

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

BOARD ORDER NO. R6V-2004-0005
WDID NO. 6B360703001

**REVISED WASTE DISCHARGE REQUIREMENTS,
INCLUDING WATER RECYCLING REQUIREMENTS
FOR**

**FORT IRWIN NATIONAL TRAINING CENTER (NTC)
WASTEWATER TREATMENT FACILITY**

San Bernardino County

The California Regional Water Quality Control Board, Lahontan Region, (Regional Board) finds:

1. Discharger, Producer and User

On August 26, 2003, the Ft. Irwin National Training Center (NTC) submitted a complete revised Report of Waste Discharge (RWD) pursuant to the California Water Code (CWC) Section 13260 and Report of Recycled Water Use (RRWU) pursuant to CWC Section 13522.5 for the Ft. Irwin NTC's domestic wastewater treatment facility (WTF) as described in Attachment "E." For the purposes of this Regional Board Order (Order), the U.S. Department of the Army is referred to as the "Discharger," and the NTC's WTF and associated disposal facilities are referred to as the "Facility". With respect to recycled water treatment and use requirements, the U. S. Department of the Army, Ft. Irwin NTC is both "Producer" and "User." For purposes of this Order "recycled water" as defined in Section 13050 (CWC) and "reclaimed water" as used in Section 13523 (CWC) are synonymous and refer to treated domestic wastewater suitable for controlled reuse.

2. Previous Board Action

The Regional Board last revised Waste Discharge Requirements (WDRs) for this Facility under Board Order No's. 6-93-42 and 6-93-42A, which were adopted on May 13, 1993 and October 13, 1994, respectively. This item was continued from the Regional Board's November 12, 2003 meeting.

3. Reason For Action

The Regional Board is revising the Order for the following reasons:

- a. This Order reflects design and operation changes at the Facility since the Order was last revised: 1) bringing on-line in 1995 a new headworks, oxidation ditch and two secondary clarifiers, 2) the planned replacement of mechanical with brush-type aerators in the oxidation ditch starting in 2003, and 3) the planned modification of former sequence batch reactors for a septage pretreatment facility starting in 2003. The Discharger plans to use existing aerated oxidation ponds during the period that the oxidation ditch is down for the aerator upgrade, to be completed by July 2004.
- b. Section 13523 of the CWC provides the authority by which the Regional Board can prescribe water reclamation (recycling) requirements for Users and/or Producers of recycled water following consultation with the California Department of Health Services (DHS). The Discharger is currently working on upgrades to the Facility which are

expected to come online in 2005 that will result in treated effluent meeting disinfected tertiary recycled water criteria as required by DHS in Title 22, of the California Code of Regulations (CCR) for non restricted recreational uses within the Ft. Irwin Cantonment area. This Order establishes criteria for compliance with the disinfected tertiary recycled water and associated use area requirements.

- c. This Order contains revised monitoring and reporting program requirements for the Facility which includes a Time Schedule for installation of additional ground water monitoring wells to further define observed conditions of pollution and/or degradation that were caused by 1) leaching of total dissolved solids (TDS) residue (salts) from the formation to ground water, 2) disinfecting treated effluent with chlorine, and 3) historical high levels of nutrients in the effluent. The recycled water project is designed, in part, to address these issues.
- d. New receiving water limitation language is added consistent with the 1995 Water Quality Control Plan for the Lahontan Region (Basin Plan).

4. Facility Location

The Facility is located approximately 35 miles northeast of Barstow, San Bernardino County. The major treatment and disposal facilities are located within Sections 3, 4 and 5, T13N, R3E, and Sections 32, 33, and 34, T14N, R3E, SBB&M as shown on Attachments "A", "B" and "C" which are made a part of this Order.

5. Wastestream Description

The Facility is designed to collect, treat and dispose of an average 2.0 million gallons per day (mgd) of primarily domestic sewage with a peak flow of 4.0 mgd. In 2002, the Facility had an average influent flow of 1.020 mgd and a maximum peak flow of 2.375 mgd. The following wastestreams contribute significant non-residential wastewater: four large food cafeterias, reverse osmosis (RO) water treatment plant brine discharges, and chemical toilet wastes collected from various locations around the base. Brine from the RO plant contributes about 50,000 gallons per day of influent, that contains about 1,200 to 1,500 mg/L of TDS. The TDS would normally be part of the wastewater treatment plant influent if not removed by the RO system. The permanent population of Ft. Irwin NTC is increasing as permanent on-base housing units are added. The current daily employee population is about 7,000 with periodic large troop rotations dependent on base facilities during their transition through the cantonment area.

6. Existing and Proposed Treatment and Disposal Facilities

The existing and proposed treatment and disposal facilities consist of the unit processes described in Table 1. Delivery of up to 1 mgd of recycled water to all recycled water use areas is planned as soon as the Facility upgrades are completed.

Table 1 – Ft. Irwin WTF Unit Processes

Unit Process Description	Existing (E) Proposed (P)	#No. Units	Comments
Collection System	E	N/A	24-inch steel influent line
Septage Pretreatment	P	3 ea	Converting three Sequence Batch Reactors to provide contractors with a septage/treatment disposal station. Following extended aeration, effluent will be discharged to the influent headworks to prevent “shock” loading of the biomass system. This Facility will come online by 2004.
Headworks – Comminutor, Automatic bar screen, Grit chamber, Parshall flume	E	1 ea	Installed in 1995. Screenings are dewatered and disposed in the Ft. Irwin Sanitary landfill.
Secondary – Oxidation ditch	E	1 ea	Aerobic biological secondary treatment. Mechanical aerators will be replaced with brush aerators by 2004.
Secondary – Clarifiers	E	2 ea	Return Activated Sludge (RAS) sent to oxidation ditch and Waste Activated Sludge (WAS) sent to drying beds.
Flow Equalization -	P	2 ea	Secondary effluent flow equalization basins will be lined with a 36-mil polypropylene synthetic material to prevent percolation of untreated wastewater to ground water and used to regulate flow to the new tertiary treatment plant.
Filters	P	4 ea	One unit with four cells, three operational and one standby. Deep bed, monomedia, continuous backwash.
Chlorine Contact Chamber	E, P	1 ea	The existing chlorine contact chamber will be replaced. Sodium hypochlorite will be used to disinfect the filtered effluent before delivery to recycled water use areas. Appropriate contact time for disinfection will be achieved.
Recycled Water Pipeline	P	1 ea	The main delivery pipeline is planned for installation as part of WTF upgrades starting in Fall 2003. A peak delivery of up to 1 mgd is planned.
Recycled Water Use Areas	P	14 ea	Approximately 14 recycled water use areas are planned for eventual connection to the distribution system and are shown in Attachments “B” and “C”.
Aerated Oxidation Ponds	E	5 ea	For emergency use only and during the oxidation ditch aerator upgrade. Each pond has an 18-inch clay liner.
Sludge Drying Beds	E	24 ea	Sand drains collect water for return to the headworks. The beds have a 30 mil polyvinyl chloride (PVC) liner.
Holding Pond	E	1 ea	This 3-acre unlined pond holds treated effluent.
Percolation Ponds	E	4 ea	A pump station delivers effluent from the holding pond to the “22-acre” pond with gravity flow to the “Duck” ponds for percolation.

7. Solids Handling

Approximately 540 tons per year of dried sludge is composted at the Ft Irwin compost facility or disposed of at the Ft Irwin Landfill which contains both lined and unlined cells. Grit from the headworks is disposed in the landfill. This Order requires that Landfill units used for biosolids disposal meet Title 27, CCR criteria.

8. Effluent Quality

The Facility produces the following average effluent quality.

Table 2 – Ft Irwin Effluent Quality (2002) ¹

Constituent	Units	Mean
Total Dissolved Solids (TDS)	mg/L	726
Biochemical Oxygen Demand (BOD)	mg/L	8.6
Nitrate as nitrogen	mg/L	2.8
Total Kjeldahl Nitrogen (TKN)	mg/L	2.9

9. Authorized Disposal Sites

Treated undisinfected secondary wastewater may be disposed to the: 1) holding pond, 2) duck pond and 3) 22-acre pond as described in Table 1 and shown on Attachment “B”. Disinfected tertiary recycled water may be used at the recycled water use areas described in Table 1 and shown on Attachments “B” (golf driving range only) and “C”; approximately 14 use areas (including numerous landscape areas as yet undetermined). In addition, disinfected treated recycled water meeting Title 22 criteria may be used for: 1) dust control on tank trails, 2) compaction and dust control at the Ft Irwin Landfill and 3) compaction at NTC construction sites. These areas are the only designated disposal sites.

10. Landowner

The designated disposal sites are located on land owned by the Discharger.

11. Surface water Hydrology

The Facility is located in the southeast portion of the Irwin basin; a sub-basin of Langford basin. Surface flows are collected to an unnamed ephemeral stream that is diverted around the west side of the Facility towards Langford basin to the southeast. Subsurface waters in the Irwin and Langford basins are separated by a bedrock high although they form one surface water basin.

12. Ground Water Hydrogeology and Water Quality

The Irwin Ground Water Basin is hydraulically closed and contains an upper aquifer in unconfined alluvium and a lower aquifer in older alluvium and the upper part of fractured basement complex. Basin sediments consist of gravels, sands, silts and clays. The water bearing zones are the coarser gravels and sands. Semi-continuous confining layers of lakebed clays are located under the main disposal areas and act as aquitards.

Ground water levels have declined in the center of the Irwin Basin because of a pumping depression near municipal wells while recharge from the Facility disposal ponds caused the formation of a recharge mound to the southeast. Percolation of wastewater is the largest source of recharge in the Irwin Basin. A portion of ground water pumped from the Irwin Basin ground water and imported from the Bicycle and Langford ground water Basins for municipal use is treated with a reverse osmosis (RO) plant to remove fluoride before blending with pumped water from the Langford and Bicycle Lake Basins and distribution to customers. The RO plant reject

¹ From Table 4-8, Draft Mitigated Environmental Assessment. Negative Declaration, Ft Irwin WTF Tertiary Upgrade and Recycled Water Distribution System, Montgomery Watson Harza, June 2003

water brine is returned to the sewer collection system and mixes with other sewage where it is disposed in the percolation ponds. The Irwin Basin water generally has a total dissolved solids (TDS) of from 450 to 600 mg/L, and locally near the Facility percolation ponds up to 2,000 mg/L. Ground water contains elevated naturally occurring fluoride (up to 10 mg/L) over the primary drinking water standard of 2 mg/L. Ground water nitrate concentrations in the Irwin Basin are generally lower than 10 mg/L as nitrogen – the drinking water standard, however there are two areas with elevated concentrations; 1) beneath the base housing area (up to 11 mg/L) and 2) beneath the wastewater percolation ponds (up to 18 mg/L). The ground water beneath the facility does not meet the drinking water standards established by the Department of Health Services.

The depth to ground water beneath the Facility is about 80 feet below ground surface. Overall water levels in the Irwin Basin have risen because more water is imported from other basins than is consumed from the Irwin Basin. The mound beneath the percolation ponds has caused ground water to flow radially outward, primarily towards the center of the Irwin Basin towards municipal supply wells and southeast towards the Langford Basin.

13. Ground Water Pollution and Degradation

There is ground water pollution and degradation resulting from historical wastewater disposal activities as described below.

- a. TDS - Percolating wastewater carries dissolved constituents from the effluent and leaches other salts from the aquifer formation to ground water. The ground water mound beneath the wastewater percolation ponds contains TDS concentrations ranging from 456 mg/L (Well STP-5, Oct 2002) to 2,060 mg/L (Well STP-8, Oct 2002), exceeding the secondary drinking water standard of 1,000 mg/L, a condition of pollution.
- b. Nitrate - Prior to 1995 when the new oxidation ditch was placed online, wastewater effluent contained elevated total nitrogen (up to 28 mg/L ammonia + organic). Percolating effluent has resulted in elevated nitrate (as nitrogen) in ground water beneath the Facility of 18.6 mg/L (Well STP-3R, April 2003), exceeding the primary drinking water standard of 10 mg/L as nitrogen, a condition of pollution.
- c. Disinfection Byproducts – Currently, all effluent is disinfected with chlorine before disposal into unlined percolation ponds because a small portion of the effluent is used to irrigate a golf driving range. As a result, recent ground water monitoring has detected trihalomethanes (THMs) – a disinfection byproduct – at low concentrations in ground water, below drinking water standards, a condition of degradation.

As noted above, the Ft. Irwin ground water basin supply wells do not meet current drinking standards for fluoride. As described below, following construction of the tertiary treatment plant, other constituents of concern, such as, THMs and nitrate will be reduced over time to meet water quality standards.

14. Ground Water Antidegradation Analysis

The Environmental Document prepared for the recycled water project evaluated existing ground water quality in the Irwin Basin and the effects of upgrading the Facility to produce disinfected tertiary recycled water and the use of that water at various use areas within the cantonment area.

One purpose of the Discharger's plans to use recycled water is to mitigate the adverse ground water quality effects as described below. Therefore, the Facility's operation conforms to the State Board Resolution 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California). This Order requires monitoring to evaluate the effectiveness of the proposed disposal method changes on ground water quality over time.

- a. Use of recycled water will cause less water to be disposed by percolation. This will decrease the size of the ground water mound beneath the percolation ponds and decrease the amount of salt leached from the underlying soil formation to ground water. Recycled water applied to the Use areas will be applied to match irrigation needs.
- b. The Facility will be operated to achieve the lowest practicable level of total nitrogen in the effluent. The final effluent total nitrogen concentration is expected to be less than 10 mg/L as nitrogen (combined ammonia, nitrate and total kjeldahl). Thus, percolated effluent will reduce existing nitrate in ground water beneath the Facility. Recycled water applied at the Use areas will result in nitrogen uptake by plants and reduce the amount of water percolated directly into the ground water basins.
- c. The Facility upgrades will allow for the percolation of final effluent before chlorine disinfection occurs. Therefore, THMs will not be generated in ground water beneath the disposal ponds. The irrigation of recycled water will reduce THMS in the disinfected effluent because of their volatility.

15. Recycled Wastewater

The DHS has established state-wide criteria for recycled water uses found in Sections 60301 through 63055, Title 22, CCR. The Discharger submitted a complete engineering report of recycled water use (for the WTF only) as required in Section 60323, Title 22, CCR that addressed operational and reliability requirements of the treatment plant. The Discharger intends to submit amended engineering reports prior to 1) delivery of recycled water to demonstrate modal contact time requirements and 2) constructing individual delivery pipelines to specific use areas that will specify public health protection measures at each location. In accordance with Section 13523 of the CWC, the Regional Board consulted with and received the recommendations of the State DHS concerning reclamation requirements which are incorporated into this Order. The unrestricted use areas shown on Attachment "C" require disinfected tertiary recycled water. The existing restricted access golf course driving range shown on Attachment "B" and dust control and construction sites described in Finding No. 9 require, at a minimum, disinfected secondary – 23 recycled water. Disinfected tertiary recycled water may be used at the sites following WTF upgrades.

16. Stormwater Permit

The Ft. Irwin NTC has applied for coverage under the Statewide General National Pollutant Discharge Elimination System (NPDES) Industrial Permit and is assigned Waste Discharge Identification No. 6B36I005232. Stormwater discharges from the WTF are covered and monitored under the NPDES Permit, separate from these requirements.

17. Basin Plan

The Regional Board adopted a Water Quality Control Plan for the Lahontan Region (Basin Plan) which became effective on March 31, 1995, and this Order implements the Basin Plan as amended.

18. Receiving Waters

The receiving waters are ground waters of the Irwin Basin (6-36.02) of the Langford Hydrologic Subarea (628.73) of the Afton Hydrologic Area of the Mojave Hydrologic Unit.

19. Beneficial Uses

The beneficial uses of ground waters of the Irwin basin of the Langford Hydrologic Subarea of the Afton Hydrologic Area of the Mojave Hydrologic Unit as set forth and defined in the plan are:

- a. MUN - municipal and domestic supply
- b. AGR - agricultural supply
- c. IND - industrial service
- d. FRSH - freshwater replenishment

20. California Environmental Quality Act (CEQA)

The continued operation of the existing Facility is exempt from the provisions of the CEQA (Public Resources Code, Section 21000 et seq.) in accordance with Title 14, Section 15301, CCR. An Initial Study describing the project to upgrade the Facility and produce disinfected tertiary recycled water for landscape irrigation at various locations around the cantonment was prepared by Montgomery Watson Harza on behalf of the U.S. Army. It was circulated under State Clearinghouse No. 2003071010 as a Joint Document to satisfy CEQA (Regional Board as Lead Agency) and the National Environmental Policy Act (Ft Irwin as NEPA Lead Agency). The Initial Environmental Study/Environmental Assessment indicates the intent of the Regional Board to consider a Mitigated Negative Declaration and the U.S. Army to adopt a Finding of No Significant Impact, respectively. In a public meeting on February 10, 2004, the Regional Board adopted a Resolution certifying the Initial Study stating that the effects on the environment are not significant as mitigated, adopting a Mitigated Negative Declaration and a Mitigation Monitoring and Reporting Plan to satisfy CEQA, and authorizing Regional Board staff to send a Notice of Determination to the State Clearinghouse.

21. Regional Board Notification

The Regional Board has notified the Discharger and interested agencies and persons of its intent to revise WDRs for this discharge and to include recycled water criteria.

22. Regional Board Consideration

The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the Discharger shall comply with the following:

I. DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. The average daily flow of wastewater to the treatment and disposal facilities during a 24-hour period shall not exceed 2.0 mgd or a peak flow of 4.0 mgd.
2. Until **July 1, 2004**, or until the oxidation ditch is brought back on-line following aerator replacement, whichever occurs first, all wastewater made available for percolation shall not contain concentrations of constituents in excess of the following limits:

<u>Parameter</u>	<u>Units</u>	<u>Mean</u>	<u>Maximum</u>
BOD ²	mg/L	30	45
MBAS	mg/L	1.0	2.0

Compliance with the mean effluent limits during this period shall be based on the arithmetic mean of effluent results collected over the past four quarters.

3. After **July 1, 2004**, or until after the oxidation ditch is brought back on-line following aerator replacement whichever occurs first, all wastewater made available for percolation shall not contain concentrations of parameters in excess of the following limits:

<u>Parameter</u>	<u>Units</u>	<u>Mean</u>	<u>Maximum</u>
BOD	mg/L	30	45
MBAS	mg/L	1.0	2.0

Compliance with the mean effluent limits during this period shall be based on all samples collected in any consecutive 30-day period.

4. All wastewater made available for percolation shall have a pH of not less than 6.0 pH units nor more than 9.0 pH units.
5. All wastewater made available for percolation shall have a dissolved oxygen concentration of not less than 1.0 mg/L.

B. Receiving Water Limitations

The discharge shall not cause a continued violation of any applicable water quality standards for receiving water adopted by the Regional or State Board. The discharge shall not cause the presence of the following substances or conditions in ground waters of the Langford Hydrologic Subarea of the Afton Hydrologic Area of the Mojave Hydrologic Unit:

² BOD – Biochemical Oxygen Demand, (5-day, 20 degree Celsius) of an unfiltered sample

1. Bacteria - Waters shall not contain concentrations of coliform organisms attributable to human wastes. The median concentration of coliform organisms, over any seven-day period, shall be less than 1.1/100 ml in ground waters.
2. Chemical Constituents – Ground waters designated as Municipal and Domestic Supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant level (MCL) or secondary maximum contaminant level (SMCL) based upon drinking water standards specified in Title 22, CCR: Table 64431-A of Section 64431 (Inorganic Chemicals), Table 64431-B of Section 64431 (Fluoride), Table 64444-A of Section 64444 (Organic Chemicals), Table 64449-A of Section 64449 (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits), and Table 64449-B of Section 64449 (Secondary Maximum Contaminant Levels-Ranges).
Waters designated for agricultural supply shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes).

Waters shall not contain concentrations of chemical constituents that adversely affect the water for beneficial uses.

3. Radioactivity - Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life, or that result in the accumulation of radionuclides in the food chain to an extent that it presents a hazard to human, plant, animal, or aquatic life. Waters shall not contain concentrations of radionuclides in excess of limits specified in the CCR, Title 22, Chapter 15, Article 5, Section 64443.
4. Taste and Odors - Ground waters shall not contain taste or odor-producing substances in concentrations that cause nuisance or that adversely affect beneficial uses. For ground waters designated as MUN, at a minimum, concentrations shall not exceed adopted SMCLs specified in Table 64449-A of Section 64449 (SMCLs – Acceptance Limits), and Table 64449-B of Section 64449 (SMCLs - Ranges) of Title 22 of the CCR, including future changes as the changes take effect.

II. RECLAMATION REQUIREMENTS

- A. The Recycled Water shall meet all requirements of Title 22, CCR, Chapter 3 (Water Recycling Criteria), Articles 1 (Definitions), 2 (Sources of Recycled Water), 3 (Uses of Recycled Water), 4 (Use Area Requirements), 5.5 (Other Methods of Treatment), 6 (Sampling and Analysis), 7 (Engineering Report), 8 (General Requirements of Design), and 10 (Reliability Requirements for Full Treatment) as described in Attachment “F”.
- B. The total flow of recycled water to the use areas shall not exceed the pumping station capacity (1.0 mgd).
- C. Pursuant to Section 60304(a), Title 22, CCR the Producer must provide disinfected tertiary recycled water that meets the following limits for parks, school yards, residential landscaping and unrestricted access golf courses.

1. Effluent shall not exceed a total coliform bacteria most probable number (MPN) of 2.2/100 ml based on the median of the results for the last seven days.
 2. Effluent shall not exceed a total coliform bacteria MPN of 23/100 ml in more than one sample in any 30-day period.
 3. Effluent shall not exceed a total coliform bacteria MPN of 240/100 ml in any sample.
 4. Chlorination shall be provided with a disinfection process providing a concentration-time (CT) of at least 450 mg-min/L with a minimum modal contact time of at least 90 minutes based on peak dry weather design flow.
 5. Effluent turbidity shall not exceed: a daily average of 2 nephelometric turbidity units (NTU), 5 NTU more than five percent of the time in a given 24-hour period, and 10 NTU at any given time.
- D. At least 120 days before recycled water is planned for delivery to any recycled water use area, the Producer/User shall submit a complete amended Engineering Report, signed by a California registered civil engineer, 1) demonstrating that the Facility meets recycled water effluent limits (including for modal contact time) and 2) describing how the use area(s) comply with DHS criteria. DHS approval of the amended Engineering Report must be submitted to the Regional Board before use may begin.
- E. Pursuant to Section 60304(c), Title 22, CCR, the Producer must provide disinfected secondary –23 recycled water that meets the following limits for restricted access golf courses.
1. Effluent is oxidized (stabilized, non-putrescible and contains dissolved oxygen).
 2. Effluent does not exceed a MPN of 23/100 mL based on the median of the results for the last seven days.
 3. Effluent does not exceed a total coliform bacteria of 240/100 ml in more than one sample in any 30-day period.
- F. Recycled water shall be applied at such a rate and volume as not to exceed vegetative needs and to prevent excess ponding from runoff.

III. GENERAL REQUIREMENTS AND PROHIBITIONS

- A. There shall be no discharge, bypass, or diversion of raw or partially treated sewage, sewage sludge, grease, or oils from the collection, transport, treatment, or disposal facilities to adjacent land areas or surface waters.
- B. All facilities used for collection, transport, treatment, or disposal of waste or recycled water shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a 24-hour storm or flood having a recurrence interval of once in 100 years.

- C. A copy of these requirements shall be maintained at the Facility and be available at all times to operating personnel.
- D. The Discharger shall at all times properly operate and maintain all treatment facilities and control systems (and related appurtenances) which are installed or used to achieve compliance with the conditions of this Order. Proper operation and maintenance includes: effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls (including appropriate quality assurance procedures).
- E. The discharge of wastewater or use of recycled water shall not cause a pollution, as defined in Section 13050 (l) of the CWC, or a threatened pollution.
- F. Neither the treatment of wastewater or the use of recycled water shall cause a nuisance, as defined in Section 13050(m) of the CWC.
- G. The Discharger shall comply with the "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached to and made a part of the Monitoring and Reporting Program.
- H. The vertical distance between the water surface elevation and the lowest point of a pond dike or the invert of an overflow structure shall not be less than 2 feet.
- I. The discharge of wastewater except to the designated disposal sites is prohibited.
- J. The Discharger shall comply with all existing Federal and State laws and regulations that apply to its sewage sludge use and disposal practice(s), and with the Clean Water Act (CWA) Section 405(d) and 40 CFR Part 503 technical standards.
- K. The integrity of the sludge drying bed, oxidation ditch, and flow equalization pond liners shall be maintained throughout their life and shall not be diminished as the result of any maintenance or cleaning operation.
- L. Dewatered sewage sludge may be disposed at a Class III landfill provided the landfill meets the criteria of Title 27, CCR, Section 20220(c): 1) the landfill is equipped with a leachate collection and removal system, 2) the sludge contains at least 15% solids by weight) and 3) there is a minimum solids-to-liquid ratio of 5:1 to ensure that codisposal will not exceed the moisture holding capacity of the landfill.
- M. No discharge of waste to any disposal or recycled water use areas is allowed except as authorized by this Order.

IV. PROVISIONS

A. Rescission

Board Orders No. 6-93-42 and 6-93-42A1 are hereby rescinded.

B. Standard Provisions

The Discharger shall comply with the "Standard Provisions for Waste Discharge Requirements" in Attachment "G", which is made part of this Order.

C. Monitoring and Reporting

Pursuant to the CWC, Section 13267(b), the Discharger shall comply with the Monitoring and Reporting Program No. R6V-2004-0005 as specified by the Executive Officer.

D. Claim of Copyright or Other Protection

Any and all reports and other documents submitted to the Regional Board pursuant to this request will need to be copied for some or all of the following reasons: 1) normal internal use of the document, including staff copies, record copies, copies for Regional Board members and agenda packets, 2) any further proceedings of the Regional Board and the State Water Resources Control Board, 3) any court proceeding that may involve the document, and 4) any copies requested by members of the public pursuant to the Public Records Act or other legal proceeding.

If the discharger or its contractor claims any copyright or other protection, the submittal must include a notice, and the notice will accompany all documents copied for the reasons stated above. If copyright protection for a submitted document is claimed, failure to expressly grant permission for the copying stated above will render the document unusable for the Regional Board's purposes, and will result in the document being returned to the discharger as if the task had not been completed.

I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on February 10, 2004.

HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A. General Location Map
B. Facilities Location Map
C. Recycled Water Use Locations
D. Process Flow Diagram
E. Information for the RWD
F. Title 22 Recycled Water Criteria
G. Standard Provisions for WDRs

WDR - Attachment C

Legend

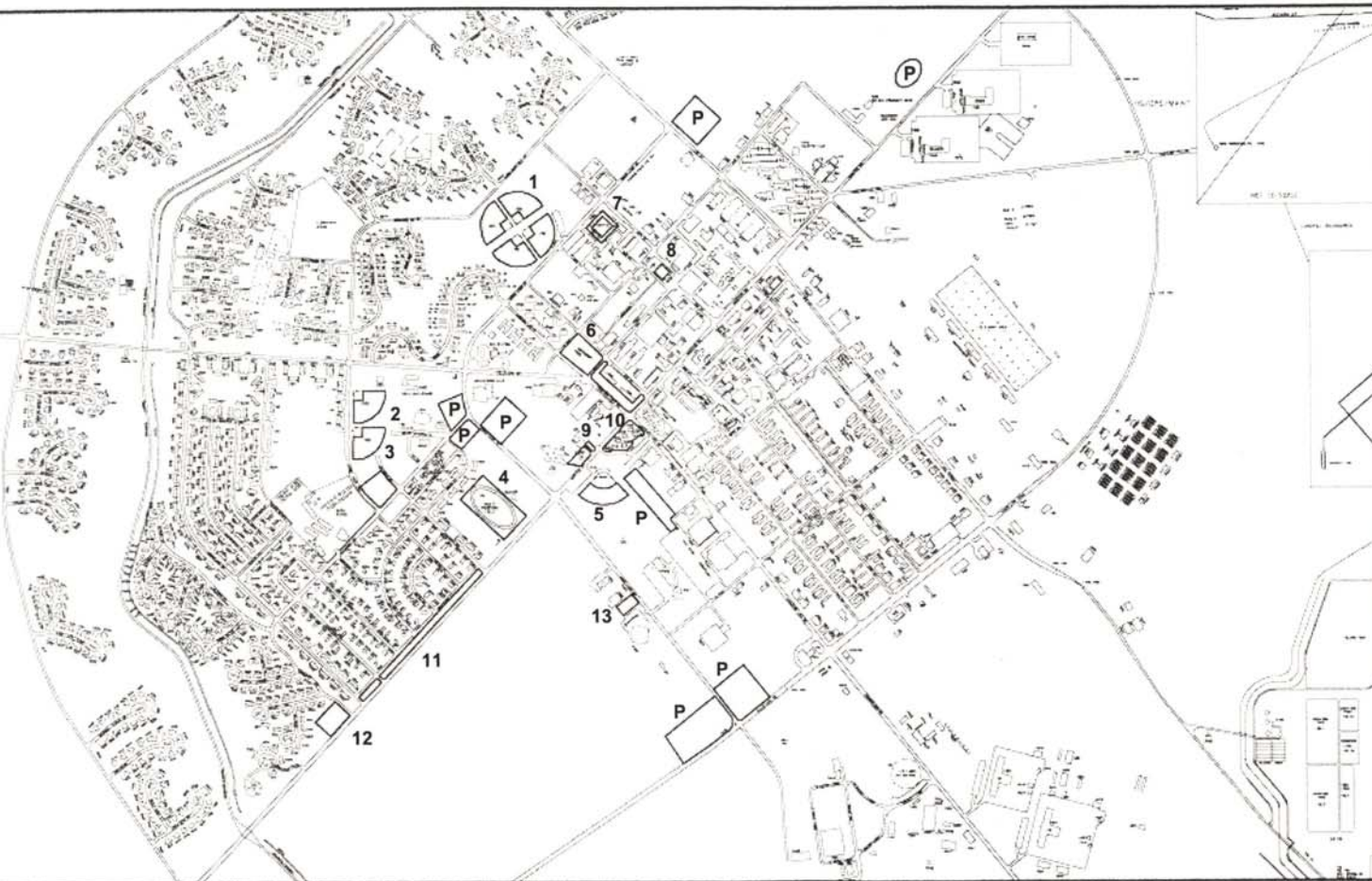
- P = Proposed Landscape Irrigation
- 1 = Baseball Field
- 2 = Baseball Field
- 3 = Soccer Field
- 4 = Multipurpose Field
- 5 = Ballfield
- 6 = Jack Rabbit Park
- 7 = Hospital Courtyard
- 8 = Headquarters Landscaping
- 9 = Cable Building Landscaping
- 10 = Green Area
- 11 = Landscaping Along Barstow Road
- 12 = Soccer Field for Children
- 13 = Green Area



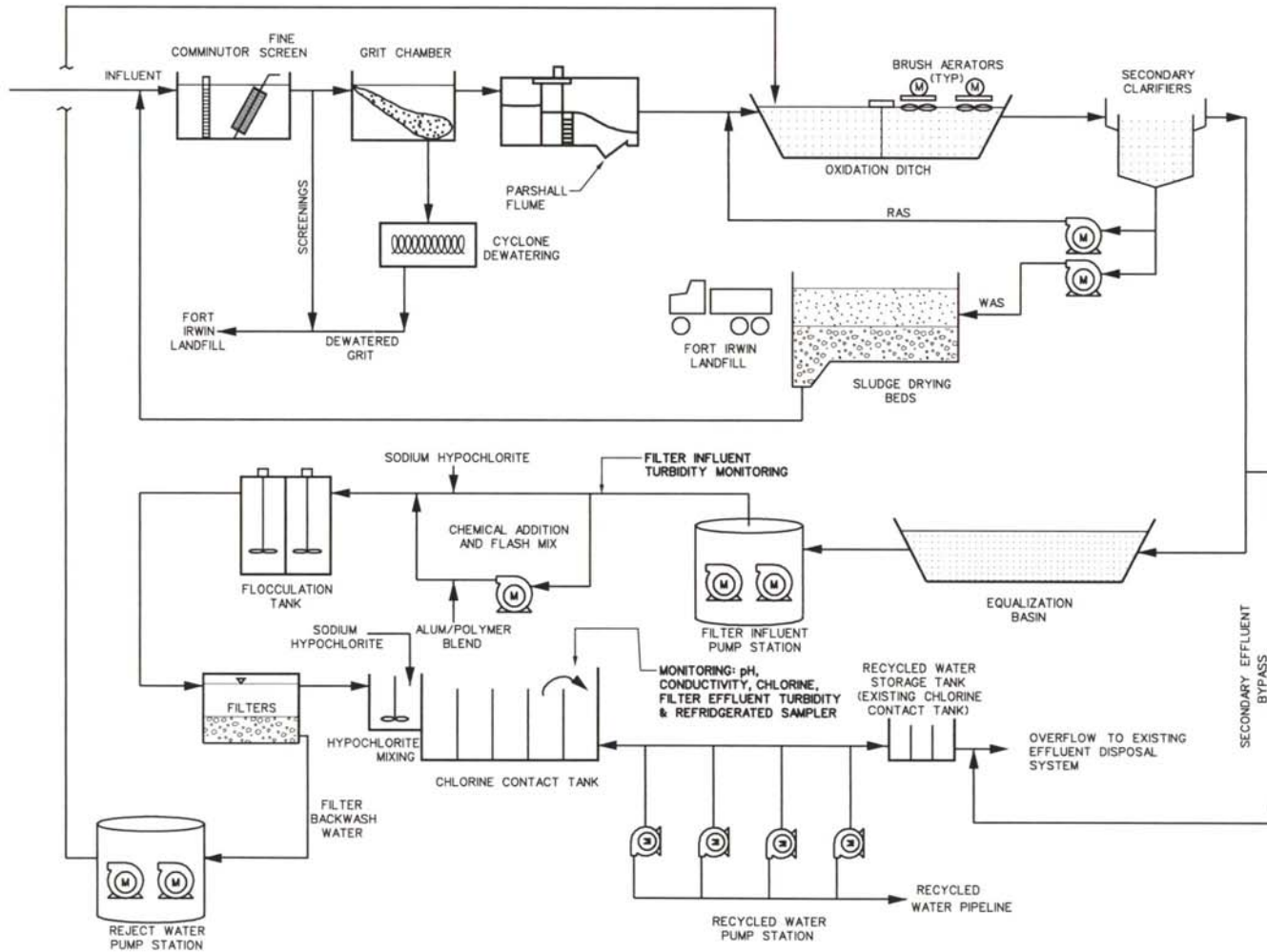
APPROXIMATE SCALE



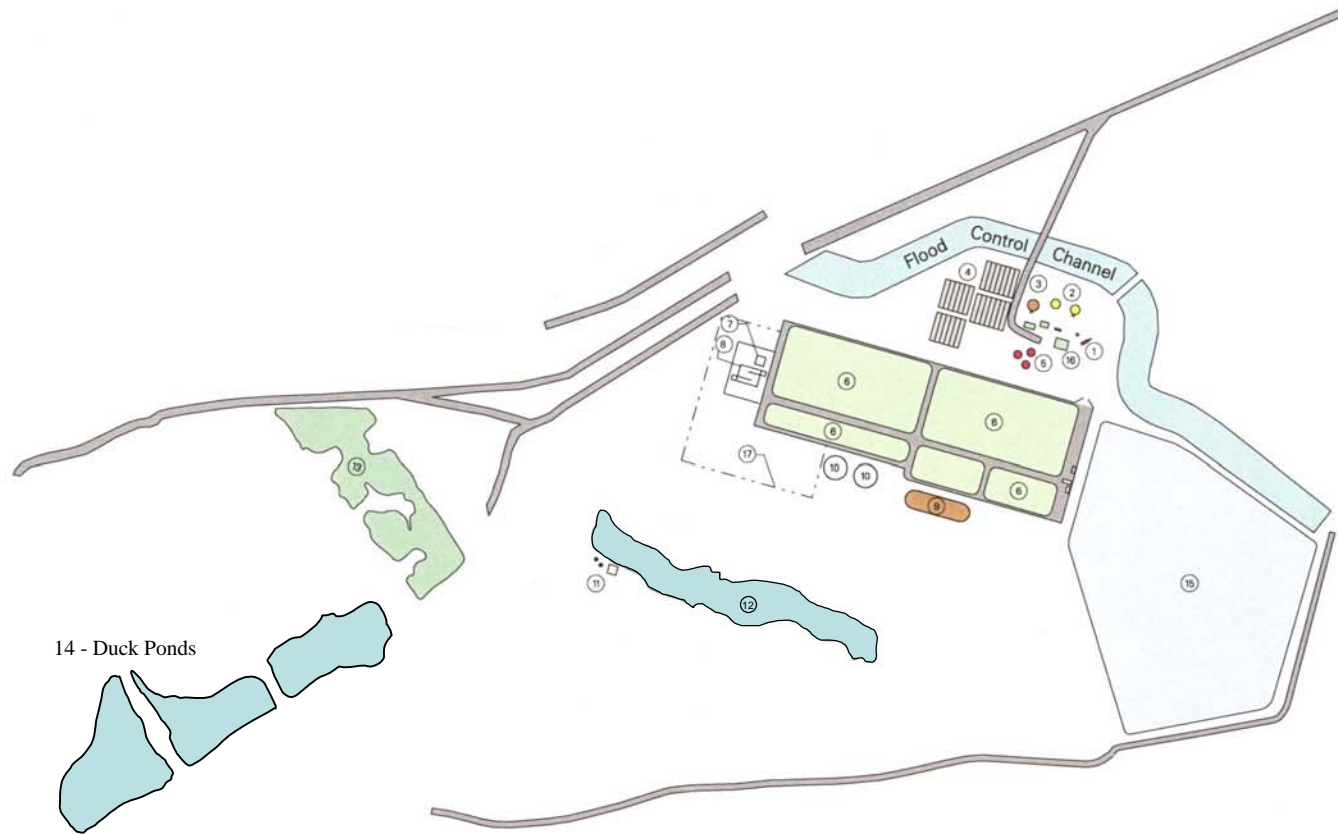
Figure 2-6
Fort Irwin Tertiary Upgrade
Potential Reclaimed Water Users



WDR - Attachment D



WDR - Attachment B



- Legend**
- ① Headworks
 - ② Primary Clarifiers (abandoned)
 - ③ Anaerobic Digester (abandoned)
 - ④ Sludge Drying Bods
 - ⑤ Sequencing Batch Reactor (abandoned)
 - ⑥ Aerated Ponds (abandoned)
 - ⑦ Chlorine Building
 - ⑧ Existing Chlorine Contact Tank
 - ⑨ Oxidation Ditch
 - ⑩ Secondary Clarifiers
 - ⑪ Existing Secondary Effluent Pump Station
 - ⑫ Existing Effluent Reclaimed Water Pond
 - ⑬ Golf Driving Range
 - ⑭ Duck Ponds
 - ⑮ Percolation / Evaporation Pond
 - ⑯ Operations Building
 - ⑰ Location Of Proposed Tertiary Facilities

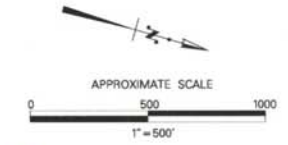
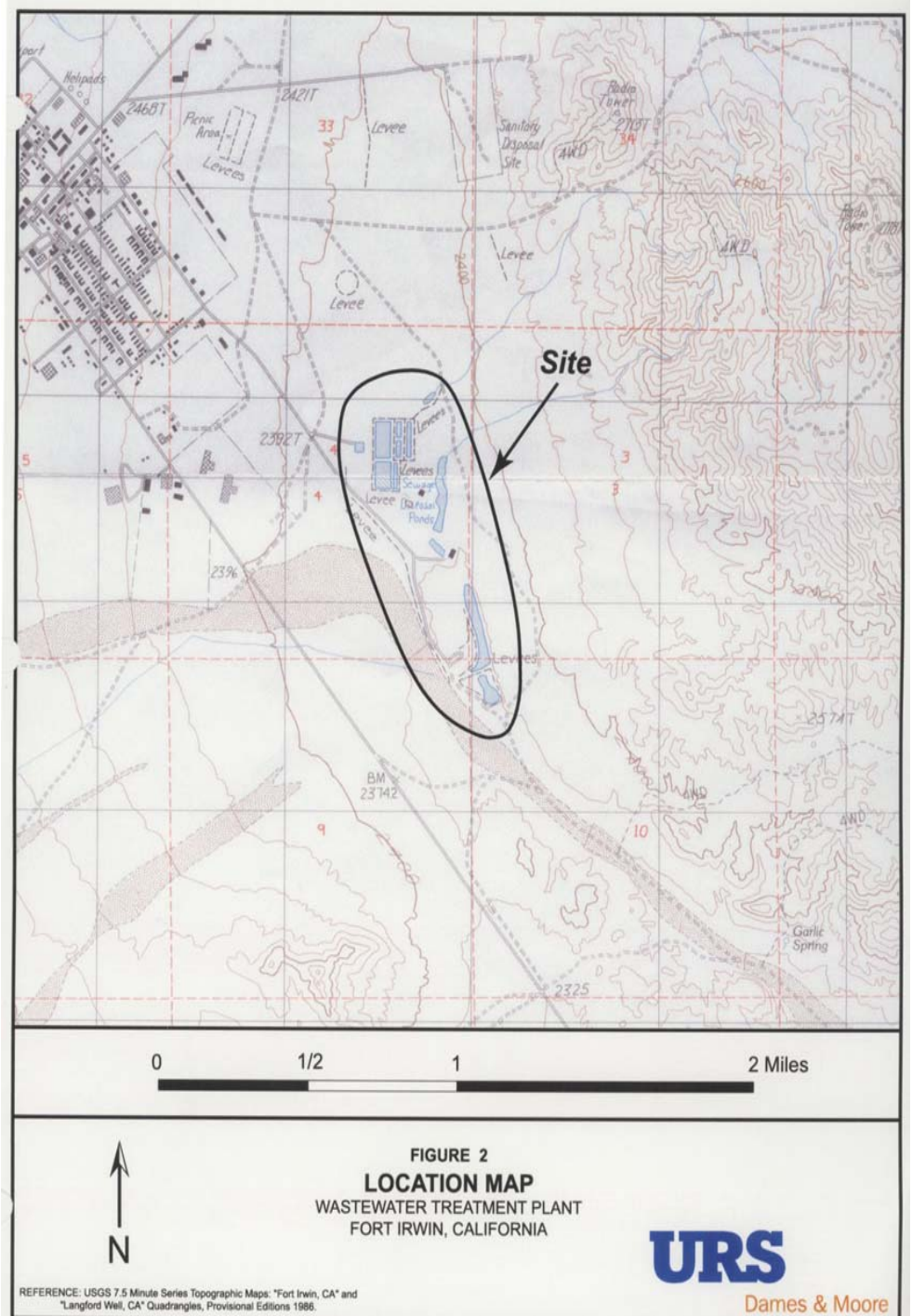


Figure 3-2A
Fort Irwin Wastewater Treatment Plant
Site Plan

WDR – Attachment A



Attachment “E”

Information Constituting the Revised Report of Waste Discharge (RRWD), Report of Recycled Water Use (RRWU) and California Environmental Quality Act (CEQA), Use of Recycled Water at Ft Irwin National Training Center, Wastewater Treatment Plant, Ft Irwin

Date	Author	Title	Purpose	Subject
4-19-02	Montgomery Watson Harza	Technical Specifications for the Ft. Irwin Wastewater Treatment Plant Aeration System Upgrade	RRWD	Technical specifications for upgrades to the oxidation ditch aerators
03-03	Montgomery Watson Harza	Design Analysis, Ft Irwin Wastewater Treatment Plant, Tertiary Upgrade	RRWU, RRWD	Engineering technical basis for design changes to bring the wastewater treatment plant up to full tertiary standards
03-03	Montgomery Watson Harza	Technical Specifications, Ft Irwin Wastewater Treatment Plant, Tertiary Upgrade	RRWU, RRWD	Technical specifications for construction to bring the wastewater treatment plant up to full tertiary standards
03-03	Montgomery Watson Harza	Construction Drawings, Ft Irwin Wastewater Treatment Plant, Tertiary Upgrade	RRWU, RRWD	Proposed modifications to bring the wastewater treatment plant up to full tertiary standards
3-17-03	Ft Irwin	Form 200	RRWD	Application Signature Page
04-28-03	Montgomery Watson Harza	Ft Irwin Tertiary Upgrade – Final Design Submittal	RRWU, RRWD	Final changes to March documents.
8-26-03	Montgomery Watson Harza	Final Title 22 Engineering Report and Report of Waste Discharge, Ft Irwin Wastewater Treatment Plant, Tertiary Upgrade	RRWU, RRWD	CA Department of Health Services Title 22 requirements and the Regional Board’s Porter-Cologne technical report requirements
8-26-03	Montgomery Watson Harza	Final Mitigated Environmental Assessment & Mitigated Negative Declaration, Ft Irwin Wastewater Treatment Plant Tertiary Plant Upgrade and Recycled Water Distribution System	CEQA	Joint Environmental Document prepared for the Ft Irwin NTC (NPEA Lead Agency) and Lahontan RWQCB (CEQA Lead Agency)

List of References Used in Preparing Revised Waste Discharge Requirements

Date	Author	Title
2003	USGS	Simulation of Groundwater Flow in the Irwin Basin Aquifer System, Ft Irwin National Training Center, California, Water Resources Investigations Report 02-4264
1997	USGS	Groundwater Hydrogeology and Water Quality of Irwin Basin at Ft Irwin National Training Center, California, Water Resources Investigations Report 97-4092
07-03	US Army Corps of Engineers, Mobile District & Tetra Tech Inc.	Environmental Assessment of Implementation of the Army Residential Communities Initiative at Fort Irwin, California, prepared for Commander Ft Irwin
07-21-03	Ft Irwin NTC	Letter transmitting “2002 Consumer Confidence Report” required by the CA DHS for Drinking Water Systems, Ft Irwin NTC, printed from Internet - http://www.irwin.army.mil/pao/ntcnewsrelease/NewsReleases.htm

Mojave/jay/ft irwin/wwtp wdr/ ft irwin – att e

ATTACHMENT F

California Health Laws Related to Recycled Water Title 22

June 2001 Edition

CHAPTER 3 WATER RECYCLING CRITERIA ARTICLE 1 DEFINITIONS

60301. Definitions

60301.100. Approved laboratory

"Approved laboratory" means a laboratory that has been certified by the Department to perform microbiological analyses pursuant to section 116390, Health and Safety Code.

60301.160. Coagulated wastewater

"Coagulated wastewater" means oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated upstream from a filter by the addition of suitable floc-forming chemicals.

60301.170. Conventional treatment

"Conventional treatment" means a treatment chain that utilizes a sedimentation unit process between the coagulation and filtration processes and produces an effluent that meets the definition for disinfected tertiary recycled water.

60301.200. Direct beneficial use

"Direct beneficial use" means the use of recycled water that has been transported from the point of treatment or production to the point of use without an intervening discharge to waters of the State.

60301.220. Disinfected secondary-2.2 recycled water

"Disinfected secondary-2.2 recycled water" means recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period.

60301.225. Disinfected secondary-23 recycled water

"Disinfected secondary-23 recycled water" means recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 23 per 100

milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30 day period.

60301.230. Disinfected tertiary recycled water

"Disinfected tertiary recycled water" means a filtered and subsequently disinfected wastewater that meets the following criteria:

(a) The filtered wastewater has been disinfected by either:

(1) A chlorine disinfection process following filtration that provides a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or

(2) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.

(b) The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

60301.240. Drift

"Drift" means the water that escapes to the atmosphere as water droplets from a cooling system.

60301.245. Drift eliminator

"Drift eliminator" means a feature of a cooling system that reduces to a minimum the generation of drift from the system.

60301.250. Dual plumbed system

"Dual plumbed system" or "dual plumbed" means a system that utilizes separate piping systems for recycled water and potable water within a facility and where the recycled water is used for either of the following purposes:

(a) To serve plumbing outlets (excluding fire suppression systems) within a building or

(b) Outdoor landscape irrigation at individual residences.

60301.300. F-Specific bacteriophage MS-2

"F-specific bacteriophage MS-2" means a strain of a specific type of virus that infects coliform bacteria that is traceable to the American Type Culture Collection (ATCC 1559781) and is grown on lawns of E. coli (ATCC 15597).

60301.310. Facility

"Facility" means any type of building or structure, or a defined area of specific use that receives water for domestic use from a public water system as defined in section 116275 of the Health and Safety Code.

60301.320. Filtered wastewater

"Filtered wastewater" means an oxidized wastewater that meets the criteria in subsection (a) or (b):

(a) Has been coagulated and passed through natural undisturbed soils or a bed of filter media pursuant to the following:

(1) At a rate that does not exceed 5 gallons per minute per square foot of surface area in mono, dual or mixed media gravity, upflow or pressure filtration systems, or does not exceed 2 gallons per minute per square foot of surface area in traveling bridge automatic backwash filters; and

(2) So that the turbidity of the filtered wastewater does not exceed any of the following:

(A) An average of 2 NTU within a 24-hour period;

(B) 5 NTU more than 5 percent of the time within a 24-hour period; and

California Health Laws Related to Recycled Water Title 22

(C) 10 NTU at any time.

(b) Has been passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane so that the turbidity of the filtered wastewater does not exceed any of the following:

(1) 0.2 NTU more than 5 percent of the time within a 24-hour period; and

(2) 0.5 NTU at any time.

60301.330. Food crops

"Food crops" means any crops intended for human consumption.

60301.400. Hose bibb

"Hose bibb" means a faucet or similar device to which a common garden hose can be readily attached.

60301.550. Landscape impoundment

"Landscape impoundment" means an impoundment in which recycled water is stored or used for aesthetic enjoyment or landscape irrigation, or which otherwise serves a similar function and is not intended to include public contact.

60301.600.

Modal contact time

"Modal contact time" means the amount of time elapsed between the time that a tracer, such as salt or dye, is injected into the influent at the entrance to a chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber.

60301.620. Nonrestricted recreational impoundment

"Nonrestricted recreational impoundment" means an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities.

60301.630. NTU

"NTU" (Nephelometric turbidity unit) means a measurement of turbidity as determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light as measured by method 2130 B. in Standard Methods for the Examination of Water and Wastewater, 20th ed.; Eaton, A. D., Clesceri, L. S., and Greenberg, A. E., Eds; American Public Health Association: Washington, DC, 1995; p. 2-8.

60301.650. Oxidized wastewater.

"Oxidized wastewater" means wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

60301.660. Peak dry weather design flow

"Peak Dry Weather Design Flow" means the arithmetic mean of the maximum peak flow rates sustained over some period of time (for example three hours) during the maximum 24-hour dry weather period. Dry weather period is defined as periods of little or no rainfall.

60301.700. Recycled water agency.

"Recycled water agency" means the public water system, or a publicly or privately owned or operated recycled water system, that delivers or proposes to deliver recycled water to a facility.

60301.710. Recycling plant

"Recycling plant" means an arrangement of devices, structures, equipment, processes and controls which produce recycled water.

60301.740. Regulatory Agency

"Regulatory agency" means the California Regional Water Quality Control Board(s) that have jurisdiction over the recycling plant and use areas.

60301.750. Restricted access golf course

"Restricted access golf course" means a golf course where public access is controlled so that areas irrigated with recycled water cannot be used as if they were part of a park, playground, or school yard and where irrigation is conducted only in areas and during periods when the golf course is not being used by golfers.

60301.760. Restricted recreational impoundment

"Restricted recreational impoundment" means an impoundment of recycled water in which recreation is limited to fishing, boating, and other non-body-contact water recreational activities.

60301.800. Spray irrigation

"Spray irrigation" means the application of recycled water to crops to maintain vegetation or support growth of vegetation by applying *it* from sprinklers.

Section 60301.830. Standby Unit Process.

"Standby unit process" means an alternate unit process or an equivalent alternative process which is maintained in operable condition and which is capable of providing comparable treatment of the actual flow through the unit for which it is a substitute.

60301.900. Undisinfected secondary recycled water.

"Undisinfected secondary recycled water" means oxidized wastewater.

60301.920. Use area

"Use area" means an area of recycled water use with defined boundaries. A use area, may contain one or more facilities.

ARTICLE 2. SOURCES OF RECYCLED WATER.

60302. Source specifications.

The requirements in this chapter shall only apply to recycled water from sources that contain domestic waste, in whole or in part.

ARTICLE 3. USES OF RECYCLED WATER.

60303. Exceptions

The requirements set forth in this chapter 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.

60304. Use of recycled water for irrigation

(a) Recycled water used for the surface irrigation of the following shall be a disinfected tertiary recycled water, except that for filtration pursuant to Section 60301.320(a) coagulation need not be used as part of the treatment process provided that the filter effluent turbidity does not exceed 2 NTU, the turbidity of the influent to the filters is continuously measured, the influent turbidity does not exceed 5 NTU for more than 15 minutes and never exceeds 10 NTU, and that there is the capability to automatically activate chemical addition or divert the wastewater should the filter influent turbidity exceed 5 NTU for more than 15 minutes:

- (1) Food crops, including all edible root crops, where the recycled water comes into contact with the edible portion of the crop,
- (2) Parks and playgrounds,
- (3) School yards,
- (4) Residential landscaping,

(5) Unrestricted access golf courses, and

(6) Any other irrigation use not specified in this section and not prohibited by other sections of the California Code of Regulations.

(b) Recycled water used for the surface irrigation of food crops where the edible portion is produced above ground and not contacted by the recycled water shall be at least disinfected secondary-2.2 recycled water.

(c) Recycled water used for the surface irrigation of the following shall be at least disinfected secondary-23 recycled water:

(1) Cemeteries,

(2) Freeway landscaping,

(3) Restricted access golf courses,

(4) Ornamental nursery stock and sod farms where access by the general public is not restricted.

{5} Pasture for animals producing milk for human consumption, and

(6) Any nonedible vegetation where access is controlled so that the irrigated area cannot be used as if it were part of a park, playground or school yard

(d) Recycled wastewater used for the surface irrigation of the following shall be at least undisinfected secondary recycled water:

(1) Orchards where the recycled water does not come into contact with the edible portion of the crop,

(2) Vineyards where the recycled water does not come into contact with the edible portion of the crop,

(3) Non food-bearing trees (Christmas tree farms are included in this category provided no irrigation with recycled water occurs for a period of 14 days prior to harvesting or allowing access by the general public),

(4) Fodder and fiber crops and pasture for animals not producing milk for human consumption,

(5) Seed crops not eaten by humans,

(6) Food crops that must undergo commercial pathogen-destroying processing before being consumed by humans, and

(7) Ornamental nursery stock and sod farms provided no irrigation with recycled water occurs for a period of 14 days prior to harvesting, retail sale, or allowing access by the general public.

(e) No recycled water used for irrigation, or soil that has been irrigated with recycled water, shall come into contact with the edible portion of food crops eaten raw by humans unless the recycled water complies with subsection (a).

60305. Use of recycled water for impoundments.

(a) Except as provided in subsection (b), recycled water used as a source of water supply for nonrestricted recreational impoundments shall be disinfected tertiary recycled water that has been subjected to conventional treatment.

(b) Disinfected tertiary recycled water that has not received conventional treatment may be used for nonrestricted recreational impoundments provided the recycled water is monitored for the presence of pathogenic organisms in accordance with the following:

(1) During the first 12 months of operation and use the recycled water shall be sampled and analyzed monthly for *Giardia*, enteric viruses, and *Cryptosporidium*. Following the first 12 months of use, the recycled water shall be sampled and analyzed quarterly for *Giardia*, enteric viruses, and *Cryptosporidium*. The ongoing monitoring may be discontinued after the first two years of operation with the approval of the department. This monitoring shall be in addition to the monitoring set forth in section 60321.

(2) The samples shall be taken at a point following disinfection and prior to the point where the recycled water enters the use impoundment. The samples shall be analyzed by an approved laboratory and the results submitted quarterly to the regulatory agency.

(c) The total coliform bacteria concentrations recreational impoundments, measured at a the point between the disinfection process and the point of entry to the use impoundment, shall comply with the criteria specified in section 60301.230 (b) for disinfected tertiary recycled water.

(d) Recycled water used as a source of supply for restricted recreational impoundments and for any publicly accessible impoundments at fish hatcheries shall be at least disinfected secondary-2.2 recycled water.

(e) Recycled water used as a source of supply for landscape impoundments that do not utilize decorative fountains shall be at least disinfected secondary-23 recycled water.

60306. Use of recycled water for cooling

(a) Recycled water used for industrial or commercial cooling or air conditioning that involves the use of a cooling tower, evaporative condenser, spraying or any mechanism that creates a mist shall be a disinfected tertiary recycled water.

(b) Use of recycled water for industrial or commercial cooling or air conditioning that does not involve the use of a cooling tower, evaporative condenser, spraying, or any mechanism that creates a mist shall be at least disinfected secondary-23 recycled water.

(c) Whenever a cooling system, using recycled water in conjunction with an air conditioning facility, utilizes a cooling tower or otherwise creates a mist that could come into contact with employees or members of the public, the cooling system shall comply with the following:

1) A drift eliminator shall be used whenever the cooling system is in operation.

(2) A chlorine, or other, biocide shall be used to treat the cooling system recirculating water to minimize the growth of *Legionella* and other micro-organisms.

60307. Use of recycled water for other purposes

(a) Recycled water used for the following shall be disinfected tertiary recycled water, except that for filtration being provided pursuant to Section 60301.320(a) coagulation need not be used as part of the treatment process provided that the filter effluent turbidity does not exceed 2 NTU, the turbidity of the influent to the filters is continuously measured, the influent turbidity does not exceed 5 NTU for more than 15 minutes and never exceeds 10 NTU, and that there is the capability to automatically activate chemical addition or divert the wastewater should the filter influent turbidity exceed 5 NTU for more than 15 minutes:

- (1) Flushing toilets and urinals,
- (2) Priming drain traps,
- (3) Industrial process water that may come into contact with workers,
- (4) Structural fire fighting,
- (5) Decorative fountains,
- (6) Commercial laundries,
- (7) Consolidation of backfill around potable water pipelines,
- (8) Artificial snow making for commercial outdoor use, and
- (9) Commercial car washes, including hand washes if the recycled water is not heated, where the general public is excluded from the washing process.

(b) Recycled water used for the following uses shall be at least disinfected secondary- 23 recycled water:

- (1) Industrial boiler feed,
- (2) Nonstructural fire fighting,
- (3) Backfill consolidation around nonpotable piping,
- (4) Soil compaction,
- (5) Mixing concrete,
- (6) Dust control on roads and streets,
- (7) Cleaning roads, sidewalks and outdoor work areas and
- (8) Industrial process water that will not come into contact with workers.

(c) Recycled water used for flushing sanitary sewers shall be at least undisinfected secondary recycled water.

ARTICLE 4. USE AREA REQUIREMENTS.

60310. Use area requirements

(a) No irrigation with disinfected tertiary recycled water shall take place within 50 feet c any domestic water supply well unless all of the following conditions have been met:

(1) A geological investigation demonstrates that an aquitard exists at the well between the uppermost aquifer being drawn from and the ground surface.

(2) The well contains an annular seal that extends from the surface into the aquitard.

(3) The well is housed to prevent any recycled water spray from coming into contact with the wellhead facilities.

(4) The ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well.

(5) The owner of the well approves of the elimination of the buffer zone requirement.

(b) No impoundment of disinfected tertiary recycled water shall occur within 100 feet of any domestic water supply well.

(c) No irrigation with, or impoundment of, disinfected secondary-2.2 or disinfected secondary-23 recycled water shall take place within 100 feet of any domestic water supply well.

(d) No irrigation with, or impoundment of, undisinfected secondary recycled water shall take place within 150 feet of any domestic water supply well.

(e) Any use of recycled water shall comply with the following:

(1) Any irrigation runoff shall be confined to the recycled water use area, unless the runoff does not pose a public health threat and is authorized by the regulatory agency.

(2) Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.

(3) Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.

(f) No spray irrigation of any recycled water, other than disinfected tertiary recycled water, shall take place within 100 feet of a residence or a place where public exposure could be similar to that of a park, playground, or school yard.

(g) All use areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide, that include the following wording: "RECYCLED WATER - DO NOT DRINK". Each sign shall display an international symbol similar to that shown in figure 60310-A. The Department may accept alternative signage and wording, or an educational program, provided the applicant demonstrates to the Department that the alternative approach will assure an equivalent degree of public notification.

(h) Except as allowed under section 7604 of title 17, California Code of Regulations, r physical connection shall be made or allowed to exist between any recycled water system and any separate system conveying potable water.

(i) The portions of the recycled water piping system that are in areas subject to access by the general public shall not include any hose bibbs. Only quick couplers that differ from those used on the potable water system shall be used on the portions of the recycled water piping system in areas subject to public access.



Water Recycling Criteria

FIGURE 60310-A

ARTICLE 5. DUAL PLUMBED RECYCLED WATER SYSTEMS,

60313. General requirements.

(a) No person other than a recycled water agency shall deliver recycled water to a dual- plumbed facility.

(b) No recycled water agency shall deliver recycled water for any internal use to any individually-owned residential units including free-standing structures, multiplexes, or condominiums.

(c) No recycled water agency shall deliver recycled water for internal use except for fire suppression systems, to any facility that produces or processes food products or beverages. For purposes of this Subsection, cafeterias or snack bars in a facility whose primary function does not involve the production or processing of foods or beverages are not considered facilities that produce or process foods or beverages.

(d) No recycled water agency shall deliver recycled water to a facility using a dual plumbed system unless the report required pursuant to section 13522.5 of the Water Code, and which meets the requirements set forth in section 60314, has been submitted to, and approved by, the regulatory agency.

60314. Report submittal

(a) For dual-plumbed recycled water systems, the report submitted pursuant to section 13522.5 of the Water Code shall contain the following information in addition to the information required by section 60323:

(1) A detailed description of the intended use area identifying the following:

(A) The number, location, and type of facilities within the use area proposing to use dual plumbed systems,

(B) The average number of persons estimated to be served by each facility on a daily basis,

(C) The specific boundaries of the proposed use area including a map showing the location of each facility to be served,

(D) The person or persons responsible for operation of the dual plumbed system at each facility, and

(E) The specific use to be made of the recycled water at each facility.

(2) Plans and specifications describing the following:

(A) Proposed piping system to be used,

(B) Pipe locations of both the recycled and potable systems,

(C) Type and location of the outlets and plumbing fixtures that will be accessible to the public, and

(D) The methods and devices to be used to prevent backflow of recycled water into the public water system.

(3) The methods to be used by the recycled water agency to assure that the installation and operation of the dual plumbed system will not result in cross connections between the recycled water piping system and the potable water piping system. This shall include a description of pressure, dye or other test methods to be used to test the system every four years.

(b) A master plan report that covers more than one facility or use site may be submitted provided the report includes the information required by this section. Plans and specifications for individual facilities covered by the report may be submitted at any time prior to the delivery of recycled water to the facility.

60315. Design requirements

The public water supply shall not be used as a backup or supplemental source of water for a dual-plumbed recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of sections 7602 (a) and 7603 (a) of title 17, California Code of Regulations, and the approval of the public water system has been obtained.

60316. Operation requirements

(a) Prior to the initial operation of the dual-plumbed recycled water system and annually thereafter, the Recycled Water Agency shall ensure that the dual plumbed system within each facility and use area is inspected for possible cross connections with the potable water system. The recycled water system shall also be tested for possible cross connections at least once every four years. The testing shall be conducted in accordance with the method described in the report submitted pursuant to section 60314. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. A written report documenting the result of the inspection or testing for the prior year shall be submitted to the department within 30 days following completion of the inspection or testing.

(b) The recycled water agency shall notify the department of any incidence of backflow from the dual-plumbed recycled water system into the potable water system within 24 hours of the discovery of the incident.

(c) Any backflow prevention device installed to protect the public water system serving the dual-plumbed recycled water system shall be inspected and maintained in accordance with section 7605 of Title 17, California Code of Regulations.

ARTICLE 5.1 GROUNDWATER RECHARGE

60320. Groundwater recharge

(a) Reclaimed water used for groundwater recharge of domestic water supply aquifers by surface spreading shall be at all times of a quality that fully protects public health. The State Department of Health Services' recommendations to the Regional Water Quality Control Boards for proposed groundwater recharge projects and for expansion of existing projects will be made on an individual case basis where the use of reclaimed water involves a potential risk to public health.

(b) The State Department of Health Services' recommendations will be based on all relevant aspects of each project, including the following factors: treatment provided; effluent quality and quantity; spreading area operations; soil characteristics; hydrogeology; residence time; and distance to withdrawal.

(c) The State Department of Health Services will hold a public hearing prior to making the final determination regarding the public health aspects of each groundwater recharge project. Final recommendations will be submitted to the Regional Water Quality Control Board in an expeditious manner.

ARTICLE 5.5. OTHER METHODS OF TREATMENT

60320.5. Other methods of treatment

Methods of treatment other than those included in this chapter and their reliability features may be accepted if the applicant demonstrates to the satisfaction of the State Department of Health that the methods of treatment and reliability features will assure an equal degree of treatment and reliability.

ARTICLE 6. SAMPLING AND ANALYSIS

60321. Sampling and analysis

(a) Disinfected secondary-23, disinfected secondary-2.2, and disinfected tertiary recycled water shall be sampled at least once daily for total coliform bacteria. The samples shall be taken from the disinfected effluent and shall be analyzed by an approved laboratory.

(b) Disinfected tertiary recycled water shall be continuously sampled for turbidity using a continuous turbidity meter and recorder following filtration. Compliance with the daily average operating filter effluent turbidity shall be determined by averaging the levels of recorded turbidity taken at four-hour intervals over a 24-hour period. Compliance with turbidity pursuant to section 60301.320 (a)(2)(B) and (b)(1) shall be determined using the levels of recorded turbidity taken at intervals of no more than 1.2-hours over a 24-hour period. Should the continuous turbidity meter and recorder fail, grab sampling at a minimum frequency of 1.2-hours may be substituted for a period of up to 24-hours. The results of the daily average turbidity determinations shall be reported quarterly to the regulatory agency.

(c) The producer or supplier of the recycled water shall conduct the sampling required in subsections (a) and (b).

ARTICLE 7. ENGINEERING REPORT AND OPERATIONAL REQUIREMENTS

60323. Engineering report

(a) No person shall produce or supply reclaimed water for direct reuse from a proposed water reclamation plant unless he files an engineering report.

(b) The report shall be prepared by a properly qualified engineer registered in California and experienced in the field of wastewater treatment, and shall contain a description of the design of the proposed reclamation system. The report shall clearly indicate the means for compliance with these regulations and any other features specified by the regulatory agency.

(c) The report shall contain a contingency plan which will assure that no untreated or inadequately treated wastewater will be delivered to the use area.

60325. Personnel

(a) Each reclamation plant shall be provided with a sufficient number of qualified personnel to operate the facility effectively so as to achieve the required level of treatment at all times.

(b) Qualified personnel shall be those meeting requirements established pursuant to Chapter 9 (commencing with Section 13625) of the Water Code.

60327. Maintenance

A preventive maintenance program shall be provided at each reclamation plant to ensure that all equipment is kept in a reliable operating condition.

60329. Operating records and reports

(a) Operating records shall be maintained at the reclamation plant or a central depository within the operating agency. These shall include: all analyses specified in the reclamation criteria; records of operational problems, plant and equipment breakdowns, and diversions to emergency storage or disposal; all corrective or preventive action taken.

(b) Process or equipment failures triggering an alarm shall be recorded and maintained as a separate record file. The recorded information shall include the time and cause of failure and corrective action taken.

(c) A monthly summary of operating records as specified under (a) of this section shall be filed monthly with the regulatory agency.

(d) Any discharge of untreated or partially treated wastewater to the use area, and the cessation of same, shall be reported immediately by telephone to the regulatory agency, the State Department of Health, and the local health officer.

60331. Bypass

There shall be no bypassing of untreated or partially treated wastewater from the reclamation plant or any intermediate unit processes to the point of use.

ARTICLE 8. GENERAL REQUIREMENTS OF DESIGN

60333. Flexibility of design

The design of process piping, equipment arrangement, and unit structures in the reclamation plant must allow for efficiency and convenience in operation and maintenance and provide flexibility of operation to permit the highest possible degree of treatment to be obtained under varying circumstances.

60335. Alarms

(a) Alarm devices required for various unit processes as specified **in** other sections of these regulations shall be installed to provide warning of:

(1) Loss of power from the normal power supply.

(2) Failure of a biological treatment process.

(3) Failure of a disinfection process.

(4) Failure of a coagulation process.

(5) Failure of a filtration process.

(6) Any other specific process failure for which warning is required by the regulatory agency.

(b) All required alarm devices shall be independent of the normal power supply of the reclamation plant.

(c) The person to be warned shall be the plant operator, superintendent, or any other responsible person designated by the management of the reclamation plant and capable of taking prompt corrective action.

(d) Individual alarm devices may be connected to a master alarm to sound at a location where it can be conveniently observed by the attendant. In case the reclamation plant is not attended full time, the alarm(s) shall be connected to sound at a police station, fire station or other full time service unit with which arrangements have been made to alert the person in charge at times that the reclamation plant is unattended.

60337. Power supply

The power supply shall be provided with one of the following reliability features:

(a) Alarm and standby power source.

(b) Alarm and automatically actuated short-term retention or disposal provisions as specified in Section 60341.

(c) Automatically actuated long-term storage or disposal provisions as specified in Section 60341.

ARTICLE 9. RELIABILITY REQUIREMENTS FOR PRIMARY EFFLUENT

60339. Primary treatment

Reclamation plants, producing reclaimed water exclusively for uses for which primary effluent is permitted shall be provided with one of the following reliability features:

(a) Multiple primary treatment units capable of producing primary effluent with one unit not in operation.

(b) Long-term storage or disposal provisions as specified in Section 60341

Note: Use of primary effluent for recycled water is no longer allowed. [repeal of Section 60309, effective December 2000]

ARTICLE 10. RELIABILITY REQUIREMENTS FOR FULL TREATMENT

60341. Emergency storage or disposal

(a) Where short-term retention or disposal provisions are used as a reliability feature, these shall consist of facilities reserved for the purpose of storing or disposing of untreated or partially treated

wastewater for at least a 24-hour period. The facilities shall include all the necessary diversion devices, provisions for odor control, conduits, and pumping and pump back equipment. All of the equipment other than the pump back

equipment shall be either independent of the normal power supply or provided with a standby power source.

(b) Where long-term storage or disposal provisions are used as a reliability feature, these shall consist of ponds, reservoirs, percolation areas, downstream sewers leading to other treatment or disposal facilities or any other facilities reserved for the purpose of emergency storage or disposal of untreated or partially treated wastewater. These facilities shall be of sufficient capacity to provide disposal or storage of wastewater for at least 20 days, and shall include all the necessary diversion works, provisions for odor and nuisance control, conduits, and pumping and pump back equipment. All of the equipment other than the pump back equipment shall be either independent of the normal power supply or provided with a standby power source.

(c) Diversion to a less demanding reuse is an acceptable alternative to emergency disposal of partially treated wastewater provided that the quality of the partially treated wastewater is suitable for the less demanding reuse.

(d) Subject to prior approval by the regulatory agency, diversion to a discharge point which requires lesser quality of wastewater is an acceptable alternative to emergency disposal of partially treated wastewater.

(e) Automatically actuated short-term retention or disposal provisions and automatically actuated long-term storage or disposal provisions shall include, in addition to provisions of (a), (b), (c), or (d) of this section, all the necessary sensors, instruments, valves and other devices to enable fully automatic diversion of untreated or partially treated wastewater to approved emergency storage or disposal in the event of failure of a treatment process and a manual reset to prevent automatic restart until the failure is corrected.

60343. Primary treatment

All primary treatment unit processes shall be provided with one of the following reliability features:

(a) Multiple primary treatment units capable of producing primary effluent with one unit not in operation.

(b) Standby primary treatment unit process.

(c) Long-term storage or disposal provisions.

60345. Biological treatment

All biological treatment unit processes shall be provided with one of the following reliability features:

(a) Alarm and multiple biological treatment units capable of producing oxidized wastewater with one unit not in operation.

(b) Alarm, short-term retention or disposal provisions, and standby replacement equipment.

(c) Alarm and long-term storage or disposal provisions.

(d) Automatically actuated long-term storage or disposal provisions.

60347. Secondary sedimentation

All secondary sedimentation unit processes shall be provided with one of the following reliability features:

(a) Multiple sedimentation units capable of treating the entire flow with one unit not in operation.

(b) Standby sedimentation unit process.

(c) Long-term storage or disposal provisions.

60349. Coagulation

(a) All coagulation unit processes shall be provided with the following mandatory features for uninterrupted coagulant feed:

1) Standby feeders,

(2) Adequate chemical stowage and conveyance facilities,

(3) Adequate reserve chemical supply, and

(4) Automatic dosage control,

(b) All coagulation unit processes shall be provided with one of the following reliability features:

(1) Alarm and multiple coagulation units capable of treating the entire flow with one unit not in operation;

(2) Alarm, short-term retention or disposal provisions, and standby replacement equipment;

(3) Alarm and long-term storage or disposal provisions;

(4) Automatically actuated long-term storage or disposal provisions, or

(5) Alarm and standby coagulation process.

60351. Filtration

All filtration unit processes shall be provided with one of the following reliability features:

(a) Alarm and multiple filter units capable of treating the entire flow with one unit not in operation.

(b) Alarm, short-term retention or disposal provisions and standby replacement equipment.

(c) Alarm and long-term storage or disposal provisions.

(d) Automatically actuated long-term storage or disposal provisions.

(e) Alarm and standby filtration unit process.

Section 60353. Disinfection

(a) All disinfection unit processes where chlorine is used as the disinfectant shall be provided with the following features for uninterrupted chlorine feed:

- (1) Standby chlorine supply,
- (2) Manifold systems to connect chlorine cylinders,
- (3) Chlorine scales, and
- (4) Automatic devices for switching to full chlorine cylinders.

Automatic residual control of chlorine dosage, automatic measuring and recording 01 chlorine residual, and hydraulic performance studies may also be required.

(b) All disinfection unit processes where chlorine is used as the disinfectant shall be provided with one of the following reliability features:

- (1) Alarm and standby chlorinator;
- (2) Alarm, short-term retention or disposal provisions, and standby replacement equipment;
- (3) Alarm and long-term storage or disposal provisions;
- (4) Automatically actuated long-term storage or disposal provisions; or
- (5) Alarm and multiple point chlorination, each with independent power source, separate chlorinator, and separate chlorine supply.

60355. Other alternatives to reliability requirements

Other alternatives to reliability requirements set forth in Articles 8 to 10 may be accepted if the applicant demonstrates to the satisfaction of the State Department of Health that the proposed alternative will assure an equal degree of reliability.

Attachment G

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LAHONTAN REGION

STANDARD PROVISIONS FOR WASTE DISCHARGE REQUIREMENTS

1. Inspection and Entry

The Discharger shall permit Regional Board staff:

- a. to enter upon premises in which an effluent source is located or in which any required records are kept;
- b. to copy any records relating to the discharge or relating to compliance with the Waste Discharge Requirements (WDRs);
- c. to inspect monitoring equipment or records; and
- d. to sample any discharge.

2. Reporting Requirements

- a. Pursuant to California Water Code 13267(b), the Discharger shall immediately notify the Regional Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation shall follow within two weeks. An adverse condition includes, but is not limited to, spills of petroleum products or toxic chemicals, or damage to control facilities that could affect compliance.
- b. Pursuant to California Water Code Section 13260 (c), any proposed material change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Regional Board at least 120 days in advance of implementation of any such proposal. This shall include, but not be limited to, all significant soil disturbances.
- c. The Owners/Discharger of property subject to WDRs shall be considered to have a continuing responsibility for ensuring compliance with applicable WDRs in the operations or use of the owned property. Pursuant to California Water Code Section 13260(c), any change in the ownership and/or operation of property subject to the WDRs shall be reported to the Regional Board. Notification of applicable WDRs shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Regional Board.
- d. If a Discharger becomes aware that any information submitted to the Regional Board is incorrect, the Discharger shall immediately notify the Regional Board, in writing, and correct that information.

- e. Reports required by the WDRs, and other information requested by the Regional Board, must be signed by a duly authorized representative of the Discharger. Under Section 13268 of the California Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation.
- f. If the Discharger becomes aware that their WDRs (or permit) are no longer needed (because the project will not be built or the discharge will cease) the Discharger shall notify the Regional Board in writing and request that their WDRs (or permit) be rescinded.

3. Right to Revise WDRs

The Regional Board reserves the privilege of changing all or any portion of the WDRs upon legal notice to and after opportunity to be heard is given to all concerned parties.

4. Duty to Comply

Failure to comply with the WDRs may constitute a violation of the California Water Code and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.

5. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of the WDRs which has a reasonable likelihood of adversely affecting human health or the environment.

6. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the WDRs. Proper operation and maintenance includes adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger, when necessary to achieve compliance with the conditions of the WDRs.

7. Waste Discharge Requirement Actions

The WDRs may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for waste discharge requirement modification, revocation and re-issuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the WDRs conditions.

8. Property Rights

The WDRs do 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.

9. Enforcement

The California Water Code provides for civil liability and criminal penalties for violations or threatened violations of the WDRs including imposition of civil liability or referral to the Attorney General.

10. Availability

A copy of the WDRs shall be kept and maintained by the Discharger and be available at all times to operating personnel.

11. Severability

Provisions of the WDRs are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

12. Public Access

General public access shall be effectively excluded from treatment and disposal facilities.

13. Transfers

Providing there is no material change in the operation of the facility, this Order may be transferred to a new owner or operation. The owner/operator must request the transfer in writing and receive written approval from the Regional Board's Executive Officer.

14. Definitions

a. "Surface waters" as used in this Order, include, but are not limited to, live streams, either perennial or ephemeral, which flow in natural or artificial water courses and natural lakes and artificial impoundments of waters. "Surface waters" does not include artificial water courses or impoundments used exclusively for wastewater disposal.

b. "Ground waters" as used in this Order, include, but are not limited to, all subsurface waters being above atmospheric pressure and the capillary fringe of these waters.

15. Storm Protection

All facilities used for collection, transport, treatment, storage, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

**REVISED MONITORING AND REPORTING
PROGRAM NO. R6V-2004-0005
WDID NO. 6B360703001**

FOR

**FORT IRWIN NATIONAL TRAINING CENTER
WASTEWATER TREATMENT FACILITY**

San Bernardino County

I. MONITORING

A. Flow, Pond and Septage Monitoring

The Discharger shall monitor and report the following:

1. The total volume, in million gallons, of wastewater flow to the Facility for each day (24-hour period).
2. The total volume, in million gallons, of wastewater flow to the Facility for each month.
3. The average flow rate, in million gallons per day (mgd), of wastewater to the Facility calculated for each month.
4. The maximum instantaneous flow rate, in mgd, of wastewater to the Facility that occurs each day.
5. The total volume, in million gallons, of recycled and disposed wastewater flow for each day. If no recycled water was delivered to a recycled water use area indicate none.
6. The freeboard (vertical distance from the top of the lowest part of the dike to the wastewater surface in the pond) measured each month in each disposal percolation pond (holding pond, 22-acre pond, and duck ponds). If a surface impoundment does not contain wastewater, indicate that it is empty. Any adverse pond condition shall be reported (e.g. excess growth, animals burrows, bank erosion, etc.).
7. The total volume, in gallons, of septage received for the month shall be reported.

B. Facility Influent and Process Control Monitoring

1. Samples of collection system flow to the Facility shall be collected and analyzed to determine the magnitude of the parameters in Table 1.

Table 1 – Influent Monitoring

Constituent	Frequency	Method	Minimum Reporting	Sample Type
Biochemical Oxygen Demand (BOD) ¹	Monthly	SM 5210B	3 mg/L	Grab
Total Suspended Solids (TSS)	Monthly	EPA 160.2	10 mg/L	Grab

2. Process control samples shall be collected and analyzed as needed to maintain proper operation of the Facility. Analytical results need not be reported but maintained onsite.

C. Effluent Monitoring

Samples of the effluent delivered to percolation ponds shall be collected and analyzed to determine the magnitude of the parameters listed in Table 2.

Table 2 – Effluent Monitoring

Constituent	Frequency	Method	Minimum Reporting	Sample Type
BOD	Weekly	EPA 405.1	3 mg/L	Grab
TSS	Weekly	EPA 160.2	10 mg/L	Grab
PH	Weekly	EPA 150.1	0.1 pH units	Grab
Dissolved Oxygen (DO)	Weekly	EPA 360.1	1.0 mg/L	Grab
Temperature	Weekly	SM 2550	Nearest deg. C	Grab
Specific Conductance	Weekly	EPA 120.1	1.0 umhos/cm	Grab
Methylene Blue Active Substances (MBAS)	Monthly	EPA 425.1	0.025 mg/L	Grab
Phenols, Total	Monthly	EPA 420.1	0.01 mg/L	Grab
Ammonia (as N)	Monthly	EPA 350.1	0.1 mg/L	Grab
Nitrate (as N)	Monthly	EPA 300	0.5 mg/L	Grab
Total Dissolved Solids (TDS)	Quarterly	EPA 160.1	10 mg/L	Grab
Total Recoverable Petroleum Hydrocarbons (TRPH)	Quarterly	EPA 1664 HEM-SGT	5.0 mg/L	Grab
Fluoride	Quarterly	EPA 300	0.1 mg/L	Grab
Oil and Grease	Quarterly	EPA 1664 HEM-SGT	5.0 mg/L	Grab
Total Trihalomethanes - Chloroform, Bromoform, Bromodichlorodimethane, Dibromochloromethane	Annual	8260B	0.0005 mg/L	Grab
Priority Pollutants – Volatile Organics, Semi-Volatile Organics, Inorganics only	Annually	Attached	Attached	Grab

¹ In this monitoring program the term BOD refers to Biochemical Oxygen Demand (5 day, 20°C) of an unfiltered sample.

D. Recycled Water Production Monitoring

Representative samples shall be collected, analyzed and determined for the parameters listed in Table 3 for any month in which recycled water is delivered to Use areas. If no recycled water is delivered to Use areas in the reporting period, indicate none.

Table 3 – Recycled Water Production Monitoring

Parameter	Station	Units	Sample Type	Analytical Method	Minimum Frequency
Flow	Recycled Water Pump Station	Mgd	Continuous, when pumping	SCADA ²	see below
Turbidity	Before and After Filters	NTU	Continuous	EPA 180 – field	see below
Chlorine Residual	Chlorine Contact Tank	Mg/L	Continuous	EPA 330	see below
CT	Calculated	Mg-minutes/L	Calculated	SCADA	Daily – see below
Total Coliform	Chlorine Contact Tank	MPN/100ml	Grab	SM 9221	Daily - see below

1. For CT calculation, the following information must be taken from 24-hour chart readings:
 - a. Modal contact time under the highest flow and corresponding chlorine residual at that time;
 - b. Lowest residual and corresponding modal contact time;
 - c. Highest residual and corresponding modal contact time; and
 - d. Modal contact time under lowest flow and corresponding residual.

CT values are calculated from these four sets of data and the lowest value would be used to determine worst case CT for the daily period. For purposes of this determination, modal contact time would be derived from a pre-determined plot correlating modal contact times to varying flow conditions. Continuous flow and chlorine residual monitoring shall be conducted. The Producer may propose alternate methods for determining daily CT compliance for review and approval by the California Department of Health Services (DHS) (e.g. for delivery periods less than 24-hours). A copy of the request and DHS approval shall be provided to the Regional Board and implemented. Individual data and all four calculations for each day shall be reported. Any CT values less than 450 mg-min/l with a minimum modal contact time of at least 90 minutes based on a peak dry weather design flow (stated in each report) shall be reported.

² SCADA - Supervisory Control and Data Acquisition system or equivalent continuous recording device

2. Filter effluent turbidity analysis should be conducted continuously using a continuous monitoring and recording turbidimeter. The following information must be collected and reported:
 - a. Turbidity readings at 72-minute (1.2 hour) intervals (representing 5% of a 24 hr period).
 - b. These readings are minimum to evaluate compliance during a 24-hour period. Additional readings may be taken if included in compliance calculations. For delivery periods less than 24-hours (e.g. irrigation only at night), the Producer may propose to the DHS an alternate data recording plan so that sufficient data are collected to evaluate turbidity levels during 5 percent of the time within a 24-hour period. A copy of the request and DHS approval shall be provided to the Regional Board and implemented.
 - c. The daily average operating filter effluent turbidity (must be less than 2 NTU) should be determined by averaging the levels of recorded turbidity taken as specified in 2.a.above (arithmetic mean).
 - d. Evaluation of compliance with the turbidity standard of not exceeding 5 NTU more than 5 percent of the time over a 24-hour period should be determined using the levels of recorded turbidity. In the first monitoring report submitted provide a description of the Producer's evaluation approach.
 - e. The maximum reading during recycled water delivery in a 24-hour period must be used to evaluate the 10 NTU maximum at-any-time criteria.
 - f. Should the continuous turbidity meter and/or recorder fail, grab sampling at a minimum frequency of 1.2 hours may be substituted for a period of up to 24-hours. Continuous turbidity monitoring should also be provided prior to filtration to ensure adequate process control.
 - g. Daily maximum turbidity.
 - h. The percent of samples greater than 5 NTU in any 24-hour period.
3. Coliform samples shall be obtained immediately after disinfection. Daily total coliform bacteria results shall be reported along with a running 7-day median calculation. Any coliform bacteria sample results exceeding the following shall be reported:

- a. For Disinfected Tertiary Recycled Water Uses:
 - i. A median MPN of 2.2 /100 ml for a running seven-day period;
 - ii. A total MPN of 23/100 ml in more than one sample in any 30-day period; and
 - iii. A total MPN of 240/100 ml in any sample.
- b. For Disinfected Secondary-23 Recycled Water Uses;
 - i. A median MPN of 23 /100 ml for a running seven-day period; and
 - ii. A total MPN of 240/100 ml in more than one sample in any 30-day period;

E. Recycled Water Use Area Monitoring

- 1. At least 90 days prior to the first application of recycled water, except to the existing golf driving range, the User shall submit a proposed vadose zone monitoring plan to evaluate the effects of percolating water beneath a representative Use area based on factors such as 1) the amount of recycled water applied, 2) the distance to a municipal drinking water well, or 3) the underlying hydrogeologic characteristics. The plan shall be designed to monitor soil moisture beneath the Use area and the downward movement of a wetting front and shall include the following: 1) installation of soil moisture sensors and suction lysimeter(s) at the Use area or an equivalent technology to measure soil moisture and collect unsaturated zone pore water samples, 2) a proposed sample collection and analysis plan consistent with Table 4, below, 3) and an operation and maintenance plan .

Table 4 – Recycled Water Use Area Vadose Zone Monitoring

Constituent	Frequency	Method	Minimum Reporting	Sample Type
Soil Moisture	Bi-Weekly	ASTM	Various	Recorded
Nitrate as N	Monthly, see note	EPA 353.1	3 mg/L	Grab
TDS	Monthly, see note	EPA 160.1	0.1 mg/L	Grab

Note: Soil tension changes will indicate when it is appropriate to collect pore-fluid samples from vacuum suction lysimeters.

- 2. The amended Engineering Report, to be submitted before recycled water application occurs, shall include a proposed Use Area inspection checklist to assist in compliance with Use area requirements. That checklist shall include the elements identified in Section 60310, Title 22, CCR and other elements described in the Mitigation Monitoring and Reporting Plan (Final Mitigated Environmental Assessment, August 2003, Montgomery Watson Harza). The results of weekly inspections at each Use area shall be recorded and kept in a permanent log or record at the facility. The permanent log or record shall be made available to Regional Board staff if requested. Each monitoring report submitted to this office shall include a

summary of significant items noted such as evidence of ponding, improper signage, improper use of recycled water, or improper hose connections shall be reported.

3. The amended Engineering Report, to be submitted before recycled water application occurs, shall include an evaluation of agronomic plant water use needs, by season. This evaluation shall form the basis for site specific water application rates. Included shall be methods to evaluate actual water use with plant needs to ensure there is no over watering.

F. Ground Water Monitoring

1. The existing ground water monitoring system is comprised of 11 monitoring wells as shown on Attachment "A" of the Waste Discharge Requirements.

Table 5 - Groundwater Monitoring Wells

Well Number	Purpose
STP-1	Downgradient of Facility
STP-3R	Sidegradient of "22-acre" percolation pond
STP-4	Downgradient of facility – adjacent to oxidation ponds
STP-5	Downgradient of Golf Driving Range
STP-6	Upgradient of "Duck Ponds"
STP-7	Downgradient of "Duck Ponds"
STP-8	Upgradient of Golf Driving Range
STP-9	Downgradient of Golf Driving Range
STP-10	Downgradient of "Holding Pond"
STP-11	Upgradient of Facility
STP-12	Upgradient of Facility

2. Samples of ground water shall be collected from each of the wells in Table 5 and analyzed to determine the magnitude of the parameters in Tables 6 and 7.

Table 6 – Ground Water Monitoring – Field Parameters

Parameter	Units	Frequency
Static Water Level	Feet above mean sea level	Semi-Annual
Static Water Depth	Feet below ground surface	Semi-Annual
Electrical Conductivity (EC)	Uhmos/cn	Semi-Annual
pH	pH units	Semi-Annual
Temperature	Degrees C	Semi-Annual
Dissolved Oxygen	Mg/L	Semi-Annual
Turbidity	NTU	Semi-Annual
Color	Visual	Semi-Annual

Table 7 – Ground Water Monitoring – Analytical Parameters

Constituent	Frequency	Method	Minimum Reporting	Sample Type
TDS	Semi-Annual	EPA 160.1	0.1 mg/L	Grab
Nitrate as N	Semi-Annual	EPA 300	0.5 mg/L	Grab
Sodium (Na)	Semi-Annual	EPA 200.7	1 mg/L	Grab
Potassium (K)	Semi-Annual	EPA 200.7	1 mg/L	Grab
Calcium (Ca)	Semi-Annual	EPA 200.7	1 mg/L	Grab
Magnesium (Mg)	Semi-Annual	EPA 200.7	1 mg/L	Grab
Iron (Fe)	Semi-Annual	EPA 200.7	0.05 mg/L	Grab
Chloride (Cl)	Semi-Annual	EPA 300	0.5 mg/L	Grab
Alkalinity	Semi-Annual	EPA 310.1	5 mg/L	Grab
Carbonate (CO ₃)	Semi-Annual	EPA 310.1	5 mg/L	Grab
Bicarbonate (HCO ₃)	Semi-Annual	EPA 310.1	5 mg/L	Grab
Sulfate (SO ₄)	Semi-Annual	EPA 300	0.5 mg/L	Grab
Fluoride (F)	Semi-Annual	EPA 300	0.1 mg/L	Grab
Boron (B)	Semi-Annual	EPA 200.7	0.05 mg/L	Grab
Total Trihalomethanes - Chloroform, Bromoform, Bromodichlorodimethane, dibromochloromethane	Annual	8260B	0.0005 mg/L	Grab
MBAS	Annual	EPA 425.1	0.025 mg/L	Grab
Priority Pollutants – only Volatile Organics & Inorganics in Wells STP1, STP3R, STP4, STP7, STP8, STP9, STP10	Annual	Attached	Attached	Grab

3. The monitoring well locations and direction of ground water flow under the Facility shall be determined and presented in graphical form.
4. The method for purging and sampling the ground water monitoring wells shall be as described.
5. By **June 15, 2004**, the Discharger shall submit a workplan and time schedule for installing three additional ground water wells downgradient of the disposal percolation areas to evaluate the effects of groundwater pollution or degradation.

G. Biosolids Disposal

1. The Discharger shall include in each monitoring report the volume, location and analytical results of biosolids hauled for composting or disposal.
2. The person or company doing the hauling and the legal point of disposal shall also be recorded. If biosolids are disposed to a landfill, submit a statement that the unit is equipped with a leachate collection and recovery system.

3. When biosolids are disposed to a landfill, at least four representative samples of the biosolids shall be collected to determine the percent moisture.
4. For biosolids hauled to the on-base landfill indicate that the biosolids meets all criteria for classifications as nonhazardous solid waste.

H. Sewer Collection System

By **September 1, 2004**, the Discharger shall submit a Sewer System Capacity, Management, Operation and Maintenance (CMOM) Program consistent with the US EPA Proposed Rule for Sanitary Sewer Overflow published in the Federal Register on January 4, 2001. The Proposed Rule may be viewed on the US EPA Internet Site at the following address: <http://cfpub.epa.gov/npdes/ssorule.cfm>. The CMOM Plan shall as a minimum, address the following elements: 1) measures to manage, operate and maintain the collection system, 2) measures to ensure there is sufficient capacity to convey base and peak flows, 3) measures to ensure all feasible steps are taken in a timely manner to stop and mitigate sanitary sewer overflows and 4) measures to inform the public and/or troops of the reasonable potential for exposure to pollutants associated with overflow events.

II. REPORTING

A. General Provisions

The Discharger shall comply with the "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached to and made part of this Monitoring and Reporting Program.

B. Format

Each monitoring report submitted shall include the following.

1. A statement regarding the compliance status with all requirements contained in the Order. For any instance of non-compliance, indicate a plan and time schedule for returning to compliance;
2. Narrative evaluation of the Facility operation for the period;
3. Record of any maintenance activities performed;
4. Description of the status of major unit processes;
5. Summary of any spills in the collection system, treatment or disposal facilities;
6. A tabular summary of the analytic information requested; and

7. Analytical and Field data shall be included as an appendix.

C. Sampling and Analysis Plan

The Discharger shall maintain onsite a Sampling and Analysis Plan (SAP) following guidance prepared by the US EPA or other equivalent sources that addresses specific procedures for each element of the monitoring program; influent monitoring, effluent monitoring, ground water monitoring, vadose zone monitoring, biosolids sampling, recycled water monitoring, industrial user monitoring, sample collection, sample handling, laboratory analysis and laboratory quality control/quality assurance. Procedures for updating the SAP as necessary must be included. The SAP must be provided to Regional Board staff upon request. The SAP must be approved by representative of the Discharger responsible for ensuring compliance with Waste Discharge Requirements.

D. In-House Laboratory Data

Laboratory data sheets from the in-house laboratory should include the following information:

1. Date, place and time of measurement;
2. Date of analysis;
3. Analytical method used including any modifications;
4. Results stating units;
5. Minimum reporting level;
6. Data qualifiers;
7. Statement of missed holding times;
8. Sample matrix type; and
9. Statement of dilution factors used.

E. Progress Reporting

Beginning **March 30, 2004**, the Discharger shall submit monthly reports to the Regional Board until each task is completed describing status of each of the following:

1. Oxidation ditch aerator replacement;
2. Sequence batch reactors septage receiving station;
3. Tertiary treatment modifications; and
4. Recycled water use area connections.

F. Annual Report

By **February 15, 2004**, and annually thereafter, submit an annual report with the following information:

1. Cumulative Graphical and tabular information of the effluent groundwater monitoring data;
2. An evaluation of Facility performance and compliance for the prior year; and

3. An evaluation of groundwater quality changes and the effects of operational changes in the disposal methods to eliminate conditions of pollution and degradation..

G. Submittal Periods

Beginning **March 30, 2004** a monitoring report including the preceding information shall be submitted to the Regional Board. Information collected before the effective date of this Order shall include the information required of the previous monitoring and reporting program. Subsequent monitoring reports shall be submitted to the Regional Board by the last day of the month following each month.

H. Claim of Copyright or other Protection

Any and all reports and other documents submitted to the Regional Board pursuant to this request will need to be copied for some or all of the following reasons: 1) normal internal use of the document, including staff copies, record copies, copies for Board members and agenda packets, 2) any further proceedings of the Regional Board and the State Water Resources Control Board, 3) any court proceeding that may involve the document, and 4) any copies requested by members of the public pursuant to the Public Records Act or other legal proceeding.

If the discharger or its contractor claims any copyright or other protection, the submittal must include a notice, and the notice will accompany all documents copied for the reasons stated above. If copyright protection for a submitted document is claimed, failure to expressly grant permission for the copying stated above will render the document unusable for the Regional Board's purposes, and will result in the document being returned to the discharger as if the task had not been completed.

I. Mitigated Negative Declaration Reporting

The daily logs of the Army's Construction Site Inspector shall be kept in a permanent onsite log or record until construction is complete and shall include evidence that the identified mitigation measures for the environmental factors listed below are monitored and reported. Ft. Irwin shall submit a summary of the Army's Construction Site Inspector's Daily Log containing adverse finding conditions and corrective measures taken to satisfy the required CEQA mitigation measures provided below. First such report is due on **March 30, 2004** and future reports to be submitted on a monthly basis thereafter, until notice is provided by an authorized representative of the Army that construction activities are completed. The monthly report shall be signed by an authorized representative of Ft. Irwin.

- a. Air Quality – Include a summary of daily inspection results. Ensure that wind readings for each day of construction activity is recorded in the Site inspector's daily log.

- b. Public Health Effects of Recycled Water Use – Not needed as this information is provided separately by this Monitoring and Reporting Program.
- c. Ground water Quality – Not needed as this information is provided separately by this Monitoring and Reporting Program included in the WDRs.
- d. Stormwater Quality – Include a summary of daily inspection results. Separately, the Army is to submit evidence that coverage under the Statewide general construction permit has been obtained and a copy of the proposed stormwater pollution prevention plan within 10 business days following commencement of construction.
- e. Noise – Include a summary of daily inspection results.
- f. Seismic Effects – Submit evidence within 10 business days following commencement of construction that the bid documents were reviewed by a California registered engineer with expertise in seismic effects.
- g. Transportation and Traffic – Include a summary of daily inspection results.
- h. Cultural Resources – Include a summary of daily inspection results.

Ordered by: _____ Dated: February 10, 2004

HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A. General Provisions for Monitoring and Reporting
B. List of USEPA Priority Pollutants
C. Facility Monitoring Well Locations

Attachment A

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LAHONTAN REGION

GENERAL PROVISIONS FOR MONITORING AND REPORTING

1. SAMPLING AND ANALYSIS

- a. All analyses shall be performed in accordance with the current edition(s) of the following documents:
 - i. Standard Methods for the Examination of Water and Wastewater
 - ii. Methods for Chemical Analysis of Water and Wastes, EPA
- b. All analyses shall be performed in a laboratory certified to perform such analyses by the California State Department of Health Services or a laboratory approved by the Regional Board Executive Officer. Specific methods of analysis must be identified on each laboratory report.
- c. Any modifications to the above methods to eliminate known interferences shall be reported with the sample results. The methods used shall also be reported. If methods other than EPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Regional Board prior to use.
- d. The Discharger shall establish chain-of-custody procedures to insure that specific individuals are responsible for sample integrity from commencement of sample collection through delivery to an approved laboratory. Sample collection, storage, and analysis shall be conducted in accordance with an approved Sampling and Analysis Plan (SAP). The most recent version of the approved SAP shall be kept at the facility.
- e. The Discharger shall calibrate and perform maintenance procedures on all monitoring instruments and equipment to ensure accuracy of measurements, or shall insure that both activities will be conducted. The calibration of any wastewater flow measuring device shall be recorded and maintained in the permanent log book described in 2.b, below.
- f. A grab sample is defined as an individual sample collected in fewer than 15 minutes.
- g. A composite sample is defined as a combination of no fewer than eight individual samples obtained over the specified sampling period at equal intervals. The volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling. The sampling period shall equal the discharge period, or 24 hours, whichever period is shorter.

2. OPERATIONAL REQUIREMENTS

a. Sample Results

Pursuant to California Water Code Section 13267(b), the Discharger shall maintain all sampling and analytical results including: strip charts; date, exact place, and time of sampling; date analyses were performed; sample collector's name; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.

b. Operational Log

Pursuant to California Water Code Section 13267(b), an operation and maintenance log shall be maintained at the facility. All monitoring and reporting data shall be recorded in a permanent log book.

3. REPORTING

- a. For every item where the requirements are not met, the Discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time, and shall submit a timetable for correction.
- b. Pursuant to California Water Code Section 13267(b), all sampling and analytical results shall be made available to the Regional Board upon request. Results shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.
- c. The Discharger shall provide a brief summary of any operational problems and maintenance activities to the Board with each monitoring report. Any modifications or additions to, or any major maintenance conducted on, or any major problems occurring to the wastewater conveyance system, treatment facilities, or disposal facilities shall be included in this summary.
- d. Monitoring reports shall be signed by:
 - i. In the case of a corporation, by a principal executive officer at least of the level of vice-president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates;
 - ii. In the case of a partnership, by a general partner;
 - iii. In the case of a sole proprietorship, by the proprietor; or

- iv. In the case of a municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
- e. Monitoring reports are to include the following:
 - i. Name and telephone number of individual who can answer questions about the report.
 - ii. The Monitoring and Reporting Program Number.
 - iii. WDID Number.
- f. Modifications

This Monitoring and Reporting Program may be modified at the discretion of the Regional Board Executive Officer.

4. NONCOMPLIANCE

Under Section 13268 of the Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation under Section 13268 of the Water Code.

x:PROVISIONS WDRS

file: general pro mrp

Attachment "B" - Priority Pollutants

CTR #	Constituent	CAS Number	Controlling Water Quality Criterion for Surface Waters		Suggested Test Methods	
			Basis	Criterion Concentration (ug/L or noted) (1)		
VOLATILE ORGANICS						
28	1,1-Dichloroethane	75343	Primary MCL	5	1	EPA 8260B
30	1,1-Dichloroethene	75354	National Toxics Rule	0.057	0.5	EPA 8260B
41	1,1,1-Trichloroethane	71556	Primary MCL	200	2	EPA 8260B
42	1,1,2-Trichloroethane	79005	National Toxics Rule	0.6	0.5	EPA 8260B
37	1,1,1,2-Tetrachloroethane	79345	National Toxics Rule	0.17	0.5	EPA 8260B
75	1,2-Dichlorobenzene	95501	Taste & Odor	10	2	EPA 8260B
29	1,2-Dichloroethane	107062	National Toxics Rule	0.38	0.5	EPA 8260B
31	1,2-Dichloropropane	78875	Calif. Toxics Rule	0.52	0.5	EPA 8260B
101	1,2,4-Trichlorobenzene	120821	Public Health Goal	5	5	EPA 8260B
76	1,3-Dichlorobenzene	541731	Taste & Odor	10	2	EPA 8260B
32	1,3-Dichloropropene	542756	Primary MCL	0.5	0.5	EPA 8260B
77	1,4-Dichlorobenzene	106467	Primary MCL	5	2	EPA 8260B
17	Acrolein	107028	Aquatic Toxicity	21	5	EPA 8260B
18	Acrylonitrile	107131	National Toxics Rule	0.059	2	EPA 8260B
19	Benzene	71432	Primary MCL	1	0.5	EPA 8260B
20	Bromoform	75252	Calif. Toxics Rule	4.3	2	EPA 8260B
34	Bromomethane	74839	Calif. Toxics Rule	48	2	EPA 8260B
21	Carbon tetrachloride	56235	National Toxics Rule	0.25	0.5	EPA 8260B
22	Chlorobenzene (mono chlorobenzene)	108907	Taste & Odor	50	2	EPA 8260B
24	Chloroethane	75003	Taste & Odor	16	2	EPA 8260B
25	2-Chloroethyl vinyl ether	110758	Aquatic Toxicity	122 (2)	1	EPA 8260B
26	Chloroform	67663	OEHHA Cancer Risk	1.1	0.5	EPA 8260B
35	Chloromethane	74873	USEPA Health Advisory	3	2.0	EPA 8260B
23	Dibromochloromethane	124481	Calif. Toxics Rule	0.41	0.5	EPA 8260B
27	Dichlorobromomethane	75274	Calif. Toxics Rule	0.56	0.5	EPA 8260B
36	Dichloromethane	75092	Calif. Toxics Rule	4.7	2	EPA 8260B
33	Ethylbenzene	100414	Taste & Odor	29	2	EPA 8260B
88	Hexachlorobenzene	118741	Calif. Toxics Rule	0.00075	1	EPA 8260B
89	Hexachlorobutadiene	87683	National Toxics Rule	0.44	1	EPA 8260B
91	Hexachloroethane	67721	National Toxics Rule	1.9	1	EPA 8260B
94	Naphthalene	91203	USEPA IRIS	14	10	EPA 8260B
38	Tetrachloroethene	127184	National Toxics Rule	0.8	0.5	EPA 8260B
39	Toluene	108883	Taste & Odor	42	2	EPA 8260B
40	trans-1,2-Dichloroethylene	156605	Primary MCL	10	1	EPA 8260B
43	Trichloroethene	79016	National Toxics Rule	2.7	2	EPA 8260B
44	Vinyl chloride	75014	Primary MCL	0.5	0.5	EPA 8260B

SEMI-VOLATILE ORGANICS						
60	1,2-Benzanthracene	56553	Calif. Toxics Rule	0.0044	5	EPA 8270C
85	1,2-Diphenylhydrazine	122667	National Toxics Rule	0.04	1	EPA 8270C
45	2-Chlorophenol	95578	Taste and Odor	0.1	2	EPA 8270C
46	2,4-Dichlorophenol	120832	Taste and Odor	0.3	1	EPA 8270C
47	2,4-Dimethylphenol	105679	Calif. Toxics Rule	540	2	EPA 8270C
49	2,4-Dinitrophenol	51285	National Toxics Rule	70	5	EPA 8270C
82	2,4-Dinitrotoluene	121142	National Toxics Rule	0.11	5	EPA 8270C
55	2,4,6-Trichlorophenol	88062	Taste and Odor	2	10	EPA 8270C
83	2,6-Dinitrotoluene	606202	USEPA IRIS	0.05	5	EPA 8270C
50	2-Nitrophenol	25154557	Aquatic Toxicity	150 (3)	10	EPA 8270C
71	2-Chloronaphthalene	91587	Aquatic Toxicity	1600 (4)	10	EPA 8270C
78	3,3'-Dichlorobenzidine	91941	National Toxics Rule	0.04	5	EPA 8270C
62	3,4-Benzofluoranthene	205992	Calif. Toxics Rule	0.0044	10	EPA 8270C

Ft Irwin Wastewater Treatment Plant - Monitoring and Reporting Program

			Controlling Water Quality Criterion for Surface Waters			
CTR #	Constituent	CAS Number	Basis	Criterion Concentration (ug/L or noted) (1)	Minimum Reporting Level (ug/L or noted)	Suggested Test Methods
52	4-Chloro-3-methylphenol	59507	Aquatic Toxicity	30	5	EPA 8270C
48	4,6-Dinitro-2-methylphenol	534521	National Toxics Rule	13.4	10	EPA 8270C
51	4-Nitrophenol	100027	USEPA Health Advisory	60	10	EPA 8270C
69	4-Bromophenyl phenyl ether	101553	Aquatic Toxicity	122	10	EPA 8270C
72	4-Chlorophenyl phenyl ether	7005723	Aquatic Toxicity	122 (2)	5	EPA 8270C
56	Acenaphthene	83329	Taste and Odor	20	1	EPA 8270C
57	Acenaphthylene	208968	No Criteria Available		10	EPA 8270C
58	Anthracene	120127	Calif. Toxics Rule	9,600	10	EPA 8270C
59	Benzidine	92875	National Toxics Rule	0.00012	5	EPA 8270C
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	Calif. Toxics Rule	0.0044	2	EPA 8270C
63	Benzo(g,h,i)perylene	191242	No Criteria Available		5	EPA 8270C
64	Benzo(k)fluoranthene	207089	Calif. Toxics Rule	0.0044	2	EPA 8270C
65	Bis(2-chloroethoxy) methane	111911	No Criteria Available		5	EPA 8270C
66	Bis(2-chloroethyl) ether	111444	National Toxics Rule	0.031	1	EPA 8270C
67	Bis(2-chloroisopropyl) ether	39638329	Aquatic Toxicity	122 (2)	10	EPA 8270C
68	Bis(2-ethylhexyl) phthalate	117817	National Toxics Rule	1.8	5	EPA 8270C
70	Butyl benzyl phthalate	85687	Aquatic Toxicity	3 (5)	10	EPA 8270C
73	Chrysene	218019	Calif. Toxics Rule	0.0044	5	EPA 8270C
81	Di-n-butylphthalate	84742	Aquatic Toxicity	3 (5)	10	EPA 8270C
84	Di-n-octylphthalate	117840	Aquatic Toxicity	3 (5)	10	EPA 8270C
74	Dibenzo(a,h)-anthracene	53703	Calif. Toxics Rule	0.0044	0.1	EPA 8270C
79	Diethyl phthalate	84662	Aquatic Toxicity	3 (5)	2	EPA 8270C
80	Dimethyl phthalate	131113	Aquatic Toxicity	3 (5)	2	EPA 8270C
86	Fluoranthene	206440	Calif. Toxics Rule	300	10	EPA 8270C
87	Fluorene	86737	Calif. Toxics Rule	1300	10	EPA 8270C
90	Hexachlorocyclopentadiene	77474	Taste and Odor	1	5	EPA 8270C
92	Indeno(1,2,3-c,d)pyrene	193395	Calif. Toxics Rule	0.0044	0.05	EPA 8270C
93	Isophorone	78591	National Toxics Rule	8.4	1	EPA 8270C
98	N-Nitrosodiphenylamine	86306	National Toxics Rule	5	1	EPA 8270C
96	N-Nitrosodimethylamine	62759	National Toxics Rule	0.00069	5	EPA 8270C
97	N-Nitrosodi-n-propylamine	621647	Calif. Toxics Rule	0.005	5	EPA 8270C
95	Nitrobenzene	98953	National Toxics Rule	17	10	EPA 8270C
53	Pentachlorophenol	87865	Calif. Toxics Rule	0.28	1	EPA 8270C
99	Phenanthrene	85018	No Criteria Available		5	EPA 8270C
54	Phenol	108952	Taste and Odor	5	1	EPA 8270C
100	Pyrene	129000	Calif. Toxics Rule	960	10	EPA 8270C
INORGANICS						
1	Antimony	7440360	Primary MCL	6	5	EPA 6020/200.8
2	Arsenic	7440382	Ambient Water Quality	0.018	1	EPA 6020/Hydride
15	Asbestos	1332214	National Toxics Rule/ Primary MCL	7 MFL	0.2 MFL >10um	EPA/600/R-93/116(PCM)
3	Beryllium	7440417	Primary MCL	4	1	EPA 6020/200.8
4	Cadmium	7440439	Public Health Goal	0.07	0.25	EPA 1638/200.8
5a	Chromium (total)	7440473	Primary MCL	50	2	EPA 6020/200.8
5b	Chromium (VI)	18540299	Public Health Goal	0.2	5	EPA 7199/1636
6	Copper	7440508	National Toxics Rule	4.1 (6)	0.5	EPA 6020/200.8
14	Cyanide	57125	National Toxics Rule	5.2	5	EPA 9012A
7	Lead	7439921	Calif. Toxics Rule	0.92 (6)	0.5	EPA 1638
8	Mercury	7439976	National Toxics Rule		0.0005	EPA 1669/1631
9	Nickel	7440020	Calif. Toxics Rule	24 (6)	5	EPA 6020/200.8
10	Selenium	7782492	Calif. Toxics Rule	5	5	EPA 6020/200.8
11	Silver	7440224	Calif. Toxics Rule	0.71 (6)	1	EPA 6020/200.8

Ft Irwin Wastewater Treatment Plant - Monitoring and Reporting Program

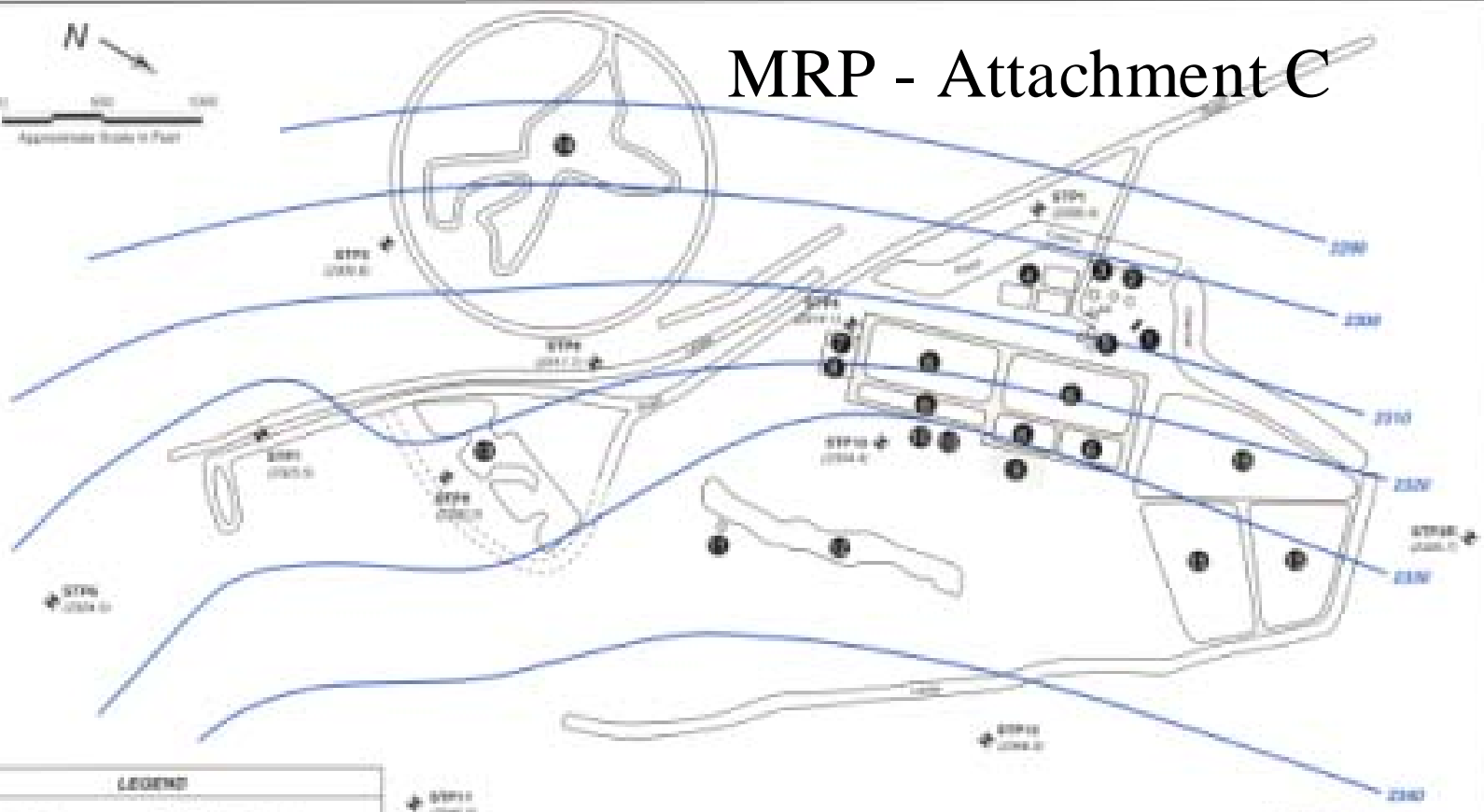
			Controlling Water Quality Criterion for Surface Waters			
CTR #	Constituent	CAS Number	Basis	Criterion Concentration (ug/L or noted) (1)	Minimum Reporting Level (ug/L or noted)	Suggested Test Methods
12	Thallium	7440280	National Toxics Rule	1.7	1	EPA 6020/200.8
13	Zinc	7440666	Calif. Toxics Rule	54/ 16 (6)	10	EPA 6020/200.8

PESTICIDES - PCBs						
110	4,4'-DDD	72548	Calif. Toxics Rule	0.00083	0.05	EPA 8081A
109	4,4'-DDE	72559	Calif. Toxics Rule	0.00059	0.05	EPA 8081A
108	4,4'-DDT	50293	Calif. Toxics Rule	0.00059	0.01	EPA 8081A
112	alpha-Endosulfan	959988	National Toxics Rule	0.056 (7)	0.02	EPA 8081A
103	alpha-Hexachlorocyclohexane (BHC)	319846	Calif. Toxics Rule	0.0039	0.01	EPA 8081A
102	Aldrin	309002	Calif. Toxics Rule	0.00013	0.005	EPA 8081A
113	beta-Endosulfan	33213659	Calif. Toxics Rule	0.056 (7)	0.01	EPA 8081A
104	beta-Hexachlorocyclohexane	319857	Calif. Toxics Rule	0.014	0.005	EPA 8081A
107	Chlordane	57749	Calif. Toxics Rule	0.00057	0.1	EPA 8081A
106	delta-Hexachlorocyclohexane	319868	No Criteria Available		0.005	EPA 8081A
111	Dieldrin	60571	Calif. Toxics Rule	0.00014	0.01	EPA 8081A
114	Endosulfan sulfate	1031078	Ambient Water Quality	0.056	0.05	EPA 8081A
115	Endrin	72208	Calif. Toxics Rule	0.036	0.01	EPA 8081A
116	Endrin Aldehyde	7421934	Calif. Toxics Rule	0.76	0.01	EPA 8081A
117	Heptachlor	76448	Calif. Toxics Rule	0.00021	0.01	EPA 8081A
118	Heptachlor Epoxide	1024573	Calif. Toxics Rule	0.0001	0.01	EPA 8081A
105	Lindane (gamma-Hexachlorocyclohexane)	58899	Calif. Toxics Rule	0.019	0.02	EPA 8081A
119	PCB-1016	12674112	Calif. Toxics Rule	0.00017 (8)	0.5	EPA 8082
120	PCB-1221	11104282	Calif. Toxics Rule	0.00017 (8)	0.5	EPA 8082
121	PCB-1232	11141165	Calif. Toxics Rule	0.00017 (8)	0.5	EPA 8082
122	PCB-1242	53469219	Calif. Toxics Rule	0.00017 (8)	0.5	EPA 8082
123	PCB-1248	12672296	Calif. Toxics Rule	0.00017 (8)	0.5	EPA 8082
124	PCB-1254	11097691	Calif. Toxics Rule	0.00017 (8)	0.5	EPA 8082
125	PCB-1260	11096825	Calif. Toxics Rule	0.00017 (8)	0.5	EPA 8082
126	Toxaphene	8001352	Calif. Toxics Rule	0.0002	0.5	EPA 8081A
16	2,3,7,8-TCDD (Dioxin)	1746016	Calif. Toxics Rule	1.30E-08	5.00E-06	EPA 8290 (HRGC) MS

FOOTNOTES:

- (1) - The Criterion Concentrations serve only as a point of reference for the selection of the appropriate analytical method.
- (2) - For haloethers
- (3) - For nitrophenols.
- (4) - For chlorinated naphthalenes.
- (5) - For phthalate esters.
- (6) - Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the water body.
- (7) - Criteria for sum of alpha- and beta- forms.
- (8) - Criteria for sum of all PCBs.

MRP - Attachment C



LEGEND	
① Headworks	⑩ Oxidation Ditch
② Primary Clarifier	⑪ Secondary Clarifier
③ Aeration Basins	⑫ Choked Filter Station
④ Sludge Drying Beds	⑬ Recirculation Pond
⑤ Suspended Solids Filter	⑭ Soft Sludge Flange
⑥ Access Point	⑮ Abandoned Inlet/Outlet
⑦ Digester Building	⑯ Wastewater Purification Expansion Pond
⑧ Digester Control Tank	

EXPLANATION	
⊕ MW1 (2004.0)	Monitoring Well Location (Groundwater Elevations in April 2005)
	Groundwater Contour and Elevation

FIGURE 1
SITE PLAN
WASTEWATER TREATMENT PLANT
MONITORING WELLS AND
GROUNDWATER CONTOURS
FORT IRWIN, CALIFORNIA