

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2002-0076

WASTE DISCHARGE REQUIREMENTS  
FOR  
DARK HORSE SUBDIVISION  
DARK HORSE, LLC  
NEVADA COUNTY

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

1. On 21 June 2001, Dark Horse, LLC, submitted a Report of Waste Discharge (ROWD) and on 9 October 2001 supplemental information to the ROWD was submitted for the design, construction, installation and operation of a complete wastewater treatment and disposal facility (WWTF) to service the proposed Dark Horse Subdivision and Golf Club (hereafter Dark Horse) located in Nevada County.
2. Dark Horse, LLC, is hereafter referred to as Discharger.
3. On 6 September 2001, an application was submitted to the Nevada County Department of Transportation and Sanitation on behalf of the Discharger to annex to the Nevada County Sanitation District No. 1 (NCSD) for the operation, maintenance and administration of the sewer collection system and treatment facilities. In order for NCSD to become the owner/operator of the WWTF the following must be completed:
  - a. Annexation of Dark Horse as a new operating zone into NCSD.
  - b. Design of Dark Horse wastewater collection system and treatment facilities with review and approval by NCSD.
  - c. Construction of Dark Horse wastewater collection system and treatment facilities with inspection and approval by NCSD.
  - d. Acceptance of the completed Dark Horse wastewater collection system and treatment facilities by the NCSD.
4. The Assessor's Parcel Number of the WWTF is 51-310-35. Dark Horse is located in Portions of Sections 25, 26, 35 and 36, T14N, R8E, MDB&M. The location map and site map of Dark Horse are located on Attachments A and B, respectively, which are attached herein and made part of this Order by reference.

**Subdivision Description**

5. Dark Horse will be constructed and occupied in two phases. These phases will be identified as Phase I and Phase II. The total build-out will consist of 273 single-family residences, country club, 18-hole golf course and golf course maintenance facility.
6. Phase I will consist of 117 residences, the country club and the maintenance facility. Phase II will consist of 156 residences. The only commercial business will be that of the country club.

**Proposed Discharge, Treatment Facility and Disposal Area**

7. The design flow rates for the Subdivision are as follows:

<u>Phase</u>	<u>ADWF (gpd)</u>	<u>PWWF (gpd)</u>
Phase I	44,690	48,200
Phase II	42,120	46,800
Total	86,810	95,000

8. The design flows were calculated assuming 300 gallons/day per connection for each residence, where each residence includes three to four bedrooms with an average of three people per residence. The design flow for the commercial development (golf course facilities) was broken down and calculated based upon the facility services.
9. Wastewater treatment for Dark Horse will be provided by a NitroRaptor/Bio-Pure™ Wastewater Treatment System, Model BP 500 with a tertiary treatment process train and sub-surface disposal. A 50,000 gpd system will be installed for Phase I and at a later date a 50,000 gpd will be installed for Phase II.
10. A breakdown of the WWTF treatment train is as follows: Influent Equalization System, Aeration Tank System, Batch Clarifier, Aerobic Digestion, Ozone Treatment and Disinfection, Effluent Filtration and Effluent Pumping to a dosing tank thence to subsurface drip disposal emitters.
11. The effluent from each phase will be pumped via a 6-inch force main to a 30,000-gallon dosing tank then dosed to a sub-surface drip disposal area. The location of the initial disposal areas for Phase I and Phase II are shown on Attachment B. The soil depths of the initial disposal areas are seven to eight feet. The average percolation rate in the initial area is 10 minutes per inch (mpi), however for design purposes, a percolation rate of 20 mpi was used. The initial disposal areas have been designed for a loading rate of 0.5 gallons per day per square foot. The sub-surface emitters will be placed 6 to 8 inches below ground and a golf course grass will be planted over the disposal areas. The total area for the initial disposal areas is 5.5 acres.
12. The replacement disposal areas for Phase I and Phase II are comprised of 6.75 acres and are shown on Attachment B. The Phase I replacement area has an average percolation rate of 63 mpi and the averaged rate for Phase II replacement area is 10 mpi. The design loading rates for Phase I and II replacement areas are 0.36 gpd/ft<sup>2</sup> and 0.35 gpd/ft<sup>2</sup>, respectfully.
13. Several soil mantle trenches were excavated by Holdrege and Kull in the original and replacement disposal areas. Soil depth ranges from 3.8 to 8 feet below grade. These trenches were excavated between 7 to 8 feet below grade. Groundwater or indications of seasonal high groundwater were not encountered.
14. The influent wastewater characteristics of the combined phases are as follows:

<u>Constituent</u>	<u>Flow (gpd)</u>	<u>Conc. (mg/L)</u>	<u>Pounds/day</u>
BOD <sup>1</sup>	48,200	337	135
TSS <sup>2</sup>	48,200	281	113
Total Nitrogen	48,200	36	14

<sup>1</sup> Biological Oxygen Demand

<sup>2</sup> Total Suspended Solids

15. The projected final effluent quality for the combined phases, as outlined in the ROWD, is as follows:

<u>Constituent</u>	<u>Secondary Effluent Concentration</u>	<u>Final Effluent Concentration</u>
BOD	14 mg/L	2 mg/L
TSS	11 mg/L	2 mg/L
Turbidity	5 NTU	1 NTU
Total Nitrogen	<5 mg/L	<5 mg/L
Total Coliform	varies	<2.2 MPN/100 mL
Total Dissolved Solids	231 mg/L	231 mg/L
pH	7-8 pH units	7-8 pH units

### Sanitary Sewer System

16. The Discharger's sanitary sewer system collects raw wastewater with sewers, pipes, pumps, and/or other conveyance systems and directs raw wastewater to the WWTF. A "sanitary sewer overflow" occurs when there is a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Temporary storage and conveyance facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) are part of the sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage/conveyance facilities.
17. Sanitary sewer overflows may consist of varying mixtures of domestic sewage, industrial wastewater, and commercial wastewater; this mixture depends on pattern of land use in the sewage collection system tributary to the overflow. The chief causes of sanitary sewer overflows include grease blockages, root blockages, debris blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm or groundwater inflow/infiltration, lack of capacity, and contractor caused blockages.
18. Sanitary sewer overflows may contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease, and other pollutants. Sanitary sewer overflows can cause temporary exceedances 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.

19. The Discharger is expected to take all necessary steps to adequately maintain, operate, and prevent unintended discharges from its sanitary sewer collection system. This Order requires the Discharger to prepare and implement best practicable treatment and control (BPTC) to prevent unintended discharges from the sanitary sewer collection system. The Regional Board acknowledges that this is a new system, however, Regional Board experience has shown that a *Sanitary Sewer Collection Operation, Maintenance, Overflow Prevention, and Response Plan (SSO Plan)* and good Operation and Maintenance (O&M) may prevent future overflows. Therefore, the Discharger is required to develop an O&M Plan and SSO Plan pursuant to a compliance schedule as outlined in Provisions F.5a and F.9.

### **Degradation**

20. State Water Resources Control Board (State Board) Resolution No. 68-16 (hereafter Resolution 68-16 or the “Antidegradation” Policy) requires the Regional Board in regulating the discharge of waste to maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit of the people of the State, will not unreasonably affect beneficial uses and will not result in water quality less than that is described in the Regional Board’s policies (e.g. quality that exceeds water quality objectives).
21. The Regional Board finds that some degradation of groundwater beneath the WWTF is consistent with Resolution 68-16 provided that:
  - a). The degradation is confined to a specified area;
  - b). The Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures;
  - c). The degradation is limited to waste constituents typically encountered in municipal wastewater as specified in the groundwater limitations in this Order; and
  - d). The degradation does not result in water quality less than that prescribed in the Basin Plan.
22. Some degradation of groundwater by some of the typical waste constituents released with discharge from a municipal wastewater utility after effective source control, treatment, and control is consistent with maximum benefit to the people of California. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impact on water quality will be substantially less. Degradation of groundwater by constituents (e.g., toxic chemicals) other than those specified in the groundwater limitations in this Order, and by constituents that can be effectively removed by conventional treatment (e.g., BOD, total coliform bacteria) is prohibited. When allowed, the degree of degradation allowed depends upon many factors (e.g., background water quality, the waste constituent, the beneficial uses and most stringent water quality objective, source control measures and waste constituent treatability).

23. Economic prosperity of local communities and associated industry is of maximum benefit to the people of California, and therefore sufficient reasons exists to accommodate growth and groundwater degradation around the WWTF, provided that the terms of the Basin Plan are met.

### **Treatment and Control Practice**

24. These requirements require the Discharger to monitor the groundwater at the disposal area and if the monitoring data indicate that the discharge of waste to the disposal area is causing groundwater to contain waste constituents in concentrations statistically greater than background water quality, then the Discharger may be required to submit a report to indicate how such degradation will comply with Resolution No. 68-16. Upon review of such report, the Regional Board may revise this Order, including the groundwater limitation section.
25. The WWTF and disposal areas as described in Finding Nos. 9, 10 and 11, provide the following BPTCs:
- a). Technology for secondary/tertiary treatment process train supported by influent flow equalization and solids handling with aerobic digestion;
  - c). Recycling of wastewater through subsurface irrigation of effluent to the disposal field at a controlled application rate of 0.5 gallons per day per square foot to subsurface geoflow emitters to a 7 to 8 foot soil mantle.
  - b). Operations and Maintenance Manual.
26. Depth to groundwater and background water quality is unknown at the disposal area therefore, the Regional Board has incorporated groundwater monitoring at the WWTF to ensure that the BPTC, as outlined in Finding No. 25 of this Order, incorporated by the Discharger will provide adequate protection of groundwater. If it is determined that the discharge is causing groundwater quality to be degraded beyond background water quality and exceeds the Groundwater Limitations set forth in this Order, then the Discharger, upon direction of the Executive Officer, will be required to complete the tasks as required in the Provisions F.12a through F.12.d of this Order, and implement the approved strategies developed from that work. This implementation will ensure that BPTC and the highest water quality consistent with the maximum benefit to the people of the State will be achieved.

### **Groundwater Considerations**

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

(December 1981), and any more stringent standards adopted by the Discharger or county pursuant to California Water Code (CWC) Section 13801, apply to all monitoring wells.

28. 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, California Code of Regulations (CCRs) (hereafter Title 27). While the wastewater treatment plant is exempt from Title 27, the data analysis methods of Title 27 are appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.

### **Basin Plan Considerations**

29. *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, contains implementation plans and policies for protecting waters of the basin, and incorporates by references plans and policies adopted by the State Board. These requirements implement the Basin Plan.
30. The Basin Plan encourages recycling of wastewater wherever feasible.
31. The Basin Plan establishes numerical and narrative water quality objectives for surface and groundwaters within the basin, and recognizes that water quality objectives are achieved primarily through the Regional Board's adoption of waste discharge requirements and enforcement orders. Where numerical water quality objectives are listed, these are limits necessary for the reasonable protection of beneficial uses of the water. Where compliance with narrative water quality objectives is required, the Regional Board will, on a case-by case basis, adopt numerical limitations in orders which will implement the narrative objectives to protect beneficial uses of the waters of the state.
32. The Basin Plan identifies numerical water quality objectives for waters designated as municipal supply. These are the maximum contaminant levels (MCLs) specified in the following provisions of Title 22, California Code of Regulations: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Table 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) of Section 64449. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Regional Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
33. The Basin Plan contains narrative water quality objectives for chemical constituents and toxicity. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in plants or animals. The chemical constituent objective requires that groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses.

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

#### **Beneficial Uses**

35. Surface water drainage is to Lake of the Pines and Magnolia Creek, thence to the Bear River.
36. The beneficial uses of the Bear River are municipal, industrial, and agricultural supply; recreation; aesthetic enjoyment; ground water recharge; fresh water habitat, hydroelectric power generation; and preservation and enhancement of fish, wildlife and other aquatic resources.
37. The beneficial uses of ground waters are municipal, domestic, industrial, and agricultural supply.

#### **Sludge and Solid Waste**

38. The discharge authorized herein and the treatment and storage facilities associated with the discharge, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), Section 20005 et seq. (hereafter Title 27). The exemption, pursuant to Section 20090(a) of Title 27, 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 associated with a municipal wastewater treatment plant.

#### **Water Recycling**

39. Title 22, Section 60303 states that water recycling requirements shall not apply to the use of recycled water onsite at a water recycling plant, or wastewater treatment plant, provided access by the public to the area of onsite recycled water use is restricted.
40. Title 22, Section 60323(a) states that no person shall produce or supply reclaimed water for direct reuse from a proposed water reclamation plant unless an engineering report is submitted for review and approval by the Department of Health Services (DHS) and the Regional Board.

A Title 22 Engineering Report shall be submitted to the Regional Board and DHS for review and approval and this Order must be updated prior to beneficial reuse in accordance with Title 22.

### **Other Regulatory Considerations**

41. The State Board adopted Order No. 97-03-DWQ (General Permit No. CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities. This Order requires the submittal of a Notice of Intent (NOI) or Notice of Non-Applicability by all affected industrial dischargers.
42. Section 13267(b)(1) 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. R5-2002-0076” are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

43. 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.
44. On 22 May 1997, the Nevada County Planning Commission (Lead Agency) approved and adopted a Mitigated Negative Declaration for the Dark Horse Subdivision. The Mitigated Negative Declaration was upheld by the Nevada County Board of Supervisors on 30 June 1997 and an appeal was filed on the Planning Commission’s action. Based on the appeal, an Environmental Impact Report (EIR) was prepared for the project.
45. Wastewater treatment and disposal, as outlined in the EIR, would be via a community septic system, which would utilize a recirculating sand filter system, which would provide additional treatment prior to disposal. On 3 November 1998, a Notice of Determination (NOD) was filed by Nevada County for the adoption of the EIR.
46. In February 2002, Nevada County Planning Department prepared a Mitigated Negative Declaration, which included various amendments to the General Plan of the Dark Horse

Subdivision including the replacement of the community septic system with a tertiary wastewater treatment facility. On 28 March 2002, the Nevada County Planning Commission certified the Mitigated Negative Declaration for the replacement of the community septic system with a tertiary wastewater treatment facility for wastewater treatment and disposal in accordance with the provisions of the California Environmental Quality Act (CEQA), (Public Resources Code Section 21000, et seq.) and the State CEQA Guidelines.

### **Public Notice**

47. The Regional Board considered all the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, in establishing the conditions of discharge.
48. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge.
49. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

**IT IS HEREBY ORDERED** pursuant to Sections 13263 and 13267 of the California Water Code, that Dark Horse, LLC, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted hereunder, shall comply with the following at the Dark Horse Subdivision.

*[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991, which is attached hereto and made part of this Order by reference.]*

#### **A. Discharge Prohibitions:**

1. The indirect or direct discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of wastewater to the WWTF is prohibited until a responsible public entity obtains administration and control of the WWTF.
3. The construction of any type of structure or pipeline(s) in either of the 100% replacement disposal area(s) is prohibited.
4. The by-pass or overflow of untreated or partially treated waste from the sanitary sewer system or WWTF is prohibited.
5. Public contact with wastewater is prohibited.

6. The use of treated wastewater effluent for beneficial reuse is prohibited until a Title 22 Engineering Report has been approved by DHS and this Order has been updated to include the approved beneficial reuse.
7. The discharge septage to the sanitary sewer system or WWTF is prohibited.
8. Discharge of waste classified as hazardous, as defined in Sections 2521(a) of Title 23, CCR, Section 2510, et seq., (hereafter Chapter 15), or 'designated', as defined in Section 13173 of the CWC, is prohibited.

**B. Discharge Specifications:**

1. The Discharger shall not exceed the design average dry weather flow of 86,000 gpd or the design peak wet weather flow of 95,000 gpd after the necessary expansion of the WWTP to service phase II. Until the Phase II expansion of the WWTP is complete, the discharge shall not exceed the design average dry weather flow of 44,700 gpd or the design peak wet weather flow of 48,200 gpd.
2. Phase I connections to the WWTP shall not exceed 117 residences, the country club and the maintenance facility. Phase II connections shall not exceed 156 residences.
3. Best management practices shall be implemented to prevent wastewater migration from the WWTF or surface run on and run off from the disposal area.
4. The discharge to the disposal area shall remain underground at all times.
5. The Discharger shall comply with applicable regulation criteria set forth in Title 22, Division 4, Section 60301 et seq., CCR.
6. Public access to the WWTF and the disposal areas shall be controlled through fences and/or signs.
7. Any potable water lines installed in the vicinity of the WWTF, disposal area or any wastewater pipeline shall maintain the respective setbacks as outlined in Title 22, Article 5., Section 64630, CCR.
8. Objectionable odors originating at the facility shall not be perceivable beyond the limits of the WWTF and disposal areas.
9. WWTF and disposal areas shall be constructed, operated, and maintained to prevent inundation or washout due to flood, storm, or an entire winter season with a 100-year return frequency.

10. 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.
11. Upon the reduction, loss, or failure of the sanitary sewer system resulting in a sanitary sewer overflow, the Discharger shall, to the extent necessary to maintain compliance with this Order, take any necessary remedial action to (a) control or limit the volume of sewage discharged, (b) terminate the sewage discharge as rapidly as possible, and (c) recover as much as possible of the sewage discharged (including washdown water) for proper disposal. The Discharger shall implement all remedial actions to the extent they may be applicable to the discharge including the following:
  - a. Interception and rerouting of sewage flows around the sewage line failure;
  - b. Vacuum truck recovery of sanitary sewer overflows and washdown water;
  - c. Use of portable aerators where complete recovery of the sanitary sewer overflows are not practicable and where severe oxygen depletion is expected in surface waters; and
  - d. Cleanup of sewage-related debris at the overflow site.
12. 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 Groundwater Limitations.

**C. Effluent Limitations:**

1. The effluent discharged to the disposal area shall not have a pH less than 6.5 or greater than 8.5.
2. The final effluent to be discharged to the disposal area shall not exceed the following limits (as proposed in ROWD):

<u>Constituent</u>	<u>Unit</u>	<u>Monthly Average</u> <sup>1</sup>
BOD <sub>5</sub>	mg/l	15
Total Suspended Solids	mg/l	15
Total Nitrogen (TKN plus Nitrate)	mg/l	5
Turbidity	NTU	1
pH	pH units	7-8

3. The concentration of total coliform bacteria in the effluent shall not exceed a median most probable number (MPN) of 2.2/100 mL utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria shall not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period.

**D. Sludge Specifications:**

Sludge, as used in this document, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screenings generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTF. Biosolids refers to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

1. Sludge and solid waste shall be removed from screens, sumps, ponds, and clarifiers as needed to ensure optimal plant operation.
2. Treatment and storage of sludge generated by the WWTF shall be confined to the WWTF property, and shall be conducted in a manner that precludes infiltration of waste constituents into soils in a mass or at concentrations that will violate the Groundwater Limitations of this Order.
3. Any storage of residual sludge, solid waste, and biosolids at the WWTF shall be temporary, and the waste shall be controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or at concentrations that will violate the Groundwater Limitations of this Order.
4. Residual sludge, biosolids, and solid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at disposal sites (i.e., landfills, WWTPs, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a Regional Water Quality Control Board will satisfy this specification.
5. Use of biosolids as a soil amendment shall comply with valid waste discharge requirements issued by a regional water quality control board. In most cases, this will mean the General Biosolids Order (State Water Resources Control Board Water Quality Order No. 2000-10-DWQ, *General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities*). For a biosolids use project to be covered by the General Biosolids Order, the Discharger must file a complete Notice of Intent and receive a Notice of Applicability for each project.

**E. Groundwater Limitations:**

1. Release of waste constituents from the WWTF shall not cause groundwater under and beyond that system component, as determined by an approved well monitoring network, to:

- a. Contain any of the following constituents in concentration greater than as listed or greater than background quality, whichever is greater:

<u>Constituent</u>	<u>Units</u>	<u>Limitation</u>
Boron	mg/L	0.6
Chloride	mg/L	106
Iron	mg/L	0.3
Manganese	mg/L	0.05
Total Coliform Organisms	MPN/100 ml	Nondetect
Total Dissolved Solids <sup>1</sup>	mg/L	450
Total Nitrogen	mg/L	10
Nitrite (as N)	mg/L	1
Nitrate (as N)	mg/L	10
Ammonia (as N)	mg/L	0.5
Total Organic Carbon (TOC)	mg/L	0
Total Trihalomethanes	µg/L	100

<sup>1</sup> A cumulative impact that accounts for several dissolved constituents in addition to those listed here separately [e.g. alkalinity (carbonate and bicarbonate), calcium, hardness, phosphate, potassium, etc.].

- b. Contain any constituent not identified in Groundwater Limitation E.1.a in concentrations greater than background quality (whether chemical, physical, biological, bacteriological, radiological, or some other property or characteristic).
- c. Exhibit a pH of less than 6.5 or greater than 8.5 pH units.
- d. Impart taste, odor, or color that creates nuisance or impairs any beneficial use.

**F. Provisions:**

1. The Discharger is required to submit all technical reports required by the Regional Board pursuant to Section 13267 of the CWC.
2. The Discharger shall comply with the Monitoring and Reporting Program No. R5-2002-0076, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
3. **Within 30 days** prior to discharge of wastewater to the WWTF, the Discharger shall submit the following and implement the required as appropriate:
  - a. A report prepared by a California Registered Engineer that describes potential scenarios of wastewater treatment system failures, and the costs to remedy such failures. **Within 30 days** of Board staff's written acceptance of this report, the Discharger shall provide for this amount or a financial assurance of this amount to be

placed into the reserve fund for the WWTF. A letter shall be submitted to the Executive Officer from the responsible financial agent or agency to verify that that this has been done **within 30 days** of the deposit of funds or financial assurance mechanism. The financial assurance must remain available to the Discharger for repairs until such time that the Executive Officer indicates the financial assurances is no longer needed. The Discharger shall notify the Regional Board annually **by 1 January** that the financial assurance mechanism remains in place.

- b. A signed contract for the operation, maintenance and monitoring of the wastewater treatment plant. The contractor performing these functions must be a Registered Engineer, Registered Environmental Health Specialist or Certified Treatment Plant Operator. Any modifications to the contract or transfer of the contract to another person or agency shall be subject to approval of the Executive Officer.
  - c. A report by a California Registered Civil Engineer that estimates the annual amount of funds necessary to accrue an amount of capitol sufficient to replace the treatment and disposal system at the end of its useful life. The Discharger shall then establish an account for these funds and shall file an annual report with the Regional Board **by 1 January** of each year verifying the account contains adequate capital in accordance with the engineer's report.
4. Within 30 days of discharging wastewater to the WWTF, the Discharger shall submit a report showing that an influent flow wastewater flow monitoring device has been installed and accurately calibrated, such that peak dry weather flows and peak wet weather flows can be recorded daily.
  5. Prior to the discharge of any wastewater to the WWTF the Discharger shall complete the following tasks, all under direct supervision of a California Registered Engineer, with wet stamp submittals where necessary:
    - a. The Discharger shall maintain an Operations and Maintenance (O & M) Manual which is kept current of the existing conditions and procedures. Operating personnel shall keep a copy of the O & M Manual at the wastewater treatment plant site for reference. Operating personnel shall be familiar with its contents and location, and it shall be made available for review during Regional Board inspection. At a minimum, items to be kept with the O & M Manual are as follows:
      - Site plan with description of the treatment components including operating procedures for each component, piping diagrams and process schematics, discussion of alarms and alarm response, discussion of maintenance and inspection procedures,
      - Steps to take when there is a problem with the system, operation and maintenance records to include equipment maintenance schedules and operator logs,
      - Monitoring and Reporting Program self-monitoring reports, system upsets, sludge disposal, and personnel training,

- An emergency response plan to include reporting procedures, agency contact phone numbers, a spill response plan for hazardous materials, raw wastewater, partially treated wastewater, spill cleanup, and cleanup waste products disposal plan; and
  - A copy of this Order.
- b. Submittal of engineer stamped as-built drawings.
- c. An engineer's report documenting that the treatment plant, disposal area and all items auxiliary to the plant have been constructed in accordance with the plans and specifications. The report shall include:
- All leak testing information, including all piping and tanks,
  - An inspection log verifying an inspector was present for all critical phases of construction,
  - Logs of pump testing, filter testing, blower testing, and testing of any other equipment,
  - Testing of disposal area for even distribution of wastewater,
  - Certification that all construction complies with County Codes.
6. **Within 90 days** of the adoption of this Order, the Discharger shall submit a plan for the installation of a shallow piezometer in each disposal field. Piezometers shall be installed within 60 days of Regional Board staff acceptance with the plan.
7. By **1 August 2002**, the Discharger shall submit a Sludge Disposal Plan. The plan shall provide a detailed program and time schedule for permanent disposal of all solid wastes generated at the wastewater treatment plant and tertiary treatment plant. The Sludge Disposal Plan shall include the items listed on Attachment D.
8. The Discharger shall perform water quality studies and implement the required monitoring and reporting program. The following reports shall be prepared by a California Registered Engineer or Registered Geologist experienced in water quality.
- a. By **1 May 2002**, the Discharger shall submit a Monitoring Well Installation Report that describes the installation of groundwater monitoring wells located in the disposal area and contains the items found in the second section of Attachment D, attached herein and made part of this Order by reference.
  - b. The Discharger shall commence monitoring in accordance with the groundwater monitoring program described in the MRP.
9. By **1 February 2003**, the Discharger shall submit a *Sanitary Sewer Collection Operation, Maintenance, Overflow Prevention, and Response Plan* (SSO Plan) that describes the actions designed to prevent, or minimize the potential for sanitary sewer overflows. The Discharger shall maintain the SSO Plan in an up-to-date condition and shall amend the SSO Plan whenever there is a change (e.g., in the design, construction, operation, or maintenance of the sanitary sewer system or sewer facilities) that materially affects the

potential for sanitary sewer overflows, or whenever there is a sanitary sewer overflow. The Discharger shall ensure that the up-to-date SSO Plan is readily available to sewer system personnel at all times and that sewer system personnel are familiar with it.

At a minimum, the Collection System Operation and Maintenance portion of the plan shall contain or describe the following:

- Detailed maps of the sanitary sewer system, identifying sewer mains, manholes, and lift stations;
- A detailed listing of elements to be inspected, a description of inspection procedures and inspection frequency, and sample inspection forms;
- Routine inspection and testing of all pipelines, lift stations, valves, and other key system components. The inspection/testing program shall be designed to reveal problems that might lead to accidental spills and ensure that preventive maintenance is completed;
- Repair or replacement of old, worn out, or defective equipment;
- Minimize the need for manual operation of critical systems and provide spill alarms or other “fail safe” mechanisms;
- Properly manage, operate and maintain, at all times, all parts of the collection system that the Discharger owns or over which the Discharger has operational control;
- Provide adequate capacity to convey base flows and peak flows for all parts of the collection system the Discharger owns or over which the Discharger has operational control; and
- Take all feasible steps to stop and mitigate the impact of sanitary sewer overflows in portions of the collection system the Discharger owns or over which the Discharger has operational control; and

At a minimum, the Overflow Prevention and Response Plan shall contain or describe the following:

- Identification of areas of the collection system that historically have overflowed and an evaluation of the cause of the overflow;
- Maintenance activities that can be implemented to address the cause of the overflow and means to prevent future overflows. Maintenance activities may include pretreatment of wastewater from industrial dischargers who discharge high concentrations of oil and grease in their wastewater;
- Procedures for responding to sanitary sewer overflows designed to minimize the volume of sewer overflow that enters surface waters, and minimize the adverse effects of sewer overflows on water quality and beneficial uses;
- Describe steps to be taken when an overflow or spill occurs, and procedures that will be implemented to ensure that all overflows and spills are properly identified, responded to and reported; and
- A public notification plan, in which any posting of areas contaminated with sewage is performed at the direction of the Nevada County Health Department. All parties with a reasonable potential for exposure to an overflow event shall be notified.

10. By **1 May 2003**, the Discharger shall submit a Background Groundwater Quality Study Report of the disposal area. The technical report shall be prepared and certified by a California Registered Civil Engineer or Registered Geologist. The report shall include each constituent/parameter the following: summary of monitoring data, calculation of the concentration in background monitoring wells, and comparison of background water quality to that in wells downgradient of the disposal area. Determination of background water quality shall be made using the methods described in Title 27, Section 20415(e)(10).
  
11. By **1 May 2004** the Discharger shall submit a written technical report, prepared by a California Registered Civil Engineer or Registered Geologist, that characterizes the groundwater quality of each monitoring well. For each monitoring parameter/constituent outlined in the MRP, the report shall compare measured concentrations for compliance monitoring wells with: 1) the calculated background concentration, and 2) the interim numeric limitations set forth in Groundwater Limitation E.1.a. Where background concentrations are statistically greater than the interim limitations specified in Groundwater Limitation E.1.a, the report shall recommend final groundwater limitations for waste constituents listed therein. Subsequent use of a concentration as a final groundwater limitation will be subject to the discretion of the Executive Officer. Where background concentrations are statistically less than the listed interim concentrations and the concentrations in the downgradient wells are statistically greater than background concentrations, the Discharger shall begin the preparation of a BPTC Evaluation Report to be approved by the Executive Officer.

If the BPTC evaluation report is required by this provision and subsequent monitoring results demonstrate the need to modify groundwater limitations this Order will be reopened and modified groundwater limitations adopted.

### BPTC EVALUATION REPORT

12. Provisions F.12.a through F.12.d outline the schedule and compliance dates to be adhered to if the Discharger is required to submit a BPTC Evaluation Report per Provision F.11:
  - a. By **1 May 2005**, the Discharger shall submit for Executive Officer approval a written work plan in the form of a technical report that sets forth a schedule for systematic and comprehensive technical evaluation of each component of the WWTP's waste treatment and control to determine for each waste constituent BPTC as used in Resolution 68-16. The technical report shall contain a preliminary evaluation of each component and propose a time schedule for completing the comprehensive technical evaluation. The technical report shall be prepared and certified by a California Registered Civil Engineer. The schedule to complete all comprehensive technical evaluations shall be as short as practicable and shall not exceed one year.
  - b. By the schedule approved by the Executive Officer the Discharger shall submit by **1 May 2007**, the written comprehensive technical evaluation shall be submitted with the Discharger's written recommendations for the WWTF modifications (e.g. component upgrade and retrofit). The report shall include specific methods the Discharger proposes as a means to measure processes and assure continuous optimal performance of BPTC measures. Comprehensive technical evaluations shall be prepared and certified by a California Registered Civil Engineer. The source of funding and proposed schedule for modifications shall be identified. The schedule shall be as short as practicable but in no case shall exceed five years past the Executive Officer's approval of the comprehensive technical evaluation unless the schedule is reviewed and specifically approved by the Regional Board. The component evaluation, recommended improvements and schedule are subject to the Executive Officer's review and approval.
  - c. By **1 August 2007**, the Discharger shall submit a technical report that proposes specific numeric groundwater limitations that reflect full implementation of BPTC and describe how these were determined considering actual data from compliance monitoring wells, impact reductions through full implementation of BPTC, reasonable growth, etc. The Discharger should submit results of a validated groundwater model to support its proposal.
  - d. By **1 August 2008**, the District shall submit a technical report on the overall status of compliance with implementation of BPTC and compliance with all groundwater limitations.
13. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
14. The Discharger shall use the best practicable cost-effective control technique(s) currently available to comply with discharge limits specified in this order.

15. The Discharger is ultimately responsible for the effectiveness of its treatment and control measures in assuring compliance with groundwater limitations, and liable for remediation of any impact on groundwater not authorized herein. Degradation of water quality beneath the facility beyond the limits indicated in Groundwater Limitations shall be grounds to rescind the Order, reclassify the waste as designated and require compliance with Title 27 prescribed waste containment standards or to initiate enforcement, as appropriate.
16. The Discharger shall not allow pollutant-free wastewater to be discharged into the wastewater collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.
17. 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."
18. The Discharger shall report promptly to the Regional Board any material change or proposed change in the character, location, or volume of the discharge.
19. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to this office.
20. 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.
21. 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.
22. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
23. The Regional Board will review this Order periodically and will revise requirements when necessary.

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2002-0076  
DARK HORSE SUBDIVISION  
DARK HORSE, LLC  
NEVADA COUNTY

-20-

I, GARY M. CARLTON, 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 26 April 2002.

---

GARY M. CARLTON, Executive Officer

MMH: 4/2/02

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2002-0076  
DARK HORSE SUBDIVISION  
DARK HORSE, LLC  
NEVADA COUNTY

This Monitoring and Reporting Program (MRP) incorporates requirements for monitoring of the influent, effluent, groundwater, and other aspects of the wastewater collection, treatment, and disposal systems at the Dark Horse Subdivision and 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. Sample collection stations shall be established such that the samples collected are representative of the nature and volume of the material(s) sampled.

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

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

**INFLUENT MONITORING**

The Discharger shall monitor the Wastewater Treatment Plant influent for the following constituents according to the following schedule:

<u>Constituents</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	gpd	Continuous	Daily	Monthly
pH <sup>1</sup>	pH units	Grab	Monthly	Monthly
Electrical Conductivity <sup>1</sup>	µmhos/cm	Grab	Monthly	Monthly
BOD <sub>5</sub> <sup>2</sup>	mg/l	Grab	Monthly	Quarterly
Total Nitrogen	mg/l	Grab	Monthly	Quarterly
Total Suspended Solids	mg/l	Grab	Quarterly	Quarterly
Oil and Grease	mg/l	Grab	Quarterly	Quarterly

<sup>1</sup> Hand held field meter may be used

<sup>2</sup> 5-day, 20°C Biochemical Oxygen Demand

**EFFLUENT MONITORING**

Effluent samples shall be collected downstream from the effluent pumping tank outfall to the land application areas. Effluent samples should be representative of the volume and quality of the discharge.

Sample collection time and person's name collecting them shall be recorded. Effluent discharged to irrigated land application areas shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	gpd	Continuous	Daily	Monthly
pH <sup>1</sup>	pH units	Grab	Monthly	Monthly
BOD <sub>5</sub> <sup>2</sup>	mg/l	Grab	Monthly	Monthly
Total Nitrogen	mg/l	Grab	Monthly	Monthly
Total Suspended Solids	mg/l	Grab	Monthly	Monthly
Turbidity <sup>1</sup>	NTU	Grab	Monthly	Monthly
Total Dissolved Solids	mg/l	Grab	Monthly	Monthly
Electrical Conductivity <sup>1</sup>	μmhos/cm	Grab	Monthly	Monthly
Total Coliform	MPN/100 ml	Grab	Monthly	Monthly

<sup>1</sup> Hand held field meter may be used

<sup>2</sup> 5-day, 20°C Biochemical Oxygen Demand

### **SUBSURFACE DRIP IRRIGATION DISPOSAL AREA MONITORING**

Inspections of the subsurface irrigation disposal areas will be comprised of a physical evaluation of the disposal site area to determine whether waste is being contained beneath the ground surface. The ground in the immediate vicinity and surrounding the disposal site shall be inspected to determine the presence of effluent on the ground surface. The inspection report shall include any findings of springs, unusual ponding, or otherwise surfacing effluent, which would indicate a failure to the system.

A written report of the conditions observed in each area shall be prepared following each inspection. Such written description shall include name of the person making the entry, the condition of all the items listed in the above paragraphs, and shall identify any maintenance work necessary on the physical aspects of the system. And the following measurements shall be included with the above physical observation-monitoring program:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Reporting Frequency</u>
Soil water saturation	Percent of void space	Continuous	Monthly
Precipitation	Inches	Continuous	Monthly
Flow	gpd	Continuous	Monthly

### **COLLECTION SYSTEM AND TREATMENT PLANT MONITORING**

An operator log shall be kept on-site for all operation and maintenance activities and be made available for review on request. Overflows from either system must be reported immediately in accordance with

the *Standard Provisions*. Components of the collection system and treatment plant shall be monitored at a minimum for physical condition and operation as follows:

<u>Component</u>	<u>Inspections per O &amp; M Manual</u>	<u>Report Frequency</u>
Collection Piping	Odors, Piping, Manholes, and Grease Traps	Quarterly
Lift Station	Odors, Grease, Water Level, and Debris	Quarterly
Force Main	Odors, Cracks, Leaks, and Abnormalities	Quarterly
Treatment Plant	Odors, Grease, Leaks, and Equip. Function	Quarterly
Alarm Systems	Alarm actuation and Auto Dialer function	Quarterly
Backup Power	Auto function, Operational test and visual fuel containment	Quarterly

### SLUDGE MONITORING

The volume of sludge removed shall be reported annually. A composite sample of sludge shall be collected in accordance with EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, when removed from the digester and tested for the following metals on an annual basis:

Cadmium	Copper	Nickel	Mercury
Chromium	Lead	Zinc	Iron

Sampling records shall be retained for a minimum of five years. An entry in the operators log shall be kept of sludge quantities generated and of handling and disposal activities. The log shall be part of the annual report.

### GROUNDWATER MONITORING

Samples shall be taken from Board approved groundwater-monitoring wells, according to Board approved sampling procedures (see Attachment C). Time of collection of a grab sample shall be recorded. The following shall constitute the groundwater-monitoring program:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Ground water elevation <sup>1</sup>	feet ± 0.1	Grab	Quarterly
20° C BOD <sub>5</sub>	mg/l	Grab	Quarterly
Temperature	Degrees °F	Grab	Quarterly
Total Coliform organisms	MPN/100 ml	Grab	Quarterly
pH	pH units	Grab	Quarterly
Total Dissolved Solids	mg/l	Grab	Quarterly
Electrical conductivity	µmhos/cm	Grab	Quarterly
Total Nitrogen	mg/l	Grab	Quarterly

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Nitrate	mg/l as N	Grab	Quarterly
Nitrite	mg/l as N	Grab	Quarterly
Ammonia	mg/l as N	Grab	Quarterly
Total Alkalinity	mg/l	Grab	Quarterly
Total Hardness	mg/l	Grab	Quarterly
Chlorides	mg/l	Grab	Quarterly
Iron	mg/l	Grab	Quarterly
Boron	mg/l	Grab	Quarterly
Manganese	mg/l	Grab	Quarterly
Sodium	mg/l	Grab	Quarterly
Standard Minerals <sup>2</sup>	mg/l	Grab	Annually

<sup>1</sup> The ground water elevation shall be used to calculate the direction and gradient of ground water flow, which must be reported in the Discharger Self Monitoring Report.

<sup>2</sup> Standard Minerals shall include, at a minimum, the following: Barium, Calcium, Magnesium, Potassium, Sulfate, and Total Alkalinity (include alkalinity series).

### **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:

<u>Constituents</u>	<u>Units</u>	<u>Sampling Frequency</u>
Electrical Conductivity <sup>1</sup>	µmhos/cm	Annually
pH	pH units	Annually
Standard Minerals	mg/l	Annually

<sup>1</sup> Hand held field meter may be used

### **REPORTING**

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

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

Certification of the monitoring reports shall be as specified in General Reporting Requirements B.3. of the *STANDARD PROVISIONS AND REPORTING REQUIREMENTS FOR WASTE DISCHARGE REQUIREMENTS*, dated 1 March 1991, which is commonly referenced as the *Standard Provisions*.

#### **A. Monthly Reports**

Monthly Reports shall contain results from all monitoring conducted during the month and shall be submitted to the Regional Board by the first day of the second month following the month of sampling (i.e., the January monthly report is due by **1 March**). Monthly report for December may be submitted as part of the Annual Monitoring Report, if desired. The Monthly Report shall include the following:

1. All continuous, daily, weekly, and monthly monitoring conducted during the month.
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities. The narrative shall be sufficiently detailed to verify compliance with this Monitoring and Reporting Program (MRP), Waste Discharge Requirements (WDRs), and the *Standard Provisions*.
3. A comparison of monitoring data to the discharge specifications, groundwater limitations and surface water limitations, and explanation of any violation of those requirements.
4. Field equipment calibration logs, if applicable.
5. A scaled map showing relevant structures and features of the facility.

#### **B. Quarterly Reports**

The Discharger shall establish a quarterly groundwater-sampling schedule such that samples are obtained approximately every three months. Quarterly Monitoring Reports for March, June, September, and December shall be submitted to the Regional Board by the **1<sup>st</sup> day of May, August, November, and February** each year. The Quarterly Report shall include the following:

1. All quarterly monitoring conducted during the quarter.
2. A narrative description of all preparations, monitoring, sampling, and analytical testing activities. The narrative shall be sufficiently detailed to verify compliance with the WDRs, this MRP, and the *Standard Provisions*. Field logs shall support the narrative for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of the casing volume; and total volume of water purged.

3. Field equipment calibration logs, if applicable.
4. Calculation of groundwater elevations, an estimation of groundwater flow direction and hydraulic position with respect to domestic wells on the date of measurement, comparison to previous data, and discussion of seasonal trends, if any.
5. A narrative discussion of the analytical results for all media and locations monitored, including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable).
6. A comparison of monitoring data to the discharge specifications, groundwater limitations and surface water limitations, and explanation of any violation of those requirements.
7. Summary data tables of historical and current monitor well elevations and analytical results.
8. 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.
9. Copies of laboratory analytical report(s).

**C. Annual Monitoring Report**

The December monthly report (**due by 1<sup>st</sup> day of February each year**) shall also serve as an Annual Monitoring Report. At a minimum, the Annual Monitoring Report shall include the following:

1. The contents of the December quarterly report and summarize all data collected during the year;
2. Tabular and graphical summaries of all well monitoring data obtained during previous years;
3. Information about disposal of screenings, sludges from domestic wastewater septic tanks, or other solids removed from liquid wastes that were disposed during the year such as volume, location, date, and transportation used;
4. A scaled Subdivision map showing each lot's status, its type of wastewater disposal system, location of the Community Collection System, lift stations, Community Disposal System, surface water monitoring locations, groundwater monitoring wells, and other relevant monitoring points, structures, and/or features of the wastewater collection, treatment, and disposal systems;

5. A narrative discussion of the analytical results for all media and locations monitored, including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);
6. A comparison of monitoring data to the discharge specifications, groundwater limitations and surface water limitations, and explanation of any violation of those requirements;
7. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system and/or reporting program;
8. The names, certificate grades, and general responsibilities of all persons employed by the Discharger;
9. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations;
10. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration; and
11. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment and disposal facilities as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

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. Pursuant to Standard Provisions, General Reporting requirements B.3, the transmittal letter shall contain the following statement by the Discharger, or the Discharger's authorized agent:

*"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 the those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."*

Based on results of the groundwater-monitoring program after a minimum of two years, the Discharger may request a reduction in the constituents monitored, sample frequency, and/or locations monitored. If such reductions are warranted, this MRP will be revised by the Executive Officer.

MONITORING AND REPORTING PROGRAM NO. R5-2002-0076  
DARK HORSE SUBDIVISION  
DARK HORSE, LLC  
NEVADA COUNTY

- 8 -

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

Ordered by: \_\_\_\_\_  
GARY M. CARLTON, Executive Officer

\_\_\_\_\_  
26 April 2002  
(Date)

MMW: 4/26/02

## INFORMATION SHEET

ORDER NO. R5-2002-0076  
DARK HORSE SUBDIVISION  
DARK HORSE, LLC  
NEVADA COUNTY

### **General Site Information**

The Dark Horse Subdivision (Dark Horse) is located on the east side of Combie Road in Nevada County. Dark Horse will be constructed and occupied in two phases. These phases will be identified as Phase I and Phase II. The total build-out will consist of 273 single-family residences, country club, 18-hole golf course and golf course maintenance facility. Phase I will consist of 117 residences, the country club and the maintenance facility. Phase II will consist of 156 residences. The only commercial construction will be that of the country club.

Wastewater treatment for Dark Horse will be provided by a NitroRaptor/Bio-Pure™ Wastewater Treatment System, Model BP 500 with a tertiary treatment process train and sub-surface disposal. A breakdown of the wastewater treatment facility (WWTF) treatment train is as follows: Influent Equalization System, Aeration Tank System, Batch Clarifier, Aerobic Digestion, Ozone Treatment and Disinfection, Effluent Filtration and Effluent Pumping to a disposal area. A 50,000 gallon per day (gpd) system will be installed for Phase I and at a later date a 50,000 gpd will be installed for Phase II. The effluent from each phase will be pumped via a 6-inch force main to a 30,000-gallon dosing tank then dosed to a sub-surface drip disposal area.

It is anticipated that the construction of the system will begin Summer 2002 and completed by Fall 2002. The developer of the subdivision, Dark Horse, LLC, has submitted an application to the Nevada County Sanitation District No. 1 (NCSD) for annexation into their service district. Once annexed into the NCSD, the NCSD will provide operation, maintenance and administration of the Dark Horse wastewater collection, treatment and disposal facilities.

Surface water drainage is to Lake of the Pines and Magnolia Creek, thence to the Bear River.

### **Antidegradation Policy**

The antidegradation directives of Section 13000 of the California Water Code require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Waters can be of high quality for some constituents or beneficial uses and not others. Policies and procedures for complying with this directive are set forth in the Basin Plan (including by reference State Water Board Resolution No. 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California," or "Antidegradation" Policy).

Resolution 68-16 is applied on a case-by-case, constituent-by-constituent basis in determining whether a certain degree of degradation can be justified. It is incumbent upon the Discharger to provide technical information for the Board to evaluate that fully characterizes:

- all waste constituents to be discharged, the background quality of the uppermost layer of the uppermost aquifer

- the background quality of other waters that may be affected
- the underlying hydrogeologic conditions
- waste treatment and control measures
- how treatment and control measures are justified as best practicable treatment and control
- the extent the discharge will impact the quality of each aquifer
- the expected degradation compared to water quality objectives

In allowing a discharge, the Board must comply with CWC section 13263 in setting appropriate conditions. The Board is required, relative to the groundwater that may be affected by the discharge, to implement the Basin Plan and consider the beneficial uses to be protected along with the water quality objectives essential for that purpose. The Board need not authorize the full utilization of the waste assimilation capacity of the groundwater (CWC 13263(b)) and must consider other waste discharges and factors that affect that capacity. The applicable beneficial uses (industrial, agricultural, municipal and domestic supply in this instance), procedure for application of water quality objectives, and the process for and factors to consider in allocating waste assimilation capacity are set forth in the Basin Plan.

Certain waste constituents in municipal wastewater are not fully amenable to waste treatment and control and it is reasonable to expect some impact on groundwater. Some degradation for certain constituents is consistent with maximum benefit to the people of California because the technology, energy, water recycling, and waste management advantages of municipal utility service to the State far outweigh the environmental impact damage of a community that would otherwise be reliant on numerous concentrated individual wastewater systems. Economic prosperity of valley communities is of maximum benefit to the people of California, and therefore sufficient reason to accommodate increases in wastewater discharge provided terms of reasonable degradation are defined and met. The proposed Order authorizes some degradation consistent with the maximum benefit to the people of the State.

Groundwater monitoring data at this site is insufficient to establish the most appropriate receiving water limits. In addition, as explained elsewhere in this information sheet, certain aspects of waste treatment and control practices have not been and are unlikely to be justified as representative of BPTC. Reasonable time is necessary to gather specific information about the facility and the site to make informed, appropriate, long-term decisions. This Order, therefore, establishes interim receiving water limitations to assure protection of the beneficial uses of waters of the State pending the completion of certain tasks and provides time schedules to complete the outlined specified tasks. The Discharger is expected to identify, implement, and adhere to BPTC as individual practices are reviewed and upgraded in this process. During this period, degradation may occur from certain constituents, but interim conditions can never exceed water quality objectives (or background water quality should it exceed objectives) or cause nuisance.

Water quality objectives define the least stringent limits that could apply as water quality limitations for groundwater at this location, except where background quality unaffected by the discharge already

exceeds the objective. The values below reflect water quality objectives that must be met to maintain specific beneficial uses of groundwater. Unless natural background for a constituent proves higher, the interim groundwater quality limit established in the WDR is the most stringent of the values listed for the listed constituents.

<u>Constituent</u>	<u>Units</u>	<u>Value</u>	<u>Beneficial Use</u>	<u>Criteria or Justification</u>
Ammonia	mg/L	0.5	MUN <sup>1</sup>	Taste and Odor <sup>2</sup>
Boron	mg/L	0.5	AGR <sup>3</sup>	Class I irrigation water (Basin Plan)
		0.7	AGR <sup>3</sup>	Boron sensitivity on certain crops <sup>4</sup>
		2	AGR <sup>3</sup>	Class II irrigation water (Basin Plan)
Chloride	mg/L	106	AGR <sup>3</sup>	Chloride sensitivity on certain crops irrigated via sprinklers <sup>4</sup>
		142	AGR <sup>3</sup>	Chloride sensitivity on certain crops <sup>4</sup>
		175	AGR <sup>3</sup>	Class I irrigation water (Basin Plan)
		250	MUN <sup>1</sup>	Recommended Secondary MCL <sup>5</sup>
		350	AGR <sup>3</sup>	Class II irrigation water (Basin Plan)
		500	MUN <sup>1</sup>	Upper Secondary MCL <sup>5</sup>
Conductivity (EC)	µmhos/cm	750	AGR <sup>3</sup>	Salt sensitivity <sup>4</sup>
		900	MUN <sup>1</sup>	Recommended Secondary MCL <sup>5</sup>
		1,000	AGR <sup>3</sup>	Class I irrigation water (Basin Plan)
		1,600	MUN <sup>1</sup>	Upper Secondary MCL <sup>5</sup>
		3,000	AGR <sup>3</sup>	Class II irrigation water (Basin Plan)
Iron	mg/L	0.3	MUN <sup>1</sup>	Secondary MCL <sup>6</sup>
Manganese	mg/L	0.05	MUN <sup>1</sup>	Secondary MCL <sup>6</sup>
Nitrate as N	mg/L	10	MUN <sup>1</sup>	Primary MCL <sup>7</sup>
Nitrite as N	mg/L	1	MUN <sup>1</sup>	Primary MCL <sup>7</sup>
pH	pH Units	6.5 to 8.5	MUN	Secondary MCL <sup>8</sup>
Sodium	mg/L	69	AGR <sup>3</sup>	Sodium sensitivity on certain crops irrigated via sprinklers <sup>4</sup>
		207	AGR <sup>3</sup>	Sodium sensitivity on certain crops <sup>4</sup>
Total Coliform Organisms	MPN / 100 mL	2.2	MUN <sup>1</sup>	Basin Plan
Total Dissolved Solids	mg/L	450	AGR <sup>3</sup>	Salt sensitivity <sup>4</sup>
		500	MUN <sup>1</sup>	Recommended Secondary MCL <sup>5</sup>
		700	AGR <sup>3</sup>	Class I irrigation water (Basin Plan)
		1,000	MUN <sup>1</sup>	Recommended Upper MCL <sup>5</sup>

<u>Constituent</u>	<u>Units</u>	<u>Value</u>	<u>Beneficial Use</u>	<u>Criteria or Justification</u>
		2,000	AGR <sup>3</sup>	Class II irrigation water (Basin Plan)
Total Trihalomethanes	µg/L	100	MUN	MCL <sup>9</sup>
Chloroform	µg/L	1.1	MUN <sup>1</sup>	Narrative Toxicity Criteria <sup>10</sup>
Bromodichloromethane	µg/L	0.27	MUN <sup>1</sup>	Narrative Toxicity Criteria <sup>10</sup>
Dibromochloromethane	µg/L	0.37	MUN <sup>1</sup>	Narrative Toxicity Criteria <sup>10</sup>
Bromoform	µg/L	4.3	MUN <sup>1</sup>	Narrative Toxicity Criteria <sup>10</sup>

<sup>1</sup> Municipal and domestic supply

<sup>2</sup> Council of the European Union, On the Quality of Water Intended for Human Consumption, Council Directive 98/83/EC (3 November 1998).

<sup>3</sup> Agricultural supply

<sup>4</sup> Ayers, R. S. and D. W. Westcot, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985)

<sup>5</sup> Title 22, California Code of Regulations (CCR), section 64449, Table 64449-B

<sup>6</sup> Title 22, CCR, section 64449, Table 64449-A

<sup>7</sup> Title 22, CCR, section 64431, Table 64431-A

<sup>8</sup> United States Environmental Protection Agency

<sup>9</sup> Title 22, CCR, section 64439

<sup>10</sup> California Environmental Protection Agency, Office of Environmental Health Hazard Assessment Cancer Potency Factor as a Drinking Water Level, *California Environmental Protection Agency Toxicity Criteria Database*

Municipal wastewater contains numerous dissolved inorganic waste constituents (i.e., salts, minerals) that together comprise total dissolved solids (TDS). The concentration of each component constituent of TDS is not necessarily critical to a beneficial use. Specific constituents that are critical are individually listed. The cumulative impact from these other constituents, along with the cumulative affect of the constituents that are individually listed can be effectively controlled using TDS as a generic indicator parameter. Most dissolved inorganic substances in water are in the ionized form and so contribute to a solution’s ability to carry an electrical current, or its “electrical conductivity” (EC). EC varies both with the number and type of ions the solution contains and is strongly temperature dependent. It is standard practice to report a solution’s EC at 25° Celsius (this value is technically called “specific conductance”). Only ions can carry a current, however. Un-ionized species of weak acids or bases will not carry a current, nor will uncharged soluble organic materials, such as ethyl alcohol and glucose, even though these constituents comprise a portion of TDS. Although EC is affected by the nature of the various ions, their relative concentrations, and ionic strength of the water, EC measurements can provide a quick and inexpensive practical estimate of a solution’s dissolved mineral content once the relationship is established for the solution. An empirical factor representing the relationship may be developed from simultaneous sampling and measurements of TDS and EC.

### **Treatment Technology and Control**

Given the character of municipal wastewater, secondary treatment technology is generally sufficient to control degradation of groundwater from decomposable organic constituents. Adding disinfection significantly reduces populations of pathogenic organisms, and reasonable soil infiltration rates and unsaturated soils can reduce them further. Total coliform organisms, the indicator parameter for pathogenic organisms, should not be found in groundwater in a well-designed, well-operated facility. Hence, the interim groundwater limit proposed for this constituent is nondetect, which is less than the water quality objective.

Municipal wastewater typically contains nitrogen in concentrations greater than water quality objectives, which vary according to the form of nitrogen. Degradation by nitrogen can be controlled by an appropriate secondary treatment system (e.g., oxidation ditch), tertiary treatment for nitrogen reduction, and agronomic reuse on harvested crops. The effectiveness varies, but generally best practicable treatment and control should be able to control nitrogen degradation at a concentration well below the water quality objectives. The interim limitation reflects water quality objectives.

Waste constituents that are forms of salinity pass through the treatment process and soil profile and effective control of long-term affects relies upon effective source control and pretreatment measures. In the best of circumstances, long-term land discharge of treated municipal wastewater will degrade groundwater with salt (as measured by TDS and EC) and the individual components of salts (e.g., sodium, chloride). Not all TDS constituents pass through the treatment process and soil profile in the same manner or rate. Chloride tends to pass through both rapidly to groundwater. As chloride concentrations in most groundwaters in the region are much lower than in treated municipal wastewater, chloride is a useful indicator parameter for evaluating the extent to which effluent reaches groundwater. This Order sets water quality objectives for the interim while site-specific, constituent-specific limits are developed in conjunction with a BPTC evaluation of source control and pretreatment. The next Order will likely contain effluent limits for salt components that, if met, assure groundwater quality will be controlled to an acceptable level.

Other indicator constituents for monitoring for groundwater degradation due to recharged effluent include total coliform bacteria, ammonia, total nitrogen, and total trihalomethanes (when the effluent is chlorinated). Total trihalomethanes (TTHMs) are chlorinated organic materials that are toxic at low concentrations. Common TTHMs include bromoform, bromodichloromethane, dibromochloromethane, and chloroform. While the State drinking water regulations (i.e., Title 22, CCR, section 64439) establish a maximum contaminant level for TTHMs of 100 µg/L, the actual concentrations at which TTHMs components are considered “toxic” to humans are much lower (e.g., chloroform’s human health toxicity limit is 1.1 µg/L). The Basin Plan states that groundwaters “shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses.” As indicated in the above table, groundwater limitations necessary to enforce the Basin Plan’s narrative toxicity objective are significantly lower than that necessary to meet the maximum contaminant level for TTHMs in drinking water. Since the system will use ozone for disinfection, the formation of TTHMs is not anticipated.

Boron is another TDS constituent that may occur in wastewater in concentrations greater than groundwater depending on the source water, to the extent residents use cleaning products containing boron, and whether any industrial dischargers utilize boron (e.g., glass production, cosmetics). As various crops sensitive to boron, however, it has an individual interim limit intended to protect agricultural use.

Still other constituents in treated municipal waste that may pass through the treatment process and the soil profile include recalcitrant organic compounds (e.g., ethylene glycol, or antifreeze), radionuclides, and pharmaceuticals. Hazardous compounds are not usually associated with domestic wastes and when present are reduced in the discharge to inconsequential concentrations through dilution with domestic waste, treatment, and the implementation of effective pretreatment programs. It is inappropriate to allow degradation of groundwater with such constituents, so proposed interim limitations are nondetect.

A discharge of wastewater that overloads soils with nutrients and organics can result in anaerobic conditions in the soil profile, which in turn creates organic acids and decreases soil pH. Under conditions of low soil pH (i.e., below 5), iron and manganese compounds in the soil can solubilize and leach into groundwater. Discharge of residual sludge to land may also lead to increases in groundwater alkalinity and hardness to concentrations that impair the water's beneficial uses and contribute to an overall increase in TDS. Overloading is preventable and does not constitute BPTC as used in Resolution 68-16. Dissolved iron and manganese, along with elevated alkalinity, hardness and nitrogen concentrations, are useful indicators to determine whether components of the WWTF with high-strength waste constituents, such as sludge handling facilities, are effectively containing waste. Iron and manganese increases and changes in pH in groundwater are avoidable and limitations should reflect background. However, during this interim investigative period, interim limits are set at the water quality objective for iron, manganese, and pH.

Depth to groundwater and background water quality is unknown at the disposal area therefore, the Regional Board has incorporated groundwater monitoring at the WWTF to ensure that the BPTC, as outlined in Finding No. 25 of this Order, incorporated by the Discharger, will provide adequate protection of groundwater. If it is determined that the discharge is causing groundwater quality to be degraded beyond background water quality and exceeds the Groundwater Limitations set forth in this Order, then the Discharger, upon direction of the Executive Officer, will be required to complete the tasks as required in the Provisions F.12a through F.12.d of this Order, and implement the approved strategies developed from that work. This implementation will ensure that BPTC and the highest water quality consistent with the maximum benefit to the people of the State will be achieved.

The Discharger is expected to take all necessary steps to adequately maintain, operate, and prevent unintended discharges from its sanitary sewer collection system. This Order requires the Discharger to prepare and implement best practicable treatment and control (BPTC) to prevent unintended discharges from the sanitary sewer collection system. The Regional Board acknowledges that this is a new system; however, Regional Board experience has shown that a *Sanitary Sewer Collection Operation, Maintenance, Overflow Prevention, and Response Plan (SSO Plan)* and good Operation and Maintenance (O&M) may prevent future overflows. Therefore, the Discharger is required to develop an O&M Plan and SSO Plan pursuant to a compliance schedule as outlined in Provisions F.5a and F.9.

### **Title 27**

Title 27, CCR, section 20005, et seq. (“Title 27”) contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent in a classified waste is acceptable under Title 27 regulations.

Discharges of domestic sewage and treated effluent can be treated and controlled to a degree that will not result in unreasonable degradation of groundwater. For this reason, they have been conditionally exempted from Title 27. Treatment and storage facilities for sludge that are part of the WWTF are considered exempt from Title 27 under section 20090(a), provided that the facilities not result in a violation of any water quality objective. As the exemption specifically excludes the discharge to land of 1) solid waste that results from treatment of domestic sewage (e.g., grit and screenings) and 2) residual sludge (sludge that will not be subjected to further treatment by the WWTF), such discharges must comply with provisions of Title 27.

Accordingly, the municipal discharge of effluent and the operation of treatment or storage facilities associated with a municipal wastewater treatment plant can be allowed without requiring compliance with Title 27, but only if resulting degradation of groundwater is in accordance with the Basin Plan. This means, among other things, that degradation of groundwater must be consistent with Resolution 68-16 and in no case greater than water quality objectives.

### **Reopener**

The conditions of discharge in this Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. However, information is presently insufficient to develop final effluent and groundwater limitations, so the Order contains interim limitations. Additional information must be developed and documented by the Discharger as required by schedules set forth in the Order. As this additional information is obtained, decisions will be made concerning the best means of assuring the highest water quality possible may that could involve substantial cost. It may be appropriate to reopen the Order if applicable laws and regulations change, but the mere possibility that such laws and regulations may change is not sufficient basis for reopening the Order. The CWC requires that waste discharge requirements implement all applicable requirements.

Several other more likely reasons for reconsidering terms of the Order exist, and the Order may be opened for this purpose at the Board’s discretion. For example, Board procedures require periodic review of the effectiveness of requirements at a frequency proportional to the threat the discharge has to water quality with update as appropriate. The Order will definitely be reopened for consideration of BPTC and establishing final numeric groundwater limitations. It is also conceivable that monitoring of compliance may identify a waste constituent, possibly a toxic waste constituent, that violates or threatens to violate groundwater limitations, establishing a need to consider an appropriate numeric effluent limit for that waste constituent.