TO: COMMITTEE MEMBERS

FROM: BRUCE BUEL BBB

DATE: JULY 20, 2007

AGENDA ITEM 3

JULY 23, 2007

BOYLE PERMIT PROCESSES MEMORANDUM

ITEM

Receive Boyle presentation re permit processes for disposal options [Forward Recommendations to Board].

BACKGROUND

Attached is a memorandum from Boyle Engineering comparing the waste discharge requirements established by the RWQCB for similar WWTFs in San Luis Obispo and Santa Barbara Counties with current requirements for Southland and Black Lake. Mike Winn and/or Malcolm McEwen of Boyle will summarize the memorandum at the Board Meeting and discuss the implications for NCSD's future discharge if the predicted requirements are ordered. It should be noted that this memorandum constitutes Task 3 in Boyle's larger scope of work. No additional Boyle authorization is required for Boyle to proceed.

RECOMMENDATION

Staff recommends that the Committee receive Boyle's presentation, ask questions as appropriate, and forward recommendations to the Board regarding acceptance of the attached report.

ATTACHMENT

- July 2007 Boyle Memorandum

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MEMORANDUM

TO: Bruce Buel, General Manager July 23, 2007

FROM: Malcolm McEwen, PE
Eileen Mick, EIT

SUBJECT: NCSD Southland Wastewater Treatment Facility
Engineering Support for Wastewater Management Program
Task 3 – Regulatory Comparison

The District faces several challenges related to wastewater management at Southland Wastewater Treatment Facility (WWTF). These include assessment of groundwater conditions beneath the plant; identification and development of recharge and reuse opportunities; short-term and long-term solids management; and meeting community wastewater demand as the program is developed and implemented.

As requested, Boyle has reviewed Waste Discharge Requirements from similar wastewater treatment facilities in San Luis Obispo and Santa Barbara Counties. This memorandum provides a comparison of treatment processes and monitoring requirements at these other facilities with Black Lake's and Southland's existing and proposed systems.

The purpose of this memorandum is to provide background information for the District in developing its Report of Waste Discharge for Southland WWTF Improvements. It may also be useful in its Engineering Report to satisfy Title 22 requirements (to be performed if recycling or recharge are pursued, during the design/permitting phase of the project).

Facilities Examined

Boyle examined eight wastewater treatment facilities in the region:

- NCSD Blacklake (WDR issued March, 1994),
- NCSD Southland (WDR issued October, 1997),
- Rural Water Company Cypress Ridge (WDR issued December, 1997),
- Woodlands Mutual Water Company (WDR issued November, 2000),
- City of Atascadero (WDR issued March, 2001),
- City of Santa Maria (WDR issued December, 2002),
- City of Guadalupe (WDR issued September, 2005), and
- Templeton Community Services District (WDR issued May, 2007).

These facilities were selected for comparison because (1) each facility discharges to percolation ponds or to irrigation of reclamation areas, and (2) they are located in the same jurisdictional region of the State Water Resources Control Board (Region 3). It is expected that effluent and receiving water limits as well as monitoring requirements will be similar among these facilities.

A series of comparison tables have been developed for these facilities, and are attached. These tables list plant characteristics (size, treatment processes, and receiving water type); effluent and receiving water limits; and water supply, influent, effluent, groundwater and biosolids monitoring requirements. These tables provide insight into possible future requirements for Southland WWTF. Because of several similarities (treatment process, disposal practice, and effluent mounding beneath the percolation ponds), the Atascadero WWTF is of particular interest and may serve as a model should the District pursue pumping of the perched effluent mound. The City of Atascadero pumps groundwater immediately downgradient of the percolation ponds and sells it to a nearby golf course for reuse.

The content of the tables is summarized below. Note that the facilities are listed above, and in the attached tables, in the order that their WDR's were issued. It is expected that future requirements placed on Southland WWTP will be similar to requirements contained in the more recently issued WDRs.

Comparison of Limits and Monitoring Requirements

General observations are summarized below.

Table 1 - Effluent Limits

The permitted flow rates of the Blacklake and Cypress Ridge facilities are much smaller than Southland WWTF, while the Cities of Atascadero and Santa Maria have much larger plants. The City of Guadalupe's facility is just slightly larger than Southland WWTF.

Most of the facilities use some type of pond or lagoon system with the exception of Cypress Ridge (sequencing batch reactor) and the City of Santa Maria (trickling filter.)

BOD, solids, and turbidity limits appear to be more stringent in cases where municipal irrigation is involved.

Total dissolved solids (TDS) limits appear to be established on a case-by-case basis. The TDS effluent limit for Blacklake is based on its water supply (TDS in water supply + 250 mg/L). The TDS effluent limit for Woodlands is set at the Basin Plan groundwater objective for the Lower Nipomo Mesa sub-basin (710 mg/L), while theCypress Ridge TDS effluent limit (1000 mg/L) is equal to the Title 22 drinking water standard. The TDS limit for the Guadalupe facility is 1500 mg/L, and was based on historical plant performance and higher TDS concentrations in the groundwater near that discharge.

The Southland WWTF is the only facility listed that does not have an effluent limit for dissolved solids.

Sodium and Chloride limits appear to be common, especially in the more recent WDRs. Few facilities face limits on their nitrogen levels.

The (maximum) bacteria and (minimum) chlorine limits appear to apply only when disposal involves municipal irrigation.

Table 2 – Receiving Water Limits

Most WDRs require 'No statistically significant increase of mineral constituents in groundwater." Specific limits are placed on some mineral constituents in Templeton's discharge to the hyporheic[1] flow of the Salinas River based on site specific studies.

Southland WWTF is one of 3 plants where nitrate limits are established in receiving waters. For Atascadero, its effluent limit for nitrate is the same as its receiving water limit-- 8 mg/L.

Table 3 – Effluent Monitoring Requirements

Most plants are required to meter either influent or effluent flow (see Table 4). Only Atascadero is required to meter both.

Common effluent parameters (suspended solids, BOD, dissolved oxygen, pH, dissolved solids, sodium, chloride, total nitrogen) are currently being monitored at the Southland WWTF and are typically required of all facilities, at various frequencies and compositing periods.

Turbidity, chlorine, and bacteria are typically required only of discharge to irrigation (Blacklake, Cypress Ridge, Woodlands). Atascadero is required to monitor coliform bacteria during effluent mound pumping.

The more recently issued WDRs contain requirements for infrequent (semi-annually, annually, or every 5 years) effluent monitoring for materials that are regulated at very low concentrations (Title 22 drinking water constituents, trace metals, various heavy metals, VOCs. PCBs and pesticides).

Table 4 – Influent Monitoring Requirements

As noted above, most plants are required to meter either influent or effluent flow (see Table 3). Only Atascadero is required to meter both.

All WDRs listed which were issued in 2000 or later have influent monitoring requirements for BOD and suspended solids. Templeton is also required to monitor its influent for TDS, sodium, and chloride twice each year.

Table 5 – Groundwater Monitoring Requirements

Most facilities are required to monitor a suite of groundwater parameters similar to those required of Southland WWTF. Additional parameters which are required of other dischargers include nitrate and ammonia forms of nitrogen, carbonaceous oxygen demand (COD), and heavy metals. The heavy metals requirement for Templeton may be due to its hyporheic connection to the Salinas River.

[1] The hyporheic zone is a region beneath and lateral to a stream bed, where there is mixing of shallow groundwater and surface water. The term hyporheic was originally coined by Orghidan in 1959 by combining two Greek words: hypo (below) and rheos (flow).

Table 6 – Water Supply Monitoring Requirements

No water supply monitoring is presently required for the Southland WWTF, for the Cypress Ridge facility, or for the City of Guadalupe facility. All other plants have some type of source water monitoring requirement. TDS, sodium, and chloride monitoring are required at most locations where effluent limits are also established for these constituents. In the case of Blacklake, its water supply monitoring is related to its effluent limit - the facility is allowed to increase dissolved solids, sodium, and chloride concentrations by a particular amount above its water supply levels.

Table 7 – Biosolids Monitoring Requirements

All WDRs issued in 2000 or later require some type of metals monitoring in biosolids. Nutrients (phosphorous and various forms of nitrogen) are also commonly required to be monitored. The larger dischargers on the list (Atascadero and Santa Maria) are also required to measure concentrations of various toxic materials (pesticides, volatile organic compounds, and PCBs).

Implications for Southland WWTF

While it is impossible to know the requirements which will be placed on the Southland WWTF, it is worthwhile to make some tentative predictions about possible future effluent limits and future monitoring requirements, as discussed below.

Because Southland's capacity will be increased, because the existing effluent appears to be affecting the perched aquifer, and because (at present) the long-term impact of the plant on the deeper aquifer is unknown, we expect effluent limits, receiving water limits, and monitoring requirements to be made more stringent.

Possible Future Effluent Limits

Dissolved solids limits may be established for Southland WWTF, and we would expect those limits to be established based on an analysis of TDS levels in the receiving water.

We expect effluent limits to be placed on nitrogen, either as nitrate or as total nitrogen. We may also expect limits on other constituents which affect plant growth (sulfates or boron).

BOD, solids, bacteria, chlorine and turbidity limits are expected to be established or made lower if irrigation with treated wastewater is proposed.

Possible Future Receiving Water Limits

We do not expect the existing receiving water limits to be changed. Instead we expect that site specific studies may result in new effluent limits, as noted above.

(The most recent data indicates that TDS, sodium, chlorides, nitrogen, sulfate, and boron exceed basin water quality objectives for groundwater in the shallow aquifer under the percolation ponds.)

Possible Future Effluent Monitoring Requirements

As noted above, effluent limits may be required for TDS, sodium, chlorides, nitrogen, sulfate, and boron. Effluent limits for bacteria and chlorine can be expected if irrigation with treated wastewater is proposed. These effluent limits would be reflected in monitoring requirements for these constituents.

As the plant capacity increases, we also expect requirements for infrequent effluent monitoring (semi-annually, annually, or every 5 years) for materials that are regulated at very low concentrations (Title 22 drinking water constituents, trace metals, heavy metals, VOCs, PCBs and pesticides).

Possible Future Influent Monitoring Requirements

If site specific effluent limits are established, we expect the District will be required to monitor the Southland WWTF influent for TDS, sodium, and chloride.

Possible Future Groundwater Monitoring Requirements

We expect that the existing groundwater monitoring program will be expanded, and that additional parameters (such as nitrate and ammonia) will be examined.

Possible Future Water Supply Monitoring Requirements

We expect water supply monitoring requirements for TDS, sodium, and chloride because we expect effluent limits to be established for these constituents.

Possible Future Biosolids Monitoring Requirements

We expect the District will be required to test its biosolids for metals and nutrients (phosphorous and various forms of nitrogen). It is also possible that the District will also be required to measure concentrations of various toxic materials (pesticides, volatile organic compounds, and PCBs).

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Table 1. Effluent Limits

	NCSD Blacklake (WDR 03/11/1994)	NCSD Southland (WDR 10/24/1997)	Rural Water Co Cypress Ridge (WDR 12/5/1997)	Woodland's Mutual Water Co. (WDR 11/29/2000)	City of Atascadero (WDR 3/23/2001)	City of Santa Maria (WDR 12/13/2002)	City of Guadalupe (WDR 09/09/2005)	Templeton CSD Meadowbrook (WDR 5/11/2007)
Permitted Maximum Monthly Average Daily Flow Rate (gpd)	*200,000*[d]	*900,000*	*140,000*	*700,000*	*2,390,000*	*9,500,000*	*960,000*	*600,000*[d]
Treatment Processes	*Comminution, aerated lagoons, disinfection*	*Comminution, aerated lagoons*	*Sequencing batch reactors, chemical addition, filtration, disinfection*	*Facultative pond(1), clarification, multimedia filtration, disinfection*	*Aeration basin, facultative ponds*	*Comminution, grit removal, clarification, trickling filter*	*Grit removal, Advanced Integrated Pond Systems (AIPS)*	*Oxidation ponds*
Receiving Waters	*Irrigation Reclamation areas & Groundwater*	*Groundwater*	*Irrigation Reclamation areas*	*Irrigation Reclamation areas & Groundwater*	*Groundwater*	*Groundwater*	*Groundwater*	*Hyporheic flow of Salinas River*
Monthly Mean BOD_5 (mg/L)	40	60	**10**	**10**	--	60	60	50
Daily Maximum BOD_5 (mg/L)	100	100	**30**	**30**	--	100	100	100
Daily Maximum Soluble BOD_5 (mg/L)	--	--	--	--	100	--	--	--
Monthly Mean Suspended Solids (mg/L)	30	60	**10**	**10**	--	60	60	50
Daily Maximum Suspended Solids (mg/L)	100	100	**30**	**30**	--	100	100	100
Monthly Mean Settleable Solids (mg/L)	**0.1**	0.2	**0.1**	**0.1**	--	**0.1**	0.2	--
Daily Maximum Settleable Solids (mg/L)	**0.3**	0.5	**0.3**	**0.3**	**0.3**	0.4	0.5	0.5
Monthly Mean Total Dissolved Solids (mg/L)	WS + 250[f]	--	--	--	1000	--	1500	1200
Daily Maximum Total Dissolved Solids (mg/L)	--	--	1000	**710**	--	1000[c]	--	1450
pH (range)	6.5 - 8.4	6.5 - 8.4	6.5 - 8.4	6.5 - 8.4	**6.5 - 8.3**	6.5 - 8.4	6.5 - 8.4	--
Minimum Dissolved Oxygen (mg/L)	1.0	1.0	**2.0**	NA	**2.0**	NA	--	1.0
Monthly Mean Grease and Oil (mg/L)	--	--	--	--	--	**20**	--	--
Daily Maximum Grease and Oil (mg/L)	--	--	--	--	--	**30**	--	--

Table 1. Effluent Limits

	NCSD Blacklake (WDR 03/11/1994)	NCSD Southland (WDR 10/24/1997)	Rural Water Co Cypress Ridge (WDR 12/5/1997)	Woodland's Mutual Water Co. (WDR 11/29/2000)	City of Atascadero (WDR 3/23/2001)	City of Santa Maria (WDR 12/13/2002)	City of Guadalupe (WDR 09/09/2005)	Templeton CSD Meadowbrook (WDR 5/11/2007)
Monthly Mean Sodium (mg/L)	WS + 70[f]	--	--	--	--	180[c]	230	265
Daily Maximum Sodium (mg/L)	--	--	--	--	200	--	--	360
Monthly Mean Chloride (mg/L)	WS + 65[f]	--	--	--	250	180[c]	230	360
Daily Maximum Chloride (mg/L)	--	--	--	--	--	--	--	**440**
Daily Maximum Boron (mg/L)	--	--	--	--	**1.0**	--	--	--
Monthly Mean Total Nitrogen (mg/L)	--	--	--	--	--	--	--	**11**
Daily Maximum Total Nitrogen (mg/L)	--	--	--	--	--	--	--	**20**
Daily Maximum Nitrate as Nitrogen (mg/L)	--	--	--	--	**8**	--	--	--
Monthly Mean Turbidity (NTU)	--	--	**2**	**2**[b]	--	--	--	--
Daily Maximum Turbidity (NTU)	--	--	**5**[a]	**5**[b]	--	--	--	--
Maximum Average Weekly Coliform (MPN/100 ml)	23[R]	--	**2.2**[R]	**2.2**[R]	--	--	--	--
Maximum Monthly Coliform (MPN/100 ml)	--	--	--	**23**[R]	--	--	--	--
Maximum Coliform (MPN/100 ml)	240[R]	--	**230**[R]	240[R]	--	--	--	--
Minimum Free Chlorine (mg/L)	**1**[R]	--	0.5[R]	0.5[R]	--	--	--	--
Maximum Free Chlorine (mg/L)	--	--	--	**5**[R]	--	--	--	--

Notes: Most stringent limits indicated in bold text

(1) The WDR for Woodlands incorrectly refers to the facultative pond treatment process as activated sludge.

[a] Turbidity must not exceed 5 NTU more than 5% of the time and must not exceed 10 NTU.

[b] Shall not exceed a daily average of 2 NTU or 5 NTU for more than 5% of the time over a 24 hour period.

[c] Compliance shall be based on a three-year running monthly mean.

[d] After completion of Phase 2.

[e] Applicable for effluent discharged to reclamation areas

[f] WS = Water Supply

[R] Limit applies to reclaimed water.

Table 2. Receiving Water Limits

	NCSD Blacklake (WDR 03/11/1994)	NCSD Southland (WDR 10/24/1997)	Rural Water Co Cypress Ridge (WDR 12/5/1997)	Woodland's Mutual Water Co. (WDR 11/29/2000)	City of Atascadero (WDR 3/23/2001)	City of Santa Maria (WDR 12/13/2002)	City of Guadalupe (WDR 09/09/2005)	Templeton CSD Meadowbrook (WDR 5/11/2007)
Receiving Water	*Irrigation Reclamation areas & Groundwater*	*Groundwater*	*Irrigation Reclamation areas*	*Irrigation Reclamation areas & Groundwater*	*Groundwater*	*Groundwater*	*Groundwater*	*Hyporheic flow of Salinas River*
Total Dissolved Solids (mg/L)	--	--	--	--	--	--	--	500
Sodium (mg/L)	--	--	--	--	--	--	--	110
Choride (mg/L)	--	--	--	--	--	--	--	150
Total Nitrogen (mg/L)	--	--	--	--	--	--	--	4.5
Nitrate as Nitrogen (mg/L)	10.0	10.0	--	--	8	--	--	--
Boron (mg/L)	--	--	--	--	--	--	--	0.2
Sulfate (mg/L)	--	--	--	--	--	--	--	150
pH	--	--	--	--	--	--	--	6.5 - 8.4

Notes:	No statistically significant increase of mineral constituents in groundwater	No statistically significant increase of mineral constituents in groundwater	No statistically significant increase of mineral constituents in groundwater	No statistically significant increase of mineral constituents in groundwater	No statistically significant increase of mineral constituents in groundwater	No statistically significant increase of mineral constituents in groundwater	No statistically significant increase of mineral constituents in groundwater

Table 3. Effluent Monitoring Requirements

	NCSD Blacklake (WDR 03/11/1994)	NCSD Southland (WDR 10/24/1997)	Rural Water Co Cypress Ridge (WDR 12/5/1997)	Woodlands Mutual Water Co. (WDR 11/29/2000)	City of Atascadero (WDR 3/23/2001)	City of Santa Maria (WDR 12/13/2002)	City of Guadalupe (WDR 09/09/2005)	Templeton CSD Meadowbrook (WDR 5/11/2007)
Daily Flow (mgd)	Metered Daily		Metered Daily	Metered Daily	Metered Daily			
Maximum Flow (mgd)			Metered Monthly	Metered Monthly	Metered Monthly			
Average Flow (mgd)	Calculated Monthly		Calculated Monthly	Calculated Monthly				
SS (mg/L)	Grab Daily	Grab Daily	Grab Daily	Grab Daily	Grab Daily while peak loading	Grab Daily	Grab Daily	Grab Daily
BOD_5 (mg/L)	24-hr composite Weekly	6-hr composite Weekly	24-hr composite Weekly	24-hr composite Weekly	Soluble BOD_5 Grab Every 6 days while peak loading	24-hr composite Weekly	24-hr composite Weekly	Grab Weekly
COD (mg/L)					24-hour composite Semi-Annually			
TSS (mg/L)	24-hr composite Weekly	6-hr composite Weekly	24-hr composite Weekly	24-hr composite Weekly	Grab Every 6 days while peak loading	24-hr composite Weekly	24-hr composite Weekly	Grab Weekly
DO (mg/L)	Grab Weekly	Grab Weekly	Grab Weekly	Grab Weekly	Grab Every 6 days while peak loading			
pH	Grab Weekly	Grab Weekly	Grab Weekly	Grab Weekly	Grab Every 6 days while peak loading	Grab Daily	Grab Weekly	Grab Monthly
TDS (mg/L)	Grab Quarterly	6-hr composite Semi-Annually	24-hr composite Quarterly	24-hr composite Monthly	24-hour composite Semi-Annually	24-hr composite Weekly	Grab Semi-Annually	Grab Semi-Annually

Table 3. Effluent Monitoring Requirements

	NCSD Blacklake (WDR 03/11/1994)	NCSD Southland (WDR 10/24/1997)	Rural Water Co Cypress Ridge (WDR 12/5/1997)	Woodlands Mutual Water Co. (WDR 11/29/2000)	City of Atascadero (WDR 3/23/2001)	City of Santa Maria (WDR 12/13/2002)	City of Guadalupe (WDR 09/09/2005)	Templeton CSD Meadowbrook (WDR 5/11/2007)
Sodium (mg/L)	Grab Quarterly	6-hr composite Semi-Annually			24-hour composite Semi-Annually	24-hr composite Weekly	Grab Semi-Annually	Grab Semi-Annually
Chloride (mg/L)	Grab Quarterly	6-hr composite Semi-Annually			24-hour composite Semi-Annually	24-hr composite Weekly	Grab Semi-Annually	Grab Semi-Annually
Boron (mg/L)					Grab Semi-Annually	Grab Semi-Annually		
Sulfate (mg/L)					24-hour composite Semi-Annually	Grab Semi-Annually		
Total Nitrogen (mg/L)	Grab Semi-Annually	6-hr composite Semi-Annually			24-hour composite Semi-Annually	Grab Semi-Annually	Grab Semi-Annually	Grab Semi-Annually
Nitrate as Nitrogen (mg/L)					24-hour composite Semi-Annually			
Turbidity (NTU)			Metered Continuous (before & after filter)	Metered Continuous (before & after filter)				
Chlorine Residual (mg/L)	Grab Weekly		Metered Continuous verify by grab	Metered Continuous verify by grab				
Total Coliform (MPN/100 mL)	Grab Daily		Grab Daily	Grab Daily	Grab Weekly during effluent mound pumping			
Zinc (mg/L)					Grab Semi-Annually			

Table 3. Effluent Monitoring Requirements								
	NCSD Blacklake (WDR 03/11/1994)	NCSD Southland (WDR 10/24/1997)	Rural Water Co Cypress Ridge (WDR 12/5/1997)	Woodlands Mutual Water Co. (WDR 11/29/2000)	City of Atascadero (WDR 3/23/2001)	City of Santa Maria (WDR 12/13/2002)	City of Guadalupe (WDR 09/09/2005)	Templeton CSD Meadowbrook (WDR 5/11/2007)
Other				Title 22 drinking water constituents (mg/L) Grab Every 5 years	Arsenic, Barium, Cadmium, Chromium, Cyanide, Lead, Mercury, Selenium, Copper Grab Yearly	Grease & Oil 24-hour composite Weekly	Freeboard in all Ponds (treatment & holding ponds) measure Weekly	Title 22 Heavy Metals (mg/L) Grab Annually
Other					VOCs, PCBs, Pesticides Grab Every 5 years			

Table 4. Influent Monitoring Requirements								
	NCSD Blacklake (WDR 03/11/1994)	NCSD Southland (WDR 10/24/1997)	Rural Water Co Cypress Ridge (WDR 12/5/1997)	Woodlands Mutual Water Co. (WDR 11/29/2000)	City of Atascadero (WDR 3/23/2001)	City of Santa Maria (WDR 12/13/2002)	City of Guadalupe (WDR 09/09/2005)	Templeton CSD Meadowbrook (WDR 5/11/2007)
Daily Flow (mgd)						Metered Daily	Metered Daily	Metered Daily
Maximum Flow (mgd)		Metered Daily			Metered Daily	Metered Monthly	Calculated Monthly	Metered Monthly
Average Flow (mgd)		Calculated Monthly				Calculated Monthly		Calculated Monthly
BOD_5 (mg/L)				Grab Weekly	Composite Quarterly	8-hr composite Monthly	24-hr composite Monthly	Grab Monthly
TSS (mg/L)				Grab Weekly	Composite Quarterly	8-hr composite Monthly	24-hr composite Monthly	
SS (mg/L)				Grab Weekly				
TDS (mg/L)								Grab Semi-Annually
Sodium (mg/L)								Grab Semi-Annually
Chloride (mg/L)								Grab Semi-Annually

Table 5. Groundwater Monitoring Requirements								
	NCSD Blacklake (WDR 03/11/1994)	NCSD Southland (WDR 10/24/1997)	Rural Water Co Cypress Ridge (WDR 12/5/1997)	Woodlands Mutual Water Co. (WDR 11/29/2000)	City of Atascadero (WDR 3/23/2001)	City of Santa Maria (WDR 12/13/2002)	City of Guadalupe (WDR 09/09/2005)	Templeton CSD Meadowbrook (WDR 5/11/2007)
Static Water Level (ft bgs)		Measurement Semi-Annually	Measurement Semi-Annually	Measurement Semi-Annually	Measurement Quarterly	Measurement Quarterly	Measurement Annually	Measurement weekly when percolating
TDS (mg/L)		Grab Semi-Annually	Grab Semi-Annually	Grab Semi-Annually	Grab Semi-Annually		Grab Annually	Grab Semi-Annually
Sodium (mg/L)		Grab Semi-Annually	Grab Semi-Annually	Grab Semi-Annually	Grab Semi-Annually	Grab Quarterly	Grab Annually	Grab Semi-Annually
Chloride (mg/L)		Grab Semi-Annually		Grab Semi-Annually	Grab Semi-Annually	Grab Quarterly	Grab Annually	Grab Semi-Annually
Total Nitrogen (mg/L)		Grab Semi-Annually	Grab Semi-Annually		Grab Semi-Annually	Grab Quarterly	Grab Annually	
Nitrate as Nitrogen (mg/L)				Grab Semi-Annually	Grab Semi-Annually	Grab Quarterly		Grab Semi-Annually
COD (mg/L)					Grab Quarterly			
Ammonia (mg/L)				Grab Semi-Annually				
Sulfate (mg/L)		Grab Semi-Annually	Grab Semi-Annually	Grab Semi-Annually		Grab Quarterly	Grab annually	
Boron (mg/L)		Grab Semi-Annually	Grab Semi-Annually	Grab Semi-Annually		Grab Quarterly	Grab Annually	
Heavy Metals (Title 22)								Grab Annually

Table 6. Water Supply Monitoring Requirements								
	NCSD Blacklake (WDR 03/11/1994)	NCSD Southland (WDR 10/24/1997)	Rural Water Co Cypress Ridge (WDR 12/5/1997)	Woodlands Mutual Water Co. (WDR 11/29/2000)	City of Atascadero (WDR 3/23/2001)	City of Santa Maria (WDR 12/13/2002)	City of Guadalupe (WDR 09/09/2005)	Templeton CSD Meadowbrook (WDR 5/11/2007)
General Minerals[a] (mg/L)				Grab Annually				
TDS (mg/L)	Grab Quarterly				City Composite Semi-Annually	Grab Quarterly		Grab Semi-Annually
Sodium (mg/L)	Grab Quarterly				City Composite Semi-Annually	Grab Quarterly		Grab Semi-Annually
Chloride (mg/L)	Grab Quarterly				City Composite Semi-Annually	Grab Quarterly		Grab Semi-Annually
Nitrate as Nitrogen (mg/L)					City Composite Semi-Annually	Grab Quarterly		
Total Nitrogen (mg/L)					City Composite Semi-Annually			
Boron (mg/L)					City Composite Semi-Annually			

Notes:

[a] "General Minerals" includes Calcium, Magnesium, Sodium, Sulfate, Carbonate, Bi-Carbonate, Chloride, Total Hardness, Total Alkalinity, Total Dissolved Solids, pH, Electical Conductivity, Boron, Iron, and Nitrate.

Table 7. Biosolids Monitoring Requirements								
	NCSD Blacklake (WDR 03/11/1994)	NCSD Southland (WDR 10/24/1997)	Rural Water Co Cypress Ridge (WDR 12/5/1997)	Woodlands Mutual Water Co. (WDR 11/29/2000)	City of Atascadero (WDR 3/23/2001)	City of Santa Maria (WDR 12/13/2002)	City of Guadalupe (WDR 09/09/2005)	Templeton CSD Meadowbrook (WDR 5/11/2007)
Quantity	NA	NA	NA	(ton or yd^3) measured Each Load	(lbs) Estimate Quarterly	(yd^3 & kg) measured during removal	(gal or yd^3) Grab Annually or when disposal occurs	(ton or yd^3) measured Before transport/disposal
Moisture Content (%)				Grab Before transport/disposal		Grab Quarterly	Grab Annually or when disposal occurs	Grab 2 mo. prior to disposal
Nitrate as Nitrogen (mg/kg)				Grab Before transport/disposal		Composited Grab Annually		Grab 2 mo. prior to disposal
Ammonia (mg/kg)						Composited Grab Annually		Grab 2 mo. prior to disposal
TKN (mg/kg)						Grab Quarterly		Grab 2 mo. prior to disposal
Total Phosphorus (mg/kg)				Grab Before transport/disposal		Grab Quarterly		Grab 2 mo. prior to disposal
pH				Grab Before transport/disposal		Grab Quarterly		Grab 2 mo. prior to disposal
Grease & Oil (mg/kg)				Grab Before transport/disposal		Composited Grab Annually		Grab 2 mo. prior to disposal

Table 7. Biosolids Monitoring Requirements								
	NCSD Blacklake (WDR 03/11/1994)	NCSD Southland (WDR 10/24/1997)	Rural Water Co Cypress Ridge (WDR 12/5/1997)	Woodlands Mutual Water Co. (WDR 11/29/2000)	City of Atascadero (WDR 3/23/2001)	City of Santa Maria (WDR 12/13/2002)	City of Guadalupe (WDR 09/09/2005)	Templeton CSD Meadowbrook (WDR 5/11/2007)
Metals (mg/kg)				Arsenic, Boron, Cadmium, Copper, Chromium, Lead, Mercury, Molybdenum, Nickel, Selenium, Zinc Grab Before transport/disposal	Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium (VI & Total), Cobalt, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Tin, Vanadium, Zinc Grab Every 2 years	*** Composited Grab Annually	Total Metals Grab Annually or when disposal occurs	Arsenic, Boron, Cadmium, Copper, Chromium, Lead, Mercury, Molybdenum, Nickel, Selenium, Zinc Grab 2 mo. prior to disposal
Fluoride (mg/kg)					Grab Every 2 years			
Pesticides (mg/kg)					Grab Every 2 years	*** Composited Grab Annually		
VOCs (ug/kg)						*** Composited Grab Annually		
Trichloroethylene (mg/kg)					Grab Every 2 years			
Vinyl Chloride (mg/kg)					Grab Every 2 years			
Organic Lead (mg/kg)					Grab Every 2 years			

Table 7. Biosolids Monitoring Requirements

	NCSD Blacklake (WDR 03/11/1994)	NCSD Southland (WDR 10/24/1997)	Rural Water Co Cypress Ridge (WDR 12/5/1997)	Woodlands Mutual Water Co. (WDR 11/29/2000)	City of Atascadero (WDR 3/23/2001)	City of Santa Maria (WDR 12/13/2002)	City of Guadalupe (WDR 09/09/2005)	Templeton CSD Meadowbrook (WDR 5/11/2007)
PCBs (ug/kg)					Grab Every 2 years	*** Composited Grab Annually		

Notes:
*** Individual constituents specified in WDR.
Composited Grab = Mixed samples from at least 3 random locations from the drying beds.

TO: COMMITTEE MEMBERS

FROM: BRUCE BUEL

DATE: JULY 20, 2007

AGENDA ITEM
4
JULY 23, 2007

SET SUBSEQUENT MEETING(S)

ITEM

Set meeting date(s)/time(s) for subsequent meeting(s) [Set Date/Time].

BACKGROUND

Staff expects that the Committee will need to meet once either Fugro or Boyle have additional findings ready for consideration.

RECOMMENDATION

Staff recommends that the Committee ask Fugro and Boyle to comment on their respective schedules and set a tentative date based on that feedback.

ATTACHMENT

- None

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