

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

ORDER NO. 97-027

**WASTE DISCHARGE REQUIREMENTS
FOR
PIMA GRO, OPERATOR
BIOSOLIDS LAND APPLICATION
Colorado Hydrologic Unit - Riverside County**

The California Regional Water Quality Control Board, Colorado River Basin Region, finds that:

1. On December 12, 1996, Pima Gro (hereinafter also referred to as the discharger), 2015 Park Avenue Suite 8, Redlands, CA 92373, submitted a Report of Waste Discharge for land application of municipal sludge (biosolids) within the Colorado Hydrologic Unit of Riverside County. The discharger currently operates under Board Order No. 90-023.
2. The discharger trucks treated biosolids from wastewater treatment plants in Riverside County for application to fields at agronomic rates. The discharger has formulated a Management Plan to meet the requirements of this Board Order, Riverside County Ordinances, and Federal Regulations, as specified in the Code of Federal Regulations 40 CFR 503.
3. The Management Plan states that biosolids are transported to fields in Riverside County in covered and sealed trucks. Biosolids are incorporated into the soil within 24 hours of delivery.
4. The discharger states that biosolids are applied uniformly to land until the application rate for the field is reached. After spreading, the biosolids are disked into the soil.
5. Any tailwater that is generated will be contained on the fields or captured and reused for irrigation.
6. Biosolids contain fertilizer and soil amendment characteristics beneficial to plant life as follows:
 - a. Nitrogen is a basic nutrient for plant growth. It is present in the forms of ammonia, nitrates and organic nitrogen in concentrations from two to ten percent by weight on a dry weight basis. The ammonia and nitrate forms of nitrogen are immediately available for plant usage. Organic nitrogen is released slowly over many months, providing a continuing supply of nitrogen for crops and minimizing the potential for movement of nitrogen to the ground water.
 - b. Phosphorous a basic nutrient for plant growth, is present in all biosolids in varying concentrations.
 - c. Organic material improves soil structure, reduces soil erosion, aids soil moisture retention, improves tillability, and helps hold fertilizer and metals in the root zones for plant usage.
7. Biosolids application will be limited to sites approved by the Riverside County Department of Environmental Health.

8. Biosolids may have the following characteristics which can create water quality and public health problems if improperly treated, managed, and regulated:
 - a. Pathogens (disease causing organisms) may be present. Unless the biosolids have been specially treated or disinfected to destroy pathogens, significant concentrations of bacteria, virus, and parasites remain. Public health problems can be prevented with appropriate control over public access to the application areas and restriction on the type and usage of crops grown on the application sites. Buffer zones around water supply wells, surface water drainage courses, and public areas will prevent transmission of pathogens to the public.
 - b. Heavy metals may be present. If heavy metals are over-applied to a field, they can cause ground water pollution, toxicity to the plants, or buildup of metals in the plant tissue with transmission of the metals into the food chain. Future cropping or other land uses could be restricted. Only some of the metals commonly found in biosolids are known to cause water quality or public health problems. Application rates for those metals can be set to eliminate the problems.
 - c. Nitrogen can be over-applied, allowing buildup of nitrogen in the soils. All excess nitrogen can eventually be converted to nitrate and migrate to the ground water. Excess nitrate in the ground water can result in exceedance of drinking water standards and a public health threat. Nitrogen over-application can be prevented by matching the application rate of the nitrogen to the nitrogen usage rate of the crops and to soil permeability and soil retention capability.
 - d. Odor and insect nuisance may be caused if the biosolids or septage have not been adequately treated (stabilized) prior to application. Compliance with Federal and County standards for stabilization of the biosolids will minimize the potential for odors and insect nuisances. Proper management at the application site will prevent serious odor and insect nuisances. Properly stabilized biosolids may generate limited, transient odors in the immediate vicinity of the application operations. Proper site selection will eliminate nuisances by providing adequate buffer zones around residences and public areas.
 - e. Discharge of organic material, metals and pathogens to surface waters can be prevented by control of field runoff, avoiding wet weather application, and incorporating the biosolids or septage into the soil soon after application. The water quality threat of organic matter discharging to surface waters due to the organic content of the biosolids is no greater than for a similar quantity of other organic soil amendments, such as steer manure.
9. The discharger submitted the Biosolids Management Plan for Riverside County (revised September 9, 1996) for the use of biosolids in unincorporated portions of Riverside County (hereinafter the Management Plan). The Management Plan contains mitigation measures for protection of the environment that include provisions for the protection of ground and surface water quality.
10. On March 26, 1991, Riverside County adopted Ordinance No. 696, "An Ordinance of the County of Riverside Regulating the Land Application of Sewage Sludge". The stated purpose and intent of the Ordinance is to regulate the land application of sludge in a manner that is consistent with agronomic rates; and to protect public health, ground water quality, surface water quality and agricultural markets.

11. The Management Plan states that site-specific information required under Ordinance 696 will be forwarded to Riverside County Department of Environmental Health for approval prior to any sludge application.
12. The discharger in a letter dated January 10, 1996, stated that the application of sludge in Riverside County will be in conformance with Riverside County Ordinance No. 696.
13. The United States Environmental Protection Agency (USEPA) has promulgated biosolids and septage reuse regulations in 40 CFR 503, "Standards for the Use and Disposal of Sewage Sludge", which establish management criteria for the protection of ground and surface waters, set application and cumulative loading rates for heavy metals, and establish stabilization and disinfection criteria.
14. The discharger in a letter dated January 10, 1996, stated that the application of sludge in Riverside County will be in conformance with the requirements of the Code of Federal Regulations, 40 CFR 503.
15. Some standards in the USEPA, 40 CFR 503 regulations are used in this Board Order, however the Regional Board is not the implementing agency for the 503 Regulations. The discharger may have permitting, reporting and other compliance responsibility with the USEPA. Compliance with this Board Order does not constitute compliance with the 503 Regulations.
16. The Water Quality Control Plan for the Colorado River Basin Region of California (Basin Plan) was adopted on November 17, 1993, and designates the beneficial uses of ground and surface waters in this Region.
17. The designated beneficial uses of ground waters in the Colorado Hydrologic Unit are:
 - a. Municipal supply (MUN)
 - b. Industrial supply (IND)
 - c. Agricultural supply (AGR)
18. The beneficial uses of Colorado River and associated lakes and reservoirs are:
 - a. Agriculture Supply (AGR)
 - b. Aquaculture (AQUA)
 - c. Cold Freshwater Habitats (COLD)
 - d. Industrial Service Supply (IND)
 - e. Ground Water Recharge (GWR)
 - f. Municipal and Domestic Supply (MUN)
 - g. Hydropower Generation (POW)
 - h. Preservation of Rare, Endangered or Threatened Species (RARE)
 - i. Water Contact Recreation (REC I)
 - j. Noncontact Water Recreation (REC II)
 - k. Warm Water Habitat (WARM)
 - l. Wildlife Habitat (WILD)
19. This Board Order sets minimum standards for the use of biosolids as agricultural site soil amendments, and does not preempt or supersede the authority of local agencies to prohibit, restrict, or control the use of biosolids subject to their control.

20. The biosolids to be applied are non-hazardous decomposable wastes, which are applied as soil amendments pursuant to best management practices, and are exempt from the requirements of Title 23, California Code of Regulations (CCR), Section 2511 (f).
21. In accordance with the California Environmental Quality Act, the County of Riverside, acting as the lead agency, prepared and approved a Negative Declaration SCH. No. 94042005 for Pima Gro's application of sludge in unincorporated portions of Riverside County.
22. The Regional Board has notified the discharger and all known interested agencies and persons of its intent to prescribe waste discharge requirements for said discharge and has provided them with an opportunity for a public meeting and an opportunity to submit comments.
23. The Board in a public meeting heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, that Board Order 90-023 is rescinded, and in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, the discharger shall comply with the following:

A. Prohibitions

1. The discharge of biosolids to surface waters or surface water drainage courses is prohibited.
2. The discharge of waste classified as "hazardous" or "designated", as defined in Section 2521 (a) and Section 2522 (a) of Title 23 of the California Code of Regulations is prohibited.
3. Application of biosolids at rates in excess of the nitrogen requirements of the vegetation, or at rates that would allow excess nutrients or metals to leach to ground water, is prohibited.
4. Discharge of biosolids with pollutant concentrations greater than those shown below is prohibited:

<u>Constituent</u>	<u>Maximum Concentration mg/kg dry weight¹</u>
Arsenic	75
Cadmium	85
Copper	4300 ²

¹ Dry weight means calculated on the basis of having been dried at 105 degrees celsius until reaching a constant mass (i.e. essentially 100 percent solid content).

² Total Threshold Limit Concentration (TTLC) prescribed in the California Code of Regulations are as follows: Copper 2500 mg/kg, Mercury 20 mg/kg, and Zinc 5000 mg/kg on a wet weight basis. Biosolids which contain metals at or above the TTLC wet weight concentrations are defined as "hazardous" and may not be discharged under this Order. If any biosolids sample contains Copper, Mercury, or Zinc concentrations exceeding the TTLC limits on a dry basis, the sample concentrations must be recalculated on a wet basis to verify whether the biosolids are "hazardous".

<u>Constituent</u>	<u>Maximum Concentration</u> <u>mg/ka dry weight³</u>
Lead	840
Mercury	57 ²
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7500 ²

5. Biosolids applied to land are prohibited in amounts which cause the following cumulative loading rates to be exceeded:

<u>Constituent</u>	<u>Maximum Concentration</u> <u>Kilograms-per-Hectare</u>	<u>Pounds-per-Acre</u>
Arsenic	41	37
Cadmium	39	35
Copper	1500	1336
Lead	300	267
Mercury	17	15
Nickel	420	374
Selenium	100	89
Zinc	2800	2494

6. Biosolids applied to land are prohibited in amounts which cause the annual (365 days) pollutant loading rate to exceed the following limits:

<u>Constituents</u>	<u>Cumulative Loadings</u>	
	<u>Kilograms-per-Hectare</u>	<u>Pounds-per-Acre</u>
Arsenic	2.0	1.78
Cadmium	1.9	1.69
Copper	75.0	66.8
Lead	15.0	13.4
Mercury	0.85	0.76
Nickel	21.0	18.7

<u>Constituents</u>	<u>Cumulative Loadings</u>	
	<u>Kilograms-per-Hectare</u>	<u>Pounds-per-Acre</u>
Selenium	5.0	4.45
Zinc	140.0	125.0

7. Application of biosolids not meeting the pathogen reduction requirements specified in Section 503.32(b) of the Title 40 of Code of Federal Regulations is prohibited.

³ Dry weight means calculated on the basis of having been dried at 105 degrees celsius until reaching a constant mass (i.e. essentially 100 percent solid content).

8. The discharge of biosolids is prohibited unless a Pre-Application Report was submitted and was approved for the project, or individual waste discharge requirements or a waiver of waste discharge requirements was adopted for the project.
9. No discharge of tailwater, stormwater, or other field runoff to surface water or surface water drainage courses is allowed within at least ninety days following the application of sludge to the field. Any noncompliance with this prohibition shall be reported to the Regional Board office by telephone (760) 346-7491 within 24 hours of the occurrence. If the office is closed a recorded voice message shall be left.
10. Tailwater shall not be discharged from any field on which sludge has been applied unless such discharge has been approved by the Riverside County Department of Environmental Health.
11. The discharge of biosolids outside of the Colorado Hydrologic Unit is not permitted by this Order.
12. Biosolids application will be limited to sites approved by both the Riverside County Department of Health Services and the Regional Water Quality Control Board.

B. Specifications

1. The treatment or disposal of wastes at this location shall not cause pollution as defined in Section 13050(l) of Division 7 of the California Water Code.
2. No biosolids shall enter wetlands or other waters of the United States.
3. Biosolids, treatment, storage, use or disposal shall not contaminate groundwater.
4. Sludge shall not be applied on areas exceeding 4 percent in slope.
5. If biosolids are incorporated into the ground, tillage practices shall minimize the erosion of soils from the application site by wind, storm water, or irrigation water.
6. Sludge application shall be at least:
 - a. 500 feet from domestic supply wells,
 - b. 50 feet from non-domestic supply wells,
 - c. 100 feet from surface waters including ephemeral streams.
7. Biosolids application shall be in conformance with Riverside County Ordinance No. 696 and with Federal Regulations as promulgated in 40 CFR 503.

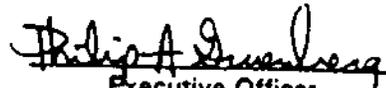
C. Provisions

1. The discharger shall comply with "Monitoring and Reporting Program No. 97-027, and future revisions thereto, as specified by the Regional Board's Executive Officer.
2. The discharger shall submit a Pre-Application Report for each field or distinct application area prior to each application of biosolids or septage. Pre-Application Reports shall be submitted as a part of the monthly monitoring reports for Regional Board staff review and approval at least 30 days prior to application of biosolids to land.

3. The discharger shall submit a Post-Application Report, for each application of sludge, as required by "Monitoring and Reporting Program No. 97-027".
4. The application of biosolids shall not cause a condition of pollution as defined by the California Water Code, Section 13050.
5. The discharger shall allow the Regional Board, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the premises regulated by this Board Order, or the place where records must be kept under the conditions of this Board Order;
 - b. Have access to and copy, at reasonable times, any records that shall be kept under the conditions of this Board Order;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Board Order; and
 - d. Sample or monitor at reasonable times, for the purpose of assuring compliance with this Board Order or as otherwise authorized by the California Water Code, any substances or parameters at this location.
6. The discharger shall comply with all of the conditions of this Board Order. Any noncompliance with this Board Order constitutes a violation of the Porter-Cologne Water Quality Control Act and is grounds for enforcement action.
7. Adequate measures shall be taken to assure that flood or surface drainage waters do not erode portions of the land application site.
8. The discharger shall furnish, under penalty of perjury, technical monitoring program reports, and such reports shall be submitted in accordance with the specifications prepared by the Regional Board's Executive Officer. Such specifications are subject to periodic revisions as may be warranted.
9. Prior to any material modifications in any aspect of the sludge management plan, the discharger shall report in writing to the Regional Board allowing sufficient time for consideration and action.
10. Owners of the real property, where discharges occur, share responsibility for ensuring compliance with the requirements of this Board Order. Enforcement actions may be initiated against landowners in the event that enforcement actions against site operators are ineffective or would be futile, or when enforcement actions are necessary to protect the environment.
11. In the event of any change in control or ownership of land or waste discharge facilities described herein, 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.
12. The discharger shall ensure that all site operating personnel and the landowner are familiar with the content of this Board Order.
13. This Order does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

14. The discharger shall inform this office by telephone of all sludge spills, within one business day of occurrence. Within five business days of the occurrence the discharger shall send a report to this office which shall include the starting date and time of occurrence, and estimate of the total spill and the corrective measures taken (or which will be taken) by the discharger.

I, Philip A. Gruenberg, 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, Colorado River Basin Region, on May 28, 1997.


Executive Officer

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

**MONITORING AND REPORTING PROGRAM NO. 97-027
FOR**

**PIMA GRO, OPERATOR
BIOSOLIDS LAND APPLICATION
Colorado Hydrologic Unit - Riverside County**

PRE-APPLICATION REPORT

A Pre-Application Report shall be submitted for each field or distinct application area prior to each application of biosolids, in accordance with the waste discharge requirements. Where biosolids are applied on a continuing basis to a single area, the Pre-Application Report may cover ongoing operations and need not be submitted for each load applied. For continuing operations an updated Pre-Application Report must be submitted annually. The Pre-Application Report shall be signed by the Operator of the biosolids application operation, and by the Property Owner. The Property Owner may submit written authorization to allow a representative of the Property Owner, such as a tenant or land management company, to sign the Pre-Application Report.

A Pre-Application Report form is included as attachment to this Monitoring and Reporting Program. The form details the minimum information which must be submitted in the Report. If additional space is needed, or additional information is being submitted, the Pre-Application Report form should be completed as fully as possible and the additional information submitted on separate sheets of paper. The additional information should be referenced on the Pre-Application form (for example, "See Attached Sheet"). The Pre-Application Report form may be modified by the Executive Officer as the need arises. With the concurrence of Board staff, the discharger may submit a Pre-Application Report in a different format for projects involving multiple fields, crops etc. Any alternative format for submittal of the Pre-Application Report must contain the equivalent data specified in the attachment.

Pre-Application Reports should be submitted as part of the monthly reports.

POST-APPLICATION REPORT

A monthly Post-Application Report shall be submitted. This report shall include:

1. Identification of the application area(s), including a map clearly showing each field or site covered by the post-application report.
2. Calculations of the agronomic rates.
3. Total volume (cubic yards) and weight (dry tons) of biosolids applied.
4. Tons of wet biosolids per acre and tons of dry biosolids per acre applied.
5. Kilograms per hectare of metals and pounds per acre of total nitrogen applied.
6. Any variations from the pre-application report.

7. Slope of property.
8. Distance from wells.

An Annual Report shall be submitted. This report shall provide the following information for each site where sludge was applied:

1. Identification of the application area (s), including a map clearly showing each field or site covered by the post application report.
2. Total volume (cubic yards), weight (wet tons), and weight (dry tons) of biosolids applied.
3. Tons of wet biosolids per acre and tons of dry biosolids per acre applied.
4. Number of crops grown on each parcel of land.
5. Number of tons of sludge obtained from each discharger.
6. A statement concerning compliance with the requirements of this Board Order.

REPORTING

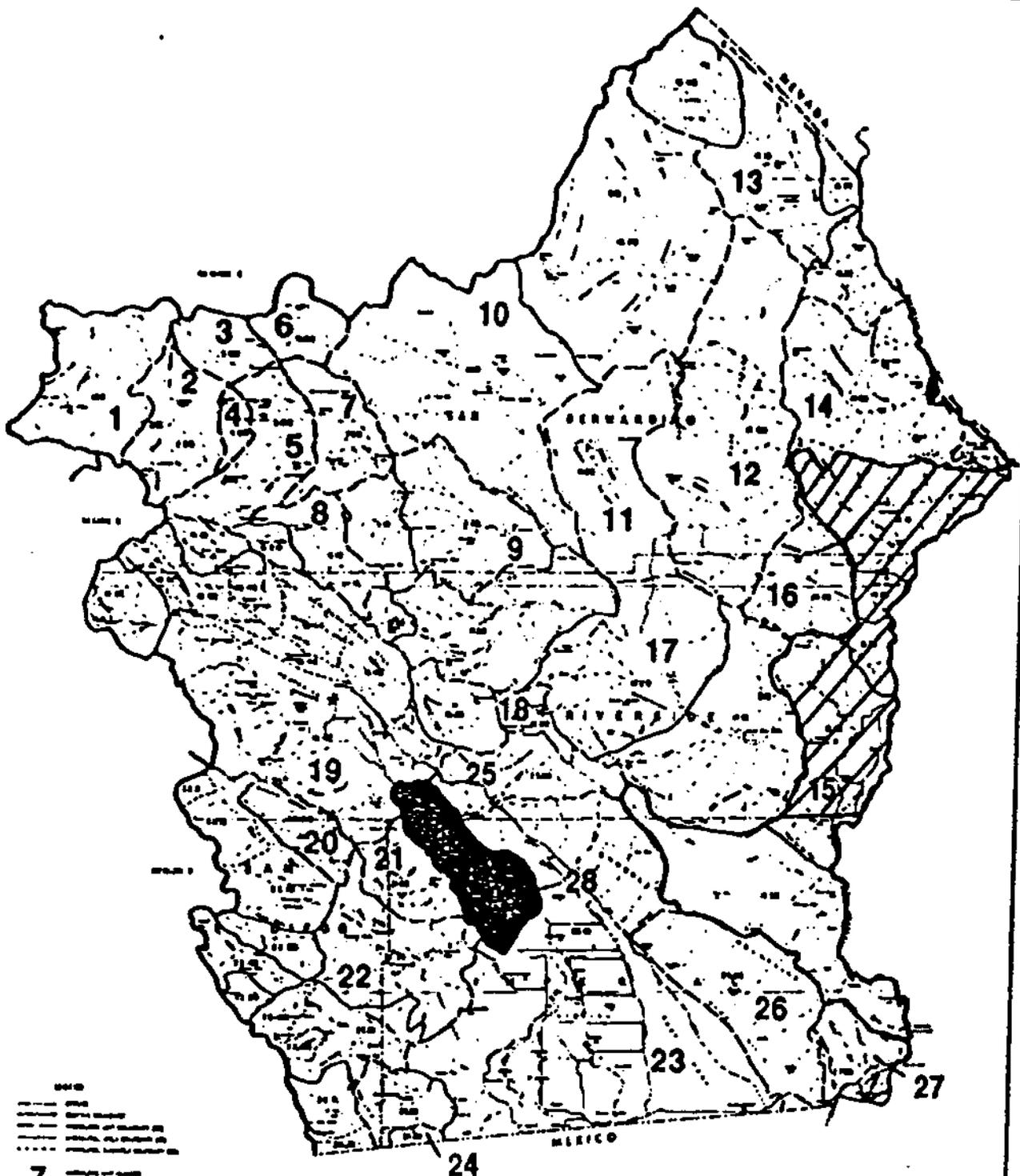
1. Pre-Application Reports shall be submitted for Regional Board staff review and approval at least 45 days prior to application of biosolids or septage to land.
2. Post-Application Reports shall be submitted monthly and annually.
3. Monthly reports shall be submitted by the 15th day of the following month. Annual reports shall be submitted by January 15th of the following year. The report shall include: a summary of the quantity (tons), sludge source, and location of application for each field on which sludge was applied during the preceding calendar year; the date(s) of the Post-Application Reports(s) applicable to each application; and a statement concerning compliance with the requirements of this Board Order.
4. In reporting the monitoring data, the discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly the compliance with waste discharge requirements.
5. 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 Board.

6. Mail reports to:

California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

Ordered by: Philip A. Gmelin
Executive Office

May 28, 1997
Date

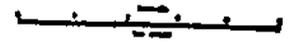


WATER
 WATER DIVISION
 WATER DIVISION
 WATER DIVISION
 WATER DIVISION
 WATER DIVISION

7

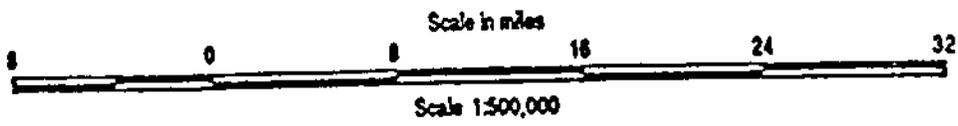
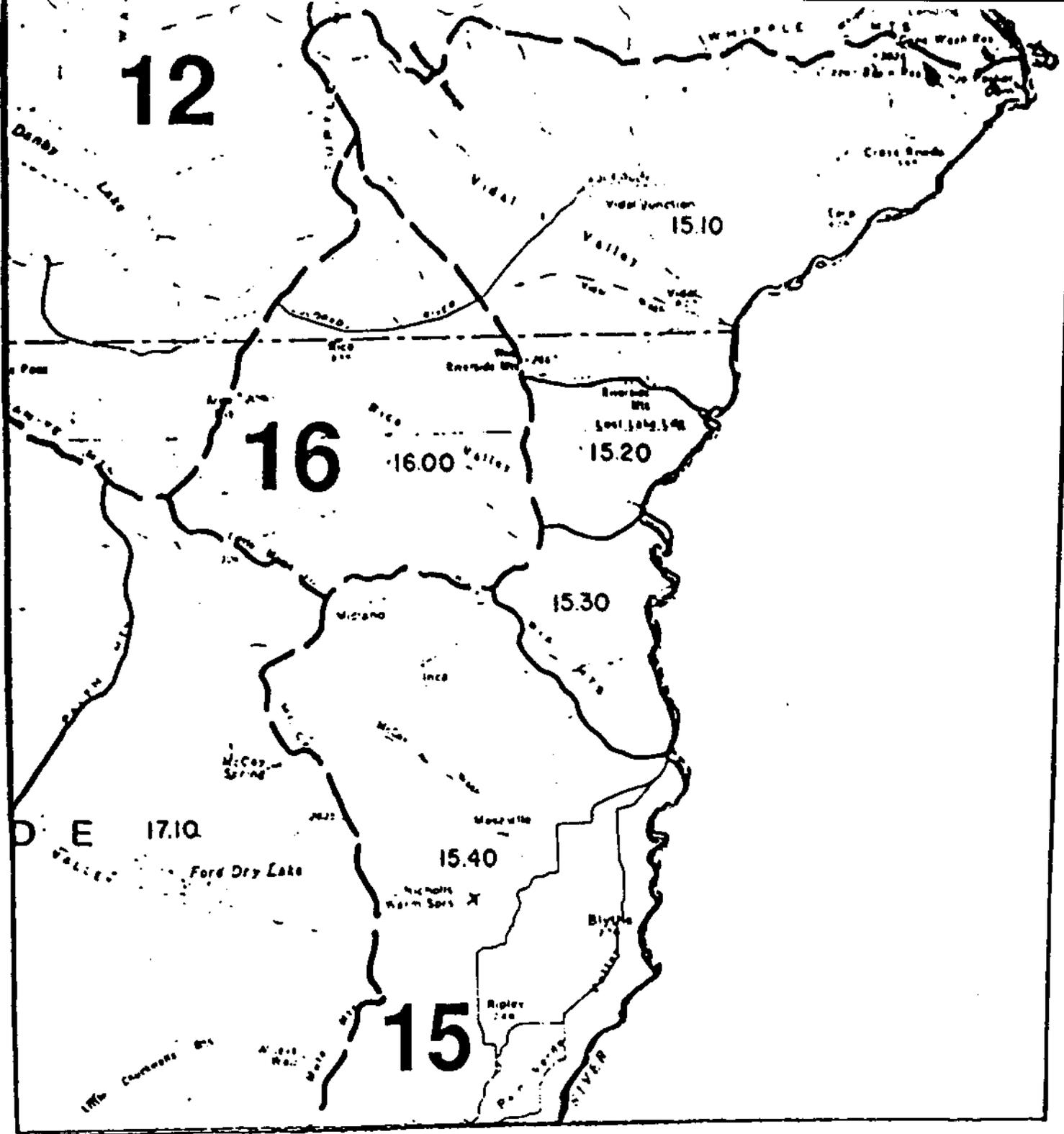


REGIONAL WATER QUALITY CONTROL BOARD
 Colorado River Basin Region (7)
 COLORADO RIVER HYDROLOGIC BASIN PLANNING AREA (CR)



PIMA GRO, OPERATOR
 BIOSOLIDS LAND APPLICATION
 Colorado Hydrologic Unit - Riverside County

Board Order No. 97-027



ATTACHMENT

PIMA GRO, OPERATOR
 BIOSOLIDS LAND APPLICATION
 Colorado Hydrologic Unit - Riverside County

Board Order No. 97-027



PRE-APPLICATION REPORT



State of California
COLORADO RIVER BASIN REGIONAL WATER QUALITY CONTROL BOARD

CaVEPA

NOTICE OF INTENT

FOR THE USE OF WASTEWATER TREATMENT PLANT BIOSOLIDS ON AN AGRICULTURAL SITE

I Owner/Operator of Spreading Operations

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person			(check one) Owner Operator Owner/Operator	

II Property Owner

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person				

III Site Operator/Property Manager

Name				
Mailing Address				
City	County	State	Zip	Phone
Contact Person				

IV Site Location

Street (including address, if any) _____ County _____

Nearest Cross Street(s) _____ Total Size of Site (acres or hectares) _____

Township/Range/Section T. _____ R. _____ Section: _____ MDB & M

Latitude/Longitude _____ Deg., _____ Min., _____ Sec. N., _____ Deg., _____ Min., _____ Sec. W

Attach a map of at least 1:24000 (1"=2000') showing the proposed application site (e.g. USGS 15' topographic map). The map should also show run-on/runoff controls, storage or staging areas, nearby surface waters, wells and residences.

V Biosolids

Wastewater Treatment Plant _____

Mailing Address _____

City	County	State	Zip	Phone
------	--------	-------	-----	-------

Contact Person _____

Level of Pathogen Treatment: Biosolids: Class A _____ Class B _____

Describe Treatment:

VI Application Information

Quantity of biosolids: _____ tons or _____ cubic yards or _____ gallons

Application area size: _____ acres Maximum ground slope: _____
 (if ground slope exceeds 10 deg., agronomist report needed)

Ammonia concentration: _____ mg/kg

Organic Nitrogen Concentration: _____ mg/kg Mineralization rate for first year following application: _____
 (submit supporting calculations on a separate sheet)

Proposed Nitrogen Loading: _____ lb Organic Nitrogen/acre

Residual Nitrogen Loading:
 from previous applications: _____ lb Organic Nitrogen/acre

Proposed Crop/Land Use: _____

Crop Nitrogen Usage: _____ lb Nitrogen per year Nitrogen Usage Reference: _____

When will biosolids be applied? (be specific)

VII Pollutant Loadings

Biosolids	Concentration			Pollutant Loadings kg/hectare dry weight					
	Pollutant	Material	Lmt	10 Times STLC	New	*	Past	=	Total
Arsenic		75	150		*		=		41
Cadmium		85	10		*		=		39
Chromium		3000	50		*		=		3000
Copper		4300	250		*		=		1500
Lead		840	50		*		=		300
Mercury		57	2		*		=		17
Molybdenum		75	-		*		=		-
Nickel		420	200		*		=		420
Selenium		100	10		*		=		100
Zinc		7500	2500		*		=		2800

VIII Site Controls

Will there be any tailwater or stormwater runoff for 90 days? Yes _____ No _____

Describe soil vegetation conditions between the application area and the nearest drainage course, and describe runoff controls on a separate sheet of paper.

Is the site subject to:

inundation by floods? Yes _____ No _____ If yes provide details on a separate sheet of paper.

erosion by floods? Yes _____ No _____ If yes provide details on a separate sheet of paper.

IX Certification

I hereby certify under penalty of perjury that the information provided in this application and in any attachments is true and accurate to the best of my knowledge.

Signature Owner/Operator		Signature of Property Owner/ Property Owner's Representative	
Printed or Typed Name		Printed or Typed Name	
Title	Date	Title	Date