

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2003-0082

WASTE DISCHARGE REQUIREMENTS  
FOR  
McCLOUD COMMUNITY SERVICES DISTRICT  
FOR CLOSURE OF  
McCLOUD CLASS III MUNICIPAL SOLID WASTE LANDFILL  
SISKIYOU COUNTY

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

1. The McCloud Community Services District (hereafter Discharger) owns and operates a municipal solid waste landfill about 0.75 miles east of the town of McCloud, in Sections 6 and 7, T39N, R2W, MDB&M, as shown in Attachment A, which is incorporated herein and made part of this Order.
2. The 28.2 acre facility consists of several existing waste disposal trenches that make up one unlined waste management unit (Unit) covering approximately 14 acres, as shown in Attachment B, which is incorporated herein and made part of this Order. A solid waste transfer station occupies most of the remaining property. The facility is comprised of Assessor's Parcel Numbers (APN) 49-06-22, 49-07-05, and 28-44-41.
3. The landfill began operations as an open dump in the early 1950s by Champion International Corporation. In 1975, the McCloud Community Services District began operating the site as a sanitary landfill. In 1986, the site was deeded to the McCloud Community Services District by Champion International Corporation.
4. The facility ceased accepting municipal solid waste for disposal in July 1995 and wood waste in July 2002. The Discharger proposes to permanently close the Unit in accordance with the approved October 2002 Final Closure and Post-Closure Maintenance Plans and the 29 January 2003 Final Closure and Post-Closure Maintenance Plan Revisions.
5. On 27 October 1989, the Regional Board issued Order No. 89-203, in which the facility was classified as a Class III waste disposal site for the discharge of municipal solid wastes and wood wastes in accordance with the regulations in effect when the order was issued. This Order is not in conformance with Title 27, California Code of Regulations, Division 2, Subdivision 1 (hereafter Title 27) or Title 40 of the Code of Federal Regulations, Part 258 (hereafter Subtitle D).

6. On 17 September 1993, the Regional Board adopted Order No. 93-200, amending Order No. 89-203 and implementing State Water Resources Control Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*.

### SITE DESCRIPTION

7. Site geology consists of tuff deposits that are underlain by fractured basalt and massive andesite, which in turn, is underlain by a deep unit consisting of red cinders and flowing sands at an approximate depth of 210 feet. Surface soils consist of clay, silt, sand, gravel, and cobbles derived from tuffs and alluvial deposits of reworked tuff mixed with coarse gravel deposits. The tuff deposits are irregular and lenticular. This formation is approximately 120 feet thick and exhibits a permeability rate of approximately  $1.6 \times 10^{-6}$  cm/sec.
8. An active unnamed quaternary fault is located within one mile southwest of the site. An open section of the fault is visible in Pond No. 2 of the McCloud Community Services District sewage treatment plant.
9. Land use in the vicinity of the site is vacant forest land in public and private ownership. There are no permanent structures within 1,000 feet of the facility.
10. The facility receives an average of 49.99 inches of precipitation per year as measured in McCloud, based on 48 years of records. The mean annual evaporation is approximately 50 inches per year, based on data from the California Department of Water Resources.
11. The 100-year, 24-hour precipitation event is estimated to be 7.5 inches, based on records from the McCloud Community Services District.
12. The waste management facility is not within a 100-year flood plain.
13. There are at least 2 domestic water supply wells within 1,000 feet of the site. The wells are located hydraulically up gradient of the landfill on assessor parcel numbers 049-061-470 and 049-061-460. No surface springs or other sources of groundwater supply have been observed within 1,000 feet of the site.

### SURFACE WATER AND GROUNDWATER CONDITIONS

14. Surface drainage is toward Squaw Valley Creek, which is a tributary of the McCloud River, in the Squaw Valley Hydrologic Area (505.22) of the Sacramento Hydrologic Basin.
15. The *Water Quality Control Plan for the Sacramento River Basin and 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.

16. The Basin Plan on page II-2.00 states that: "Existing and potential beneficial uses which currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. The beneficial uses of any specifically identified water body generally apply to its tributary streams." Application of the tributary rule requires the beneficial uses of any specifically identified water body apply to its tributary streams. The Basin Plan does not identify any beneficial uses specifically for Squaw Valley Creek, but does identify present and potential uses for the McCloud River, to which Squaw Valley Creek is tributary.

The Basin Plan identifies the following beneficial uses for the McCloud River: domestic supply; water contact and non-contact recreation; cold freshwater habitat, spawning, reproduction, and/or early development of fish; and preservation and enhancement of fish, wildlife and other aquatic resources. In addition, State Board Resolution 88-63, incorporated into the Basin Plan pursuant to Regional Board Resolution 89-056, requires the Regional Board to assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in Table II-1.

Upon review of the flow conditions, habitat values, and beneficial uses of Squaw Valley Creek, the Regional Board finds that beneficial uses identified in the Basin Plan for the McCloud River are applicable to Squaw Valley Creek. The Basin Plan defines the beneficial uses, and with respect to disposal of wastewaters, states that "... disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses." The Regional Board finds that the beneficial uses identified in the Basin Plan for the McCloud River are applicable to Squaw Valley Creek based upon the following facts:

a. *Domestic Supply*

The State Water Resources Control Board (SWRCB) has issued water rights to existing water users along Squaw Valley Creek and the McCloud River for domestic uses.

b. *Water Contact and Noncontact Recreation and Esthetic Enjoyment*

Prior to discharge into the McCloud River, Squaw Valley Creek flows through areas of general public access. The McCloud River also offers recreational opportunities.

c. *Preservation and Enhancement of Fish, Wildlife and Other Aquatic Resources.*

Squaw Valley Creek flows into the McCloud River. The California Department of Fish and Game (DFG) has verified that the fish species present in Squaw Valley Creek and downstream waters are consistent with cold water fisheries and that trout, a cold water species, have been found both upstream and downstream of the point where the facility's discharge reaches Squaw Valley Creek. The Basin Plan (Table II-1) designates the McCloud River as a cold freshwater habitat. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold designation applies to the Squaw Valley Creek. The cold freshwater habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/l.

The beneficial uses of any specifically identified water body generally apply to its tributary streams. The Regional Board finds that, based on hydraulic continuity, aquatic life migration, existing and potential water rights, and the reasonable potential for contact recreational activities, that the beneficial uses of the McCloud River apply to Squaw Valley Creek.

17. The Basin Plan states that "*Water Bodies within the basins that do not have beneficial uses designated in Table II-1 are assigned MUN designations in accordance with the provisions of State Water Board Resolution No. 88-63 which is, by reference, a part of this Basin Plan.*" State Water Resources Control Board Resolution No. 88-63 "Sources of Drinking Water" provides that "*All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards...*". The beneficial use of municipal and domestic supply is applicable to Squaw Valley Creek based on Resolution 88-63, the Basin Plan tributary rule, and actual uses.
18. The first encountered groundwater is about 190 feet below the native ground surface. Groundwater elevations range from 3,086 feet MSL to 3,095 feet MSL. The hydraulic gradient is generally from northwest to southeast. Movement of groundwater beneath the site is within fractured basalts, lava tubes, and other geologic phenomenon such as flowing sands, and is difficult to measure.
19. Monitoring data obtained since 1993 indicates background groundwater quality is excellent, and has an electrical conductivity (EC) ranging between 60 and 110 micromhos/cm and total dissolved solids (TDS) ranging between 49 and 112 mg/l.
20. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal supply, agricultural supply, industrial service supply, and industrial process supply.

### GROUNDWATER MONITORING

21. Three groundwater monitoring wells were installed in 1988 as part of the SWAT investigation. Monitoring well OB-1 is located hydraulically up gradient of the Unit along the north boundary of the landfill, and is 216 feet deep with a screen interval of 195 to 215 feet below ground surface (BGS). Well OB-2 is located hydraulically cross gradient of the Unit along the west fill boundary, and is 230 feet deep with a screen interval of 209 to 229 feet BGS. Well OB-3 is located hydraulically down gradient of the Unit along the south fill boundary, and is 208 feet deep with a screen interval of 187 to 207 feet BGS. The landfill is unlined, and no vadose zone monitoring occurs at the site.
22. The Discharger submitted a 20 October 1999 Water Quality Protection Standard (WQPS) Report that established constituents of concern, their concentration limits, the point of compliance, and the compliance period for the Water Quality Protection Standard. Additionally, the Discharger submitted a 6 March 2003 WQPS Report Addendum revising the statistical method used to evaluate groundwater monitoring data and establishing new concentration limits for each monitoring point.
23. The Discharger's detection monitoring program for groundwater at this Unit does satisfy the requirements contained in Title 27.
24. Volatile organic compounds (VOCs) are often detected in a release from a landfill, and are the primary waste constituents detected in groundwater beneath a municipal solid waste landfill. Since volatile organic compounds are not naturally occurring and thus have no background value, they are not amenable to the statistical analysis procedures contained in Title 27 for the determination of a release of waste from a Unit.
25. Sections 20415(e)(8) and (9) of Title 27 provide for the non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a Unit in accordance with §20415(b)(1)(B)(2-4) of Title 27. However, Title 27 does not specify a specific method for non-statistical evaluation of monitoring data.
26. The Regional Board may specify a non-statistical data analysis method pursuant to Section 20080(a)(1) of Title 27. Section 13360(a)(1) of the California Water Code allows the Regional Board to specify requirements to protect underground or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.
27. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a Unit, this Order specifies a non-statistical method for the evaluation of monitoring data.

28. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a Unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL), may indicate that a release of waste from a Unit has occurred. Following an indication of a release, verification testing will be conducted to determine whether there has been a release from the Unit, or there is a source of the detected constituents other than the landfill, or the detection was a false detection. Although the detection of one non-naturally occurring waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release, the detection of two non-naturally occurring waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL as a trigger.

#### **CLOSURE CONSTRUCTION AND ENGINEERED ALTERNATIVE**

29. Section 20080(b) of Title 27 allows the Regional Board to consider the approval of an engineered alternative to the prescriptive construction standards of Title 27. In order to approve an engineered alternative in accordance with Section 20080(c)(1) and (2), the Discharger must demonstrate that the prescriptive design is unreasonably and unnecessarily burdensome and will cost substantially more than an alternative which will meet the criteria contained in Section 20080(b), or would be impractical and would not promote attainment of applicable performance standards. The Discharger must also demonstrate that the proposed engineered alternative is consistent with the performance goal addressed by the particular prescriptive standard, and provides protection against water quality impairment equivalent to the prescriptive standard in accordance with Section 20080(b)(2) of Title 27.
30. Section 13360(a)(1) of the California Water Code allows the Regional Board to specify the design, type of construction, and/or particular manner in which compliance must be met in waste discharge requirements or orders for the discharge of waste at solid waste disposal facilities.
31. The Discharger submitted final closure and post-closure maintenance plans that propose an engineered alternative final cover system consisting of, in ascending order: a one foot soil foundation layer, a 32 ounce per square yard nonwoven geotextile, a 60 millimeter high density polyethylene barrier layer, a 16 ounce per square yard nonwoven geotextile, and an 18 inch soil vegetative layer. A passive gas venting system, consisting of two 600 foot lengths of PVC pipe that cross at the top of the landfill with a vent pipe installed through the cap at the high point, will be installed below the foundation layer.

32. The Discharger has adequately demonstrated that construction of a Title 27 prescriptive final cover system would be unreasonable and unnecessarily burdensome when compared to the proposed engineered alternative design. There is no soil borrow area at or near the site for use in constructing the foundation layer or the vegetative layer of the final cover system. Importing additional soil for constructing a two-foot foundation layer in accordance with the prescriptive standards of Title 27 would cost substantially more than the proposed engineered alternative. The Discharger has demonstrated that the proposed engineered alternative is consistent with the performance goals of the prescriptive standard and affords equivalent or better protection against water quality impairment.
33. Closure construction will proceed only after all applicable final closure and post-closure maintenance plans, including construction quality assurance plans, have been approved by the Executive Officer.

#### CEQA AND OTHER CONSIDERATIONS

34. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code §21000, et seq., and the CEQA guidelines, in accordance with Title 14, CCR, §15301.
35. 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 Chapters 1 through 7, Subdivision 1, Division 2, Title 27, of the California Code of Regulations, effective 18 July 1997, and subsequent revisions;
  - c. The prescriptive standards and performance criteria of RCRA Subtitle D, Part 258; and
  - d. State Water Resources Control Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*, adopted 17 June 1993.

#### PROCEDURAL REQUIREMENTS

36. 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 discharges of waste to land stated herein and for site closure.
37. The Regional Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for site closure, and has provided them

with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

38. The Regional Board, in a public meeting, heard and considered all comments pertaining to site closure.
39. 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](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. 89-203 is rescinded, and Attachment 1 of Order No. 93-200 is amended to delete the McCloud Class III Landfill, which is on line No. 44, and that the McCloud Community Services District, its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

**A. PROHIBITIONS**

1. The discharge of 'hazardous waste' or 'designated waste' is prohibited. For the purposes of this Order, the term 'hazardous waste' is as defined in Title 23, California Code of Regulations, Section 2510 et seq., and 'designated waste' is as defined in California Water Code, Section 13173.
2. The discharge of wastes outside of a Unit or portions of a Unit specifically designed for their containment is prohibited.
3. The discharge of waste to a closed Unit is prohibited.
4. The site shall be maintained so that pollutants or waste constituents are not released in a manner that could cause a condition of nuisance, degradation, contamination, or pollution of groundwater, as indicated by the most appropriate statistical or non-statistical data analysis method and retest method listed in this Order, the Monitoring and Reporting Program, or the Standard Provisions and Reporting Requirements.
5. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or groundwater is prohibited.

**B. FACILITY SPECIFICATIONS**

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.
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, which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
3. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control, and construction.
4. The Discharger shall maintain in good working order any facility control system or monitoring device installed to achieve compliance with the waste discharge requirements.
5. Methane and other landfill gases shall be adequately vented, removed from the Unit, or otherwise controlled to prevent the danger of adverse health effects, nuisance conditions, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.
6. Surface drainage within the waste management facility shall either be contained on-site or discharged in accordance with applicable storm water regulations.
7. The Discharger shall maintain a *Storm Water Pollution Prevention Plan and Monitoring Program and Reporting Requirements* in accordance with State Water Resources Control Board Order No. 97-03-DWQ, or retain all storm water on-site until such time that the landfill cap is stabilized ensuring that sediment is adequately contained at the Unit.

**C. CLOSURE CONSTRUCTION SPECIFICATION**

1. The Discharger shall comply with Section 20950 of Title 27 – General Closure and Post-Closure Maintenance Standards Applicable to Waste Management Units for Solid Waste.
2. The Discharger shall comply with Section 21090 of Title 27 – Closure and Post-Closure Maintenance Requirements for Solid Waste Landfills.
3. The Discharger shall close the landfill and construct an engineered alternative final cover system in accordance with the design described in this Order, the October 2002 *Final Closure and Post-Closure Maintenance Plans*, and the 29 January 2003 *Final Closure and Post-Closure Maintenance Plan Revisions*.

4. The approved engineered alternative final cover system shall be constructed in accordance with the following design, in ascending order: a one foot soil foundation layer, a 32 ounce per square yard nonwoven geotextile, a 60 millimeter high density polyethylene barrier layer, a 16 ounce per square yard nonwoven geotextile, and an 18 inch soil vegetative layer. A passive gas venting system will be installed across the landfill cap, just below the foundation layer.
5. The Discharger may propose changes to the final cover system design prior to construction, provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and the proposed final closure system results in the protection of water quality equal to or greater than the design prescribed by Title 27 and this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation as an engineered alternative, with approval by the Regional Board.
6. The closed Unit shall be graded to at least a three percent grade and maintained to prevent ponding.
7. The closed Unit shall be provided with two permanent monuments, installed by a licensed land surveyor, from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period.
8. The Discharger shall complete all construction activities associated with closure of the entire landfill facility **by 15 October 2003**.
9. Following completion of construction of the final cover system, the final documentation required in §20324(d)(1)(C) of Title 27 shall be submitted to the Executive Officer for review and approval. The report shall be certified by a registered civil engineer or a certified engineering geologist. It shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, and with the performance goals of Title 27. The final documentation of site closure shall be submitted **by 1 December 2003**.
10. Closure shall not proceed in the absence of closure waste discharge requirements.

**D. DETECTION MONITORING SPECIFICATIONS**

1. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater and surface water in accordance with Monitoring and Reporting Program No. R5-2003-0082.

2. 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.
3. The Discharger shall comply with the 20 October 1999 Water Quality Protection Standard (WQPS) Report and the 6 March 2003 WQPS Addendum No. 1 Report, Monitoring and Reporting Program No. R5-2003-0082, and the Standard Provisions and Reporting Requirements, dated April 2000.
4. The Discharger shall calculate concentration limits for naturally occurring monitoring parameters and constituents of concern that are not included in the 6 March 2003 Water Quality Protection Standard Addendum No. 1 Report once sufficient data is collected. Water Quality Protection Standard concentration limits may be recalculated annually based on additional data from background monitoring points. Proposed concentration limit revisions shall be submitted in the Annual Monitoring Summary Report, **due 31 January each year**.
5. The Discharger shall evaluate monitoring data collected during each semiannual sampling event using statistical procedures described in the 6 March 2003 Water Quality Protection Standard Report (or some other statistical procedure approved by the Executive Officer), in order to determine whether a release of waste has occurred in the earliest possible time frame.
6. 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. R5-2003-0082 and §20415(e) of Title 27.
7. The Water Quality Protection Standard for organic compounds that are not naturally occurring and not detected in background groundwater samples shall be taken as the detection limit of the analytical method used (i.e., USEPA methods 8260B and 8270C). The presence of non-naturally occurring organic compounds in samples above the Water Quality Protection Standard from detection monitoring wells may be evidence of a release from the Unit.
8. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to the Water Quality Protection Standard and Monitoring and Reporting Program No. R5-2003-0082.
9. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall be taken **within a span not to exceed 30 days**, unless the

Executive Officer approves a longer time period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible.

10. Specific methods of sample collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) *Methods for the Analysis of Organics in Water and Wastewater* (USEPA 600 Series), (2) *Test Methods for Evaluating Solid Waste* (SW-846, latest edition), and (3) *Methods for Chemical Analysis of Water and Wastes* (USEPA 600/4-79-020), and in accordance with an approved Sample Collection and Analysis Plan.
11. The Discharger shall submit for Executive Officer review and approval a Sample Collection and Analysis Plan. The Sample Collection and Analysis Plan shall at a minimum include:
  - a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
  - b. Sample preservation information and shipment procedures;
  - c. Sample analytical methods and procedures;
  - d. Sample quality assurance/quality control (QA/QC) procedures; and
  - e. Chain of Custody control.
12. If methods other than USEPA approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval by the Executive Officer prior to use.
13. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90 percent non-numerical determinations (i.e., "trace" or "ND") in data from background monitoring points for that medium, the analytical method having the lowest method detection limit (MDL) shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.
14. **"Trace" results** - results falling between the MDL and the practical quantitation limit (PQL) - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.

15. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.
16. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. **The MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99 percent reliability of a nonzero result.** The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.
17. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.
18. Unknown chromatographic peaks shall be reported, flagged, and tracked for potential comparison to subsequent unknown peaks that may be observed in future sampling events. Identification of unknown chromatographic peaks that recur in subsequent sampling events may be required.
19. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to §20415(e)(7) of Title 27 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 §20415(e)(7) of Title 27, shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22,

California Code of Regulations, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient 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 non-statistical 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".

20. The Discharger may propose an alternate statistical method [to the methods listed under 27 CCR §20415(e)(8)(A-D)] in accordance with §20415(e)(8)(E) of Title 27, for review and approval by the Executive Officer. Upon receiving written approval from the Executive Officer, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Board staff.
21. The Discharger shall use the following non-statistical method for the  $VOC_{water}$  monitoring parameters and for all constituents of concern (COC), which are not amenable to the statistical tests above (i.e., less than 10 percent of the data from background samples that equal or exceed their respective MDL). The term  $VOC_{water}$  is defined in Detection Monitoring Specification D.22.a and COC is defined in Detection Monitoring Specification D.22.b. Each qualifying constituent at a monitoring point shall be determined based on either:
  - a. The data from a single sample for that constituent, taken during that reporting period from that monitoring point; or
  - b. The data from the sample that contains the largest number of qualifying constituents, where several independent samples have been analyzed for that constituent at a given monitoring point.

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).
22. The method shall be implemented as follows:
  - a. *For the Volatile Organic Compounds Monitoring Parameter For Water Samples [ $VOC_{water}$ ]:* For any given monitoring point, the  $VOC_{water}$

monitoring parameter is a composite parameter addressing all "qualifying VOCs" (in this case, VOCs that are detected in less than 10 percent of background samples).

The Discharger shall conduct verification testing (see Detection Monitoring Specification D.23 and D.25 below, as appropriate) to determine whether a release of VOC<sub>water</sub> monitoring parameter has occurred if the data for any monitoring point meets either of the following triggering conditions:

- 1) The data contains two or more qualifying VOCs that equal or exceed their respective MDLs; or
  - 2) The data contains one qualifying VOC that equals or exceeds its PQL.
- b. *For Constituents of Concern:* For five-yearly testing of all constituents of concern (COCs), the "qualifying constituents" consist of COCs that are detected in less than 10 percent of applicable background samples.

The Discharger shall conduct verification testing (see Detection Monitoring Specification D.23 and D.25 below, as appropriate) to determine whether a release of COCs has occurred if the data for any monitoring point meets either of the following triggering conditions:

- 1) The data contains two or more qualifying constituents that equal or exceed their respective MDLs; or
  - 2) The data contains one qualifying constituent that equals or exceeds its PQL.
23. **Non-Statistical Method Retest.** A non-statistical test method may be used by the Discharger to analyze the monitoring data for which it is impractical to conduct a statistical analysis. A non-statistical test method shall include a procedure to verify that there is "measurably significant" evidence of a release from the Unit. For the VOC<sub>water</sub> and non-statistical COC test, the Discharger shall use a discrete retest consisting of two new samples from each indicating monitoring point. The Discharger shall conduct the retest for the standard non-statistical method as follows:
- a. **For VOC<sub>water</sub>:** Because the VOC composite monitoring parameter is a single parameter which addresses an entire family of constituents likely to be present in any landfill release, **the scope of the laboratory analysis for each of the two retest samples shall include all VOCs detectable in that retest sample.** Therefore, a confirming retest, in accordance with Detection Monitoring

Specification D.22.a above, for either triggering condition in either of the two retest samples, shall have validated the original indication even if the detected constituents in the confirming retest sample(s) differs from those detected in the sample which initiated the retest.

- b. **For Constituents of Concern.** Because all constituents of concern that are jointly addressed in the non-statistical test above, remain as individual constituents of concern, **the scope of the laboratory analysis for the non-statistical retest of constituents of concern shall address only those constituents detected in the sample which initiated the retest.** Therefore, the list of "qualifying constituents" for use in the retest, under Detection Monitoring Specification D.22.b above, shall consist of those constituents which provided the original indication at that monitoring point. If the retest meets either triggering condition in either of the two retest samples, the retest shall have validated the original indication.

24. **Response to Detection in Background of VOCs** (or any other constituent which is not naturally in the background and thus is not amenable to statistical analysis):

- a. Any time the laboratory analysis of a sample from a background monitoring point, sampled for VOCs, shows either:
- 1) Two or more VOCs at or above their respective MDL; or
  - 2) One VOC at or above its respective PQL.

Then the Discharger shall:

- a) **Immediately** notify the Regional Board by phone;
  - b) Follow up with written notification by certified mail **within seven days**;
  - c) Obtain **two** new independent VOC samples from that background monitoring point; and
  - d) Send such samples for laboratory analysis of all detectable VOCs **within thirty days**.
- b. If either or both the new samples validates the presence of VOC(s), using the above criteria, the Discharger shall:
- 1) **Immediately** notify the Regional Board about the VOC(s) verified to be present at that background monitoring point, and follow up with written

notification submitted by certified mail **within seven days** of validation;  
and

- 2) If the Discharger believes that the VOC(s) in background is from a source other than the Unit, then:
  - a) **Within seven days** of determining "measurably significant" evidence of a release, submit to the Regional Board by certified mail a Notification of Intent to make such a demonstration pursuant to §20420(k)(7) of Title 27; and
  - b) **Within 90 days** of determining "measurably significant" evidence of a release, submit a report to the Regional Board that demonstrates that a source other than the Unit caused the evidence, or that the evidence resulted from error in sampling, analysis or evaluation, or from natural variation in groundwater, surface water, or the unsaturated zone.
  - c. If the Executive Officer determines, after reviewing the submitted report(s), that the VOC(s) detected originated from a source other than the Unit(s), the Executive Officer will make appropriate changes to the monitoring program.
25. If the Executive Officer determines, after reviewing the submitted report, that the detected VOC(s) most likely originated from the Unit(s), the Discharger shall **immediately** implement the requirements of XI. Response To A Release, C. Release Has Been Verified, contained in the Standard Provisions and Reporting Requirements.

#### E. REPORTING REQUIREMENTS

1. In the event the Discharger does not comply or will be unable to comply with any Prohibition or Specification of this Order for any reason, the Discharger shall notify the appropriate Regional Board office by telephone **as soon as** it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.
2. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records

of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the post-closure period.

Such legible records shall show the following for each sample:

- a. Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
  - b. Date, time, and manner of sampling;
  - c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
  - d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
  - e. Calculation of results; and
  - f. Results of analyses, and the MDL and PQL for each analysis.
3. A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report.
4. Each monitoring report shall include a compliance evaluation summary. The summary shall contain at least:
- a. For each monitoring point and background monitoring point addressed by the report, a description of:
    - 1) The time of water level measurement;
    - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
    - 3) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; the calibration of the field equipment; results of the pH, temperature,

- conductivity, and turbidity testing; and the method of disposing of the purge water) to remove all portions of the water that was in the well bore before the sample was taken;
- 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and
  - 5) A statement that the sampling procedure was conducted in accordance with an approved Sample Collection and Analysis Plan.
- b. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.
  - c. For each groundwater body, a description and graphical presentation of the gradient and direction of groundwater flow under/around the Unit, and the groundwater flow rate, based upon water level elevations taken prior to the collection of the water quality data submitted in the report.
  - d. Laboratory statements of results of all analyses evaluating compliance with requirements.
  - e. An evaluation of the effectiveness of any leachate monitoring and control facilities and run-off/run-on control facilities.
  - f. A summary and certification of completion of all **Standard Observations** for the Unit(s) and the perimeter of the Unit. The Standard Observations shall include:
    - 1) For the Unit:
      - a) Evidence of ponded water at any point on the facility (show affected area on map);
      - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
      - c) Evidence of erosion and/or of day-lighted refuse.
    - 2) Along the perimeter of the Unit:
      - a) Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);

- b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
  - c) Evidence of erosion and/or of day-lighted refuse.
5. The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. A written report shall be filed with the Regional Board **within seven days**, containing at least the following information:
- a. A map showing the location(s) of seepage;
  - b. An estimate of the flow rate;
  - c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
  - d. Verification that samples have been submitted for analyses of the constituents of concern and monitoring parameters, and an estimated date that the results will be submitted to the Regional Board; and
  - e. Corrective measures underway or proposed, and corresponding time schedule.
6. The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the reporting period of the previous monitoring year. This report shall contain the following:
- a. All monitoring parameters and constituents of concern shall be graphed so as to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
  - b. Unless otherwise exempted by the Executive Officer, all monitoring analytical data obtained during the previous two six-month reporting periods, shall be submitted in tabular form as well as in a digital file format acceptable to the Executive Officer. The Regional Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [§20420(h)], in that this facilitates periodic review by the Regional Board.

- c. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
- d. A site map showing, at a minimum, waste disposal boundaries, all monitoring points, and any area of the cap or drainage conveyance system that were repaired during the previous year.
- e. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.
- f. An evaluation of the effectiveness of any leachate monitoring/control facilities.
- g. Updated Water Quality Protection Standard concentration limits based on water quality data collected to date.

**F. PROVISIONS**

- 1. The Discharger shall maintain a copy of this Order at the facility 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 all applicable provisions of Title 27 and 40 Code of Federal Regulations Part 258 (Subtitle D) that are not specifically referred to in this Order.
- 3. The Discharger shall comply with Monitoring and Reporting Program No. R5-2003-0082, which is incorporated into and made part of this Order.
- 4. The Discharger shall comply with the applicable portions of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258 et seq.), dated April 2000, which are hereby incorporated into this Order.
- 5. All reports and transmittal letters shall be signed by persons identified below:
  - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
  - b. For a partnership or sole proprietorship: by a general partner or the proprietor.

- c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.
- d. A duly authorized representative of a person designated in a, b or c above if;
  - 1) The authorization is made in writing by a person described in a, b, or c of this provision;
  - 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
  - 3) The written authorization is submitted to the Regional Board.
- e. Any person signing a document under this Section shall make the following certification:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”
6. 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.
7. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and post-closure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
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. 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 Provision F.5 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.

10. The Discharger shall establish cost estimates for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill, and submit these estimates to the Executive Officer for review and approval in accordance with the time schedule established pursuant to Provision F.13.D below.
11. The Discharger shall obtain and maintain assurances of financial responsibility for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill in an amount approved by the Executive Officer, and shall submit the financial assurance mechanism to the Financial Assurances Section of the California Integrated Waste Management Board.
12. The Discharger is required to maintain financial assurance mechanisms for closure and post-closure maintenance costs as specified in Chapter 6 of Title 27. The Discharger is required to submit the financial assurance mechanism to the Financial Assurances Section of the California Integrated Waste Management Board, which determines if the mechanism meets the requirements of Chapter 6, Title 27, and if the amount of coverage is adequate.
13. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
<b>A. Closure Construction</b>	
Complete site closure activities in accordance with the October 2002 <i>Final Closure and Post-Closure Maintenance Plans</i> and the 29 January 2003 Final Closure and Post-Closure Maintenance Plan Revisions. (See Closure Construction Specification C.3, C.4, and C.8)	<b>15 October 2003</b>

**B. Closure Construction Final Report**

Submit a final closure construction report upon completion, demonstrating construction was in accordance with the approved October 2002 *Final Closure and Post-Closure Maintenance Plans* and the 29 January 2003 Final Closure and Post-Closure Maintenance Plan Revisions, for Executive Officer review and approval. (See Closure Construction Specification C.9) **1 December 2003**

**C. Sample Collection and Analysis Plan**

Submit a Sample Collection and Analysis Plan. (See Detection Monitoring Specification D.11). **1 December 2003**

OK 3/3/04 DPS

**D. Cost Estimate for Corrective Action**

Submit a cost estimate for corrective action associated with known or reasonably foreseeable releases from the landfill. (See Provision F.10) **1 December 2003**

OK 11/24/03 DPS

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 25 April 2003.



THOMAS R. PINKOS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2003-0082  
FOR

McCLOUD COMMUNITY SERVICES DISTRICT  
FOR CLOSURE OF  
McCLOUD CLASS III MUNICIPAL SOLID WASTE LANDFILL  
SISKIYOU COUNTY

Compliance with this Monitoring and Reporting Program, with Title 27, California Code of Regulations, Section 20005, et seq. (hereafter Title 27), and with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258)*, dated April 2000, is ordered by Waste Discharge Requirements Order No. R5-2003-0082.

A. **REQUIRED MONITORING REPORTS**

<u>Report</u>	<u>Due</u>
1. Groundwater Monitoring (Section D.1)	See Table I
2. Annual Monitoring Summary Report (Order No. R5-2003-0082, E.6)	Annually by 31 January
3. Annual Facility Inspection Report (Section D.3.a)	Annually by 15 November
4. Response to a Release (Standard Provisions and Reporting Requirements)	As necessary

B. **REPORTING**

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program, Order No. R5-2003-0082, and the Standard Provisions and Reporting Requirements. Reports that do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to clearly illustrate compliance with the waste discharge requirements, or lack thereof. Data shall also be submitted in a digital format acceptable to the Executive Officer.

Each monitoring report shall include a compliance evaluation summary as specified in Reporting Requirements E.4, of Order No. R5-2003-0082.

Field and laboratory tests shall be reported in each monitoring report. Semiannual, and annual monitoring 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.

<u>Sampling Frequency</u>	<u>Reporting Frequency</u>	<u>Reporting Periods End</u>	<u>Report Date Due</u>
Semiannually	Semiannually	30 June 31 December	<b>by 31 July</b> <b>by 31 January</b>
Annually	Annually	31 December	<b>by 31 January</b>

**Semiannual samples shall be collected during the first month of the second and fourth quarter of each calendar year.**

The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Board covering the previous monitoring year. The annual report shall contain the information specified in Reporting Requirements E.6, of Order No. R5-2003-0082, and a discussion of compliance with the waste discharge requirements and the Water Quality Protection Standard.

The results of **all monitoring** conducted at the site shall be provided to the Regional Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

### C. **WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD**

#### **Water Quality Protection Standard**

The Regional Board has approved the 20 October 1999 Water Quality Protection Standard Report and the 6 March 2003 Water Quality Protection Standard Addendum No. 1 Report, submitted by the Discharger, for the McCloud Class III Municipal Solid Waste Landfill. These reports describe water bodies that could be affected by a release from the landfill, identify groundwater monitoring points, demonstrate compliance of the Groundwater Monitoring Program with Title 27, provide a map of the monitoring points and the point of compliance, discuss the compliance period, list the constituents of concern, and establish concentration limits for use in statistically evaluating monitoring data. Concentration limits have not been established for each required monitoring parameter and constituent

of concern listed in Table I. The Discharger shall calculate concentration limits for naturally occurring monitoring parameters and constituents of concern listed in Table I that are not included in the 6 March 2003 Water Quality Protection Standard Addendum No. 1 Report once sufficient data is collected.

**The concentration limits may be updated each year in the Annual Monitoring Summary Report** based on subsequent monitoring data collected since the last revision of the concentration limits. If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

The Water Quality Protection Standard Report also describes the statistical method that will be used to evaluate the monitoring data. The 6 March 2003 Water Quality Protection Standard Addendum No. 1 Report describes the statistical method in the following way:

“Because of the documented spatial variability in groundwater quality at the site and vicinity, intrawell statistical methods have been used to evaluate compliance per *Title 27*. Intrawell analysis presents a better picture of the nature of constituent concentrations at specific points because the component of spatial variability is removed. By using intrawell analysis, uncertainty (statistical error) is reduced, making intrawell analyses more powerful (sensitive) for detecting actual releases.

Recent data evaluation has shown that many parameters have distributions that cannot be normalized. For this reason, intrawell parametric statistical analyses (such as control charts) are not appropriate. Trend analysis, using the non-parametric Mann-Kendall test, is preferred.”

The Discharger shall perform a statistical evaluation of monitoring data collected during each semiannual sampling event to determine whether a release from the landfill has occurred. For naturally occurring constituents of concern, the monitoring data shall be evaluated using methods described above, or other method that has been approved by the Executive Officer. For non-naturally occurring constituents of concern (COC), the concentration limit used for determining whether a release has occurred shall be the method detection limit for the respective COC. Triggers for determining and confirming a release of a non-naturally occurring COC are described in the Detection Monitoring Specifications of Order No. R5-2003-0082.

## **D. MONITORING**

The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater and surface water in accordance with Detection Monitoring Specification D.1 and D.3 of Waste Discharge Requirements, Order No. R5-2003-0082. All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan, which includes quality assurance/quality control standards, that is acceptable to the Executive Officer.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those that cannot be quantified and/or specifically identified. Metals shall be analyzed in accordance with the methods listed in Table II.

The Discharger may, with the approval of the Executive Officer, use alternative analytical test methods, including new USEPA approved methods, provided the methods have detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

### **1. Groundwater Monitoring**

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with applicable provisions of §20415 and §20420 of Title 27 in accordance with a Detection Monitoring Program approved by the Executive Officer. The Discharger shall collect, preserve, and transport groundwater samples in accordance with an approved Sample Collection and Analysis Plan.

Currently, three monitoring wells are utilized for the groundwater Detection Monitoring Program. Well OB-1 is hydraulically up gradient of the Unit and provides background water quality data. Wells OB-2 and OB-3 are hydraulically cross and down gradient of the Unit, respectively, and provide point of compliance water quality data. All point of compliance monitoring wells established for the detection monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All Detection Monitoring Program groundwater monitoring wells shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Tables I and II.

The Discharger shall determine the groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

Cross sections of the Unit shall be submitted each semiannual reporting period showing each well and the elevation of groundwater with respect to the elevation of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared quarterly and submitted annually.

Groundwater samples shall be collected from the point-of-compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table I.

The monitoring parameters shall also be evaluated annually with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schoeller plot. Samples for the constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods listed in Table II every five years.

## 2. Leachate Monitoring

There is no leachate collection or removal system at the McCloud Class III Municipal Solid Waste Landfill. Leachate that seeps to the surface from the Unit shall be contained, sampled, and analyzed for each monitoring parameter and constituent of concern listed in Table I upon detection. The quantity of leachate shall be *estimated* and reported as Leachate Flow Rate (in gallons/day).

## 3. Facility Monitoring

### a. Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess any damage to the landfill cover system and groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations contained in Section E.4.f of Order No. R5-2003-0082. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit an annual report describing the results of the inspection and the repair measures implemented, including photographs of the problem and the repairs.

b. **Storm Events**

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events*. For the purposes of this Monitoring and Reporting Program, a *major storm event* is defined as 1.5 or more inches of precipitation falling within a 24 hour period. Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

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

Ordered by:



THOMAS R. PINKOS, Executive Officer

25 April 2003

(Date)

DPS:klc

**TABLE I**  
**GROUNDWATER DETECTION MONITORING PROGRAM**

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
<b>Field Parameters</b>		
Groundwater Elevation	Ft. & hundredths, M.S.L.	Quarterly
Temperature	°C	Semiannual
Electrical Conductivity	μmhos/cm	Semiannual
pH	pH units	Semiannual
Turbidity	Turbidity units	Semiannual
<b>Monitoring Parameters</b>		
Total Dissolved Solids (TDS)	mg/L	Semiannual
Chloride	mg/L	Semiannual
Carbonate	mg/L	Semiannual
Bicarbonate	mg/L	Semiannual
Nitrate - Nitrogen	mg/L	Semiannual
Sulfate	mg/L	Semiannual
Calcium	mg/L	Semiannual
Magnesium	mg/L	Semiannual
Potassium	mg/L	Semiannual
Sodium	mg/L	Semiannual
Tannins and Lignins	mg/L	Semiannual
Volatile Organic Compounds (USEPA Method 8260B)	μg/L	Semiannual
<b>Constituents of Concern (see Table II)</b>		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	μg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	μg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	μg/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	μg/L	5 years

**TABLE II**  
**CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS**

<u>Inorganics (dissolved):</u>	<u>USEPA Method</u>
Aluminum ✓	6010
Antimony ✓	7041 or 6010 (Trace ICP) and 200.8 (ICP/MS)
Barium ✓	6010
Beryllium ✓	6010
Cadmium ✓	7131A or 6010 (Trace ICP) and 200.8 (ICP/MS)
Chromium ✓	6010
Cobalt ✓	6010
Copper ✓	6010
Silver ✓	6010
Tin ✓	6010
Vanadium ✓	6010
Zinc ✓	6010
Iron ✓	6010
Manganese ✓	6010
Arsenic ✓	7062 or 6010 (Trace ICP) and 200.8 (ICP/MS)
Lead ✓	7421 or 6010 (Trace ICP) and 200.8 (ICP/MS)
Mercury ✓	7470A
Nickel ✓	7521 or 6010 (Trace ICP) and 200.8 (ICP/MS)
Selenium ✓	7742 or 6010 (Trace ICP) and 200.8 (ICP/MS)
Thallium ✓	7841 or 6010 (Trace ICP) and 200.8 (ICP/MS)
Cyanide ✓	9010B
Sulfide ✓	9030B

**Volatile Organic Compounds:**

**USEPA Method 8260B**

- Acetone
- Acetonitrile (Methyl cyanide)
- Acrolein
- Acrylonitrile
- Allyl chloride (3-Chloropropene)
- Benzene
- Bromochloromethane (Chlorobromomethane)
- Bromodichloromethane (Dibromochloromethane)
- Bromoform (Tribromomethane)
- Carbon disulfide
- Carbon tetrachloride
- Chlorobenzene
- Chloroethane (Ethyl chloride)
- Chloroform (Trichloromethane)
- Chloroprene
- Dibromochloromethane (Chlorodibromomethane)

TABLE II

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

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 (Trimethylene dichloride)  
2,2-Dichloropropane (Isopropylidene chloride)  
1,1-Dichloropropene  
cis-1,3-Dichloropropene  
trans-1,3-Dichloropropene  
Di-isopropylether (DIPE)  
Ethanol  
Ethyltertiary butyl ether  
Ethylbenzene  
Ethyl methacrylate  
Hexachlorobutadiene  
Hexachloroethane  
2-Hexanone (Methyl butyl ketone)  
Isobutyl alcohol  
Methacrylonitrile  
Methyl bromide (Bromomethane)  
Methyl chloride (Chloromethane)  
Methyl ethyl ketone (MEK; 2-Butanone)  
Methyl iodide (Iodomethane)  
Methyl t-butyl ether  
Methyl methacrylate  
4-Methyl-2-pentanone (Methyl isobutyl ketone)  
Methylene bromide (Dibromomethane)  
Methylene chloride (Dichloromethane)  
Naphthalene  
Propionitrile (Ethyl cyanide)  
Styrene  
Tertiary amyl methyl ether  
Tertiary butyl alcohol  
1,1,1,2-Tetrachloroethane  
1,1,2,2-Tetrachloroethane

**TABLE II**  
**CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS**

**Continued**

Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)  
Toluene  
1,2,4-Trichlorobenzene  
1,1,1 -Trichloroethane, Methylchloroform  
1,1,2-Trichloroethane  
Trichloroethylene (Trichloroethene; TCE)  
Trichlorofluoromethane (CFC- 11)  
1,2,3-Trichloropropane  
Vinyl acetate  
Vinyl chloride (Chloroethene)  
Xylene (total)

**Semi-Volatile Organic Compounds:**

**USEPA Method 8270C - base, neutral, & acid extractables**

Acenaphthene  
Acenaphthylene  
Acetophenone  
2-Acetylaminofluorene (2-AAF)  
Aldrin  
4-Aminobiphenyl  
Anthracene  
Benzo[a]anthracene (Benzanthracene)  
Benzo[b]fluoranthene  
Benzo[k]fluoranthene  
Benzo[g,h,i]perylene  
Benzo[a]pyrene  
Benzyl alcohol  
Bis(2-ethylhexyl) phthalate  
alpha-BHC  
beta-BHC  
delta-BHC  
gamma-BHC (Lindane)  
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)  
Chlordane  
p-Chloroaniline  
Chlorobenzilate  
p-Chloro-m-cresol (4-Chloro-3-methylphenol)  
2-Chloronaphthalene  
2-Chlorophenol

TABLE II  
CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

4-Chlorophenyl phenyl ether  
Chrysene  
o-Cresol (2-methylphenol)  
m-Cresol (3-methylphenol)  
p-Cresol (4-methylphenol)  
4,4'-DDD  
4,4'-DDE  
4,4'-DDT  
Diallate  
Dibenz[a,h]anthracene  
Dibenzofuran  
Di-n-butyl phthalate  
3,3'-Dichlorobenzidine  
2,4-Dichlorophenol  
2,6-Dichlorophenol  
Dieldrin  
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  
Endosulfan I  
Endosulfan II  
Endosulfan sulfate  
Endrin  
Endrin aldehyde  
Ethyl methanesulfonate  
Famphur  
Fluoranthene  
Fluorene  
Heptachlor  
Heptachlor epoxide  
Hexachlorobenzene  
Hexachlorocyclopentadiene  
Hexachloropropene  
Indeno(1,2,3-c,d)pyrene

TABLE II

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

Isodrin  
Isophorone  
Isosafrole  
Kepone  
Methapyrilene  
Methoxychlor  
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  
Toxaphene  
2,4,5-Trichlorophenol  
0,0,0-Triethyl phosphorothioate

**TABLE II**  
**CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS**

Continued

sym-Trinitrobenzene

**Chlorophenoxy Herbicides:**

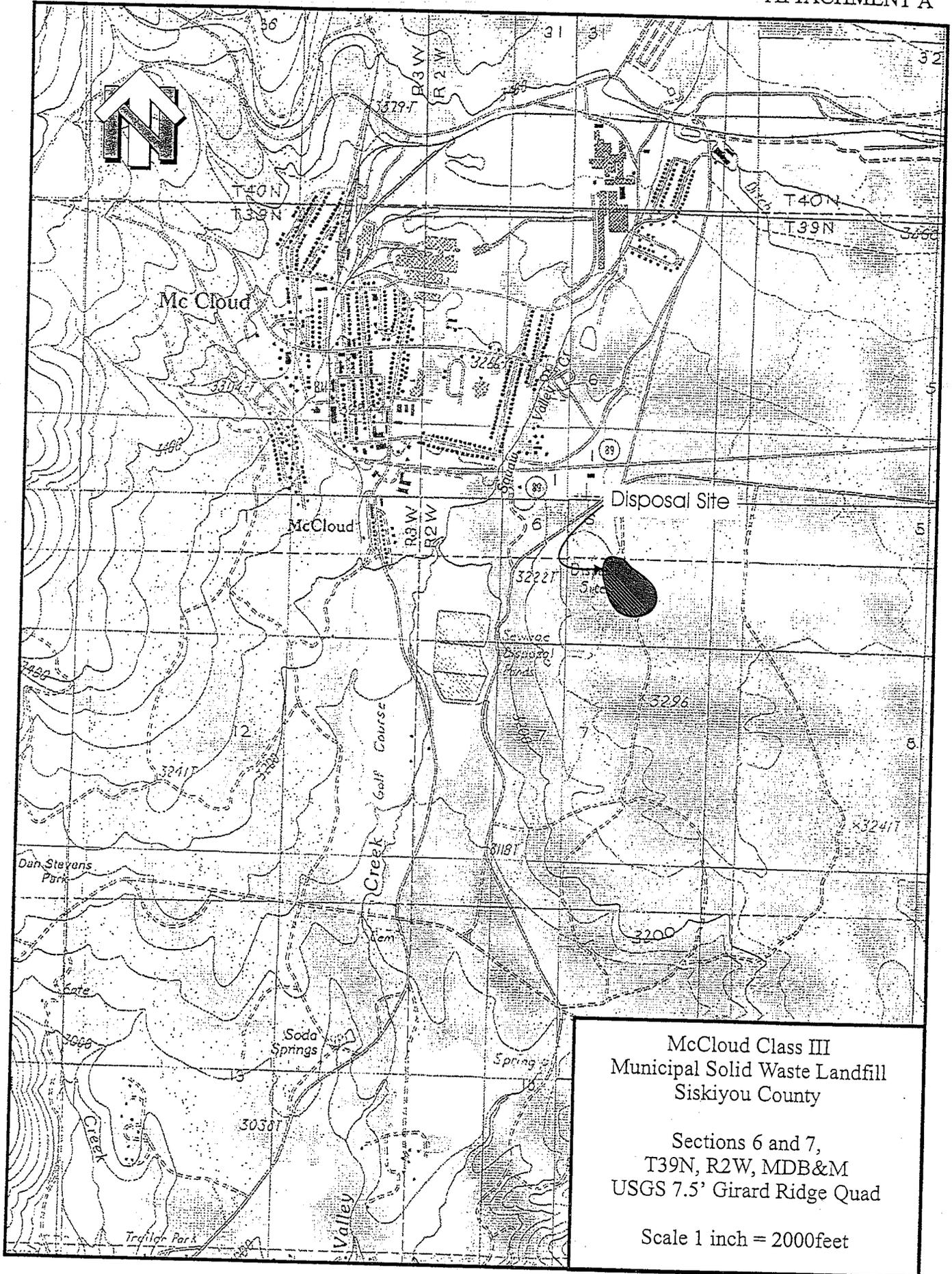
**USEPA Method 8151A**

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

**Organophosphorus Compounds:**

**USEPA Method 8141A**

Atrazine  
Chlorpyrifos  
0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)  
Diazinon  
Dimethoate  
Disulfoton  
Ethion  
Methyl parathion (Parathion methyl)  
Parathion  
Phorate  
Simazine





To Highway 89

Front Gate

OB-1

Access Road

Transfer Station

Property Line

OB-2

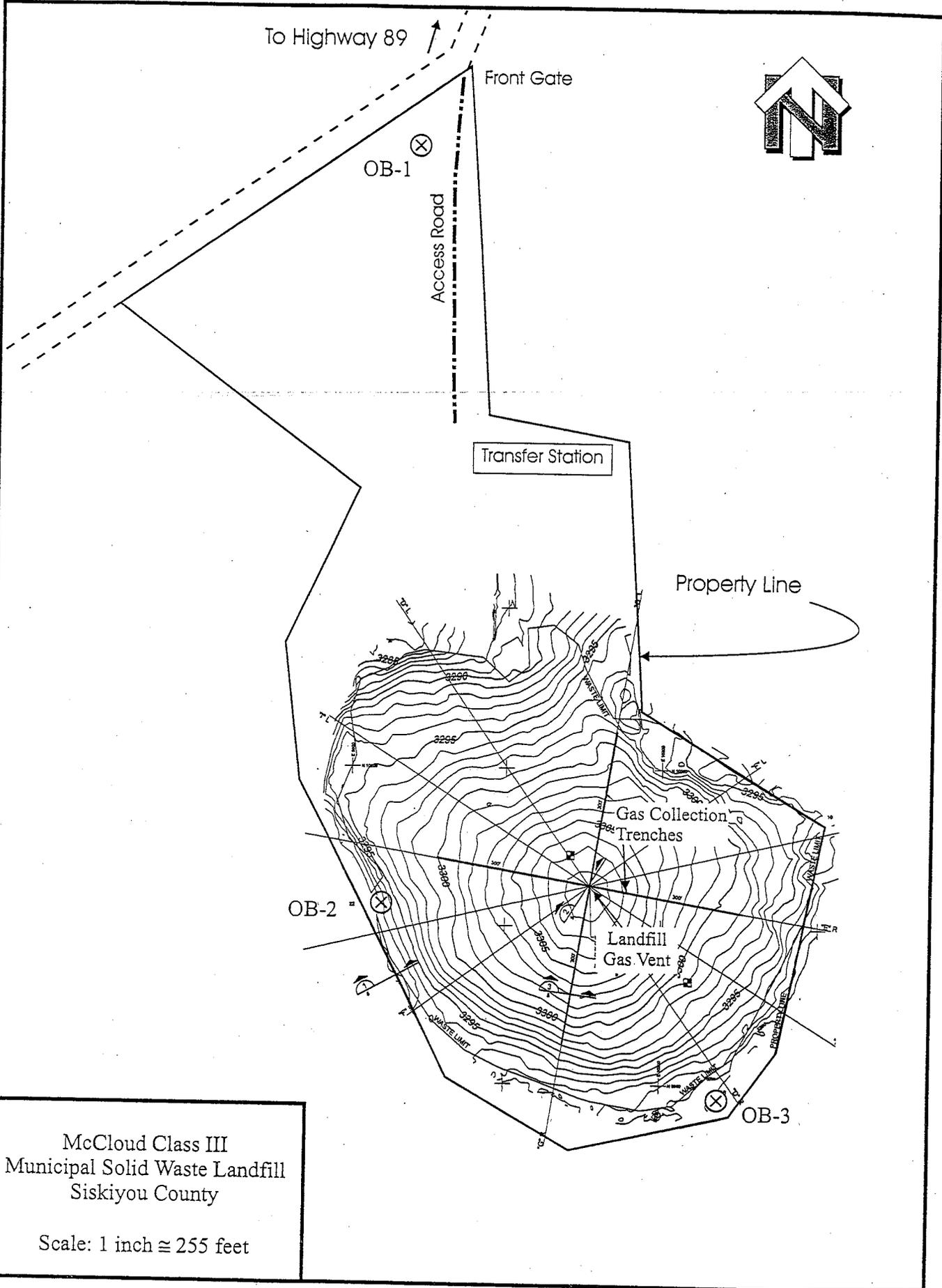
Gas Collection  
Trenches

Landfill  
Gas Vent

OB-3

McCloud Class III  
Municipal Solid Waste Landfill  
Siskiyou County

Scale: 1 inch  $\approx$  255 feet



## INFORMATION SHEET

ORDER NO. R5-2003-0082

McCLOUD COMMUNITY SERVICES DISTRICT  
FOR CLOSURE OF McCLOUD CLASS III MUNICIPAL SOLID WASTE LANDFILL  
SISKIYOU COUNTY

The McCloud Class III Municipal Solid Waste Landfill is located approximately 0.75 miles east of the town of McCloud on property owned by the McCloud Community Services District. The landfill began operations as an open dump in the early 1950s by Champion International Corporation. In 1975, the McCloud Community Services District began operating the site as a sanitary landfill. In 1986, Champion International Corporation deeded the site to the McCloud Community Services District.

The facility consists of a series of unlined trenches that were used for municipal solid waste disposal. Municipal solid waste disposal ceased in 1995. Until summer 2002, wood waste from the nearby California Cedar Products Company sawmill was placed over the trenches to help achieve final closure contours.

Site geology consists of tuff deposits that are underlain by fractured basalt and massive andesite, which in turn, is underlain by a deep unit consisting of red cinders and flowing sands at an approximate depth of 210 feet. Surface soils consist of clay, silt, sand, gravel, and cobbles derived from tuffs and alluvial deposits of reworked tuff mixed with coarse gravel deposits. The tuff deposits are irregular and lenticular. This formation is approximately 120 feet thick and exhibits a permeability rate of approximately  $1.6 \times 10^{-6}$  cm/sec.

A groundwater monitoring network at the site consists of three monitoring wells installed between 207 and 229 feet below ground surface (BGS). First encountered groundwater is approximately 190 feet BGS. The hydraulic gradient is generally from northwest to southeast. Movement of groundwater beneath the site is within fractured basalts, lava tubes, and other geologic phenomenon such as flowing sands, and is difficult to measure. In general, groundwater quality beneath the site is excellent.

This Order revises Waste Discharge Requirements Order No. 89-203 to reflect site closure and to incorporate provisions of Title 27, California Code of Regulations.

DPS:klc