California Regional Water Quality Control Board

Central Valley Region

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DRAFT CLEANUP AND ABATEMENT ORDER, YOLO COUNTY CENTRAL LANDFILL, YOLO COUNTY

Enclosed for your review is a draft Cleanup and Abatement Order (C&A) for the Yolo County Central Landfill. The draft C&A requires the implementation of short-term and long-term measures for the control and disposal of leachate. The C&A also requires regular monitoring for dioxins and furans in the leachate, and a source-identification study. In addition, the C&A requires an investigation as to the source of the methyl tert-butyl ether (MTBE) detected in the groundwater.

Please submit any comments you may have about this draft C&A by **4 June 1999**. We anticipate that the Executive Officer will sign the Order shortly thereafter.

If you have any questions, please contact me at (916) 255-3135, or John Moody at (916) 255-3136.

WENDY WYELS, Chief
Waste Discharge to Land Unit
Lower Sacramento River Watershed

Enclosure

cc: Ms. Frances McChesney, Office of the Chief Counsel, SWRCB, Sacramento
Ms. Elizabeth Haven, Division of Clean Water Programs, SWRCB, Sacramento
Mr. Tim Crist, California Integrated Waste Management Board, Sacramento
Mr. Jeff Pinnow, Yolo County Department of Environmental Health, Woodland

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

CLEANUP AND ABATEMENT ORDER NO. 99-719

FOR
YOLO COUNTY PLANNING
AND PUBLIC WORKS DEPARTMENT
YOLO COUNTY CENTRAL LANDFILL
YOLO COUNTY

This Order is issued to Yolo County Planning and Public Works Department (hereafter known as Discharger) based on provisions of California Water Code Section 13304 which authorizes the Regional Water Quality Control Board, Central Valley Region (hereafter Board) to issue a Cleanup and Abatement Order.

The Board finds, with respect to the Discharger's acts, or failure to act, the following:

1. The Yolo County Central Landfill is a 725 acre municipal solid waste landfill located near the intersection of Roads 28H and 104, approximately four miles northeast of Davis in Sections 29 and 30, T9N, R3E, MDB&M. The assessor's parcel numbers are APNs-042-004-001, 042-004-002, and 042-014-006.

2. The landfill accepts inert and nonhazardous wastes, as classified under Chapter 15, Division 23, of the California Code of Regulations (CCR) (now Title 27, CCR). Waste Discharge Requirements Order No. 96-223 prescribe requirements for the discharge.

3. The facility includes six Class III landfills, designated as Waste Management Units (WMUs) 1 through 6. WMU 6 is currently used for active landfill operations, while the other landfills are inactive pending closure. The facility also includes two Class II surface impoundments, WMUs F and G, and a "wet cell" demonstration project for leachate recirculation. WMU G is used for storing landfill leachate and has a capacity of about 1.5 million gallons. WMU F has a degraded liner and is out of service.

4. WMUs 1 through 4 are unlined landfills constructed on compacted subgrade sloped for perimeter drainage of leachate. WMU 5 is constructed with a two-foot compacted clay liner and a dendritic leachate collection and recovery system (LCRS). WMU 6 is constructed with a Subtitle D composite liner, including two feet of compacted clay ($k \leq 1 \times 10^{-7}$ cm/sec), overlain by 60-mil flexible membrane liner (FML) and a dendritic LCRS.

5. Leachate from WMUs 1 through 5 drains to Pump Station L1 while leachate from WMU 6 drains to Pump Station L2. Gas collected from the landfill is used in an onsite power plant.

6. The groundwater table beneath the site is naturally high and is additionally elevated from irrigation of adjacent farmland. The water table ranges seasonally between four and 15 feet below ground surface (bgs) with a natural gradient to the southwest. In addition, a capillary rise up to three feet has been measured. A deeper aquifer underlies the shallow and begins about 80 feet bgs.

7. To maintain the minimum required separation between groundwater and the landfill units, a slurry wall was installed in 1988 at an upgradient location near WMU 5. In addition, the extraction wells along the northern boundary are used for both groundwater extraction and de-watering purposes. A capillary break was also installed in module 6C of WMU 6 as an engineered alternative design.

8. The groundwater beneath the site has been impacted by volatile organic compounds (VOCs) from landfill leachate. The Discharger has implemented groundwater extraction to pump and treat the VOCs. Since initiation of pump and treat, the concentration of total VOCs has declined and the plume appears to be contained onsite. The highest levels of VOCs currently detected include benzene up to 1 ppb, 1,1-dichloroethane up to 3 ppb, cis-1,2-dichloroethene up to 26 ppb, tetrachloroethene up to 5 ppb, trichloroethene up to 4 ppb, vinyl chloride up to 4 ppb, and methyl-t-butyl ether (MTBE) up to 23 ppb. The source of the VOCs appears to be the unlined landfill units and WMU 5 while the source of the benzene and MTBE may be an onsite fueling station. The extracted groundwater is treated using an air stripper tower and discharged to an adjacent agricultural drain under an NPDES permit.

9. The landfill produces about 10 million gallons of leachate per year, which in the past was disposed of at the City of Davis Wastewater Treatment Plant (WWTP) adjacent to the landfill. In May 1998, testing required by the City revealed the presence of low levels of dioxins and furans corresponding to a 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) equivalent concentration up to 3.1 picograms per liter. The City subsequently notified the Discharger that it would no longer accept the leachate without pre-treatment to remove the dioxins.

10. A 28 August 1998 letter from the County requested Board staff approval for the use of leachate for dust control to help alleviate liquid levels in WMU G. Board staff approved of the request, but was neither aware nor informed at the time that the leachate contained dioxins. Approximately 1.8 million gallons of landfill leachate was applied in the landfill cover areas during the remainder of the 1998 dry season.

11. On 22 January 1999, Board staff issued a Notice of Violation (NOV) for a freeboard violation in WMU G. The NOV requested the Discharger to submit a status report as to measures taken to avert a spill, an analysis of the leachate, a list of tasks, and a schedule for implementing alternative leachate disposal and/or treatment options. The NOV also stated that staff would need to re-evaluate approval of the use of leachate for dust control and would consider the information submitted by the Discharger in the evaluation.

12. In a 25 January 1999 response to the 22 January 1999 NOV, the Discharger stated that the leachate pump stations had been turned off to prevent overtopping of WMU G, and that pumping from the landfill would resume "when it is operationally feasible". The response stated that the Discharger was evaluating leachate management options, including the feasibility of filtering the leachate as a pre-treatment measure to remove the dioxins. The response also stated that the Discharger evaluated the feasibility of trucking the leachate to an offsite disposal facility, and had begun negotiations for an emergency disposal option with the McKittrick Waste Treatment Site in

southern California. The $3,000,000 cost estimate for this option for one season was, however, stated to be prohibitive.

14. Board staff issued a 17 February 1999 follow-up NOV to the Discharger for the following WDR violations:

    * ongoing failure to pump leachate from the landfill,
    * causing a discharge or threatened discharge to groundwater, and a resulting
    * failure to maintain adequate separation between wastes and groundwater.

15. The NOV requested that the Discharger prepare an engineering evaluation as to the impact of shutting off the pumps, including calculations as to the amount of leachate in the landfill, the impact of hydraulic head on the liners, the amount of leachate that may have escaped containment, and any potential ground water impact.

16. In response to the NOV, the Discharger submitted a 16 March 1999 evaluation which acknowledged a build-up of hydraulic head on the liners and a subsequent discharge to the groundwater; however, the Discharger concluded that the groundwater extraction system captures the area beneath all the WMUs, except WMU 1. The theoretical flow rate of leachate into groundwater at WMU 1 was estimated to be about 39 gallons per day. The report also noted that the groundwater monitoring data does not indicate any change in VOC concentrations that could be associated with leachate buildup in the landfill.

17. Recent hot weather has increased the evaporation rate of the leachate stored in the leachate surface impoundment (WMU G). On 26 May 1999, the Discharger turned on Leachate Pump Station L2, while on 1 June, Leachate Pump Station L1 was turned on. However, the Discharger anticipates turning off the pumps shortly, when the leachate surface impoundment again reaches capacity.

18. To provide sufficient storage capacity to contain leachate generated during the wet season, the Discharger is proposing to construct additional surface impoundments, including one to replace WMU F (see Attachment I). The impoundments will be constructed in accordance with the requirements of Title 27 for a Class II surface impoundment (as described in WDRs No. 96-223), and will cover an area of about 10 acres. Their estimated storage capacity will be up to 25 million gallons and they will include aeration facilities to enhance evaporation of the leachate over the dry season. The Discharger submitted the design report for the construction of these ponds on 3 June 1999. This Order includes a schedule for construction of these ponds.

19. As a result of the activities described in this Order, the Board finds that the Discharger has caused or permitted waste to be discharged or deposited where it has discharged to waters of the state and has created, and continues to threaten to create, a condition of pollution or nuisance.

20. The Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Fourth Edition)* (Basin Plan) establishes beneficial uses of the waters of the state and water

quality objectives to protect those uses. The beneficial uses of the deep groundwater beneath the site are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply. However, as noted in the WDRs, the beneficial uses of the shallow groundwater do not include agricultural due to the presence of naturally high levels of boron.

22. Section 13304(a) of the California Water Code provides that: "Any person who has discharged or discharges waste into waters of this state in violation of any waste discharge requirements or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the Regional Board clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including but not limited to, overseeing cleanup and abatement efforts. Upon failure of any person to comply with the cleanup or abatement order, the Attorney General, at the request of the board, shall petition the superior court for that county for the issuance of an injunction requiring the person to comply with the order. In any such suit, the court shall have jurisdiction to grant a prohibitory or mandatory injunction, either preliminary or permanent, as the facts may warrant."

23. Section 13267(b) of the California Water Code states: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste outside of its region that could affect the quality of waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports."

24. The issuance of this Order is an enforcement action taken by a regulatory agency and is exempt from the provisions of the California Environmental Quality Act, pursuant to Section 15321(a)(2), Title 14, California Code of Regulations. In addition, Yolo County has prepared a Negative Declaration for the construction of the ponds. It is anticipated that the County Board of Supervisors will approve the Negative Declaration at their 22 June 1999 meeting.

25. Any person affected by this action of the Board may petition the State Water Resources Control Board (State Board) to review the action in accordance with Title 23 California Code of Regulations sections 2050- 2068. The petition must be received by the State Board within 30 days of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request. In addition to filing a petition with the State Board, any person affected adversely by this Order may request the Regional Board to reconsider this Order. Such request should be made within 30 days of the dates of this Order. Note that even if reconsideration by the Regional Board is sought, filing a petition with the State Board within the statutory time period is necessary to preserve the petitioner's legal rights.

IT IS HEREBY ORDERED that, pursuant to Sections 13304, 13260, and 13267 of the California Water Code, the Yolo County Planning and Public Works Department shall cleanup and abate,

forthwith, all leachate generated by Yolo County Central Landfill, and shall determine the source and magnitude of the MTBE contamination in the groundwater. "Forthwith" means as soon as is reasonably possible. Compliance with this requirement shall include, but not be limited to, the measures below:

I. Short Term Measures – Removal of Leachate From the 1999-98 Wet Season

1. By **11 June 1999,** submit a report containing the Discharger's final decision on how to dispose of the leachate collected in WMU G and in the landfill LCRS.

2. Upon approval of the disposal method by staff, and no later than **10 July 1999**, resume pumping and treatment of the leachate from the landfill. The leachate pumps shall not be turned off again after this date.

3. Beginning **1 July 1999**, submit monthly status reports as to the amount of leachate removed from the landfill and the method of treatment/disposal.

II. Long Term Measures – Pond Construction

1. By **30 June 1999**, submit a copy of the adopted Negative Declaration.

2. Upon approval of the design documents by staff, but no later than **9 August 1999**, begin construction of the new surface impoundments. Note however, that construction of the ponds may not begin until the Negative Declaration has been adopted.

3. Beginning **1 September 1999**, submit monthly progress reports on construction of the impoundments.

4. By **1 November 1999**, place surface impoundments in operation.

5. By **1 February 2000**, the Discharger shall submit a Joint Technical Document covering the construction of the leachate ponds.

Dioxins and Furans

1. The leachate from Pump Stations L1 and L2 shall each be sampled for dioxins and furans quarterly (i.e. twice) during the wet season and semi-annually (i.e. once) during the dry season. The results shall be included in the quarterly monitoring reports.

2. By **1 September 1999**, the Discharger shall submit a workplan to identify the source of the dioxins and furans in the leachate.

3. Within **90 days** of staff approval of the workplan, submit a report of results. Depending on

the investigation results, the report shall include recommendations for additional investigations, source control, and/or remediation.

IV. Petroleum Investigation

1. By **1 September 1999**, the Discharger shall submit a workplan to identify the magnitude and source of the MTBE and benzene found in the groundwater. The leachate shall also be sampled for MTBE. The workplan shall conform with the requirements of the State Board's *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304* and with the Water Quality Control Plan.

2. Within **90 days** of staff approval of the workplan, submit a report of results. Depending on the investigation results, the report shall include recommendations for additional investigations, source control, and/or remediation.

In addition to the above, the Discharger shall comply with all applicable provisions of Title 27 of the California Code of Regulations that are not specifically referred to in this Order. As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all reports shall be prepared by, or under the supervision of, a registered professional engineer or geologist and signed by the registered professional.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement or may issue a complaint for administrative civil liability.

This Order is effective upon the date of signature.

GARY M. CARLTON, Executive Officer

7 June 1999
(Date)