MCL
Total Lead	Toxicity	2	California Public Health Goal
Dissolved Lead	Aquatic Life	Hardness Dependent ¹	Maximum Conc. (1-hr average.)
Dissolved Lead	Aquatic Life	Hardness Dependent ¹	Continuous Conc. (4-day average)

¹ See Attachment B, which is incorporated herein and made part of this Resolution.

Waste discharges resulting in exceedance of any applicable water quality objective in the Basin Plan constitutes pollution as defined in CWC Section 13050 and impairs the beneficial uses of water. The presence of waste in groundwater may cause nuisance as defined in CWC section 13050.

11. Surface drainage is toward Horseshoe Lake, which is tributary to Big Chico Creek, in the Butte Basin Hydrologic Area (520.40) of the Sacramento Hydrologic Basin. The estimated high water mark of Horseshoe Lake, a shallow man-made reservoir, is approximately 100 feet from the edge of the proposed Unit.

12. Consistent with the Basin Plan and applicable state and federal law, the beneficial uses of both Big Chico Creek and Horseshoe Lake are identified based on the designated uses for Big Chico Creek, to which Horseshoe Lake is tributary, and include agricultural supply, water contact and non-contact recreation, warm and cold freshwater habitat, migration of aquatic organisms, spawning, reproduction and/or early development of aquatic organisms, and wildlife habitat. Groundwater recharge and freshwater replenishment are not identified in the Basin Plan as beneficial uses of Big Chico Creek or Horseshoe Lake, but are existing beneficial uses of these water bodies because the level of water in Big Chico Creek and Horseshoe Lake is at a lower elevation than the groundwater table elevation adjacent to the creek and the lake during at least a portion of the year and because Big Chico Creek flows into the Sacramento River, thereby providing a source of freshwater replenishment for that water body. Because Big Chico Creek and Horseshoe Lake are sources of groundwater replenishment and beneficial uses of groundwater include municipal and domestic supply, the quality of water in Big Chico Creek and Horseshoe Lake could also affect the municipal and domestic supply beneficial use. Water samples collected from Horseshoe Lake in 2001 found lead concentrations ranging from <2.5 µg/L to 8.4 µg/L. The water within Horseshoe Lake, however, is typically turbid and contains suspended solids. Sufficient documentation is not available to determine if these sample results are representative of the actual concentrations of dissolved lead in the lake. Supporting analyses such as pH, alkalinity, and hardness were also not measured in 2001. Water samples collected in 2004 from the eastern arm of Horseshoe Lake were filtered to remove suspended solids and were analyzed for pH, alkalinity, hardness, and lead. In the 2004 samples, the hardness was 61 mg/L and dissolved lead was not detected above the detection limit of 0.5 µg/L. Sediment sampling of the lake in 2001 detected total lead concentrations ranging from 13 mg/Kg to 86 mg/Kg. The reported sediment concentrations are within the natural background range for lead in the vicinity of the shooting range.

13. The designated beneficial uses of groundwater, as specified in the Basin Plan, are domestic and municipal supply, agricultural supply, industrial service supply, and industrial process supply. The depth to groundwater, as determined in a domestic water supply well installed approximately 500 feet from the proposed Unit, is approximately 197 feet below ground surface. A water samples collected from the domestic well in 2004 did not detected lead above 5.0 µg/L, the laboratory detection limit.

14. Title 27 California Code of Regulations (CCR) section 20090 sets forth conditional exemptions to certain provisions of Title 27. Title 27 CCR section 20090(d) states as follows:

“Actions taken by or at the direction of public agencies to cleanup or abate conditions of pollution or nuisance resulting from unintentional or unauthorized releases of waste or pollutants to the environment [are exempt from the State Water Board provisions of Title 27]; provided that wastes, pollutants, or contaminated materials removed from the immediate place of release shall be discharged according to the SWRCB-promulgated sections of Article 2, Subchapter 2, Chapter 3, Subdivision 1 of this division (§20200 et seq.); and further provided that remedial actions intended to contain such wastes at the place of release shall implement applicable SWRCB-promulgated provisions of this division to the extent feasible.”

15. The RAW proposes to consolidate lead contaminated soil on-site in a new waste management unit (Unit). Since the contaminated soil (considered contaminated materials and waste as per CWC) will be removed from the immediate place of release and placed nearby in the new Unit, it is subject to the requirement of 27 CCR section 20090(d) to comply with 27 CCR sections 20200 et seq. In summary, those sections require the waste to be classified and disposed of in Units that comply with the containment requirements of Title 27 for that classification of waste.

16. Title 27 CCR Division 2 (Title 27) requires, among other requirements, approved Design Plans and Specifications for the Unit prior to construction that comply with the requirements of Title 27, including Construction Quality Assurance and Post-Closure Maintenance Plans, and a Final Report following construction. In addition, Title 27 requires a Deed Restriction for the Unit, Financial Assurances for reasonably foreseeable releases and post closure maintenance of the Unit, and Monitoring and Reporting.

17. The proposed Unit will be constructed directly on competent bedrock. Local and regional studies of bedrock underlying the proposed Unit demonstrate that the bedrock has a low hydraulic conductivity, as low as 1×10^{-9} to 3.5×10^{-10} centimeters per second, which exceeds the conductivity requirements for Class II units in Title 27. These studies also document that fracturing in the bedrock is not pervasive, and any fractures that do exist are proposed to be closed or filled so they do not act as conduits for fluid migration.

18. The City proposes to excavate the existing parking lot to bedrock, construct a sump within the bedrock to collect and monitor any free moisture that may enter the cell, and install a base liner system consisting of a 6-inch layer of clean fill over bedrock and a cover system over the waste, constructed from bottom to top, with a 0.25-inch geocomposite clay layer (GCL), a

40-mil LDPE geomembrane, a 0.3-inch geonet drainage layer, and 2-feet of cover soil. An additional 12-inches of gravel is proposed over the top deck to provide a surface for parking.

19. The proposed base liner system meets or exceeds the prescriptive or performance standards of Title 27 CCR Division 2 (Title 27) to prevent migration of wastes from the Unit to adjacent geologic materials, groundwater, or surface water.

20. DTSC has not made a formal waste classification determination regarding the contaminated soil being managed in the Unit. However, if the waste described in Finding 6 were determined as exhibiting the characteristics of hazardous waste, then DTSC has determined that such soil may be managed onsite within an area of contamination without triggering the hazardous waste management requirements, including permitting, closure and post-closure, or compliance with land disposal restrictions. Contaminated materials may be moved or consolidated within an area of contamination, treated in situ, or left in place. DTSC applies the area of contamination concept equally at hazardous waste corrective action sites, cleanups under state law, and other voluntary cleanups.

21. Title 27 section 20200(a)(1) allows the Regional Board to determine if a particular waste constituent or combination of constituents presents a lower risk of water quality degradation than that indicated by its classification. Although the waste (contaminated soil) described in Finding 6 appears to exhibit the characteristics of hazardous waste and/or designated waste, the waste is being disposed in a dedicated, site-specific, Class III Unit specifically designed and constructed to protect the beneficial uses described in Finding 10. Based on the particular waste constituent, the design of the proposed unit, the geologic characteristics of the area, and the distance to ground water (197 feet), the waste poses a lower risk of water quality degradation than that indicated by its characteristics as hazardous waste and/or designated waste.

22. Pursuant to HSC Division 20, Chapter 6.8, DTSC will require the City to submit Design Plans and Specifications, an Operation and Maintenance Plan, Deed Restriction, and Financial Assurances for the Unit. The DTSC Operation and Maintenance Plan, an equivalent of the Title 27 Post-Closure Maintenance Plan, will require monitoring of the Unit sump, Horseshoe Lake, and the domestic water supply well. Under the Voluntary Cleanup Program, and in accordance with HSC Division 20 Chapter 6.8, DTSC is responsible for enforcing and overseeing Construction, Operation and Maintenance, and the recording of a Deed Restriction for the Unit.

23. DTSC will oversee operation, maintenance, and monitoring of the Unit through enforceable agreements with the Discharger entered into under the authority set forth in Health and Safety Code section 25355.5(a)(1)(C), and are enforceable by DTSC pursuant to Health and Safety Code sections 25359.2 and 25359.3, or through an action for specific performance. The operation and maintenance agreement also includes requirements for continuing and periodic

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review of the effectiveness of the remedy as long as hazardous substances remain onsite. In addition, cap maintenance requirements, monitoring, soil management contingency plans, and institutional controls will be contained in a recorded land use covenant which is enforceable by DTSC and which runs with the land pursuant to Health and Safety Code sections 25222.1 and 25355.5(a)(1)(C), and Civil Code section 1471.

24. CWC section 13269 authorizes the Regional Board to waive waste discharge requirements as to a specific discharge or type of discharge if the Regional Board determines after any necessary Regional Board meeting that “the waiver is consistent with any applicable state or regional water quality control plan and is in the public interest”. A waiver may not exceed five years in duration but may be renewed. The waiver must be conditional and may be terminated at any time by the State or Regional Board. The waiver must also include monitoring unless the Regional Board determines that the discharges do not pose a significant threat to water quality.

25. The Regional Board finds that this waiver of waste discharge requirements is “in the public interest” and complies with other requirements of CWC section 13269 because:

- a. The site is regulated by DTSC pursuant to HSC Division 20, Chapter 6.8, pursuant to a Voluntary Agreement and DTSC may enforce compliance with that Agreement and the Removal Action Workplan to be approved for this site.
- b. DTSC, in compliance with Chapter 6.8, will require the City to submit Design Plans and Specifications, an Operation and Maintenance Plan, Deed Restriction, and Financial Assurances for the Unit.
- c. The DTSC Operation and Maintenance Plan, an equivalent of the Title 27 Post Closure Maintenance Plan, will require monitoring of the Unit sump, Horseshoe Lake, and the domestic water supply well.
- d. Under the Voluntary Cleanup Program, and in accordance with HSC Chapter 6.8, DTSC is responsible for enforcing and overseeing Construction, Operation and Maintenance, and the recording of a Deed Restriction for the Unit.
- e. HSC section 25356.1.5 requires any response action approved pursuant to Chapter 6.8 to be no less stringent than the federal National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300.400 et seq.): regulations, plans, and policies established pursuant to the CWC Division 7; and any applicable provisions of Chapter 6.8.
- f. This proposed waiver contains conditions that require the Unit to comply with applicable provisions of Title 27 CCR Division 2, including 27 CCR sections 20200 et seq. The proposed construction of the Unit and monitoring,

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deed restriction, financial assurance, operation and maintenance plan, design plans and specifications requirements will comply with the Title 27 standards.

- g. Failure to comply with the conditions of this Waiver set forth below under “THEREFORE BE IT RESOLVED”, may subject the Discharger to enforcement by the Regional Board pursuant to California Water Code Division 7, in particular section 13350.

26. The City of Chico Park Department as lead agency pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and CEQA guidelines (14 CCR Section 15000 et seq.) circulated an Initial Study and Negative Declaration, which evaluated the potential environmental impacts of remediating the two former shooting range sites located within Bidwell Park. The City of Chico filed a Notice of Determination on 22 October 2004 in accordance with CEQA and CEQA guidelines (14 CCR Section 15000 et seq.). The Regional Board, as a responsible agency under CEQA, reviewed the CEQA document and has included conditions in this waiver to address water quality requirements of the Regional Board.

27. This Order implements:

- a. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition;
- b. The prescriptive standards and performance goals of Title 27 CCR Division 2, Subdivision 1, Chapters 1 through 7, effective 18 July 1997, and subsequent revisions.

28. The proposed Unit and monitoring requirements are consistent with the Basin Plan.

29. The materials described in Finding 6 and the wastes proposed to be disposed at the waste management unit constitute wastes as defined in CWC section 13050. Disposal of such wastes in a waste management unit is subject to Title 27 CCR Division 2.

30. The Regional Board notified the Discharger and interested agencies and persons of its intent to adopt a waiver of waste discharge requirements for this discharge, and has provided them with an opportunity to submit their written comments.

31. 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 Title 23 of the California Code of Regulations Section 2050 through 2068. The State Water Resources Control Board, Office of Chief Counsel, must receive the petition within 30 days of the date of issuance of this Waiver.

32. The Regional Board held a public hearing on 17 March 2005 to receive comments on this waiver of waste discharge requirements as required by CWC section 13269.

THEREFORE BE IT RESOLVED, in accordance with California Water Code section 13269, that the California Regional Water Quality Control Board, Central Valley Region, has determined that, consistent with the Basin Plan, and to avoid a duplication of DTSC requirements, it is in the public interest to waive Waste Discharge Requirements for the City of Chico Park Department, For Construction and Closure of Horseshoe Lake Parking Area E, subject to the following conditions:

1. The City continues to participate in DTSC Voluntary Cleanup Agreement HSA/A 03/04-001.
2. The Unit is constructed to meet the prescriptive standards or an engineered alternative that is consistent with the performance goal of Title 27 CCR Division 2 that affords equivalent protection against water quality impairment as required by Title 27 CCR section 20080(b). The performance goal is to prevent migration of wastes from the Unit to adjacent geologic material, groundwater, or surface water.
3. The Unit will be constructed at Horseshoe Lake Parking Area E. The existing parking area will be excavated to bedrock and any observed open fractures will be sealed with an appropriate material that will prevent migration of waste to adjacent geologic material, groundwater, or surface water prior to installation of the base liner. The bedrock will be appropriately sloped to allow any free moisture that may enter the Unit to be collected in a sump constructed in the bedrock.
4. The Unit will, at a minimum, be constructed with a base liner system consisting of a 6-inch layer of clean fill over bedrock and a cover system over the waste, constructed from bottom to top, with a 0.25-inch thick geocomposite clay layer (GCL), a 40-mil LDPE geomembrane, a 0.3-inch geonet drainage layer, 2-feet of cover soil, and an additional 12-inches of gravel over the top deck for a parking surface.
5. The site shall be subject to a deed restriction that assures that the integrity of the Unit shall be maintained; financial assurances approved by DTSC; and monitoring of the Unit's sump, Horseshoe Lake, and the domestic water supply well.
6. The City shall comply with Monitoring and Reporting Program No. R5-2005-0049, which is incorporated herein and made part of this Resolution.

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7. The discharge of waste to the proposed Unit shall not create a condition of pollution or nuisance (as defined in CWC Section 13050) or cause or contribute to violations of the Basin Plan water quality objectives in waters of the State. The numerical limits for lead in the following table implements the Basin Plan water quality objectives.

CONSTITUENT	WATER QUALITY OBJECTIVE	LIMIT (µg/L)	REFERENCE FOR LIMIT
Total Lead	Chemical Constituents	15	California Primary MCL
Total Lead	Toxicity	2	California Public Health Goal
Dissolved Lead	Aquatic Life	Hardness Dependent ¹	Maximum Conc. (1-hr average.)
Dissolved Lead	Aquatic Life	Hardness Dependent ¹	Continuous Conc. (4-day average)

¹ See Attachment B, which is incorporated herein and made part of this Resolution.

8. This waiver of waste discharge requirements will terminate on 17 March 2010, unless renewed in compliance with CWC section 13269.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a true, full, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Central Valley Region, on 17 March 2005.

Original signed by

 THOMAS R. PINKOS, Executive Officer

KB/KLC: sae
 3/21/05

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2005-0049

CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR
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This monitoring and reporting program (MRP) incorporates requirements for groundwater monitoring of the nearby domestic water supply well and the collection sump constructed within the bedrock beneath Horseshoe Lake Parking Area E and surface water monitoring of Horseshoe Lake. All samples shall be analyzed by a California certified laboratory using appropriate analytical techniques to determine compliance with the Water Quality Objectives described in Finding 10 of Resolution No. R5-2005-0049. This MRP shall not be changed until a revised MRP is issued by the Regional Board Executive Officer.

VISUAL MONITORING

The Discharger shall inspect the collection sump monthly during the fourth and first calendar quarters of each year and report the presence or absence of liquid in the sump. If liquid is present, a monthly water sample shall be collected and analyzed in accordance with the following groundwater monitoring program.

GROUNDWATER MONITORING

Water samples shall be collected from the nearby domestic water supply well and collection sump liquid. Water samples collected from the domestic water supply well shall be analyzed annually for total lead. If the volume of liquid observed in the collection sump is adequate, a sample shall be collected monthly and analyzed for total and dissolved lead. Any additional monitoring required in the Operations and Maintenance Plan, developed by DTSC pursuant to Health and Safety Code section 6.8, shall also be reported.

SURFACE WATER MONITORING

Water samples shall be collected annually from Horseshoe Lake and/or its drainage courses and analyzed for total lead, dissolved lead, and hardness. Any additional monitoring required in the Operations and Maintenance Plan, developed by DTSC pursuant to Health and Safety Code section 6.8, shall also be reported.

REPORTING

In reporting the monitoring data, the Discharger shall arrange the data in a tabular form so that the date, the sample type (e.g. visual, groundwater, surface water, etc.) and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to illustrate clearly compliance with the Resolution.

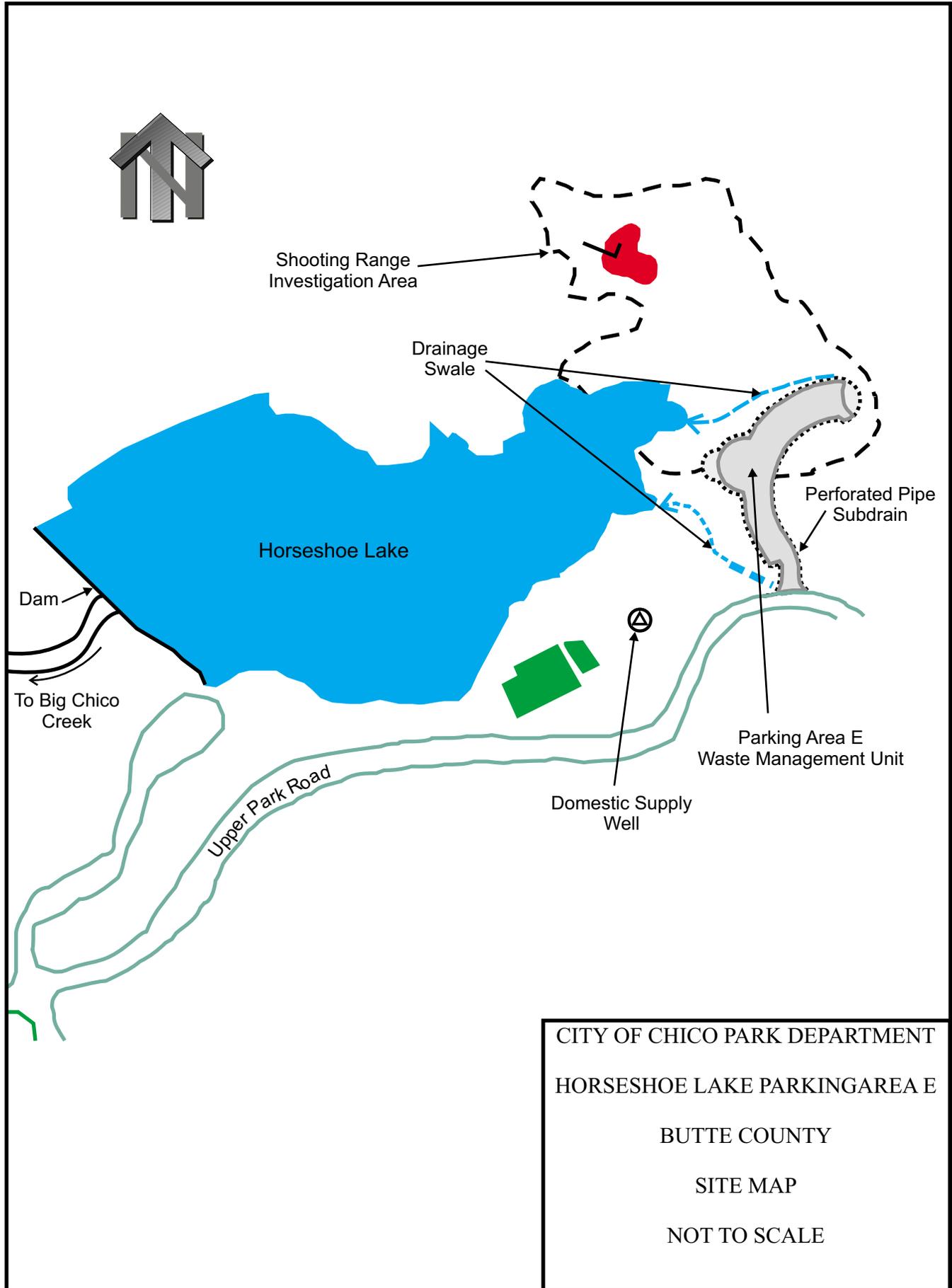
Annual reports shall be submitted to the Regional Board by the **1st day of the second month** following the calendar year. (i.e. the calendar year annual report is due by 1 March). In addition, all analytical sample results shall be submitted electronically over the Internet to the State Water Resources Control Board's Geotracker system **immediately upon completion by the laboratory.**

The results of any monitoring done more frequently that required at the locations specified in the MRP shall be reported to the Regional Board.

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

Ordered by: Original signed by
THOMAS R. PINKOS, Executive Officer

17 March 2005
(Date)



CITY OF CHICO PARK DEPARTMENT
HORSESHOE LAKE PARKING AREA E
BUTTE COUNTY
SITE MAP
NOT TO SCALE

WATER QUALITY LIMITS FOR CONSTITUENTS AND PARAMETERS
FRESHWATER AQUATIC LIFE - LEAD

California Toxics Rule and USEPA National Recommended Water Quality Criteria to Protect Freshwater Aquatic Life

Hardness (mg/L as CaCO ₃)	Dissolved		Lead (ug/L)		Total Recoverable	
	Continuous Conc. 4-day Average use formula	Maximum Conc. 1-hour Average use formula	Continuous Conc. 4-day Average use formula	Maximum Conc. 1-hour Average use formula	Continuous Conc. 4-day Average use formula	Maximum Conc. 1-hour Average use formula
< 25	0.54	14	0.54	14		
25	0.66	17	0.69	18		
30	0.79	20	0.84	21		
35	0.82	24	0.89	25		
40	1.0	27	1.2	30		
45	1.3	33	1.5	34		
50	1.4	37	1.7	43		
55	1.6	40	1.8	47		
60	1.7	44	2.0	52		
70	1.8	47	2.2	57		
80	2.0	51	2.4	61		
85	2.1	54	2.6	66		
90	2.2	58	2.8	71		
95	2.4	61	3.0	76		
100	2.5	65	3.2	82		
110	2.8	72	3.6	92		
120	3.1	79	4.0	100		
130	3.3	86	4.4	110		
140	3.6	93	4.9	130		
150	3.9	100	5.3	140		
160	4.2	110	5.8	150		
170	4.5	110	6.3	160		
180	4.7	120	6.7	170		
190	5.0	130	7.2	180		
200	5.3	140	7.7	200		
210	5.6	140	8.2	210		
220	5.9	150	8.7	220		
230	6.2	160	9.2	240		
240	6.4	170	9.7	250		
250	6.7	170	10	260		
260	7.0	180	11	280		
270	7.3	190	11	290		
280	7.6	190	12	300		
290	7.8	200	12	320		
300	8.1	210	13	330		
310	8.4	220	13	340		
320	8.7	220	14	360		
330	9.0	230	15	370		
340	9.3	240	15	390		
350	9.5	240	16	400		
360	9.8	250	16	420		
370	10	260	17	430		
380	10	270	17	450		
390	11	270	18	460		
400	11	280	19	480		
> 400	11	280	19	480		

