

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2005-0176

WASTE DISCHARGE REQUIREMENTS

FOR
CEDAR RIDGE VIEW, LLC.
CEDAR RIDGE VIEW MOBILE HOME PARK
WASTEWATER TREATMENT AND DISPOSAL SYSTEM
AMADOR COUNTY

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

1. On 3 September 2004, Cedar Ridge View, LLC (hereafter Discharger) submitted a Report of Waste Discharge (RWD) for a new wastewater treatment and disposal system (WWTF) that will treat and dispose of domestic wastewater generated from the Cedar Ridge View Mobile Home Park (MHP) in Amador County.
2. At full buildout, the proposed Cedar View Ridge MHP will consist of 90 adult/senior modular homes. The MHP is located on the south side of State Route 88 at Defender Grade Road, within the town of Pioneer, in Section 29, T7N, R13E, MDB&M (Assessors Parcel Number 031-070-009) as shown on Attachment A, which is attached hereto and made part of this Order by reference.
3. For the purposes of this Order, the WWTF shall mean the septic tanks, effluent conveyance lines and leachfield disposal system.
4. The Discharger is responsible for assuring that the design, operation, and maintenance of the WWTF satisfies the terms of this Order.

Proposed Wastewater Treatment System

5. The Cedar View MHP WWTF, which will be owned and operated by Cedar Ridge View, LLC, will serve 90 equivalent dwelling units (EDUs). The WWTF will consist of individual septic tanks at each dwelling unit, a wastewater collection system, and disposal to a leachfield.
6. Each residential unit will have a 1,200 gallon dual chamber watertight septic tank that is equipped with an effluent filter and screening device to eliminate solids carryover into the collection system. Septic tank effluent will be discharged via gravity through a one and one half inch service connection into the collection system. The service connection includes a low-pressure flap check valve, which serves to prevent backflow into the septic tank if there is a downstream blockage or when the system is flushed for cleaning.
7. Each septic tank will have two chambers. Both chambers capture and store solids while they undergo anerobic decomposition. The heavier solids settle and form sludge at the bottom. The lighter solids, including fats and grease, rise to the surface and form a scum layer. The scum and sludge undergo decomposition and digestion, which both liquifies some solids and also produces carbon dioxide and methane gas, which are volatilized from the tank. Both the liquefaction and

gasification processes reduce the solids volume in the tank and therefore reduce the frequency of septic tank cleaning.

8. Septic tanks have two basic functions, waste treatment and solids storage. Both are essential to the long-term function of the leachfield by reducing the amount of particulate (i.e., non-liquefied sludge) solids and scum that exist in the tank. For this reason, the exit level of the second chamber draws from the tank below the scum and above the sludge, and it is imperative that regular inspections and cleanings assure that neither the sludge layer nor the scum layer increases to the extent that particulates are scoured and discharged from the tanks.
9. Septic tank effluent will flow from each septic tank service connection into a gravity collection system consisting of three and four inch PVC main lines. All main lines will be outfitted with air release/vacuum valves for adequate system breathing, and flushing inlets for servicing and cleaning as necessary.
10. Septic tank effluent from all but 12 of the residential units will enter the collection system main lines and be discharged into a lift station located at a low point within the north side of the MHP property. The wet well within the lift station will have a volume of approximately 6,000 gallons and will be equipped with two pumps that have the capacity to pump 70 gallons per minute. The lift station will be equipped with an autodial system that will allow alarms to be sent to the WWTF operator in case of pump failure or high water level. The lift station will also be equipped with a standby generator in case of prolonged power outages.
11. Septic tank effluent from the remaining 12 residential units will flow via gravity through the collection system to a dosing tank located near the southwest corner of the leachfield. The dosing tank/siphon will have a capacity of approximately 2,000 gallons.

Proposed Wastewater Disposal System

12. Wastewater disposal will be to a series of pressure dosed leachfields. The leachfield disposal area consists of approximately 6,750 linear feet of pressure dosed leachline on approximately four acres of land, as shown on Attachment B, which is attached hereto and made part of this Order by reference. The leachfield disposal area is divided into seven individual leachfields, each of which contains approximately 965 lineal feet of leachline.
13. Information submitted in the RWD indicates that the leachlines can dispose of approximately 13,500 gallons per day (gpd) of wastewater. The leachfield disposal trenches will be approximately three feet wide by three feet deep and placed a minimum of 10 feet apart. The wastewater application rate is assumed to be approximately 0.30 gallons per day/square foot, or about two gallons per day per lineal foot of disposal trench at design flow.
14. Septic tank effluent collected in the lift station will be discharged into six different leachfields via pressure dosing through the lift station. The dose per discharge to the leachfield will be approximately 1,200 gallons at a time, nine to ten times per day. A cycle meter and flow meter will be installed at the discharge point on the lift station to monitor the amount of wastewater discharged into the leachfields.

15. Septic tank effluent from the 12 remaining residential units will be discharged from the dosing tank to one of the leachfields. The dose per discharge will be approximately 1,824 gallons at a time, and will occur about once per day. A cycle meter will be installed on the dosing tank to monitor the amount of wastewater discharged into the leachfield.
16. Good practice requires that either an alternate leachfield of the same size be installed and alternately used or that sufficient area be set aside to replace the entire leachfield. The Discharger has designed this leachfield disposal area such that there is enough area to allow 100% of leachfield replacement. The leachfield replacment area is located in the middle of the proposed leachfield disposal area, as shown in Attachment B of this Order.
17. Monitoring of wastewater depth in disposal trenches can aid in estimating the condition of leachfields and in adjusting distribution of wastewater within the leachfield, and is key to determining when replacing a leachfield is necessary. Therefore, each individual leachfield lateral will have an inspection riser tube at each end to monitor the drainage capabilities of the disposal line.

Effluent Characteristics

18. Potable water for the Cedar Ridge MHP will be provided by the Amador Water Agency (AWA) Central Amador Water Project (CAWP). The CAWP’s water source is the North Fork of the Mokelumne River at Tiger Creek Afterbay. The Discharger provided results of potable water samples collected in October 2003 from the AWA Buckhorn Water Treatment Plant, which will serve the mobile home park. Results are as follows:

<u>Constiuent</u>	<u>Units</u>	<u>Results</u>
Settleable Solids	mg/l	<0.1
Total Suspended Solids	mg/l	<5.0
Chloride	mg/l	1.5
Manganese	mg/l	0.3
Total Nitrogen	mg/l	.11
Sodium	mg/l	2.0
Sulfate	mg/l	1.1
Total Dissolved Solids	mg/l	14
Zinc	mg/l	0.4
Turbidity	NTU	0.38
Arsenic	ug/l	<2.0
Cadmium	ug/l	<1.0
Mercury	ug/l	<1.0
Nickel	ug/l	<3.0
Specific Conductance	umho/cm	42
pH	Std Units	7.0
Fecal Coliform	MPN/100ml	4
Total Coliform	MPN/100ml	4

19. The RWD provides information as to the expected septic tank effluent quality once it is dicharged from the septic tank, and is presented below:

<u>Constituent</u>	<u>Units</u>	<u>Septic Tank Effluent With Filter</u>
pH	Standard Units	6.8
Total Dissolved Solids (TDS)	mg/l	280
Total Suspended Solids	mg/l	30
BOD ₅	mg/l	130
Total Coliform Organisms	MPN/100 ml	>2,400
Total Fecal Organisms	MPN/100 ml	>2,400
Total Kjeldahl Nitrogen	mg/l	57
Nitrate as Nitrate	mg/l	0.4

20. Based on projected effluent quality, it appears that the septic tanks will provide primary treatment. Wastes that pass through the septic tanks are discharged to the soil underlying the leach lines; the soil then treats some of the remaining wastes. However, the amount of treatment depends on the waste type and concentrations, soil type and depth, percolation rates, wastewater application rates, and depth to groundwater. Under the best of circumstances, some waste constituents may migrate through the soil column to the underlying groundwater.
21. Waste brines from water softeners could adversely affect the functioning and life of the community leachfields, as well as cause unnecessarily elevated concentrations of sodium and chloride that can degrade groundwater and adversely affect agricultural use of the groundwater. Because Cedar Ridge View MHP will receive excellent quality supply water, the use of water softeners is unnecessary, and if the Discharger allows them, they must exclude self-regenerating models.
22. Acid and organic chemical solvent septic system additives typically contain halogenated and aromatic hydrocarbons that are highly mobile in soils and groundwater. The additives can impede effective treatment and pollute groundwater, and their use must be restricted as monitoring and cleanup can be costly.

Sanitary Sewer Overflows

23. A collection system “overflow” is a discharge to ground surface or to surface water from the effluent collection system at any point upstream of where effluent is discharged into the leachfield. Temporary storage or collection facilities may be utilized during maintenance operations and discharges to these facilities are not considered overflow events, provided that the waste is fully contained and properly disposed.
24. Potential causes of overflows within this system include grease blockages, root blockages, debris blockages, sewer line flood damage, air relief/vacuum valve failures, vandalism, storm or groundwater inflow/infiltration, lack of capacity, and contractor caused blockages.
25. Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, nutrients, oxygen demanding organic compounds, oil and grease, and other wastes. Sanitary sewer overflows can cause temporary exceedences of applicable water quality objectives, pose a threat to

public health, adversely affect aquatic life, and impair the public recreational use and aesthetic enjoyment of surface waters in the area.

- 26. The Discharger is expected to take all necessary steps to adequately maintain and operate, and thereby prevent overflows from, its effluent collection system. A reasonable means to accomplish this is to prepare and implement an operation and maintenance manual that includes overflow prevention and response features.

Soil and Groundwater Conditions

- 27. In March 2004, the Discharger conducted a geologic and soils investigation of the proposed leachfield disposal area. Eleven test pits were dug within the proposed leachfield area. Results of the investigation indicates that the average effective soil depth is approximately eight feet below ground surface (bgs) or 5.1 feet below the bottom of the disposal trenches. Average percolation rates were estimated to be approximately 25 minutes per inch (mpi) at a depth of 24 inches bgs and 87 mpi at 47 and 54 inches bgs.
- 28. Results of the March 2004 geologic and soils investigation indicate that seasonal high groundwater conditions are greater than eight feet bgs (or five feet below the base of each trench) within the proposed disposal area, as no mottling or presence of groundwater was noted in the profile trenches that were dug on site.
- 29. In May of 2005, the Discharger installed one groundwater monitoring well to obtain baseline groundwater quality data prior to any discharge at the site. The groundwater monitoring well was installed in an area assumed to be downgradient of the proposed disposal site, approximately 50 feet from a surface drainage course. During drilling of the well, groundwater was encountered at approximately eight feet bgs. Samples were collected and analyzed as presented below:

<u>Constituent</u>	<u>Units</u>	<u>Groundwater Results</u>
pH	Standard Units.	5.96
Specific Conductance	umhos/cm	68
BOD ₅	mg/l	ND
Total Coliform Organisms	MPN/100 ml	170
Total Fecal Organisms	MPN/100 ml	4.0
E. Coli	MPN/100 ml	4.0
Total Dissolved Solids (TDS)	mg/l	82
Nitrate as Nitrate	mg/l	ND
Chloride	mg/l	2.1
Sulfate as Sulfate	mg/l	0.84
Total Alkanlity	mg/l	33
Calcium	mg/l	6.3
Magnesium	mg/l	2.9
Potassium	mg/l	1.5
Sodium	mg/l	4.7

Based on the groundwater data provided in the RWD it appears that the quality of groundwater is very good. Elevated total coliform organisms levels may be the result of cross containment during construction of the well or during sampling of the well.

30. The March 2004 geologic and soils investigation indicates that the soil/weathered bedrock depth measured in test trenches ranged from 0 to 120 inches, with an average soil depth of 96 inches. Fractured bedrock was encountered as shallow as six feet bgs in two test trenches, but averaged eight feet bgs across the entire proposed disposal site. The RWD states, based on the disposal trench design of three feet bgs, that there should be a minimum of five feet of soil/weathered bedrock between the bottom of the disposal trenches and bedrock or seasonal high groundwater.

Site Specific Conditions

31. The average annual rainfall, based on the Tiger Creek weather station, is approximately 44.9 inches.
32. The average evapotranspiration rate for the area is approximately 48 inches annually.
33. All portions of the leachfield are outside of the 100-year flood zone.
34. The land uses around the leachfield area are primarily a mix of rural residential and commercial, and some limited agricultural, mining, and timber harvesting uses.
35. The leachfield is within the Upper Mokelumne Hydrologic Area No. 532.60, as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.
36. Soils within the leachfield area are of the Aiken and Musick series. The soils range from 0 to 96 inches deep and consists of cobbly loams.
37. Slopes in the proposed leachfield area range from 4 to 30 percent with average slope being 15%.

Basin Plan, Beneficial Uses, and Regulatory Considerations

38. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board. Pursuant to Section 13263(a) of the CWC, waste discharge requirements must implement the Basin Plan.
39. Surface water drainage from the Cedar Ridge View MHP leachfield area is to the headwaters of the south branch of Sutter Creek, which is a tributary of Sutter Creek which flows into the Consumnes River.
40. The designated beneficial uses of the Consumnes River are municipal and domestic supply; agricultural supply; water contact recreation; noncontact water recreation; warm and cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.

41. The designated beneficial uses of the underlying groundwater are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
42. The Basin Plan establishes numerical and narrative water quality objectives for surface water and groundwater that waste discharge requirements must implement. To implement narrative water quality objectives, relevant water quality criteria and guidelines are to be considered on a case-by-case basis to determine the appropriate numerical limitation.
43. The Chemical Constituent objective in the Basin Plan requires, at a minimum, compliance with California maximum contaminant levels (MCLs) for waters designated as municipal supply. More stringent criteria than MCLs are sometimes necessary to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
44. The Basin Plan contains narrative water quality objectives for chemical constituents, tastes and odors, and toxicity. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants or animals associated with beneficial uses. The chemical constituent objective requires that groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses. The tastes and odors objective requires that groundwater shall not contain taste or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

Groundwater Degradation

45. State Water Resources Control Board (State Board) Resolution No. 68-16 (“Policy with Respect to Maintaining High Quality Waters of the State”) (hereafter Resolution No. 68-16) requires a regional board in regulating the discharge of waste to maintain high quality waters of the state (i.e., background water quality) until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than as described in plans and policies (e.g. violation of any water quality objective). The discharge is required to meet waste discharge requirements that will result in the best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and highest water quality consistent with maximum benefit to the people will be maintained.
46. The Regional Board finds that the Discharger has not demonstrated that it is to the maximum benefit to the people of the State of California to degrade groundwater, and therefore groundwater degradation is not allowed under this Order.
47. Several features have been incorporated into the design of wastewater treatment and disposal system to reduce the potential for groundwater degradation. First, all onsite septic tanks will be required to be water tested reducing potential leakage and groundwater contamination. Second, all septic tanks will be fitted with effluent filters to reduce BOD and TSS, thereby preventing matting within the disposal trench walls and promoting a more aerobic condition in the disposal trenches to provide efficient treatment of effluent within the upper soil mantle. Third, wastewater will be distributed evenly via pressure dosing to seven different leachfields to minimize loads to any one location.

Other

48. The State Water Resources Control Board adopted Order No. 97-03-DWQ (General Permit No. CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The collection system and leachfields are underground and are not exposed to stormwater runoff. Because there is no stormwater discharge, the Discharger is not required to obtain coverage under General Permit No. CAS000001.
49. On 3 May 2002, in accordance with the California Environmental Quality Act (Title 14, California Code of Regulations (hereafter CCR), section 15261 et seq.), the Amador County Planning Commission adopted a Negative Declaration for the Cedar Ridge View Mobile Home Park.
50. The project, as approved by Amador County may degrade water quality, possibly to the degree that water quality objectives will be violated, beneficial uses impacted, and pollution, contamination, or nuisance created. However, Prohibition A.7, Discharge Specification B.8, Groundwater Limitations E, and Provisions F.1, F.4, F.5, and F.7, among others, should mitigate or avoid pollution, nuisance, contamination, exceedance of water quality objectives, and impacts on beneficial uses.
51. Section 13267(b) of the CWC provides that: “In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”

The technical reports required by this Order and the attached “Monitoring and Reporting Program No. R5-2005-0176” are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges waste subject to this Order.

52. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells, as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to CWC section 13801, apply to all monitoring wells.
53. State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27, CCR, section 20005, et seq. (hereafter Title 27). While this facility is exempt from Title 27, the data analysis

methods of Title 27 may be appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.

54. The discharge authorized herein and the treatment and storage facilities associated with the discharge, except for discharges to land of residual sludge and solid waste, are exempt from the requirements of Title 27. The exemption, pursuant to Title 27 section 20090(a), is based on the following:
 - a. The waste consists primarily of domestic sewage and treated effluent;
 - b. The waste discharge requirements are consistent with water quality objectives; and
 - c. The treatment and storage facilities described herein are comparable in function to a municipal wastewater treatment plant.
55. Pursuant to CWC section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

Public Notice

56. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
57. The Discharger and interested agencies and persons were notified of the intent to prescribe waste discharge requirements for this discharge, and provided an opportunity to submit written views and recommendations and to be heard in a public meeting.
58. In a public meeting, all comments pertaining to the discharge were heard and considered.

IT IS HEREBY ORDERED that, pursuant to CWC sections 13263 and 13267, Cedar Ridge View, LLC., its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder, shall comply with the following:

[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.]

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated or partially treated waste is prohibited.
3. Discharge of sewage from the sanitary sewer system at any point upstream of the leachfield is prohibited.
4. Discharge of wastewater outside of the leachfield area is prohibited.

5. Surfacing of waste within or downgradient of the community leachfield is prohibited.
6. Discharge of waste classified as 'hazardous' under Title 23, CCR, Section 2521, or as 'designated' under of CWC section 13173 is prohibited, including any discharge of sludge.
7. The presence of wastewater within one foot of the lowest finished disposal field grade is prohibited.

B. Discharge Specifications

1. The monthly average inflow to the Cedar Ridge View MHP leachfield shall not exceed 13,500 gpd.
2. The wastewater treatment and leachfield disposal areas shall not cause pollution or a nuisance as defined by Section 13050 of the CWC.
3. Public contact with wastewater in the leachfield shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.
4. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations.
5. Objectionable odors originating from the leachfield shall not be perceivable beyond the limits of the leachfield.
6. The WWTF shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
7. Disposal of wastewater shall be confined to each leachfield area defined in the Findings of this Order.
8. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge. In particular, the Discharger shall comply with the following items, and shall describe their implementation in the Operation and Maintenance Plan required by the Provisions. The frequency of each task may be modified upon written request by the Discharger and written approval by the Executive Officer. The written request must clearly show that the reduction in frequency will not have the potential to impact water quality. The Discharger shall:
 - a. Inspect each septic tank at least annually.
 - b. Cut vegetation in the leachfield as needed to prevent threat of root intrusion into the leachlines and drainage rocks, and remove the vegetative litter.
 - c. Annually evaluate whether wastewater is evenly distributed to all the disposal trenches and make modifications to the distribution system as necessary to optimize distribution

and preclude the depth of wastewater in any disposal trench within 12 inches of the ground surface.

- d. Annually inspect, and if necessary, clean the leachfield's distribution piping.
 - e. Properly maintain the septic tanks, including pumping a tank when any one of the following conditions exist, or can be reasonably projected to occur before the next inspection of a tank:
 1. The combined thickness of sludge and scum exceeds one-third of the tank depth of the second compartment,
 2. The scum layer is within three inches of the outlet device; or,
 3. The sludge layer is within eight inches of the outlet device.
 - f. Require that septic tanks that are cracked or otherwise damaged be promptly repaired or replaced.
 - g. Require that septic tank filters be cleaned on a regular basis.
 - h. Inform homeowners, through a public education program, about the chemicals and actions which have the potential to impair the proper and sustained functioning of the leachfield. Chemicals of concern include self-regenerating water softeners, acid and organic chemical solvent septic system additives, and kitchen greases and oils. Actions of concern include the excessive use of garbage disposal systems, connecting rainfall drainage controls to the collection system, and draining swimming pools into the collection system.
9. The WWTF shall have sufficient treatment, storage, and disposal capacity to accommodate allowable wastewater flow, inflow and infiltration, and design seasonal precipitation during the winter months. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
 10. A 100-foot buffer zone shall be maintained between the nearest point of the leachfield and any year round surface water course, spring, domestic well, or irrigation well. A 50-foot buffer zone shall be maintained between the nearest point of the leachfields and any seasonal drainage course.
 11. A 50-foot buffer zone shall be maintained between the leachfields and the nearest property boundary.

C. Effluent Limitations

1. Effluent discharged to the leachfield shall not have a pH less than 6.5 or greater than 8.4.

D. General Solids Disposal Specifications

Sludge means the solid, semisolid, and liquid residues removed during the wastewater treatment processes.

1. Sludge shall be removed from septic tanks, dosing tank, and lift station as needed to ensure optimal operation and optimal life of the leachfield, but no less frequent than as specified in Discharge Specification B.8.
2. Sludge that accumulates in the lift station and dosing tank shall be removed as needed to ensure the protection and optimal life of the leachfield.
3. Sludge removal shall be by a licensed liquid waste hauler and documented by copies of manifests.
4. Disposal of residual sludge and solid waste must be to a facility operated in accordance with valid waste discharge requirements issued by a regional water quality control board.

E. Groundwater Limitations

The discharge shall not cause underlying groundwater to contain waste constituents in concentrations greater than background water quality (i.e., groundwater unaffected by any waste sources).

F. Provisions

1. All of the following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared by a registered professional as described by Provision F.3.
 - a. **At least 90 days prior to any discharge of waste**, the Discharger shall submit a *Groundwater Monitoring Well Workplan* for the installation of at least two additional wells (one located upgradient and one located downgradient) of the WWTF leachfield. The workplan shall describe the installation of a sufficient amount of groundwater monitoring wells to allow evaluation of the groundwater quality upgradient, beneath, and downgradient of the leachfield. Every monitoring well shall be constructed to yield representative samples from the uppermost layer of the uppermost water bearing zone and to comply with applicable well standards. The workplan shall be consistent with, and include the items listed in, the first section (including a groundwater sampling and analysis plan Appendix) of Attachment C, “*Items to be Included in a Monitoring Well Installation Workplan and a Monitoring Well Installation Report of Results.*”
 - b. **At least 45 days prior to discharge of waste**, the Discharger shall submit a report certifying that the collection system, lift station, dosing tank, and leachfield have been constructed in accordance with this Order.

- c. **At least 45 days prior to discharge of waste**, the Discharger shall submit and implement an *Operation and Maintenance (O&M) Plan* for the Cedar Ridge View MHP WWTF. The O&M Plan shall instruct field personnel on how to manage the day-to-day discharge operations to comply with the terms and conditions of this Order and how to make field adjustments, as necessary, to optimize the effectiveness and life of the leachfields and preclude nuisance conditions (e.g., surfacing wastewater). It shall also include a troubleshooting flowchart with recommend remedial actions and a description of notification requirements. The O&M Plan shall address management of the WWTF in sufficient detail to optimize compliance with this Order, and most particularly Discharge Specification B.8, including the following:
- i. An inspection procedure for checking the integrity of septic tanks.
 - ii. A description of the type, location, and procedure for calibration of the cycle meters and flow meters installed to comply with the Monitoring and Reporting Program.
 - iii. The procedures to be implemented to assure that wastewater is evenly distributed within the disposal trenches and wastewater will not be disposed of when the depth of wastewater in any trench is within 12 inches of the ground surface.
 - iv. A description on how vegetation will be controlled and maintained in the leachfield to prevent root intrusion and damage.

The Discharger shall ensure that an up-to-date O&M Plan is readily available to operating personnel at all times, and that personnel are familiar with it.

- d. **Within 90 days of approval of the *Groundwater Monitoring Well Installation Workplan***, the Discharger shall submit a *Groundwater Well Installation Report* that is consistent with, and includes the items listed in, the second section of Attachment C. The report shall describe the qualified consultant that the Discharger will use to collect groundwater samples.
- e. **By 31 December 2007**, the Discharger shall submit a *Background Groundwater Quality Study Report*. For each groundwater monitoring parameter/constituent identified in the Monitoring and Reporting Program, the report shall present a summary of monitoring data, a calculation of the concentration in background monitoring well(s), and a comparison of background groundwater quality to that in wells used to monitor the facility. Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least four consecutive quarterly (or more frequent) groundwater monitoring events.
- f. If groundwater monitoring results show that the discharge of waste is causing degradation, then within 120 days of the written request by the Executive Officer, the Discharger shall submit a report showing that degradation of the groundwater complies with SWRCB Resolution No. 68-16, i.e., that (a) it is in the best interest of the people of the state, (b) best practical treatment and control measures have been implemented to minimize the amount of degradation, (c) quantifies the groundwater degradation and

documents that it will not exceed applicable water quality objectives, and (d) the degradation is confined within a specified boundary. If the Discharger cannot comply with Resolution No. 68-16 with the existing system, then within 120 days of request by the Executive Officer, it shall submit a workplan and timeline detailing the facility modifications that shall be implemented such that it complies with Resolution 68-16 or with the Groundwater Limitations of this Order.

2. When it appears that any leachfield within the system is showing signs of failure (sustained wastewater in disposal trenches at or near the maximum design depth), then the Discharger shall immediately inform Board staff, shall increase the frequency of observation well monitoring, and shall initiate construction of the replacement leachfield when this condition cannot be mitigated by distribution system adjustments and the surfacing of effluent will be otherwise unavoidable.
3. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain the professional's signature and/or stamp of the seal.
4. The Discharger shall comply with Monitoring and Reporting Program No. R5-2005-0176, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
5. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
6. The Discharger shall use the best practicable treatment and control techniques, including proper operation and maintenance, to assure compliance with terms of this Order.
7. Upon the reduction, loss, or failure of the sanitary sewer system resulting in a sanitary sewer overflow, the Discharger shall take all necessary remedial action to control and limit the volume of sewage discharged, and terminate the overflow as rapidly as possible. Necessary remedial actions may include, but are not limited to, the following:
 - a. Interception and rerouting of sewage flows around the collection line failure;
 - b. Vacuum truck recovery to the extent practical of sanitary sewer overflows and wash down water;
 - c. Use of portable aerators in surface waters where complete recovery of the spilled sewage is not feasible and severe oxygen depletion is expected;

- d. Cleanup of sewage-related debris at the overflow site;
 - e. Disinfection and posting of the area.
8. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
 9. The Discharger shall not allow waste-free wastewater to be discharged into the wastewater collection, treatment, and disposal system. Waste-free wastewater means rainfall (roof gutters, yard drainage), groundwater, cooling waters, and condensates that are essentially free of wastes.
 10. The Discharger shall submit to the Regional Board on or before each compliance report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharge shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board in writing when it returns to compliance with the time schedule.
 11. In the event of any change in control or ownership of the facility or wastewater disposal areas, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. 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 paragraph of Standard Provision B.3 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 shall be approved or disapproved by the Executive Officer.
 12. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or recession of this Order.
 13. A copy of this Order shall be kept at the WWTF for reference by operating personnel. Key operating personnel shall be familiar with its contents.
 14. The Regional Board will review this Order periodically and will revise requirements when necessary.

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2005-0176
CEDAR RIDGE VIEW MHP
WASTEWATER TREATMENT AND DISPOSAL SYSTEM
AMADOR COUNTY

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 29 November 2005.

THOMAS R. PINKOS, Executive Officer

JSK: 29 November 2005

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2005-0176

FOR
CEDAR RIDGE VIEW, LLC.
CEDAR RIDGE VIEW MOBILE HOME PARK
WASTEWATER TREATMENT AND DISPOSAL SYSTEM
AMADOR COUNTY

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

This MRP is effective upon the date of signature; however, monitoring of septic tanks, effluent, and leachfields need only be conducted once the discharge of wastewater into the treatment and disposal system commences. In the meantime, the Discharger shall submit monthly status reports and groundwater monitoring reports as described in the “Reporting” section of this MRP.

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

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

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

SEPTIC TANK MONITORING

The Discharger shall monitor the septic tanks and report this information in the annual reports. Septic tanks shall be inspected annually as described below. In addition, the Discharger shall visually inspect the tanks for signs of damage, leaks, or deterioration.

<u>Parameter</u>	<u>Units</u>	<u>Type of Measurement</u>	<u>Minimum Inspection</u>	<u>Reporting Frequency</u>
Sludge depth and scum thickness in the first compartment of each septic tank	Feet	Staff Gauge	Annually	Annually
Distance between bottom of scum layer and bottom of outlet device	Inches	Staff Gauge	Annually	Annually

<u>Parameter</u>	<u>Units</u>	<u>Type of Measurement</u>	<u>Minimum Inspection</u>	<u>Reporting Frequency</u>
Distance between top of sludge layer and bottom of outlet device	Inches	Staff Gauge	Annually	Annually

The Discharger shall retain records of each inspection, by lot number, noting the date and measured readings and calculations. The Discharger will also record when cleaning is required, the date of notice to the homeowner, the condition of the tank, and the date that cleaning or repair occurred and by whom. Copies of the Liquid Waste Hauler manifests shall be retained for review as with any other record concerning documentation of compliance with the Order.

EFFLUENT MONITORING

Wastewater effluent shall be monitored prior to discharge to the leachfield. Samples shall be collected from the lift station. Flow shall be monitored at both the lift station and the dosing siphon. Grab samples are considered adequately composited to represent the wastewater. Effluent monitoring shall include, at a minimum, the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Total Flow to the leachfields	gpd	Meter	Weekly	Monthly
Flow Discharged from Lift Station To Leachfield	gpd	Meter	Daily	Monthly
Flow Discharged from Dosing Siphon To Leachfield	gpd	Meter	Daily	Monthly
pH	Std. units	Grab	Monthly	Monthly
BOD ₅	mg/l	Grab	Monthly	Monthly
Total Dissolved Solids	mg/l	Grab	Monthly	Monthly
Nitrates as Nitrogen	mg/l	Grab	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/l	Grab	Monthly	Monthly
Standard Minerals ²	mg/l	Grab	Annually	Annually

¹ Standard Minerals shall include, at a minimum, the following elements and compounds: Boron, Calcium, Iron, Magnesium, Manganese, Sodium, Potassium, Chloride, Sulfate, Total Alkalinity (including alkalinity series), and Hardness.

LEACHFIELD AREA MONITORING

The Discharger shall conduct a visual inspection of the leachfield on a **weekly basis**. Results shall be recorded and submitted with the monthly monitoring report. Photocopies of entries into an operator's log are acceptable. Evidence of surfacing wastewater, erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the report. If surfacing water is found, then a sample shall be

collected and tested for total coliform organisms and total dissolved solids. In addition to the visual inspections, monitoring of the leachfields shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Application Rate ¹	gal/acre•day	Calculated	Monthly	Monthly
Leachline Riser Inspection ²	Inches	Measurement	Monthly	Monthly

¹ The application rate for each leachfield

² The Discharger shall measure and record the distance from the surface of the liquid in the observation port to the surface of the ground in each active lateral(s).

GROUNDWATER MONITORING

Beginning with the first quarter 2006, the Discharger shall conduct the following groundwater monitoring program. Prior to construction of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Board for review and approval. Once installed, all new wells shall be added to the MRP, and shall be sampled and analyzed according to the schedule below.

Prior to sampling, groundwater elevations shall be measured and the wells shall be purged at least three well volumes until pH and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Water table elevations shall be calculated and used to determine groundwater gradient and direction of flow. Samples shall be collected using approved EPA methods. Groundwater monitoring shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling and Reporting Frequency⁴</u>
Groundwater Elevation ¹	0.01 Feet	Measurement	Quarterly
Depth to Groundwater	0.01 Feet	Calculated	Quarterly
Gradient	Feet/Feet	Calculated	Quarterly
Gradient Direction	Degrees	Calculated	Quarterly
Total Coliform Organisms ²	MPN/100ml	Grab	Quarterly
pH	S.U.	Grab	Quarterly
Total Dissolved Solids	mg/l	Grab	Quarterly
Nitrates as Nitrogen	mg/l	Grab	Quarterly
Total Kjeldahl Nitrogen	mg/l	Grab	Quarterly
Standard Minerals ³	mg/l	Grab	Annually

¹ Groundwater elevation shall be based on depth-to-water using a surveyed measuring point elevation on the well and a surveyed reference elevation.

² Using a minimum of 15 tubes or three dilutions

³ Standard Minerals shall include, at a minimum, the following elements and compounds: Boron, Calcium, Iron, Magnesium, Manganese, Sodium, Potassium, Chloride, Sulfate, Total Alkalinity (including alkalinity series), and Hardness.

⁴ The existing monitoring well shall be sampled beginning with the First Quarter 2006. The additional required wells shall be added to the sampling program upon installation.

WATER SUPPLY MONITORING

A sampling station shall be established where a representative sample of the municipal water supply can be obtained. Water supply monitoring shall include at least the following for each water source used during the previous year. As an alternative to annual water supply monitoring, the Discharger may submit results of the most current DHS water supply monitoring data.

<u>Constituents</u>	<u>Units</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Total Dissolved Solids	mg/L	Annually	Annually
Standard Minerals ¹	mg/L	Annually	Annually

¹ Standard Minerals shall include, at a minimum, the following elements/compounds boron, calcium, iron, magnesium, manganese, sodium, potassium, chloride, sulfate, total alkalinity (including alkalinity series), and hardness.

REPORTING

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

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

A. Monthly Monitoring Reports

Monthly reports shall be submitted to the Regional Board on the **1st day of the second month following sampling** (i.e. the January Report is due by 1 March). At a minimum, the reports shall include:

1. If the WWTF is not yet operational, then a status report shall be submitted stating that it is not yet operational and providing a timeline for anticipated start-up of the WWTF.
2. Once the WWTF is operational, then the report shall include the following:
 - a. Results of effluent and leachfield area monitoring;
 - b. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
 - c. If requested by staff, copies of laboratory analytical report(s); A calibration log verifying

calibration of all hand held monitoring instruments and devices used to comply with the prescribed monitoring program; and

- d. Date(s) on which the monitoring instruments were calibrated.

B. Quarterly Report

Submittal of quarterly monitoring reports to the Regional Board shall begin starting the first quarter of 2006. The Discharger shall establish a quarterly sampling schedule for groundwater such that samples are obtained approximately every three months. Quarterly monitoring reports shall be submitted to the Board by the **1st day of the second month after the quarter** (i.e. the January-March quarterly report is due by May 1st) each year. The Quarterly Report shall include the following:

1. Results of groundwater monitoring. The results of regular monthly monitoring reports for March, June, September and December may be incorporated into their corresponding quarterly monitoring report;
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;
3. Calculation of groundwater elevations and discussion of seasonal trends if any;
4. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);
5. A comparison of the monitoring data to the groundwater limitations and an explanation of any violation of those requirements;
6. Summary data tables of historical and current water table elevations and analytical results;
7. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and
8. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Report

An Annual Report shall be prepared as the December monthly monitoring report. The Annual Report will include all monitoring data required in the monthly schedule. The Annual Report shall be submitted to the Regional Board by **1 February** each year. In addition to the data normally presented,

the Annual Report shall include the following:

1. The contents of the regular monthly and quarterly monitoring report for the last month and quarter of the year, respectively;
2. If requested by staff, tabular and graphical summaries of all data collected during the year;
3. Results of the annual effluent and groundwater monitoring;
4. Results of the water supply monitoring;
5. Results of the septic tank monitoring, including the number of tanks for which notifications for cleaning were issued, and from compilation of Liquid Waste Hauler Manifests, the volumes of waste removed;
6. A description of any activity to control vegetation in the leachfield area;
7. A statement of when the O&M Manual was last reviewed for adequacy, and a description of any changes made during the year;
8. A description of the annual evaluation of effluent distribution and adjustments made, if any;
9. A summary of maintenance and repairs activities which were performed on the effluent collection system;
10. A statement regarding whether flow meter was calibrated during the year; A statement on how many new septic tanks were connected to the leachfield disposal system during the year.
11. Attached documentation describing user education actions; and
12. A discussion of any compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.

A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain a statement by the discharger, or the discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate and complete.

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

Ordered by:

THOMAS R. PINKOS, Executive Officer

29 November 2005

(Date)

JSK: 9/20/05

INFORMATION SHEET

ORDER NO. R5-2005-0176
CEDAR RIDGE VIEW, LLC.
CEDAR RIDGE VIEW MOBILE HOME PARK
WASTEWATER TREATMENT AND DISPOSAL SYSTEM
AMADOR COUNTY

Cedar Ridge View, LLC. owns property on which it proposes to construct the Cedar Ridge View Mobile Home Park (MHP) located near Pine Grove in Amador County. At full buildout, the MHP will consist of 90 adult/senior residential units. Wastewater generated from the MHP will be treated and disposed of via a septic tank leachfield system.

Each residential unit will have a 1,200 gallon dual chamber watertight septic tank that is equipped with an effluent filter and screening device to eliminate solids carryover into the collection system. Septic tank effluent from all but 12 of the residential units will enter the main collection system and be discharged into a lift station located at a low point within the north side of the MHP property. Septic tank effluent from the remaining 12 residential units will flow via gravity through a collection system to a leachfield dosing tank near the southwest corner of the leachfield.

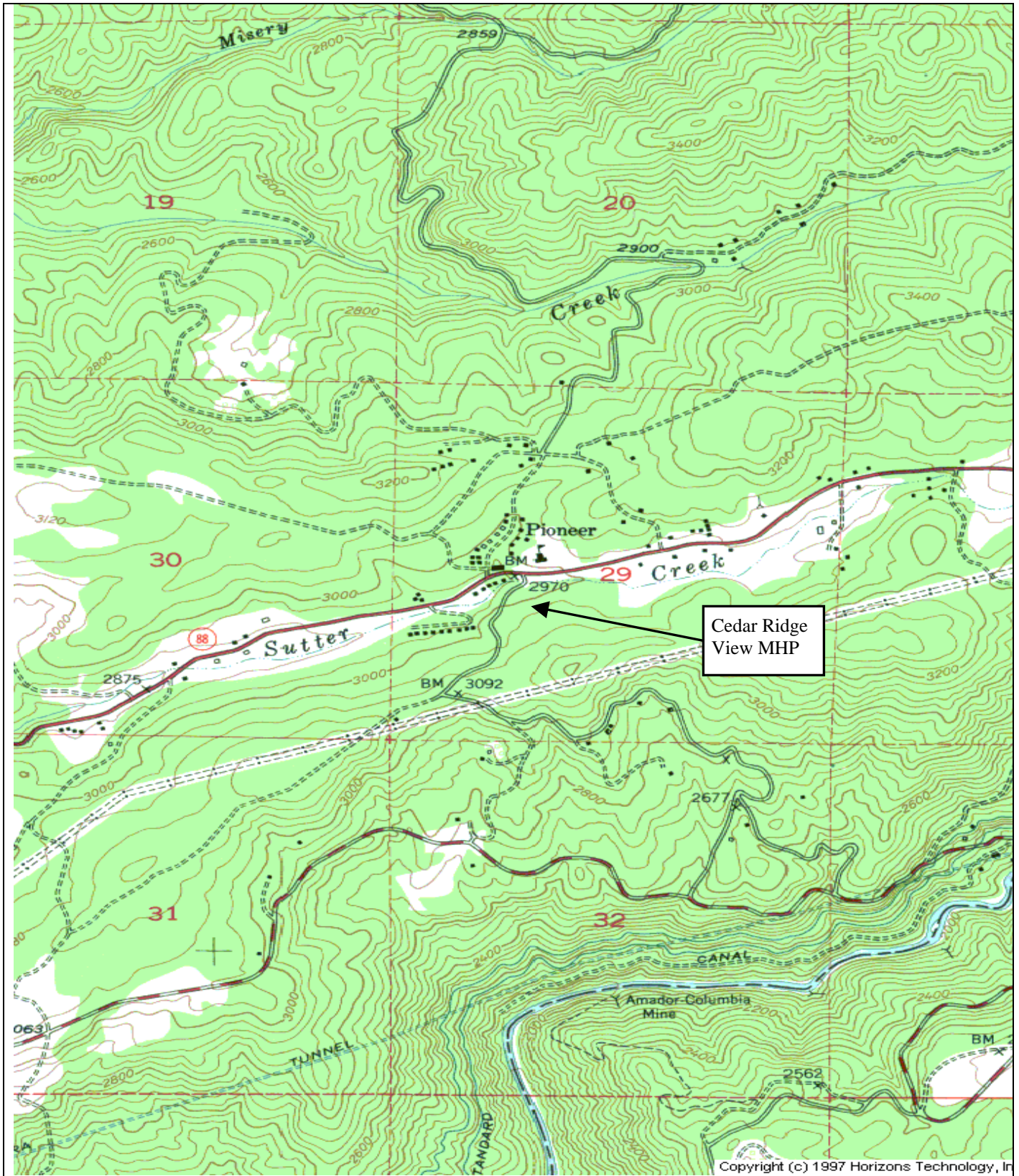
Wastewater disposal will occur via pressure dosing from the lift station and dosing tank to a series of pressure dosed leachfields. The leachfield disposal area consists of approximately 6,750 linear feet of pressure dosed leachline on approximately four acres of land. The leachfield disposal area is divided into seven individual leachfields, each of which contains approximately 965 lineal feet of leachline. The leachfield disposal system is being designed to dispose of approximately 13,500 gallons per day (gpd). Therefore, this Order allows a monthly average dry weather flow of 13,500 gpd.

Information provided in the Discharger's RWD indicate that the soils, and geologic and hydrogeologic conditions at the proposed leachfield, meet the Basin Plan Guidelines with respect to percolation rates, depth to seasonal high groundwater, and depth to bedrock.

This Order requires the Discharger to: submit a report certifying that the wastewater system has been constructed in accordance with this Order; submit a Operation and Maintenance Plan; and install and sample groundwater monitoring wells.

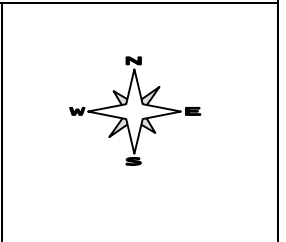
The proposed Order requires the Discharger to conduct septic tank, effluent, leachfield and groundwater monitoring as required by the Monitoring and Reporting Program (MRP). In order to adequately characterize its wastewater effluent, the Discharger is required to monitor for TDS, nitrogen, and TKN. Monitoring of additional minerals is required on an annual basis. Groundwater monitoring and reporting is required on a quarterly basis.

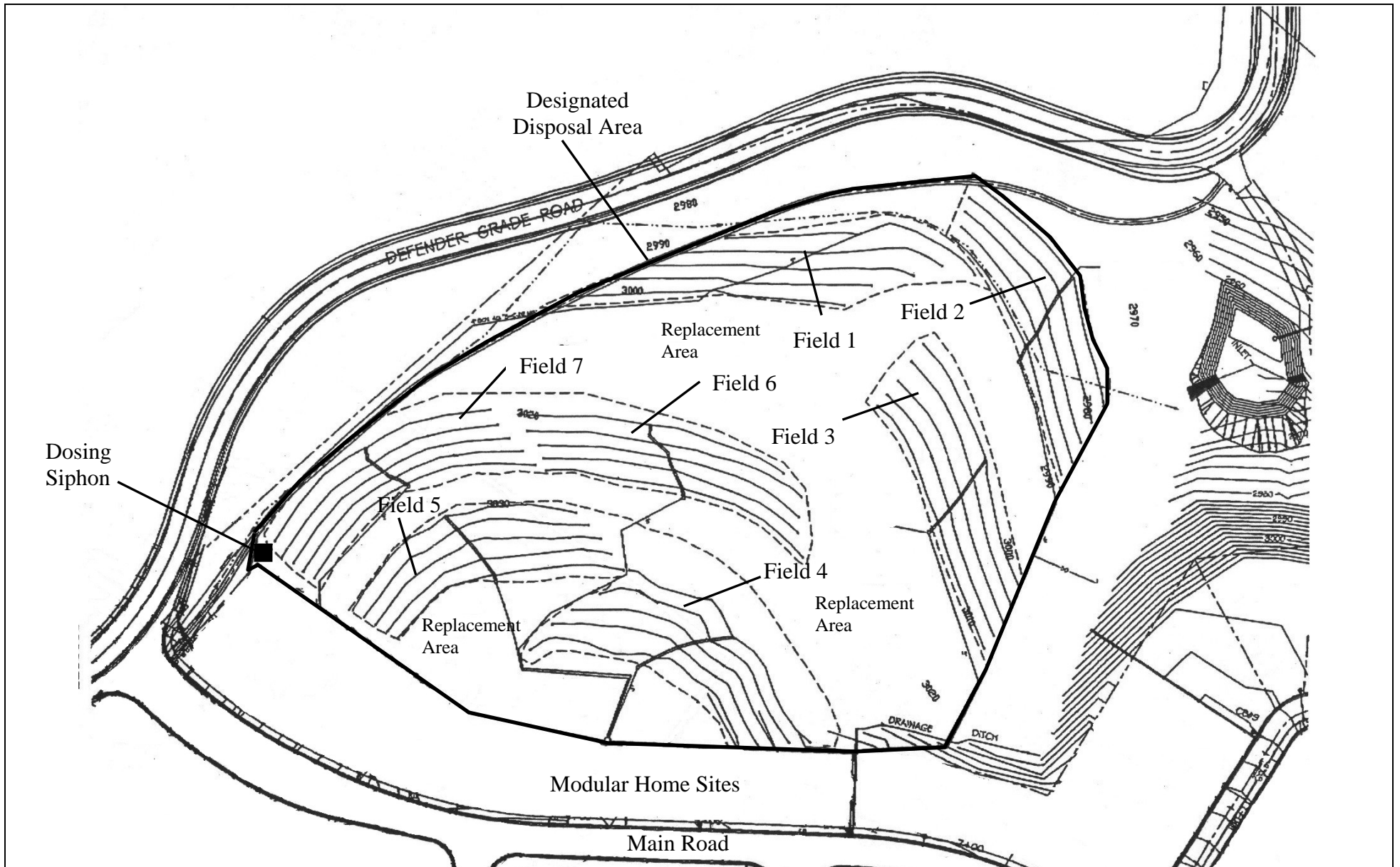
JSK: 11/1/05



Drawing Reference:
U.S.G.S
Quad Name
TOPOGRAPHIC MAP
7.5 MINUTE QUAD

SITE LOCATION MAP
Cedar Ridge View, LLC
Cedar Ridge View Mobile Home Park
Wastewater Treatment and Disposal System
Amador County





DRAWING REFERENCE:
Toma & Anderson
Wastewater Collection and Disposal System
Sheet 2

SITE PLAN
Cedar Ridge View, LLC
Wastewater Disposal Area

Scale:
Not to Scale



California Regional Water Quality Control Board

Central Valley Region



Alan C. Lloyd, Ph.D.
Secretary for
Environmental
Protection

Robert Schneider, Chair

Arnold Schwarzenegger
Governor

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ORDER NO. R5-2005-0176 ATTACHMENT C REQUIREMENTS FOR MONITORING WELL INSTALLATION WORKPLANS AND MONITORING WELL INSTALLATION REPORTS

Prior to installation of groundwater monitoring wells, the Discharger shall submit a workplan containing, at a minimum, the information listed in Section 1, below. Wells may be installed after staff approve the workplan. Upon installation of the monitoring wells, the Discharger shall submit a well installation report which includes the information contained in Section 2, below. All workplans and reports must be prepared under the direction of, and signed by, a registered geologist or civil engineer licensed by the State of California.

SECTION 1 - Monitoring Well Installation Workplan and Groundwater Sampling and Analysis Plan

The monitoring well installation workplan shall contain the following minimum information:

A. General Information:

- Purpose of the well installation project
- Brief description of local geologic and hydrogeologic conditions
- Proposed monitoring well locations and rationale for well locations
- Topographic map showing facility location, roads, and surface water bodies
- Large scaled site map showing all existing on-site wells, proposed wells, surface drainage courses, surface water bodies, buildings, waste handling facilities, utilities, and major physical and man-made features

B. Drilling Details:

- On-site supervision of drilling and well installation activities
- Description of drilling equipment and techniques
- Equipment decontamination procedures
- Soil sampling intervals (if appropriate) and logging methods

C. Monitoring Well Design (in narrative and/or graphic form):

- Diagram of proposed well construction details
 - Borehole diameter
 - Casing and screen material, diameter, and centralizer spacing (if needed)
 - Type of well caps (bottom cap either screw on or secured with stainless steel screws)
 - Anticipated depth of well, length of well casing, and length and position of perforated interval

California Environmental Protection Agency

- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Anticipated screen slot size and filter pack

D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):

Method of development to be used (i.e., surge, bail, pump, etc.)

Parameters to be monitored during development and record keeping technique

Method of determining when development is complete

Disposal of development water

E. Well Survey (precision of vertical survey data shall be at least 0.01 foot):

Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey

Datum for survey measurements

List well features to be surveyed (i.e. top of casing, horizontal and vertical coordinates, etc.)

F. Schedule for Completion of Work

G. **Appendix: Groundwater Sampling and Analysis Plan (SAP)**

The Groundwater SAP shall be included as an appendix to the workplan, and shall be utilized as a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities.

Provide a detailed written description of standard operating procedures for the following:

- Equipment to be used during sampling
- Equipment decontamination procedures
- Water level measurement procedures
- Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
- Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
- Purge water disposal
- Analytical methods and required reporting limits
- Sample containers and preservatives
- Sampling
 - General sampling techniques
 - Record keeping during sampling (include copies of record keeping logs to be used)
 - QA/QC samples
- Chain of Custody
- Sample handling and transport

SECTION 2 - Monitoring Well Installation Report

The monitoring well installation report must provide the information listed below. In addition, the report must also clearly identify, describe, and justify any deviations from the approved workplan.

A. General Information:

Purpose of the well installation project

Brief description of local geologic and hydrogeologic conditions encountered during installation of the wells

Number of monitoring wells installed and copies of County Well Construction Permits

Topographic map showing facility location, roads, surface water bodies

Scaled site map showing all previously existing wells, newly installed wells, surface water bodies, buildings, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details (in narrative and/or graphic form):

On-site supervision of drilling and well installation activities

Drilling contractor and driller's name

Description of drilling equipment and techniques

Equipment decontamination procedures

Soil sampling intervals and logging methods

Well boring log

- Well boring number and date drilled
- Borehole diameter and total depth
- Total depth of open hole (same as total depth drilled if no caving or back-grouting occurs)
- Depth to first encountered groundwater and stabilized groundwater depth
- Detailed description of soils encountered, using the Unified Soil Classification System

C. Well Construction Details (in narrative and/or graphic form):

Well construction diagram, including:

- Monitoring well number and date constructed
- Casing and screen material, diameter, and centralizer spacing (if needed)
- Length of well casing, and length and position of perforated interval
- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Type of well caps (bottom cap either screw on or secured with stainless steel screws)

E. Well Development:

Date(s) and method of development

How well development completion was determined

Volume of water purged from well and method of development water disposal

Field notes from well development should be included in report

F. Well Survey (survey the top rim of the well casing with the cap removed):

Identify the coordinate system and datum for survey measurements

Describe the measuring points (i.e. ground surface, top of casing, etc.)

Present the well survey report data in a table

Include the Registered Engineer or Licensed Surveyor's report and field notes in appendix