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March 16, 2015

Mr. Marty Hartzell, PG, CHG
Senior Engineering Geologist
Title 27 Permitting and Mining Unit
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, California 95670-6289

**SUBJECT: COMMENTS ON THE TENTATIVE WASTE DISCHARGE REQUIREMENTS FOR
FOOTHILL SANITARY LANDFILL (FSL)**

Dear Mr. Hartzell:

San Joaquin County has reviewed the Tentative Waste Discharge Requirements for Foothill Sanitary Landfill and provides the comments and recommendations below for your consideration:

1. WDR Finding 7 on page 2 – LF-1 (Module I) is approximately 80 acres not 85 as indicated. This needs to be corrected throughout the document.
2. WDR Finding 8 on page 3 – The fourth sentence is not an accurate statement, which states: *“A third phase of the module, including additional LF-1 overlap, will be constructed before the module reaches final waste grade in late 2015.”* There are no more LF-1 overlaps planned until the County begins utilization of Module Five (LF-2, M-5), and that is not anticipated until the year 2045 (See 2010 JTD, Figure 5, Conceptual Fill Plan).
3. WDR Finding 16 on page 5 – We recommend that the second line in the paragraph be modified to state “leachate and landfill gas condensate returned to LF-2...” Please see comment No. 9 below for additional details.
Also, please add the following to Finding 16: The County is also considering the use of dewatered sludge as Alternative Daily Cover (ADC). Any such proposal will include CEQA and other submittal documentation for review of the executive Officer.
4. WDR Finding 18 on page 5 – The maximum height of the landfill is 432 feet MSL not 180 as indicated. This needs to be corrected throughout the document.
5. WDR Finding 20 on page 5 – The County requests that the requirement for closure of LF-1 be removed from the WDR or delayed. LF-1 is already partially closed, with a final evapotranspirative (ET) cover on the top deck and intermediate cover on side slopes, and is no longer accepting waste. The southern side slope adjacent to LF-2 has a barrier membrane installed per CAO R5-2004-0706. The CAO is still in effect and requires a barrier to be installed on all side slopes before waste can be placed over inactive LF-1. Furthermore, the County is not planning any more overlaps on LF-1 for approximately another 30 years (2045 per 2010 JTD, Figure 5, Conceptual Fill Plan). The placement of additional soil cover over LF-1 at this point serves no environmental purpose, and

imposes a significant financial burden on the County. The cost of full closure of LF-1 will be in excess of Three Million Dollars (\$3 Million). This closure cost is obtained by prorating the 2010 JTD final closure costs and escalating to 2015 dollars (cost estimate available upon request). Thus, the County requests that closure of LF-1 be removed from this WDR or delayed until 2045, to be consistent with regulatory compliance and the state of engineering practice at that future time.

6. WDR Finding 21 on page 6 – See comment No. 5 above.
7. WDR Finding 43 on page 11 – As indicated there has never been any methane exceedances at any of the perimeter monitoring wells. Methane detections have only occurred at inner wells.
8. WDR Finding 53 on Page 14 – Finding states that a separate Water Quality Protection Standards (WQPS) report be prepared for each unit. Because LF-2 is an inseparable lateral expansion of LF-1, both reports would be essentially identical. Therefore, it is requested that the requirement to prepare separate WQPS reports for each landfill unit be removed.
9. WDR Finding 62 on Page 17 – This Finding states that landfill gas (LFG) condensate from LF-1 cannot be discharged to LF-2. However, a review of the referenced regulatory criteria for condensate handling appears to indicate that the LF-1 condensate can be discharge to LF-2. LFG is extracted from LF-1 as part of corrective action measure to mitigate a release from that unit. The LFG cools as it is extracted from the landfill and forms a liquid referred to as condensate, which is handled as leachate.

Finding 62 references CCR Section 20340(g), states:

(g) Leachate Handling — Except as otherwise provided under SWRCB Resolution No. 93-62 (for MSW landfills subject to 40 CFR 258.28), collected leachate shall be returned to the Unit(s) from which it came or discharged in another manner approved by the RWQCB. Collected leachate can be discharged to a different Unit only if:

- (1) the receiving Unit has an LCRS, contains wastes which are similar in classification and characteristics to those in the Unit(s) from which leachate was extracted, and has at least the same classification (under Article 3 of this subchapter) as the Unit(s) from which leachate was extracted;
- (2) the discharge to a different Unit is approved by the RWQCB;
- (3) the discharge of leachate to a different Unit shall not exceed the moisture holding capacity of the receiving unit, and shall comply with section 20200(d).

A review of SWRCB Resolution No, 93-62 indicates that it does not prohibit the discharge of leachate or condensate to a different MSW unit from which it came. Federal regulation 40 CFR 258.28 also does not prohibit the discharge of leachate or condensate to a lateral expansion of an MSW landfill. 40 CFR 258.28, similar to CCR 20340(g) allows the discharge of leachate and condensate to a lateral expansion if that unit has a composite liner and a leachate collection system.

Federal Subtitle D design regulations give additional guidance for the discharge of leachate into a MSW unit. The leachate collection system should be designed to maintain less than a 30-centimeters (cm) depth of leachate over the liner.

Based on the above State and Federal regulations for MSW landfills, it appears that the RWQCB can allow condensate from LF-1 to be discharged into LF-2. The County can comply with the referenced regulatory criteria for allowing LF-1 condensate to be discharged into LF-2:

- LF-1 contains Class III MSW that is similar to the Class III MSW waste that is currently being placed in LF-2. The waste material that was placed into LF-1 came from the same municipalities that currently provide waste material to LF-2.
- The discharge of condensate from LF-1 into LF-2 will not exceed the moisture holding capacity of the waste in LF-2. The extraction of LFG from both LF-1 and LF-2 commenced in 2006. Since 2006, the LFG from both units have been conveyed in a single pipeline to either a flare or an engine for destruction. The condensate from both units is removed prior to destruction, and is handled as a single source for input into LF-2. At no time during the operation of this single condensate source to LF-2 has there been any evidence that the moisture holding capacity of the waste in LF-2 has been exceeded.
- The discharge of condensate from LF-1 to LF-2 will not cause leachate to rise above 30-cm in the leachate collection system of LF-2. Since 2006, when the discharge of combined condensate into LF-2 commenced, all leachate monitoring records from LF-2 have shown that leachate has not risen above 30-cm.

Other criteria that the RWQCB can use to justify continued discharge of condensate from LF-1 to LF-2 are as follows:

- The effective operation of the corrective action measure at LF-1, which consists of extraction and destruction of LFG, relies on the efficient handling of condensate.
- The destruction of LFG from LF-1 will continue to be the most effective mechanism for the prevention of volatile organic compounds (VOCs) migration into the groundwater at the site.
- The current condensate handling procedure that has been implemented at FSL is state of the practice in which liquids are handled as a single source, even if the LFG is extracted from lined or unlined units from the same MSW landfill.
- If condensate from LF-1 is not allowed to be discharged into LF-2, it will have to be discharged to an off-site disposal site.
- Since both Federal and State MSW regulations allow for the discharge of condensate to a lateral expansion unit, the requirement to remove condensate from a landfill that has a unit with a compliant liner and leachate collection system could be considered onerous.
- Disposal of comingled LFG condensate from both LF-1 and LF-2 in the Subtitle D-lined landfill was approved by RWQCB staff in 2005 and has continued without mishap since. The County believes that continuing this procedure is prudent, and could be accepted by RWQCB staff per regulations outlined above, allowing this procedure to be "grandfathered" into the revised WDRs.

In addition, it is not possible to separate the condensate from LF-1 gas from the condensate of LF-2 gas. Landfill gas condensate is produced whenever landfill gas cools as it travels through piping. In the system installed at the Foothill Landfill in the Site Improvement Project of 2006, and as approved by Regional Water Quality Control staff, wells from both LF-1 and LF2 are connected by a common LFG header. Moisture continually condenses from this comingled gas as it travels along the common header to the gas-to-energy plant. As such condensate cannot be exclusively assigned to one unit or the other.

Maximum condensate production from the landfill is approximately 1200 Gallons per day, of which approximately 450 gal per day can be attributed to LF-1. Condensate production is roughly proportional to LFG production, and is expected to decline exponentially beginning two years after the last deposit of refuse in LF-1 which occurred in 2003.

In our professional opinion, return of condensate generated from LF-1 gas to LF-2 is within applicable regulations and does not pose a threat to groundwater quality. Furthermore, it is not possible to separate the condensate of one LF from the other.

Consequently, it is requested that condensate from LF-1 be continued to be allowed to be discharged into LF-2 in a manner that has occurred since 2006.

10. WDR Finding 63, 64, and 65 on page 17 – Please see comment No. 9 above.
11. WDR Finding 69 on page 18 – LF-1 (Module I) is 80 acres, not 84 as indicated.
12. WDR Finding 79 on page 21 – Last sentence describes an “external” pump. The pump is a submersible pump within the sump, it is not external.
13. WDR Finding 103 on page 28 – Please see comment No. 5 above.
14. WDR pages 34, 35, and 36 Discharge Prohibitions – Please see comments Nos. 5 and 9 above.
15. WDR page 37, D. Construction Specifications – These findings appear to be based on the design of Module M-2A; as such, they are overly specific and deny the County flexibility for future designs and incorporating advances in technology. The County requires design flexibility to allow engineering calculations to be performed for each future module on a case by case basis. Components such as pipe sizes, double or single sided texturing of the geomembrane, moisture content ranges of soils, rounded gravel, geomembrane on slopes, etc. will vary based on the geometry of future modules. Please see “Attachment A” for County comments on Section D. Construction Specifications.
16. WDR page 41, E1 Closure Specification – The deadline of 15 October 2015 is unrealistic. The County needs to issue a Request for Bid (RFB), select a consultant, and prepare the design. This process takes about a year or longer. Furthermore, County staff will be occupied with the construction of Module M-2A until October 2015 and implementing the 2014 NOV requirements and the County does not have the resources or the budget to do additional work in 2015. The County’s corrective action expenditures in 2015 will far exceed its annual Financial Assurances obligation. Consequently, the County requests that this deadline and all other FC/PC submittal requirements be pushed by back by one (1) year to 2016. Also please see comments Nos. 5 and 9 above.
17. WDR page 47, item 7, LF-1 Closure Status Report – Please see comments Nos. 5 and 16 above.
18. WDR page 48, item 10, LFG modifications – Please see comment No. 9 above.

Monitoring and Reporting Program (MRP)

19. MRP page 13, Section 5, Solid Waste Monitoring - Table A.5 (Solid Waste Monitoring Schedule) contains the requirement to measure the elevation range of discharges on a quarterly basis. The County currently conducts an aerial topographic survey of the landfill on an annual basis that it uses to determine the remaining landfill capacity. The County has been conducting these surveys for several years and has found that more frequent surveys (i.e. quarterly) would be unproductive. The County currently maintains a monthly record of waste disposed at the landfill and uses those records

between the annual topographic surveys to gage the loss of landfill capacity throughout the year. The additional requirement to bring in a survey crew to measure the elevation change at the tipping area on a quarterly basis does not yield useful information, will be out-of-date within weeks of the survey, and is a financial burden on the County. The County's waste tonnage disposal records can be used to report the remaining landfill capacity.

Therefore, it is requested that the requirement to conduct a quarterly elevation survey and other quarterly requirements shown in Table A.5 be replaced with the following:

- Annual elevation survey of the landfill surface
- Semiannual calculations of remaining capacity

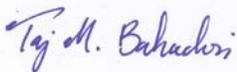
20. MRP page 15, Section 7, Additional Corrective Action Monitoring – Landfill Gas - Table A.A.7 (LFG Monitoring Schedule) contains the requirement to monitor for VOCs at each LFG extraction well on a semiannual basis. To determine the other reporting requirement of Table A.A.7 (i.e., total and cumulative VOCs removed) it is not necessary to individually collect a VOC gas sample from each extraction well. The concentration of VOCs in the gas collected from the landfill, and cumulative amounts of VOCs removed can be obtained from collecting a combined LFG sample from the header from LF-1, as already required. The requirement to sample each well on a semiannual basis adds an additional expense with no appreciable result.

Additionally, MRP Section 7 requires monitoring for carbon monoxide and hydrogen sulfide from individual wells. It is not clear how this data is relevant to groundwater protection at FSL. Therefore, it is requested that the requirement to monitor for VOCs, carbon monoxide, and hydrogen sulfide at each extraction well be removed from Table A.A.7. Also, please revise the notes in table A.A.7.

San Joaquin County looks forward to continued partnership with the Central Valley Regional Water Quality Control Board, and is committed to safeguarding the waters of the State.

Please feel free to contact me at (209) 953-7316 if there are any questions.

Sincerely,



TAJ M. BAHADORI, PE
Senior Civil Engineer

TMB:sc

N:\1Foothill\RWQCB\RWQCB Permit Docs\2015 WDR\Tentative\2015-03-16 FH Comments to Tentative WDR.doc

Attachment

c: John Moody, CVRWQCB (electronic copy)
Howard Hold, CVRWQCB (electronic copy)
Todd A. Del Frate, CVRWQCB (electronic copy)
Robert McClellon, Environmental Health Department (electronic copy)
Jim Stone, Deputy Director/Operations (electronic copy)
Desi Reno, Integrated Waste Manager (electronic copy)

ATTACHMENT A

COMMENTS ON THIS DOCUMENT CAN ONLY BE SEEN ON THE ELECTRONIC VERSION

D. CONSTRUCTION SPECIFICATIONS

Liner

1. LF-2 expansion modules shall, at a minimum, be constructed in accordance with the following engineered alternative design (EAD), from top to bottom:¹⁴

Component	Base Liner	Side Slopes	
		Excavation	LF-1 Overlap
Operations Layer	³ 2 feet soil		
Filter Fabric	Geotextile ¹		
LCRS	9-inch gravel layer		Geocomposite²
	4-inch PE collection piping in drainage troughs		
Base Liner	60-mil HDPE ³		None ⁴
	Geosynthetic Clay Liner (GCL) ^{5,6}		
Foundation Layer	³ 1 foot prepared subgrade ⁷		

1. Geotextile consists of 8-oz/yd² woven fabric.
2. Geonet with abutment geotextile on both sides.
3. ~~HDPE double side texture~~
4. Additional containment components (e.g., synthetic barrier layer) shall be installed if (and to the extent) required under an approved corrective action program submitted under these WDRs and/or separate Central Valley Water Board order (e.g., CAO R5-2004-0706).
5. GCL shall exhibit appropriate strength characteristics (hydrated) to accommodate stresses associated with specific landfill design parameters, with particular attention to interface, long-term creep, shear, and bearing capacity.
6. ~~In lieu of the EAD, LF-1 overlap areas~~ may alternatively be constructed with a Title 27 prescriptive clay liner. See Title 27, section 20330(a).
7. See Construction Specification D.2.

2. The foundation layer in the above composite liner design (D.1) shall be constructed as follows:
 - a. Project CQA shall include preparation of the foundation surface so as to minimize the risk of liner puncture and detection testing. In both of the above designs, the foundation layer shall consist of select fine-grained soil materials compacted as follows:
 - 1) In lifts of 6 inches or less; and
 - 2) To 90% of maximum dry density at 0 to 4% wet of optimum moisture content, in accordance with the approved CQA plan; and
 - 3) To a minimum hydraulic conductivity of 1×10^{-5} cm/sec; or
 - 4) In accordance with the following gradation criteria:
 - i. A maximum size of 3/8-inch; and

¹⁴ Incorporates EAD approved under previous WDRs and Title 27 containment system requirements for side slope extensions overlapping an existing MSW landfill (i.e., LF-1).

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- ii. At least 30% of the material, by dry weight, passing the No. 200 U.S. Standard sieve; and
 - iii. A gradation series (i.e., well-graded) that is amenable to compaction.
- b. The subgrade for the bottom and side slopes (including LF-1 overlap areas) shall be prepared in an appropriate manner using accepted engineering and construction methods so as to provide a smooth surface free from rocks, sticks, or other debris that could damage or otherwise limit the performance of the GCL.

LCRS

3. The LCRS for LF-2 expansion modules shall, at a minimum, be constructed in accordance with the following, from top to bottom:
- a. Blanket Drainage Layer –
 - 1) Minimum 9-inches thick layer of rounded gravel over base liner
 - 2) Geocomposite (or equivalent combination of geonet and filter fabric) over side slopes, including LF-1 overlap areas, as needed.
 - b. Collection Piping
 - 1) Perforated 4-inch HDPE laterals installed in collection troughs (or directly on base liner) and plumbed to header pipe(s) along perimeter module. Laterals shall be equipped with pipe risers at each end to allow for video camera inspection (by wire rope or robot) and cleaning, as necessary
 - 2) 6-inch HDPE header pipe in perimeter collection trough(s) plumbed to LCRS sump.
 - c. Collection Troughs – graded toward header or LCRS sump at a minimum 2% slope.

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4. The LCRS sump shall be constructed consistent with the approved designs for Module 1 or Module 2 as follows, from top to bottom:

<u>Component</u>		<u>Specification</u>
Filter Fabric		Geotextile ²
Sump ^{1,3}	Gravel	Sump gravel
	Depth	≥ 4 feet
	Pump	Automatic with high and low alarms, flow meter
Cushion		Geotextile ²
Primary Composite Liner		60-mil HDPE/GCL
Secondary LCRS ³		Geonet
Secondary Composite Liner		60-mil HDPE/GCL
Foundation Layer		³ 1 foot compacted subgrade

1. Sump shall be equipped with an automatic pump, flow meter, and recording device, allowing instantaneous measurement of rate and volumes removed. High and low liquid level sensors and associated alarms shall also be included in design.
2. 8 oz/yd² non-woven fabric.
3. Design shall include appropriately-sized HDPE riser pipes for leachate monitoring and removal.

Final Cover

5. Final cover installed over the remainder of partially-closed LF-1 shall, at a minimum, be constructed in accordance with one of the following designs consistent with the Partial FCP submitted under this Order, as approved:

- a. Title 27 Prescriptive Standard, from top to bottom:

<u>Component</u>	<u>Side Slopes</u>	
	<u>Exterior</u>	<u>LF-2 Underlap</u>
Erosion Resistant Layer	³ 2 feet vegetative cover soil	
Low Hydraulic Conductivity (LHC) Layer	³ 1 foot compacted clay soil ($k \leq 1 \times 10^{-6}$ cm/sec) ¹	
Foundation Layer	³ 2 feet soil or appropriate waste materials ²	

1. Minimum relative compaction of 90%.
2. See Construction Specification D.2.

- b. One or more of the following Title 27 Engineered Alternative Designs (EADs), as applicable, from top to bottom:

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1) GCL (All slopes)

<u>Component</u>	<u>Side Slopes</u>	
	<u>Exterior</u>	<u>LF-2 Underlap</u>
Erosion Resistant Layer	³ 2 feet vegetative cover soil	
Low Hydraulic Conductivity (LHC) Layer	Geosynthetic Clay Liner (GCL) ¹	
Foundation Layer	³ 2 feet soil or appropriate waste materials ²	

1. GCL shall exhibit appropriate strength characteristics (hydrated) to accommodate stresses associated with specific landfill design parameters, with particular attention to interface, long-term creep, shear, and bearing capacity.
2. See Construction Specification D.2.

2) ET Cover (Exterior side slopes only)

<u>Component</u>	<u>Side Slopes</u>	
	<u>Exterior</u>	<u>LF-2 Underlap</u>
Evapotranspirative Layer	≥ 3 feet soil	n/a ¹

1. ET cover not authorized in LF-2 underlap areas. Use GCL or prescriptive design.

3) Liner-Cover Combination System (LF-2 underlap areas only)

For LF-2 underlap areas only, a combined liner-cover system that incorporates, but does not necessarily duplicate, elements specified above for LF-1 overlap liner (Construction Specification D.1) and LF-2 underlap final cover (Construction Specification D.5), provided that the combined containment system meets Title 27 performance standards for both final cover and Class III (non-composite) landfill liner.

The partial FC/PCMP shall include an appropriate EAD demonstration per Title 27, section 20080(b) for each of the above designs proposed. See Closure and Postclosure Maintenance Specification E.5.

6. The Discharger may propose changes to the liner/final cover system design prior to construction provided that approved components are not eliminated, the engineering properties of the components are not substantially reduced, and the proposed liner/final cover system results in the protection of water quality equal to or greater than the design prescribed by Title 27 and this Order. The proposed changes may be made following approval by the Executive Officer. Substantive changes to the design require reevaluation as an engineered alternative and approval by the Central Valley Water Board in revised WDRs.
7. ~~The design and construction of all landfill module LCRS and containment system components shall incorporate adequate factors of safety to handle the increased~~

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~~vertical loads associated with vertical expansion.~~

8. **At least 90 days** prior to initiation of any new landfill modules or closure construction activities under an FC/PCMP or Partial FC/PCMP, as approved by the Executive Officer, the Discharger shall submit for review and approval all applicable plans and reports, including, but not necessarily limited to, the following:
 - a. Any proposed design modifications pertaining to construction or closure of the unit, module, or phase per Construction Specification D.6.
 - b. A construction design report, including project specifications, drawings, grading and design plans; and
 - c. A Construction Quality Assurance (CQA) Plan which satisfies the requirements of Section 20324 of Title 27 as it applies to the construction of the erosion-resistant and foundation layers.

Closure construction shall proceed only after the above (and any other applicable) reports have been approved by Executive Officer. See also Standard Construction Specification F.1, SPRR.

9. LFG extraction facilities necessary to control LFG shall be installed as each new module is constructed and developed. New modules shall be tied into the existing LFG extraction system in order to help control LFG.
10. The Discharger shall comply with all Standard Construction Specifications listed in Section F of the SPRRs.
11. The Discharger shall comply with all Storm Water Provisions listed in Section L of the SPRRs.

E. CLOSURE AND POST-CLOSURE MAINTENANCE SPECIFICATIONS

LF-1

1. By **15 October 2015**, the Discharger shall submit a revised Partial FC/PCMP for closure the remainder of LF-1 consistent with the construction specifications (e.g., Construction Specification D.5) and other applicable requirements of this Order. The revised Partial FC/PCMP shall include plans for closure of all portions of the unit that have not yet been closed (e.g., side slopes), and include a description of closure activities, a schedule, and all other information required under Title 27, section 21769(c). See Finding 103, Closure and Postclosure Specification E.2, Provision H.7.b, and Standard Closure and Postclosure Specification G.8.
2. By **15 November 2017**, the Discharger shall complete closure of unlined unit LF-1 (i.e., Module I) and within 30 days thereafter submit a certification that the

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March 11, 2015
Project 149259

Taj M. Bahadori, P.E.
Senior Civil Engineer
San Joaquin County Department of Public Works
Solid Waste Division
1810 E. Hazelton Avenue
Stockton, CA 95201

Re: Comments on the Tentative Waste Discharge Requirements for the Foothill Sanitary Landfill, San Joaquin County, California

Dear Mr. Bahadori:

This letter provides comments to the tentative Waste Discharge Requirements (WDRs) prepared by the Central Valley Regional Water Quality Control Board (RWQCB) for the Foothill Sanitary Landfill (FSL).

Background

FSL currently operates under WDR Order R5-2003-0020 that were issued in January 2003. The site consists of two Class III municipal solid waste (MSW) management units; unlined landfill 1 (LF-1) and lined landfill 2 (LF-2). LF-2 is a lateral expansion of LF-1. LF-2 is compliant with all existing State (California Code of Regulations [CCR] Title 27) and Federal (Code of Federal Regulations [CFR] Subtitle D) MSW design requirements. FSL has been operated as one landfill with several discrete units under the 2003 WDR. This new WDR subjectively separates the single landfill into two landfills.

Comments to Tentative WDRs

The following comments are based on my review of the tentative WDRs:

Comment 1

WDR Finding 20 on page 6, states that LF-1 must be closed with a containment system that is feasible to construct.

LF-1 is already partially closed, with a final evapotranspirative (ET) cover on the top deck and intermediate cover on side slopes, and is no longer accepting waste. The southern side slope adjacent to LF-2 has a barrier membrane installed per CAO R5-2004-0706. The CAO is still in effect and requires a barrier to be installed on all side slopes before waste can be placed over inactive LF-1. Furthermore, the County is not planning any more overlaps on LF-1 for

approximately another 30 to 50 years (2045-2065 per 2010 JTD Conceptual Fill Plan). The placement of final cover over LF-1 at this point serves no environmental purpose, and imposes a significant financial burden on the County. The cost of full closure of LF-1 will be in excess of Three Million Dollars (\$3 Million). This closure cost is obtained by prorating the 2010 JTD closure costs and escalating to 2015 dollars (Cost estimate available upon request). Thus, the County requests that closure of LF-1 be removed from this WDR or delayed until 2045, to be consistent with regulatory compliance and the state of engineering practice at that future time.

Comment 2

WDR Finding 53 on page 14, states that a separate Water Quality Protection Standards (WQPS) report be prepared for each unit. Because LF-2 is an inseparable lateral expansion of LF-1, two separate WQPS reports provide no engineering or scientific purpose. Both reports would be essentially identical.

Therefore, it is requested that the requirement to prepare separate WQPS reports for each landfill unit be removed

Comment 3

WDR Finding 62 on page 17, states that landfill gas (LFG) condensate from LF-1 cannot be discharged to LF-2. However, a review of the referenced regulatory criteria for condensate handling appears to indicate that the LF-1 condensate can be discharge to LF-2. LFG is extracted from LF-1as part of corrective action measure to mitigate a release from that unit. The LFG cools as it is extracted from the landfill and forms a liquid referred to as condensate, which is handled as leachate.

Finding 62 references CCR Section 20340(g), which states:

(g) Leachate Handling — Except as otherwise provided under SWRCB Resolution No. 93-62 (for MSW landfills subject to 40 CFR 258.28), collected leachate shall be returned to the Unit(s) from which it came or discharged in another manner approved by the RWQCB. Collected leachate can be discharged to a different Unit only if:

- (1) the receiving Unit has an LCRS, contains wastes which are similar in classification and characteristics to those in the Unit(s) from which leachate was extracted, and has at least the same classification (under Article 3 of this subchapter) as the Unit(s) from which leachate was extracted;
- (2) the discharge to a different Unit is approved by the RWQCB;
- (3) the discharge of leachate to a different Unit shall not exceed the moisture holding capacity of the receiving unit, and shall comply with section 20200(d).

A review of SWRCB Resolution No, 93-62 indicates that it does not prohibit the discharge of leachate or condensate to a different MSW unit from which it came from. Federal regulation 40 CFR 258.28 also does not prohibit the discharge of leachate or condensate to a lateral expansion of an MSW landfill. 40 CFR 258.28, similar to CCR 20340(g) allows the discharge of leachate and condensate to a lateral expansion if that unit has a composite liner and a leachate collection system.

Federal Subtitle D design regulations give additional guidance for the discharge of leachate into a MSW unit. The leachate collection system should be designed to maintain less than a 30-centimeters (cm) depth of leachate over the liner.

Based on the above State and Federal regulations for MSW landfills, it appears that the RWQCB can allow condensate from LF-1 to be discharged into LF-2. The County can comply with the referenced regulatory criteria for allowing LF-1 condensate to be discharged into LF-2:

- LF-1 contains Class III MSW that is similar to the Class III MSW waste that is currently being placed in LF-2. The waste material that was placed into LF-1 came from the same municipalities that currently provide waste material to LF-2.
- The discharge of condensate from LF-1 into LF-2 will not exceed the moisture holding capacity of the waste in LF-2. The extraction of LFG from both LF-1 and LF-2 commenced in 2006. Since 2006, the LFG from both units have been conveyed in a single pipeline to either a flare or an engine for destruction. The condensate from both units is removed prior to destruction, and is handled as a single source for input into LF-2. At no time during the operation of this single condensate source to LF-2 has there be any evidence that the moisture holding capacity of the waste in LF-2 has been exceeded.
- The discharge of condensate from LF-1 to LF-2 will not cause leachate to rise above 30-cm in the leachate collection system of LF-2. Since 2006, when the discharge of combined condensate into LF-2 commenced, all leachate monitoring records from LF-2 have shown that leachate has not risen above 30-cm.

Other criteria that the RWQCB can use to justify to continued discharge of condensate from LF-1 to LF-2 are as follows:

- The effective operation of the corrective action measure at LF-1, which consists of extraction and destruction of LFG, relies on the efficient handling of condensate.
- The destruction of LFG from LF-1 will continue to be most effective mechanism for the prevention of volatile organic compounds (VOCs) migration into the groundwater at the site.
- The current condensate handling procedure that has been implemented at FSL is state of the practice in which liquids are handled as a single source, even if the LFG is extracted from lined or unlined units from the same MSW landfill.

- If condensate from LF-1 is not allowed to be discharged into LF-2, it will have to be discharged to an off-site disposal site.
- Since both Federal and State MSW regulations allow for the discharge of condensate to a lateral expansion unit, the requirement to remove condensate from a landfill that has a unit with a compliant liner and leachate collection system could be consider onerous.

In addition, it is not possible to separate the condensate from LF-1 gas from the condensate of LF-2 gas. Landfill gas condensate is produced whenever landfill gas cools as it travels through piping. In the system installed at the Foothill Landfill in the Site Improvement Project of 2006, and as approved by Regional Water Quality Control staff, wells from both LF-1 and LF2 are connected a common LFG header. Moisture continually condenses from this comingled gas as it travels along the common header to the gas-to-energy plant. As such condensate cannot be exclusively assigned to one unit or the other.

In our professional opinion, return of condensate generated from LF-1 gas to LF-2 is within applicable regulations and does not pose a threat to groundwater quality. Furthermore, it is not possible to separate the condensate of one LF from the other. Consequently, it is requested that condensate from LF-1 be continued to be allowed to be discharged into LF-2 in a manner that has occurred since 2006.

Therefore, it is requested that condensate from LF-1 be continued to be allowed to be discharged into LF-2 in a manner that has occurred since 2006.

Comment 4

Monitoring and Reporting Program (MRP) Section 5 (Solid Waste Monitoring), Table A.5 (Solid Waste Monitoring Schedule) contains the requirement to measure the elevation range of discharges on a quarterly basis.

The County currently conducts an aerial topographic survey of the landfill on an annual basis that it uses to determine the remaining landfill capacity. The County has been conducting these surveys for several years and has found that more frequent surveys (i. e., quarterly) would be unproductive. The County currently maintains a monthly record of waste disposed of at the landfill and uses those records between the annual topographic surveys to gage the loss of landfill capacity throughout the year. The additional requirement to bring in a survey crew to measure the elevation change at the tipping area on a quarterly basis does not yield useful information, will be out-of-date within weeks of the survey, and is a financial burden on the County.

The County's waste tonnage disposal records can be used to report the remaining landfill capacity.

Therefore, it is requested that the requirement to conduct a quarterly elevation survey shown in Table A.5 be replaced with the following:

- Annual elevation survey of the landfill surface
- Calculation of refuse to soil density semiannually
- Calculation of the weight of the refuse placed semiannually
- Calculation of the remaining capacity of the landfill semiannually

Comment 5

MRP Section 7 (Additional Corrective Action Monitoring – Landfill Gas), Table A.A.7 (LFG Monitoring Schedule) contains the requirement to monitor for VOCs at each LFG extraction well on a semiannual basis. To determine the other reporting requirement of Table A.A.7 (i. e., total and cumulative VOCs removed) it is not necessary to individually collect a VOC gas sample from each extraction well. The concentration of VOCs in the gas collected from the landfill, and cumulative amounts of VOCs removed can be obtained from collecting a combined LFG sample from the header from LF-1, as already required. The requirement to sample each well on a semiannual basis adds an additional expense with no appreciable result.

Additionally, MRP Section 7 requires monitoring for carbon monoxide and hydrogen sulfide from individual wells. It is not clear how this data is relevant to groundwater protection.

Therefore, it is requested that the requirement to monitor for VOCs, carbon monoxide, and hydrogen sulfide at each extraction well be removed from Table A.A.7.

Please call if you have any questions.

Sincerely,
CB&I Environmental and Infrastructure, Inc

