VISALIA LANDFILL MASTER DEVELOPMENT PLAN
DRAFT ENVIRONMENTAL IMPACT REPORT

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PROJECT DESCRIPTION

This Draft Environmental Impact Report (DEIR) (project EIR) addresses the expansion of the existing Visalia Landfill. The expansion includes the development and operation of a new Class III (municipal solid waste, no hazardous waste) waste management unit (WMU), public diversion/drop-off area, and a new entrance complex. Based upon the amount of waste currently disposed of, the project could extend the life of the facility by approximately 22 to 78 years. The project would be constructed to meet California Code of Regulations Title 27 landfill design requirements and would increase the permitted average daily tonnage from 570 tons per day (tpd) to 1,200 tpd. The maximum daily tonnage would be 2,000 tons per day.

The facility is located in Tulare County approximately six miles northwest of Visalia at the intersection of Road 80 and Avenue 328. Although the existing WMU was developed in accordance with regulatory requirements at the time of its construction, changes in design requirements now require Class III landfills/WMUs to have liners and leachate/gas collection systems. The existing WMU does not meet contemporary design requirements and is anticipated to close as soon as practicable following certification of the new WMU.

The County of Tulare operates the facility under a Conditional Use Permit (Manufacturing-Two Use Permit No. 50) issued by the County in 1952. The Visalia Landfill received a Solid Waste Facilities Permit (54-AA-009) to operate from the California Waste Management Board on August 14, 1979 and continues to operate under this permit.

The new WMU includes a Title 27 CCR design. The following environmental monitoring systems would be installed consistent with regulatory requirements (in ascending order):

- A vadose monitoring system would be installed beneath the base liner in accordance with the waste discharge requirements issued for the new WMU.
- Reinforced geosynthetic clay liner (GCL) would be placed directly on prepared subgrade.
- Double-sided textured 60-mil high-density polyethylene (HDPE) geomembrane liner would be placed over the GCL and welded together to form a continuous sheet.
- Leachate Collection and Removal System (LCRS), which consists of a geocomposite drainage layer that blankets the entire lined area, a 6-inch pipe that is placed on the center of each waste management cell, a lined leachate sump, and pipes/pumps to remove leachate from sumps.
- Two feet of operations soil would be placed over the LCRS and lined areas.

OVERVIEW OF MITIGATION MEASURES AND IMPACTS

Sections 3 and 4 of the DEIR present the potentially significant adverse effects associated with the expansion of the Visalia Landfill. Mitigation measures have been identified to reduce many of the significant impacts to a level of insignificance. In addition, the project includes project design features that address regulatory requirements and reduce impacts, thereby not requiring additional mitigation measures. However, even after mitigation, two environmental issue areas (air quality emissions and

visual resources) have unavoidable significant environmental effects. Table ES-1 provides a summary of the impacts and mitigation measures identified for this project.

ALTERNATIVES TO THE PROJECT

Six different alternatives were considered in the preliminary evaluation of alternatives to the project. Three of these alternatives were carried forward for further analysis in the DEIR. These alternatives are briefly described below:

1. **No Project Alternative**. The No Project Alternative would not affect the current design or operation of the permitted Visalia Landfill.

2. **Reduced Project Alternative**. This alternative evaluates the impacts associated with a landfill expansion that would have a lower maximum height and a lower daily tonnage than the project.

3. **Off-site Alternative**. This alternative considers the use of the Woodville Landfill for the waste that currently goes to the Visalia Landfill.

The evaluation of alternatives identified the Reduced Project Alternative as the environmentally superior alternative since it had the potential to reduce air quality and visual impacts associated with the project. This alternative, however, would not meet the long-term disposal capacity needs of the county.

AREAS OF CONTROVERSY

The facility is located in a primarily agricultural area with no sensitive receptors near the landfill. Thus, the primary concerns have been raised by regulatory agencies. These concerns have centered on the groundwater contamination associated with the use of the existing unlined WMU and the closure of the existing WMU. Currently, groundwater contamination is under investigation through separate regulatory reviews and oversight. Similarly, closure activities associated with the existing WMU would require a separate environmental analysis and permit process. These issues are mentioned in this document as they are related to the present proposal to expand the facility.

RESOLUTION OF ISSUES

The EIR includes a Mitigation and Monitoring Plan to address the effective implementation of the mitigation measures. This plan includes a process for conflict resolution. The plan generally provides for informal consideration of a conflict by the County Resource Management Agency or facility operator, consultation with the Local Enforcement Agency (LEA), and then, if necessary, a formal action by the LEA.

Table ES-1 Summary of Impacts and Mitigation for the Visalia Landfill Expansion

Impact	Class	Mitigation Measure(s)	Level of Significance After Mitigation
Aesthetics			
View from Road 80 would be impacted during operation of the landfill.	I	A-1: Mitigation measures can reduce, but not eliminate, this significant impact. Revegetation of WMU perimeter slopes should begin as soon as feasible and not wait until final closure of the landfill.	Significant and unavoidable
View from Avenue 328	III	No mitigation measures needed.	Insignificant
Air Quality			
Landfill Gas Emissions: Generation of landfill gas emissions would increase with the new WMU.	III	Project design includes a gas collection and control system. No mitigation measures are necessary.	Insignificant
Off-Site Emissions: Off site emissions of VOCs and NOx exceed SJVUAPCD thresholds and PM_{10} would increase over existing conditions.	I	No effective mitigation measures are available to reduce this impact.	Significant and unavoidable
On-Site Emissions: Increased fugitive dust and equipment/ vehicle exhaust that exceed current conditions.	I	AQ-1: Limit traffic speeds on unpaved roads to 15 mph.	Significant and unavoidable
		AQ-2: Install erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.	
		AQ-3: Suspend excavation and grading activity when sustained winds exceed 20 mph.	
		AQ-4: Limit area subject to excavation, grading, and other construction activity at any one time.	
		AQ-5: Minimize idling time.	
		AQ-6: Limit the hours of operation of heavy equipment and/or the amount of equipment in use.	
		AQ-7: Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.	
Odor Emissions: Increased odor emissions over current conditions.	II	AQ-8: The landfill operator shall bury excessively odorous wastes immediately with other landfill wastes.	Less than significant
		AQ-9: The landfill operator shall ensure that loading, unloading, and material handling activities are carried out efficiently and without delays to avoid excessive odors.	
Biological Resources			
Temporary loss of wildlife habitat, and displacement and/or potential elimination of resident wildlife species.	II	B-1: Two months prior to construction of the proposed landfill, a biologist with experience in burrowing owl surveys, shall conduct burrowing owl surveys per the California Burrowing Owl Consortium (1999) survey guidelines.	Less than significant
		B-2: If the results of the protocol surveys in Mitigation Measure B-1 indicate burrowing owls are present in areas that are planned for construction, a biologist shall implement a passive relocation program with experience in relocations. The passive relocation program shall include methods to create artificial burrows on site and measures to ensure the complete vacancy of occupied burrows. A CDFG representative shall approve the program.	

Impact	Class	Mitigation Measure(s)	Level of Significance After Mitigation
Loss of suitable habitat for San Joaquin kit fox.	II	B-3: To determine the likelihood of occupation, a qualified biologist shall survey the San Joaquin kit fox dens identified during the reconnaissance phase, as well as other areas that seem likely to have dens. B-4: If the results of the protocol survey specified by Mitigation Measure B-3 indicate San Joaquin kit fox are present in areas that are planned for construction, a mitigation program, approved by CDFG and USFWS shall be established. The plan should conform to the Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS, 1998).	Less than significant
Disturbance or loss of sensitive species or their habitat as a result of actions by landfill employees or their contractors.	II	B-5: Employee education (e.g., via handouts and a 30-minute program) for sensitive wildlife should be part of the orientation of every employee or contractors that will be on site for more than one month. This education should be documented by the retention of a signature sheet in the Operation Building.	Less than significant
Cultural Resources			
Potential disturbances to buried pre-historic, historic, and paleontological resources due to construction and closure-related grading and excavation.	II	C-1: Ensure cultural and paleontological monitoring during initial construction and closure activities. Continue monitoring as necessary if monitoring results in the identification of sensitive resources.	Less than significant
Geology and Soils			
Artificial slopes could be subject to slope failure, which could jeopardize slope stability and compromise the liner, cover, leachate collection or drainage system.	II	Project design addresses state and federal regulations regarding slope stability. No mitigation measures are necessary.	Less than significant
Seismic ground shaking could cause permanent horizontal displacement of the refuse, slope failure damage the liner or leachate system.	II	Project design addresses state and federal regulations regarding slope stability. No mitigation measures are necessary.	Less than significant
Long-term settlement of the landfill surface could adversely affect drainage, liner, or cover.	II	Project design meets Title 27 requirements. No mitigation measures are necessary.	Less than significant
Hazards			
Hazardous wastes could be hauled to the landfill for disposal or included in household refuse.	II	Project design includes control measures (i.e., periodic load checks) for limiting or eliminating the amount of hazardous materials that get into the waste stream. No mitigation measures are necessary.	Less than significant
Landfill expansion would generate landfill gas that could pose an explosion.	II	Project design includes a gas collection and control system. No mitigation measures are necessary.	Less than significant
Landfill expansion would be subject to fires.	II	Project design includes control measures to reduce the potential fires. No mitigation measures are necessary.	Less than significant
Landfill expansion would provide for vectors.	II	Project design includes control measures to reduce landfill vectors. No mitigation measures are necessary.	Less than significant
Hydrology and Water Quality			
Potential for groundwater contamination from leachate.	II	Project design includes a liner and leachate control and recovery system consistent with regulatory requirements. No mitigation measures are needed.	Less than significant
Storm water runoff if not properly controlled could degrade surface water.	II	Project design includes landfill drainage system consistent with regulatory requirements. No mitigation measures are needed.	Less than significant

Impact	Class	Mitigation Measure(s)	Level of Significance After Mitigation
Uncontrolled erosion or inadvertent refuse spill could contaminate surface water.	II	Project design includes measures to prevent soil erosion and reduce refuse spills. No mitigation measures are needed.	Less than significant
Land Use			
Consistency with land use plans and ordinances.	III	No mitigation measures required.	Insignificant
Noise			
Increased noise with the landfill expansion.	III	No mitigation measures required.	Insignificant
Transportation			
Project would increase daily and peak hour traffic on local and regional roadways.	III	No mitigation measures required.	Insignificant
Increased traffic into the new landfill facility entrance on Avenue 328 could increase the potential for traffic accidents (particularly truck traffic waiting to turn left into the new entrance) and increase delays to through traffic on Avenue 328.	II	T-1: Widen Avenue 328 at the new entrance to include an exclusive eastbound left turn lane and a westbound right turn deceleration lane in accordance with County design standards.	Less than significant

1. INTRODUCTION

1.1 OVERVIEW OF THE PROJECT

This Draft Environmental Impact Report (EIR) addresses the expansion of the Visalia Landfill. It is a project EIR that specifically addresses the development and operation of a new Class III (municipal solid waste, no hazardous waste) waste management unit (WMU), waste diversion/drop-off area, and a new entrance complex. The closure of the existing WMU will be addressed through a separate environmental review process.

The facility is located in Tulare County approximately six miles northwest of Visalia at the intersection of Road 80 and Avenue 328 (Figure 1.1-1). The County of Tulare has operated the facility since 1952 and includes an active WMU, demolition/recycling diversion area, a landfill gas generation plant, and entrance facilities at Road 80. Although the landfill was developed in accordance with regulatory requirements at the time of its construction, changes in landfill design requirements now generally require Class III landfills/WMUs to have liners, leachate collection and removal systems, and gas collection systems. The existing WMU does not meet contemporary design requirements and will be closed when the new WMU is operational.

The facility expansion would include: (1) the development and operation of a new Class III (municipal solid waste, no hazardous waste) WMU adjacent to the existing WMU, (2) demolition/recycling diversion area that would be located in the new entrance complex, and (3) a new entrance complex constructed at Avenue 328 (Figure 1.1-2). Based upon the amount of waste currently disposed of, the project could extend the life of the facility by approximately 22 to 78 years. The project would be constructed to meet California Code of Regulations Title 27 landfill design requirements and would increase the permitted average daily tonnage from 570 tons per day (tpd) to 1,200 tpd. Ownership and operation of the new facilities would continue to be provided by the Solid Waste Division of the Tulare County Resource Management Agency (County). The key features of the new facilities are noted in Table 1.1-1.

Table 1.1-1 Key Project Features

Project Features	Existing WMU	New WMU Adds:
WMU	132 acres	115 acres
Borrow areas	28 acres	175 acres
Maximum Height of New WMU	Approximately 80 to 85 feet	210 feet above existing grade (at closure)
Site Life (with new facilities)	2 or more years	22 to 78 years
Average Daily Throughput	570 tons per day	1,200 tons per day
Maximum Daily Throughput	1,300 tons per day	2,000 tons per day

Source: EBA, 2000(a) and (b)

The new WMU, demolition/recycling diversion area, and entrance complex are herein referenced as the "project" and "proposed project."

1.2 PURPOSE OF THE EIR

Pursuant to Section 15063(a) of the Guidelines for Implementation of the California Environmental Quality Act (CEQA), an Initial Study for the project was released in May 2000 (Appendix A). The Initial Study indicates that the project may result in potentially significant environmental effects. As stipulated by CEQA Guidelines, an EIR must be prepared when potentially significant effects are identified in an Initial Study. Acting as the Lead Agency under CEQA, the Tulare County Resource Management Agency, Solid Waste Division, has directed the preparation of this EIR to address the findings of the above-referenced Initial Study.

The objectives of the CEQA environmental review process are to: (1) disclose to decision makers and the public the significant environmental effects of a project; (2) identify ways to either avoid or minimize environmental impacts; (3) prevent environmental effects by requiring implementation of feasible alternatives or mitigation measures; (4) disclose to the public reasons for agency approval of projects that may create significant environmental effects; (5) foster interagency coordination; and, (6) enhance public participation (Bass et al., 1999).

As stipulated under Sections 15003 and 15121(a) of the CEQA Guidelines, an EIR serves to inform decision makers and the public about a project's significant environmental effects and ways to minimize them; demonstrate to the public that the environment is being protected; and ensure accountability by disclosing the environmental values held by elected and appointed officials (Bass et al., 1999).

This EIR has been prepared to addresses both the site-specific and cumulative environmental effects of the project in accordance with the provisions set forth by the CEQA Guidelines. It presents information concerning the project site's existing ("baseline") environmental setting, identifies potential project-related impacts, and recommends mitigation measures considered appropriate to reduce potentially significant impacts to a level of less than significant. Alternatives to the project are additionally addressed.

One of the primary purposes of an Initial Study is to identify the potential environmental impacts of a project; these impacts are categorized as either significant, potentially significant unless mitigated, less than significant, or no impact. The Initial Study provides an avenue for explaining the reasons why a given conclusion regarding impacts has been reached. Per CEQA Guidelines Section 15063(c), this process allows an EIR to focus only on those issue areas that may be potentially significant. The Initial Study for the project concluded that the project would have no impact on mineral resources, population and housing, public services, or recreation. Consequently, these resource/issue areas are not addressed in this EIR. The reader is directed to the Initial Study (Appendix A) for information regarding this conclusion. The resource-specific concerns examined in this document include: aesthetics; air quality; biological resources; cultural resources; geology and soils; hazards and hazardous materials; hydrology and water quality (including utilities and service systems, as it relates to wastewater); land use (including agriculture); noise; and transportation.

Figure 1.1-1 Site Location (Color, 8 ½ X 11)

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Figure 1.1-2 Site Layout (11 x 17 B/W)

Page 2 placeholder for Figure 1.1-2 (11 x 17)

As previously referenced, the County of Tulare, Resources Management Agency, is acting as the Lead Agency under CEQA for the project. Additional regulatory agencies reviewing this document and approving the proposed project either through review of this EIR, or by issuance of a discretionary or administrative permit are identified in Section 2.10.

1.3 ORGANIZATION OF THE EIR

The information contained in this EIR is presented on a resource-specific basis. The following sections are presented in this report:

Executive Summary. The Executive Summary summarizes the project description, the environmental impacts that would result from project implementation, mitigation measures suggested to reduce or eliminate impacts, and alternatives to the project.

1. **Introduction.** Section 1 provides an introduction and overview of the project and the need for the EIR. It also discusses the intended use of the EIR, summarizes the EIR review and certification process, and sets forth some of the assumptions critical to the environmental analysis.

2. **Project Description**. Section 2 provides key information on the project's location, background and purpose; design and operational features; and required regulatory reviews, permits and approvals.

3. **Environmental Setting, Impacts, and Mitigation Measures.** Section 3 addresses aesthetics (visual resources); air quality; biological resources; cultural resources; geology and soils; hazards and hazardous materials; hydrology and water quality (including utilities and service systems, as it relates to wastewater); land use (including agriculture); noise; and transportation. Each of these sections includes (1) a baseline setting; (2) identification of potential impacts associated with the project; and (3) identification of proposed mitigation to minimize potential impacts.

4. **Impact Overview.** Section 4 presents a discussion of growth inducement, summarizes cumulative impacts identified in Section 3, includes a list of effects found not to be significant, and identifies unavoidable significant environmental effects.

5. **Alternatives to the Project**. Section 5 presents alternatives to the project, provides a discussion of the environmental impacts associated with each alternative, and discusses the relationship of each alternative to the project objectives.

6. **Mitigation Monitoring and Reporting Program.** Section 6 includes the Mitigation Monitoring Program for this project. CEQA additionally requires that a Lead Agency establish a Mitigation Monitoring and Reporting Plan (MMRP) upon project approval. The MMRP ensures implementation of the mitigation measures and conditions of approval for the project to minimize or avoid environmental impacts associated with the proposed project.

7. **Report Preparers; Organizations and Persons Consulted**. Section 7 identifies the persons that prepared the EIR and the organizations and persons contacted.

8. **Glossary and Acronyms.** Section 8 provides the definition of technical terms and acronyms used throughout this EIR.

9. **References**. Section 9 includes the references used to develop the general and technical sections of this report.

Appendices. The appendices include documentation that supports the environmental analyses presented in this EIR.

1.4 EIR APPROACH

The overall approach used to conduct the resource-specific analysis presented in this EIR included the collection and review of existing technical and regulatory review documents associated with the existing landfill and the proposed project site, field reconnaissance and database searches, as appropriate, contact with state, regional, and local agencies, as appropriate, and independent research and analysis. All materials collected and used for preparation of this EIR are listed in the references section (Section 9).

1.5 SITE DESIGN ENGINEER

The County of Tulare has contracted with EBA Engineering to design the new WMU and prepare the project information presented in this report. The design of the new WMU is also detailed in the Joint Technical Document prepared by EBA. The site design engineer is Damon Brown, C.E.G. 1728.

1.6 PUBLIC REVIEW

Written comments may be submitted on the technical adequacy and accuracy of this document during a 45-day public comment period. Following the close of the comment period, responses to comments on the environmental effects of the proposed project will be prepared and published as part of the EIR finalization process. The Final EIR will then be reviewed and certified by the County of Tulare Board of Supervisors if it is determined to be in compliance with CEQA. Following certification of the EIR, the County of Tulare can approve or deny the project. Written comments on this document may be directed to:

Mr. Kevin B. Shannon
County of Tulare
Resource Management Agency
5961 South Mooney Boulevard
Visalia, California 93277-9394
Fax: (559) 730-2653

1.7 DISPOSAL FACILITY OUTLINE REFERENCE TABLE

Table 1.7-1 presents a cross reference of the information contained in this EIR to the California Integrated Waste Management Board's (CIWMB) Disposal Facility Outline. It provides the page number or table/figure that addresses each of the information requirements of the CIWMB.

Table 1.7-1 Disposal Facility Outline EIR Reference

Disposal Facility Outline	Environmental Impact Report (EIR) Reference		
	EIR Section No.	EIR Page No.	Table Appendix Figure
1. General Background Information			
1.1 Project Location	2.1	2-1	Fig 1.1-1
1.2 Owner and operator of the facility	2.3.1	2-4	
1.3 Name and registration number of the site design engineer	1.5	1-8	
1.4 Need for project	2.3.1	2-4	
1.5 Area served by population	2.2.4	2-2	
1.5.1 city	2.2.4	2-2	
1.5.2 county	2.2.4	2-2	
1.5.3 out-of-county	2.2.4	2-2	
1.6 Service projections for the life of the facility taking into account AB 939 waste diversion mandates	2.4.4	2-14	Tb 2.4-3
1.7 Existing facilities	2.2	2-1	
1.8 Regional map / Surrounding area map		1-3	Fig 1.1-1
1.9 Conformance to waste management plan	3.8.1	3-69	
1.10 Designation in general plan	3.8.1	3-69	
1.11 Initial Study and environmental checklist			App A
2. Project Description			
2.1 Site Description	2.2	2-1	
2.1.1 topographical map		3-45	Fig 3.5-1
2.1.2 size of site (acres)	1.1	1-1	Tb 1.1-1
2.1.3 site design, including site/layout map, landfilled footprints, sequence of filling, well locations, and property boundaries	2.4	2-6	
2.1.4 total capacity	2.4.4	2-14	
2.1.5 average maximum quantity of individual waste received daily	2.2.4	2-4	
2.1.6 sources of individual types of waste received daily	2.2.4/6	2-4	
2.1.7 expected facility life span	2.4.4	2-14	Tb 2.4-3
2.1.8 current land use	2.2.1	2-1	
2.1.9 historic land use	2.2.1	2-1	
2.1.10 current zoning	2.2.3	2-2	
2.1.11 detailed environmental setting, including climatological factors, physical setting, ground and surface water, soils, and surrounding land use	3.0	3-1	
2.1.12 classification of disposal site	1.1	1-1	
2.1.13 ultimate land uses (post closure)	2.4.6	2-16	
2.1.14 final height of fill areas	2.4.1	2-6	
2.1.15 type of users of the site (commercial, public, private)	2.2.4/6	2-4	
2.1.16 construction description (e.g. grading plan)	2.4	2-6	

Disposal Facility Outline			Environmental Impact Report (EIR) Reference		
			EIR Section No.	EIR Page No.	Table Appendix Figure
	2.1.17	list of approvals required by federal, state, and local agencies in order to implement project	2.10	2-24	
2.2	Design and Operations		2.4/2.5	2-6 and 2-16	
	2.2.1	Verification of compliance with: ▪ US Environmental Protection Agency ▪ Department of Health Services ▪ Department of Toxic Substances Control ▪ Air Pollution Control District ▪ Regional Water Quality Control Board ▪ Integrated Waste Management Board ▪ State Minimum Standards	* 2.7 2.8 2.9 2.10	2-21 2-23 2-24	
	2.2.2	method of disposal	2.5.2	2-17	
	2.2.3	construction of cells	2.5.4	2-18	
	2.2.4	depth of excavation	2.4.1.1	2-6	Fig 2.4-2
	2.2.5	cover: ▪ frequency of cover ▪ type of cover (use of alternative daily cover) ▪ thickness of cover ▪ total amount of cover material needed for life of site ▪ source and supply of cover ▪ compaction rate	2.5.2	2-17	
	2.2.6	waste characterization	2.2.6	2-4	
	2.2.7	equipment: ▪ number and types ▪ emissions ▪ stand-by availability, number and type	2.5	2-16	
	2.2.8	operating days and hours: ▪ describe the operating cycle of the facility including hours waste is received and covered	2.5.1	2-16	
	2.2.9	traffic number and types of vehicles: ▪ access routes (ingress/egress) ▪ unloading ▪ on-site roads ▪ public and commercial routing ▪ number and types entering and leaving site per day ▪ modifications required during inclement weather ▪ emissions	3-10	3-28 3-80	
	2.2.10	provisions for site security (fencing, gates, security)	2.5.3	2-18	
	2.2.11	fire controls: ▪ nearest fire department ▪ on-site	3.6.1	3-55 3-59	
	2.2.12	vector controls	3.6.2	3-55/3-59	
	2.2.13	litter controls	2.5.5	2-19/3-60	
	2.2.14	odor controls	3.2.3	3-29	
	2.2.15	dust controls	3.2.3	3-28	
	2.2.16	noise and vibration control provisions: ▪ noise levels generated (construction & operation) ▪ vibration levels generated (construction & operation)	3.9	3-74	
	2.2.17	weight scales	2.5.1	2-17	

Disposal Facility Outline	Environmental Impact Report (EIR) Reference		
	EIR Section No.	EIR Page No.	Table Appendix Figure
2.2.18 resource recovery: ▪ types ▪ volume ▪ storage - time - location ▪ handling ▪ market ▪ diversion projections (compliance with AB 939)	2.4.4 2.5.2	2-14 2-17	
2.2.19 water supply: ▪ source, well or municipal, sufficiency	2.4.3	2-14	
2.2.20 leachate controls (landfills and impoundment basins): ▪ liner system type - permeability - compaction of underlying soils ▪ collection system ▪ recirculation	2.7.2	2-21	
2.2.21 leachate monitoring system	2.7.2	2-21	
2.2.22 gas monitoring and control systems	2.7.4	2-22	
2.2.23 erosion controls	2.7.1	2-21	
2.2.24 sedimentation controls, siltation basins and location of controls	2.7.1	2-21	
2.2.25 drainage facilities (run-on and run-off): ▪ drainage plan (can be included with site map)	2.7.1	2-21	
2.2.26 method of handling special waste (liquids, sludge, white goods)	2.5.2	2-17	
2.2.27 method of handling incidental hazardous waste: ▪ exclusion ▪ storage ▪ removal	2.5.2	2-17	
2.2.28 description of contents and location of operating record	2.5.1	2-16	
2.2.29 number of employees and duties	2.5.1	2-16	Tb 2.5-1
2.2.30 site improvements: ▪ drinking water (well, municipal, bottled) ▪ sanitary facilities ▪ communications ▪ electrical provisions ▪ office building	2.2 2.4.3	2-1 2-14	
2.2.31 risk of upset: ▪ contingency plan ▪ public health and safety ▪ employee health and safety	3.6	3-51	
2.2.32 airport safety (compliance with CCR Section 17258.10)	2.5.6	2-20	

Disposal Facility Outline	Environmental Impact Report (EIR) Reference		
	EIR Section No.	EIR Page No.	Table Appendix Figure
2.2.33 closure procedures (design, construction, operation): ▪ anticipated date ▪ gas and leachate monitoring and removal system ▪ final cover - thickness - permeability - grading ▪ revegetation ▪ responsibility for maintenance ▪ responsibility for monitoring post closure land use (compatible open space or other uses)	2.4.5	2-15	
3. Existing Environment			
3.1 Climate	3.7.1	3-62	
3.1.1 average precipitation: ▪ seasonal ▪ annual	3.7.1	3-62	Tb 3.2-1
3.1.2 seasonal temperature range	3.2.1	3-14	Tb 3.2-1
3.1.3 wind conditions (windrose): ▪ direction ▪ velocity	3.2.1.	3-14	Tb 3.2-1
3.1.4 evaporation rate: ▪ seasonal ▪ annual	3.7.1	3-62	
3.2 Air	3.2.1	3-14	
3.2.1 baseline air quality	3.2.1	3-14	Tb 3.2-4
3.2.2 existing emissions: ▪ landfill equipment ▪ hauling vehicles ▪ other emission sources	3.2.1	3-14	Tb 3.2-7
3.2.3 project emissions: ▪ landfill equipment ▪ hauling vehicles ▪ other emission sources ▪ dust including PM-10 data for project construction operations	3.2.3	3-27	Tb 3.2-10 Tb 3.2-11 App. E
3.2.4 landfill gas emissions	3.2.1	3-23/3-27	
3.2.5 leachate evaporation	2.7.2	2-21	
3.2.6 odor	3.2.1	3-19	
3.3 Surface Water	3.7.1	3-62	
3.3.1 existing surface waters (streams, rivers, etc.)	3.7.1	3-62	
3.3.2 drainage courses	3.7.1	3-62	
3.3.3 average seasonal flows	3.7.1	3-62	
3.3.4 greatest anticipated 24 hour or 6 day rainfall amount	3.7.1	3-62	

Disposal Facility Outline		Environmental Impact Report (EIR) Reference		
		EIR Section No.	EIR Page No.	Table Appendix Figure
3.3.5	beneficial uses of waters	3.7.1	3-62	
3.3.6	water quality analyses	3.7.1	3-62	
3.3.7	watershed characteristics	3.7.1	3-62	
3.4 Subsurface Water		3.7.1	3-64	
3.4.1	existing subsurface water (aquifer, aquiclude, etc.)	3.7.1	3-64	
3.4.2	beneficial uses of water	3.7.1	3-64	
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4.4 Geology	4.2	4-5	
4.5 Land	4.2	4-6	
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Disposal Facility Outline	Environmental Impact Report (EIR) Reference		
	EIR Section No.	EIR Page No.	Table Appendix Figure
4.7 Fauna	4.2	4-5	
4.8 Noise	4.2	4-6	
4.9 Social	4.2	4-2	
4.10 Historical / Cultural	4.2	4-5	
4.11 Traffic	4.2	4-6	Fig 3.10-4
4.12 Aesthetics (compatible with specific general plan policies or view shed ordinances)	4.2	4-4	Fig 3.1-5
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Note: * These items can not be fully addressed until the Draft EIR has been released for public review and comments are received on the draft and when the project is further into the permit review process.

2. PROJECT DESCRIPTION

This section presents key information on the County's request to construct a new Class III WMU, waste diversion/drop-off area, and a new entrance complex at its existing Visalia facility.

2.1 PROJECT LOCATION

The proposed project would be located immediately adjacent to the east and south sides of the existing WMU. The facility is located in the County of Tulare, approximately six miles northwest of Visalia at the intersection of Road 80 and Avenue 328 (Figure 1.1-1). The existing site address is 33466 Road 80, Visalia, CA 93291-8856. The legal boundary for the landfill property comprises Assessor's Parcel Numbers 077-020-11, 077-020-12, 077-020-18, 077-020-21, 077-020-24, and 077-020-26 (EBA, 2000a).

The facility includes the eastern ½ of Section 5 and western ½ of Section 4, Township 18 South, Range 24 East. The new WMU would be located on 631 acres owned by the County of Tulare (County), of which 132 acres are currently permitted for disposal of solid waste under an existing solid waste facilities permit (SWFP) (see below, Section 2.3). The new WMU would occupy a 115-acre footprint of the property; borrow areas would occupy an additional 175 acres (Figure 1.1-2) (EBA, 2000a). The County Resource Management Agency would operate the new WMU. All property to be used for this project is owned by the County; portions of the facility property are currently under agricultural lease agreements as noted in Section 2.2. Appendix B provides photographs of the existing landfill and proposed locations of the new WMU and ancillary facilities.

2.2 EXISTING SITE DESCRIPTION

2.2.1 Historic and Current Land Use

The Visalia facility began operation on March 11, 1952, and has been in continuous operation as a waste management facility. The site originally contained 40-acres of a 135-acre property. A burrow pit was also located on this parcel. The County purchased the 135-acre property in 1966 and purchased additional land in 1998, bringing the total facility property to 631 acres.

The Visalia facility has used different site operation methods over the years. These methods include the following:

1952 to 1956	Cut and Cover
1956 to 1971	Burn Dump
1971 to 1980	Cut and Cover
1980 to present	Area Fill

The project as described in this report would extend the life of the waste management facility for another 22 to 78 years depending on the disposal rate. Section 2.4 provides more information on the projected site life of the facility with the addition of the new WMU.

2.2.2 Land Leases

The County has historically entered into agricultural lease agreements on undeveloped portions of landfill facility property (Figure 2.2-1). The Visalia Landfill property currently contains two such leases; a third lease (Agricultural Lease Agreement 19041) recently terminated. Agricultural Lease Agreement 16212 contains 78.12 acres and is located in the northeast portion of the facility property. Agricultural Lease Agreement 19417 contains 140 acres and is located along the eastern perimeter of the facility property. Both of these leases contain provisions for renewal.

At the time of preparation of this Draft EIR, Lease 16212 is not anticipated to be renewed and Lease 19417 is anticipated to be renewed with revised boundaries incorporating Lease 16212. It is unknown if the property contained in Lease 19041 will be incorporated into an agricultural lease.

Landfill Gas Plant Lease Agreement 95-18066 for 0.64 acre was entered into in 1995 with no expiration, and established a site for construction of the landfill gas plant. The plant is located adjacent to the east side of Road 80 and south of the existing WMU. No modifications to the landfill gas facility are proposed as part of this project. The gas collection system was installed in 1996, and the station began flaring gas in 1997. Generation of electricity began in June of 1998, and is distributed through Southern California Edison. Landfill Gas Lease Agreement 95-18067 allows for the collection of landfill gas on the existing WMU and the conveyance of the gas to the landfill gas plant. There is no expiration on the lease agreement.

2.2.3 Zoning Designations

The Tulare County Zoning Ordinance No. 352 designates the landfill property, contiguous parcels, and surrounding area as AE-40, Exclusive Agriculture Zone. The Visalia facility and the proposed new WMU are compatible with surrounding land uses, as Section 16 of the Tulare County Zoning Ordinance allows landfills to be located on parcels that are zoned AE-40.

2.2.4 Service Area Population

The Visalia Landfill service area includes residential and commercial generators. Cities and unincorporated areas of northern Tulare county use the Visalia facility for disposal of municipal, construction, and demolition wastes. In 1997, the County of Tulare Board of Supervisors adopted a

Placeholder for Figure 2.2-1 Lease Agreement Properties

policy that does not allow the Visalia Facility to accept out-of-County wastes. The average maximum quantity of waste received at the Visalia Facility in 1999 was 763 tons.

The facility would provide disposal capacity for portions of northern Tulare County. Refuse entering the facility originates from the following sources:

- Unincorporated Areas of Northern Tulare County
- The City of Visalia, private and municipal refuse haulers
- The City of Dinuba, private and municipal refuse haulers
- The City of Woodlake, private and municipal refuse haulers
- Badger Transfer Station
- Residential Self-haul
- Commercial Self-haul.

2.2.5 Project Acreage

The existing landfill facility includes 631 acres owned by the County of Tulare; 132 acres of this area are permitted for disposal of solid waste under the existing SWFP (54-AA-009). This project would add a new WMU, which would occupy a 115-acre footprint, and borrow areas, which would occupy an additional 175 acres. These additional facilities would be constructed within the 631-acre facility property.

2.2.6 Waste Type and Users

The facility accepts only general type wastes including mixed municipal and construction and demolition from residential and commercial generators. No hazardous wastes, designated wastes, infectious wastes, dead animals, septage, liquid waste, or containers in which pesticides have been stored are accepted for landfill disposal.

2.3 PROJECT OBJECTIVES, BACKGROUND, AND PURPOSE

2.3.1 Background, Purpose, and Need

The existing facility was originally started as a burn dump in 1952 (County, 1996). In 1979, the California Integrated Waste Management Board issued the SWFP (54-AA-009) for operation. The facility is owned by the County of Tulare and operated by the Solid Waste Division of Tulare County Resource Management Agency.

The existing WMU is 132 acres in size. Although it was developed in accordance with regulatory requirements at the time of its construction, changes in landfill design requirements now generally require Class III landfills/WMUs to have liners, leachate collection and removal systems and gas collection systems. The existing WMU does not meet contemporary design requirements. As such, the primary purpose of the proposed project is to meet California Code of Regulations Title 27 landfill design requirements. The maximum daily throughput of the facility would be 2000 tpd. The increased capacity

would extend the life of the existing facility by approximately 22 to 78 years, with an estimated average life span of 62 years (County, 2000a).

In addition to the above, in 1987 it was determined that contaminants from the existing unlined WMU were percolating into the ground and potentially affecting groundwater quality. The County is currently in the process of characterizing the nature and extent of these contaminants. The contaminants include volatile organic compounds (VOCs) and inorganic waste constituents. It is currently estimated that they have migrated approximately 1,500 feet west, 1,200 feet southwest, and approximately 800 feet south of the existing WMU. More information is provided in Section 3 and in Appendix C of this report. Although the percolation and migration of these contaminants are not the subject of this EIR, their existence is, in part, triggering the need for a new, lined WMU. Closure of the existing WMU and replacement with the new WMU are part of the existing facility's Corrective Action Plan for potential impacts to groundwater quality.

2.3.2 Statement of Objectives

Section 15124 (b) of the CEQA Guidelines states that an EIR must contain "A statement of the objectives sought by the proposed project." The section states the purpose of the objectives as follows: "A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary." The same section also requires: "The statement of objectives should include the underlying purpose of the project." The following are the project objectives:

- Expand an existing Class III solid waste landfill on County-owned land that has been active for over a 58 year period,
- Provide efficient solid waste management and disposal capacity to Tulare County by expanding an existing facility to avert an identified short-term and potential long-term solid waste disposal capacity shortfall,
- Provide Tulare County the opportunity for long-term solid waste disposal capacity,
- Recover, recycle, and/or reuse waste materials that would otherwise be disposed of at the County facility by providing public "drop-off" and green waste/wood waste diversion areas for local residents,
- Minimize significant impacts on environmental resources associated with a new WMU site by developing next to the existing WMU, which has the infrastructure in place to readily accommodate future development, and
- Facilitate local and regional efforts directed toward attaining solid waste disposal capacity objectives for the County of Tulare contained in the Countywide Integrated Waste Management Plan.

2.4 PROJECT DESIGN AND DEVELOPMENT

The proposed project consists of a new Class III WMU, including a diversion/drop-off area and a new entrance complex. The design and development of the new WMU are described below. This description is primarily based upon information contained in the project's "Master Development Plan" (EBA, 2000a). Engineering and design details are additionally provided in the project's Joint Technical Document (EBA, 2000b), and are incorporated herein by reference.

2.4.1 New Class III WMU

The new WMU has been designed as an area-fill landfill that would occupy a maximum footprint of approximately 115 acres upon completion of the base liner system. Development of the new WMU would require excavation and placement of engineered fill in order to meet proposed base liner grades while maintaining the required minimum separation between deposited waste and the highest anticipated groundwater levels. The site design includes provisions for installation of the base liner and leachate collection and removal system (LCRS), drainage control facilities, groundwater monitoring, landfill gas (LFG) control and monitoring, construction of access roads and ancillary facilities, refuse disposal, placement of the final closure cap, and provisions for postclosure maintenance. The maximum height of the new WMU would be 210 feet above existing grade at closure. Figures 2.4-1, 2.4-2, 2.4-3 and 2.4-4 provide design details of the project.

2.4.1.1 Site Preparation and Excavation

Excavation of the project footprint and installation of the base liner system would be completed in a series of sequential phases commencing in the northwest corner of the site and progressing southward as new phases of the WMU are constructed. Development of each phase would be implemented in accordance with capacity requirements and planning objectives.

The base liner would be graded to form ten cells separated by an asymmetric north-south primary ridge and four east-west trending secondary ridges. Each cell would drain to an individual sump. Base liner grades would include perimeter side slopes of 3H:1V, and 1.5 percent slopes along the LCRS collection main and ridges resulting in 2.12 percent transverse slopes on the base of the WMU.

Excavation for the base liner would be deepest on the west side and would range from depths of 15 to 18 feet. On the west side, 3-foot deep LCRS sumps would be excavated to 21 feet. Pan lysimeters would be installed 2 feet beneath the sumps. Therefore, the deepest excavation would be approximately 23 feet beneath the western pan lysimeters. Maximum excavations on the east side of the liner footprint would be approximately 4 feet shallower than those described for the west side.

Figure 2.4-1 Final Grading Plan 11 x 17

Figure 2.4-2 Cross Sections (11 x 17)

Figure 2.4-3 Construction Details (11 x 17)

Figure 2.4-4 Environmental Monitoring Locations (11 x 17)

Engineered fill would be placed along the north-south ridge to meet final design grades. Unconsolidated material would be excavated from the uppermost 4 feet prior to placement of engineered fill. The maximum depth of engineered fill would be approximately 9 feet, resulting in final base liner grades along the north-south ridge that would range from 0 to 5 feet above original grade.

Borrow material required for the project would be obtained from on-site sources located in two primary areas; borrow soil obtained from excavation of the WMU would additionally be used. Borrow sources include the area located south of the existing WMU and eastern expansion of the existing borrow source located north of the existing WMU. Borrow areas are shown in Figure 2.4-1. The maximum depth of borrow excavation would be approximately 24 feet below existing grade with side slopes no steeper than 4H:1V. The final combined area of both borrow excavations, including a 25 percent contingency volume, would be approximately 175 acres. The borrow pits would also serve as storm water retention basins as described further in Section 2.7.1.

2.4.1.2 Base Liner Design

The composite base liner would be founded upon the excavated subgrade and engineered fill and would provide primary containment for landfill leachate in accordance with applicable sections of Title 27 CCR. Prior to placement of the liner, the subgrade would be smooth-drum rolled to create a surface suitable for installation. The proposed liner system would consist of the following components, in ascending order:

- Reinforced geosynthetic clay liner (GCL)
- Double-sided textured 60-mil high-density polyethylene (HDPE) geomembrane
- Geocomposite drainage layer comprising the blanket LCRS and consisting of HDPE geonet core heat bonded to a geotextile filter fabric.

Further information regarding the LCRS is provided in Section 2.7.2. The GCL would be placed directly on the prepared subgrade and overlapped with adjoining panels. Geomembrane panels would be deployed directly over the GCL and fusion welded together to form a continuous sheet. The geocomposite would be placed on the geomembrane and covered with two feet of protective operations soil obtained from on-site borrow sources. Incoming solid waste would be placed directly on the operations soil.

2.4.1.3 Base Liner Stability

Stability of the new WMU was evaluated under static and pseudo-static conditions to determine the minimum factor of safety for slope failure. The factor of safety is a common index used in the evaluation of slope stability and is defined as the ratio of forces resisting failure (the shear strength of the soil or refuse) to forces driving failure (the shear stress induced on the potential failure surface). A factor of safety of 1.0 indicates a threshold condition of failure, whereas a factor of safety greater than 1.0 indicates stable conditions. A minimum static factor of safety of 1.5 is regarded as the industry standard for permanent slopes, while the minimum pseudo-static factor of safety requirement under seismic shaking conditions is 1.0.

The analysis was performed using material properties compiled from numerous sources, as summarized in Table 2.4-1. Properties required for the analysis included unit weight, cohesion, and internal angle of friction for refuse, base liner, native subgrade, and engineered fill.

Table 2.4-1 Slope Stability Material Properties

Material	Unit Weight (PCF)	Cohesion (PSF)	Friction Angle (degrees)
Refuse	75	0	33
Base Liner System	N.A.	0	17
Subgrade/Engineered Fill	125	250	25

Source: EBA, 2000a and b.

The unit weight of in-place refuse is difficult to measure and has been shown to increase with depth as a result of consolidation. Unit weight of municipal refuse compiled and reported by Kavazanjian, et al. (1996) for southern California landfills ranges from 55 to 90 pounds per cubic foot (PCF) for fill depths up to 100 feet (EBA, 2000a). For the purposes of the stability analysis, refuse was assigned an average unit weight of 75 PCF. Results of the stability analysis were found to be insensitive to variations up to 10 PCF in refuse unit weight.

Due to the heterogeneous nature of municipal refuse, shear strength properties are difficult to measure in the laboratory and must be measured in the field or back calculated from case histories of landfill failures. Shear strength parameters used in the analysis are consistent with empirical estimates of friction angle and cohesion (33 degrees and no cohesion) for municipal refuse (EBA, 2000a).

Geosynthetic material interfaces, whether between two geosynthetic materials or between a geosynthetic and native or compacted soil material (i.e., subgrade or engineered fill) are typically the weakest components within a landfill liner system and cause block or wedge-type failures to occur when the interfacial shear strength is exceeded. The average shear strength of the base liner system was specified using a conservative friction angle of 17 degrees.

Stability of the new WMU was modeled by evaluating various failure mechanisms passing through refuse and the base liner system. For the analysis, the minimum factor of safety was found by forcing a block type failure to occur along the base liner interface. A minimum factor of safety of 1.68 was calculated under static conditions for failure occurring in a north-south orientation at the edge of the liner and in the center of the new WMU. Pseudo-static conditions were evaluated by including a representative horizontal acceleration of 0.11g. A minimum factor of safety of 1.16 was calculated under pseudo-static conditions.

Although final fill slopes are specified at 4H:1V, a maximum slope of 3H:1V was used in the analysis to provide a conservative estimate of the minimum factor of safety. Results of the most critical stability scenarios are shown in Table 2.4-2.

Table 2.4-2 Slope Stability Analysis Results

Section Location	Factor of Safety	
	Static	Pseudo-Static
Along N-S ridge at toe, 3:1 fill slopes	1.68	1.16
Along N-S ridge at first E-W ridge, 3:1 fill slopes	1.81	1.20
Along N-S ridge at toe, 4:1 fill slopes	2.08	1.32
Along N-S ridge at first E-W ridge, 4:1 fill slopes	2.16	1.34
Along N-S ridge at second E-W ridge, 4:1 fill slopes	2.19	1.36
Transverse direction above LCRS sump, 3:1 fill slopes	2.28	1.39
Transverse direction through LCRS sump, 3:1 fill slopes	2.29	1.41

Source: EBA, 2000a and b.

2.4.2 New Entrance Complex

A gated entrance on Road 80 near the northwest corner of the facility provides access for the existing facility (Figure 2.4-1). Currently, there are no turn or merge lanes on Road 80 for the facility entrance. Site development for the new WMU would include relocating the main entrance from Road 80 to Avenue 328 at the southeast corner of the site as shown on Figure 2.4-1. The entrance facility would consist of a minimum of three lanes, a gatehouse and vehicle scales. The gatehouse and scales would be located such that vehicle queuing would not encroach onto Avenue 328. A paved demolition/recycling diversion area (drop-off and storage area) for white goods, metal, cardboard, tires, mattresses, wood and yard waste and recyclable materials (glass, cans, paper, and plastic) would be located past the gatehouse.

Site development would include a public tipping facility and truck wash facility. The site's existing cotton gin building would be converted for use as the public tipping facility. Renovation of the building would include the removal of the building's east facing wall to allow open access to the tipping area. Public self-haulers would unload waste onto a level concrete tipping floor where it would be pushed into roll-off bins for transport to the landfill working face. Commercial trucks would be directed to the active working face of the landfill for refuse drop-off. The truck wash facility would also be developed adjacent to the public tipping facility for County use only. Existing structures that would be removed as part of the proposed project include a series of 10 steel poles approximately the height of the cotton gin bottom (located southwest of the cotton gin mill), an existing sump structure located southwest of the above-referenced poles, two silos located east of the cotton gin mill, and an existing gatehouse (or scale house) located west of the cotton gin mill.

A 20-foot wide, all-weather access road would encircle the new WMU and provide access to the leachate sumps and environmental monitoring facilities. The perimeter access road would be constructed in phases as site development progresses. Intermediate haul roads constructed along the new WMU and over inactive disposal areas would provide access to the existing WMU. Roads and associated drainage would

be periodically relocated as refuse filling operations advance and the location of the active disposal area changes.

2.4.3 Utilities

Utilities necessary for operation of the facility include electric, telephone, water and sewage. Electrical service would be required for operation of the entrance complex, truck wash facility and leachate pumping systems for each cell of the new WMU. Presently, there is electrical service at the existing gin building and to adjacent structures. Electric and telephone service would need to be extended to the new gatehouse and scale complex and to the leachate pumping stations located around the WMU.

The existing, and possibly new, on-site well and storage tank would supply water necessary for operations, including dust control and fire suppression as required by the local fire authority. Sewer service for the gatehouse and public tipping facility would be accommodated by either existing on-site septic systems or by development of new systems. An existing propane tank located adjacent to the gin building would be removed and replaced with a smaller tank.

2.4.4 Project Site Life

Based on a comparison of proposed excavation and fill contours, the volume available for refuse and daily cover is estimated to be approximately 15,970,000 cubic yards (CY). Site life projections utilized the available volume and the following assumptions to estimate disposal capacity:

- A constant disposal rate of 400 tons per day (tpd), six days per week (308 days per year)
- A compacted refuse density of 1,200 pounds per cubic yard (PCY)
- A refuse to soil cover ratio of 4:1.

Based on these assumptions, the new WMU would provide disposal capacity for approximately 62 years. However, the assumptions presented above are considered conservative. Alternative excavation and fill plans for future cells could increase or decrease the site life. The overall projected life span of the new WMU ranges between 22 and 78 years. Table 2.4-3 presents a summary of site life scenarios premised on an available volume of 15,970,000 CY for various combinations of disposal rate, cover ratio, and refuse density. The refuse to soil cover ratio is expected to increase with increasing disposal rate, as indicated. The cover ratios shown in Table 2.4-3 were selected based on a reasonable variation with disposal rate.

Table 2.4-3 New WMU Site Life in Years

Disposal Rate	Refuse: Soil Cover	Refuse Density (PCY)			
(TPD)	Ratio	1,200	1,300	1,400	1,500
400	**4.0**	62	67	73	78
600	**4.0**	41	45	48	52
800	**4.5**	32	35	37	40

1,000	**4.5**	25	28	36	32
1,200	**5.0**	22	23	25	27

Source: EBA, 2000a and b.

AB 939 mandates have been considered in the development of this project. The County recognizes the need to reduce the amount of waste that is disposed of at the landfill and therefore continues the use of a refuse diversion area. The diversion area that is currently used at the facility would be relocated to the new entrance complex. Its purpose is to provide a drop off area for white goods, green waste, and tires and to divert undesirable waste from entering the WMU.

2.4.5 Final Closure Design

The final cover system would be constructed in accordance with applicable state and federal regulations in place at the time of closure to prevent the infiltration of water and generation of leachate. In accordance with Title 27 CCR, Sections 21140(a) and 21142(a), the final cover system would be compatible with postclosure land use. Currently, Title 27 CCR, Section 21090 requires a cover system that would attain a hydraulic conductivity equal to or greater than the hydraulic conductivity of the base liner.

The final cover system would include, in ascending order:

- Foundation layer consisting of a compacted soil layer
- Geosynthetic gas relief layer
- Geosynthetic clay liner (GCL)
- Geomembrane barrier layer
- Geosynthetic drainage layer for pore pressure relief
- 24-inch vegetative layer to prevent erosion and provide protection for underlying components.

All soil material required for construction of the final cover system would be obtained on site. Approximately 840,000 CY of material would be required for construction of the foundation and vegetative layers. A qualitative assessment of material encountered in borings indicates that on-site materials would be suitable for use in construction of the final cover system. Proposed final slopes would be graded at 4H:1V with 20-foot wide intermediate benches every 40 vertical feet.

2.4.6 Ultimate Land Use

As discussed in Section 2.6, after waste disposal ceases, the site would be maintained for a period of not less than 30 years. The area would be vegetated and returned to a natural setting, with the exception of access roads, environmental monitoring systems, and drainage structures.

2.5 FACILITY OPERATIONS

2.5.1 Hours of Operation, Employees, and Operating Record

The new WMU would be open 6 days per week for public and commercial receipt of waste, Monday

through Friday from the hours of 7:00 a.m. to 4:00 p.m. and on Saturday from the hours of 8:00 a.m. to 4:00 p.m. Site maintenance would be limited to one hour before opening and one hour after closing during days in which the facility is open. The new WMU would be closed on observed holidays (New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day).

A sufficient number of personnel would be assigned to the site to meet daily operating requirements. The minimum number of personnel required to operate the site will vary, depending on actual disposal rates. Table 2.5-1 indicates personnel allocations required for 400 tpd and the peak disposal rate of 2,000 tpd.

Table 2.5-1 Personnel Allocation

Position	Allocation	
	400 TPD	2,000 TPD
Refuse Site Supervisor	1	1
Refuse Site Attendant	2	3
Refuse Equipment Operator III	1	4
Refuse Equipment Operator I/II	4	6
Caretaker	2	4
Caretaker Maintenance Worker	1	4
Caretaker Maintenance Worker (extra help)	3	8

Landfill records are kept in the Solid Waste Division Office of the Resource Management Agency as approved by the Tulare County Health and Human Services Agency acting as the local enforcement agency (LEA). Records maintained by the County include the following:

- Closure/Post-Closure Maintenance Plans
- Excavation amounts
- Financial Assurance Documentation
- Gas monitoring results
- Landfill equipment
- Personnel training record
- Roster of site personnel
- Special occurrences log
- Volume estimates
- Weight tickets
- Airport safety location restriction demonstration.

The County will continue to implement various procedures that focus on maintaining accurate disposal site records for the new WMU. Large trucks and trailers would be weighed at the gatehouse upon entering the facility. Truck weight and the load data would be recorded at a gatehouse. A tare weight for the unloaded vehicle would be determined and recorded at the gatehouse. The weight of waste in smaller vehicles would be estimated based on the type of vehicle. Gatehouse records would be transferred to the Solid Waste Division Office on a daily basis.

Certification reports that include record drawings delineating the horizontal and vertical extent of excavations, earthfills, base liner systems, and environmental monitoring and control systems (i.e., groundwater, vadose zone, landfill gas, and leachate systems) would be kept in Solid Waste Division Office and would be available for inspection by authorized regulatory representatives. Special occurrence involving a fire, earthslide, injury, or other unusual incident would be recorded by the site supervisor in the special occurrences log kept at the Refuse Site Supervisor's office.

2.5.2 Refuse Disposal

Routine operations would include the spreading and compaction of incoming refuse, excavation and placement of daily cover soil, and periodic maintenance or relocation of infrastructure such as access roads, drainage structures, leachate control facilities, and landfill gas piping adjust to changing site conditions. Equipment necessary to perform these operations would include steel-wheel solid waste compactors for spreading and compacting refuse, bulldozers for the excavation of borrow material and access roads, scrapers for the excavation and placement of daily cover, a water truck for dust control, a motor grader for maintenance of access roads, a backhoe for minor excavations, an equipment repair and lube truck, and several pickup trucks.

The new WMU would be open to both commercial haulers and the general public. All incoming waste loads would arrive at the facility through the main entrance on Avenue 328. Upon entering, road markings and signs would direct individual haulers to the gatehouse where loads would be inspected and weighed. At the gatehouse, commercial haulers would be directed to the new WMU working face and self-haul public users would be directed to the public tipping facility. Public users would have the opportunity to drop off recyclable material such as white goods, metal, wood/yard waste, tires, and mattresses prior to unloading of waste material at the diversion area or public tipping facility.

Waste unloaded at the public tipping facility would be pushed into roll-off bins with a rubber-tire loader. Hazardous materials identified would be separated and stored temporarily in appropriate approved storage lockers. Once the bins are full, they would be loaded and transported to the WMU working face. All waste material would be removed from the public tipping facility on a daily basis. A load-checking program would be developed and enforced for the inspection and identification of hazardous waste that may be included in waste delivered to the site.

2.5.3 Control Provisions

The project includes provisions for site security and noise control. A 6-foot high barbed wire fence would be installed to enclose the new WMU and the entrance would be locked when the facility is closed to prevent unauthorized access. In addition, security lighting is proposed in the new entrance complex to illuminate the immediate area surrounding the gatehouse and scales. Since the facility would operate during daylight hours, no other lighting is proposed.

The facility is located in a rural agricultural area with no sensitive receptors in close proximity to site operations. The nearest residence is located approximately 0.5 mile from the facility property boundary. However, the project has been designed to reduce noise emissions where possible. To reduce the noise generated by heavy equipment, all vehicles would be equipped with functioning mufflers. Individual hearing protection would be available to site personnel.

2.5.4 Fill Sequencing

Initial waste disposal operations (Phase 1) would commence in the northwest cell of the new WMU (Figure 1.1-2). The Phase 1 fill plan would initiate refuse filling at the bottom or west end of the cell above the sump. Exterior fill slopes on the north and west sides would eventually become the final slopes for the new WMU and would be graded slightly steeper than 4H:1V to account for settlement and meet proposed final grades. Interior (intermediate) slopes on the east and south sides of Phase 1 would be graded no steeper than 3H:1V for purposes of maintaining interim slope stability.

The maximum interim fill height for Phase 1 would be approximately 55 feet, with a top deck measuring approximately 140 feet wide and graded at a slope of 10 percent. Twenty-foot wide benches would be constructed every 40 feet in vertical height. Benches would be battered back toward the slope at a grade of 5 percent and would drain at a minimum slope of 3 percent towards drop inlets spaced periodically along benches. Benches constructed on exterior slopes would tie into successive phases and would be compatible with the final grading and drainage plan.

Construction of successive phases would proceed southerly until Phases 1 through 5 on the west side of the footprint are complete; construction of Phases 6 through 10 on the east side would then follow. Completion of liner phases 1 through 10 would allow vertical filling of refuse to a maximum height of approximately 210 feet with a top deck sloping away from a center ridge at 10 percent.

Proper cell phasing would require that successive cells be excavated in a timely manner to allow for liner construction before the previous cell reaches capacity. Soil excavated during construction of the first cell would be stockpiled for later use as daily and intermediate cover. Daily cover soil required for operation of Phase I (approximately 170,000 CY) would be obtained from excavation of the second cell (approximately 175,000 CY). Soil required for operation of Phase 2 would be obtained from excavation of the third cell and from stockpiled or borrow sources; soil required for Phase 3 would be obtained from excavation of the fourth cell and borrow sources, and so forth.

Following construction of the entire base liner, soil required for operation would be obtained exclusively from on-site borrows areas. Borrow excavation would be assessed continuously to assure that provisions for storm water retention are met.

Storm water control during the initial stages of site development would require a coordinated planning effort to minimize the quantity of runoff entering the LCRS, which would require treatment as leachate. As the rainy season approaches, refuse filling operations would focus on providing positive drainage

away from the active refuse filling area. Temporary berms would be constructed to divert runoff away from lined areas and to retention basins.

2.5.5 Soil Requirements

Operation of the new WMU would require approximately 3,180,000 CY of daily cover soil (assuming a refuse to soil cover ratio of 4:1). An additional 1,300,000 CY of material would be required for daily operations and final closure of the existing unlined 132-acre WMU, based on a comparison of final grades and existing topography as surveyed May 5, 1999 (EBA, 2000a). For the new WMU, 1,600,000 CY of borrow material would be required for engineered fill, placement of a protective operational layer between the liner and first lift of refuse, and construction of the final cover system during closure.

All borrow material would be obtained from on-site borrow sources. Excavation of the new lined WMU would provide approximately 1,400,000 CY of material. The remaining 5,850,000 CY (including a 25 percent contingency) of soil would be obtained from two designated borrow areas shown on Figure 2.4-1.

Title 27 CCR, Section 20680 requires the placement of a six-inch layer of soil over refuse at the end of each operational day to control vector populations, odors, and blowing litter. Section 20680 also allows the use of alternative daily cover (ADC) in lieu of a six-inch layer of soil. The use of ADC reduces borrow soil requirements while increasing the volume available for refuse disposal. Operations at the existing WMU currently utilize a tarp system deployed from a device attached to a D-7 or larger dozer. A similar ADC system would be used for the new WMU. In accordance with Title 27 CCR, Section 20700, 1 foot of intermediate cover would be placed in areas where no additional refuse would be deposited within 180 days.

Daily and intermediate cover soil constitutes the majority of the soil budget for the new WMU. Soil required for daily landfill operations is typically expressed as a ratio of refuse to cover soil. A conservative refuse to cover soil ratio of 4:1 has been used for the proposed design and was combined with other soil requirements to determine the total borrow excavation volume. The refuse soil ratio would likely increase with an increased disposal rate in response to more efficient use of daily cover soil, resulting in a decrease in the volume of soil required for the new WMU.

2.5.6 Airports

The new WMU would be located within 5 miles of two airport runways used by turbojet or piston-type aircraft. The Visalia Municipal Airport would be about 4.5 miles south of the new WMU and Sequoia Field Airport would be about 5 miles north of the new WMU. As specified in the Joint Technical Document (JTD), the Federal Aviation Administration and appropriate officials at respective airports have been notified of the project.

2.6 POSTCLOSURE MAINTENANCE

Maintenance of disposal site facilities and environmental monitoring and control systems would continue after refuse disposal ceases and construction of the landfill cap is completed. In accordance with Title 27 CCR, Section 21180, the new WMU would be maintained and monitored for a period of not less than thirty years after completion of closure of the entire facility. Postclosure activities would be performed in accordance with an approved Postclosure Maintenance Plan, which would include the following:

- Environmental monitoring
- Monitoring of landfill settlement
- Maintenance of drainage and erosion control systems
- Maintenance of the final cover
- Maintenance of landfill gas monitoring and control systems
- Maintenance of leachate monitoring and control systems
- Maintenance of site security.

Postclosure monitoring of the site would be performed to assure the integrity and operation of the leachate, storm water, and landfill gas systems.

2.7 ENVIRONMENTAL MONITORING AND CONTROLS

Environmental monitoring would be conducted during operation of the facility and throughout the postclosure maintenance period after the site ceases to accept waste in accordance with applicable regulations and permits issued for the site. A description of the environmental monitoring systems required for the project is presented below.

2.7.1 Storm Water Control

The storm water control system for the site would utilize an internal drainage scheme whereby all runoff generated from the existing and new WMUs would be routed to on-site borrow excavations, which would function as retention basins for the evaporation and percolation of storm water. The storm water control system would be designed to accommodate peak surface water flows for a 100-year event in accordance with Title 27 CCR, Section 20365 and during the most critical stage of site development when runoff is anticipated to be a maximum. Runoff from the active disposal area, which has contacted refuse, would be contained and diverted to the leachate management system described in Section 2.7.2.

The storm water control system would be assessed and modified on a continuous basis during site development as refuse filling operations proceed and new phases are constructed. Existing borrow areas would provide adequate storm water retention volume for the existing WMU and initial phases of the new WMU. Borrow areas excavated during filling of the new WMU would provide the additional storm water retention volume required, commensurate with site development.

The proposed final closure configuration would include a perimeter ditch to convey runoff from final landfill slopes and all outside cut slopes. Drainage from the new WMU would be split and conveyed to either the northern borrow area or the southern borrow area (Figure 2.4-1).

2.7.2 Leachate Management

The proposed LCRS design consists of a blanket geonet composite drainage layer placed over the geomembrane liner (Figures 2.4-2 and 2.4-3). A perforated HDPE main surrounded by gravel and wrapped in a geotextile filter fabric would be placed down the center of each cell. The perforated main would drain to a sump located at the end (low point) of each cell on the east and west sides of the new WMU footprint. A total of 10 cells are proposed for the new WMU. Each sump would be fitted with an automated submersible pump housed in an HDPE riser accessible from the surface. Construction of the LCRS and fill sequencing of each phase would be coordinated to limit the amount of storm water entering the system.

Leachate collected from sumps would be pumped to centrally located storage tanks fitted with secondary containment and a spill detection monitoring system. The proposed method of disposal is by tanker truck to any of three treatment plants: the Visalia Wastewater Treatment Plant (owned and operated by the City of Visalia) located approximately 7 miles southwest of the site; the Traver Wastewater Treatment Plant located approximately 7 miles northwest of the site; and the Delft Colony Wastewater Treatment Plant located approximately 9 miles northwest of the site. Both the Traver and Delft Colony plants are owned and operated by the County.

Actual quantities of leachate collected over any time period would vary depending upon various factors including the size of the active disposal area, cover soil placement and compaction, moisture content of incoming waste, and seasonal climatologic conditions. Operational provisions for the storage, removal and disposal of leachate would be assessed based on generation analyses and empirical measurements of leachate production as development of the new WMU progresses. Leachate generation is anticipated to decline gradually throughout the postclosure period following construction of the geosynthetic final cover system.

2.7.3 Groundwater Monitoring

The existing groundwater monitoring system includes 19 wells installed around the perimeter of the facility to monitor potential groundwater impacts from the existing WMU. Additional groundwater monitoring wells would be required for the new WMU. A groundwater-monitoring program approved by the Regional Water Quality Control Board (RWQCB) and the County Health and Human Services Agency would be established in accordance with Title 27 CCR, Section 20385 and Waste Discharge Requirements (WDRs) issued for the site. The monitoring program would include a sufficient number of detection monitoring points and background monitoring points installed at appropriate locations to provide data necessary for the evaluation of groundwater quality.

A vadose zone monitoring system would be installed beneath the base liner in accordance with the WDRs issued for the site. Geomembrane-lined pan lysimeters would be installed beneath the LCRS mains and

sumps to monitor saturated flow in the vadose zone. Lysimeters would be accessed via an HDPE riser located near each sump.

2.7.4 Landfill Gas

Anaerobic decomposition of organic waste disposed at the site would produce carbon dioxide, methane gas and minor concentrations of associated organic constituents. Details regarding anticipated gas production rates are found in Section 3.6 of this report.

Landfill gas (LFG) would be collected from the new WMU by means of a modular system that would include a series of horizontal landfill gas collection laterals connected to a pipe manifold system installed during site development and waste filling operations. The horizontal collectors would consist of perforated HDPE piping surrounded by gravel, spaced approximately 200 feet apart, and placed every 40 to 50 vertical feet in refuse. The collection system may also be connected to LCRS piping to enhance LFG collection from the base of refuse. Horizontal collectors would be connected to a condensate collection system and a flare station via aboveground manifold piping.

Landfill gas would be extracted from the collectors and drawn into a flare with a vacuum induced by blowers located near the flare complex. LFG flares are designed for the combustion of landfill gas, in the presence of oxygen, to carbon monoxide, sulfur dioxide, oxides of nitrogen (NO_x), and other related gases. The existing WMU is currently equipped with a LFG collection system and a LFG-fueled electrical generation plant. LFG collection system components associated with the new WMU would be connected to the existing system for processing and subsequent destruction of the LFG. Upon reaching the capacity of the existing system, provisions for expansion or construction of a new flare system would be explored for the destruction of LFG extracted from the new WMU.

Monitoring of subsurface gas outside of refuse, as required by Title 27, would be conducted by installing several perimeter probes at various depths surrounding the project site. The purpose of the probes would be to monitor the presence of subsurface gasses, which may have migrated beyond the fill limits. The geosynthetic component of the base liner and operation of the LFG extraction system should reduce the likelihood of LFG migration beyond limits of the base liner.

2.8 CLOSURE OF EXISTING WMU

The existing WMU would be closed according to state and federal regulations when the new WMU becomes operational. As described in the Preliminary Closure and Post Closure Plan prepared for the site, the closure of the existing unlined WMU will generally include a prescriptive final cover that consists of a soil foundation layer, a low-permeability clay layer, and a vegetative soil layer. The closure of this site would also include post closure maintenance as described in the 1996 Preliminary Closure and Postclosure Plan (County, 1996). A separate environmental document and permit process would be conducted for the closure of the existing landfill operations.

2.9 ENVIRONMENTAL COMMITMENTS

The County has committed to avoiding or minimizing several potential environmental impacts through project design and planned implementation. Details regarding these design and implementation measures are provided in the Section 3 of this report and in the project's Joint Technical Document (EBA, 2000b). These project commitments are summarized below.

- Project design to withstand the maximum probable earthquake without damage to the foundation or structures that control leachate, surface drainage, erosion, or landfill gas.
- A storm water control system to prevent inundation of the new WMU or impairment of environmental control systems resulting from a 100-year storm event.
- Base liner design to provide for the containment of landfill leachate.
- Base liner design to ensure slope stability.
- Incorporation of a leachate collection and removal system to minimize the potential for off-site leachate migration.
- Enhancement of the existing WMU's groundwater monitoring system to accurately track potential ground water impacts.
- A final cover system to prevent the infiltration of water and generation of leachate.
- Development and implementation of a gas management plan to collect and dispose of landfill gas.
- A commitment to maintain accurate facility records.
- Assurance of site security via fencing and lighting at the new entrance gate.
- Development and implementation (as necessary) of emergency response procedures.
- Assurance of adequate personnel training in subjects pertinent to site operation and maintenance, including hazardous materials recognition and screening, heavy equipment operation, health and safety, environmental controls, and emergency procedures.
- Development and implementation of procedures to minimize the propagation or harborage of vectors and other matters related to the protection of public health, including air and water quality, dust control, noise control, odor control, litter control and public safety.
- Measures for fire control and response.
- Procedures for the prevention of hazardous waste disposal, including the development and implementation (if necessary) of a Contingency Plan for Accidental Discharge.

2.10 REGULATORY REVIEWS AND APPROVALS

As noted in Section 1 of this document, the Solid Waste Division of the Tulare County Resource Management Agency is acting as the Lead Agency under CEQA for the project and is responsible for reviewing and certifying the technical adequacy of this EIR. Those regulatory agencies having discretionary authority over the aspects of the project are considered to be Responsible Agencies under

CEQA. In addition, a number of other regulatory agencies may have an interest in the proposed project; these agencies are referred to as Interested Agencies. Agencies that have responsibility or interest in the proposed project include:

Responsible Agencies

- California Integrated Waste Management Board
- Central Valley Regional Water Quality Control Board
- San Joaquin Valley Unified Air Pollution Control District
- California Department of Fish and Game
- County of Tulare Health & Human Services Agency.

Interested Agencies

- California Department of Transportation (Caltrans)
- California Department of Conservation
- Tulare County Association of Governments.

3. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

This section examines the environmental consequences associated with the expansion of the Visalia Landfill. Section 2 offers a complete and detailed description of the proposed project. In this section, the project is analyzed with regard to the 10 environmental issue areas listed below:

3.1 Aesthetics (Visual Resources)
3.2 Air Quality
3.3 Biological Resources
3.4 Cultural Resources
3.5 Geology and Soils
3.6 Hazards
3.7 Hydrology and Water Quality
3.8 Land Use
3.9 Noise
3.10 Transportation

Within each issue area, the project is discussed in the following order:

- Environmental Setting
- Impacts
- Mitigation Measures

By identifying the impacts associated with each issue area and by offsetting impacts with mitigation measures, regulatory agencies and the general public are afforded full disclosure of the significant environmental impacts of this project.

Environmental Setting

The analysis within each issue area begins with an examination of the existing physical or baseline setting wherein the project would be placed. The regulatory setting, which includes applicable government rules, regulations, plans, and policies, is also presented in the environmental setting. For the purpose of this document, and pursuant to CEQA Guidelines, the baseline used for the impact analysis reflects the actual conditions at the time of preparation of the report.

Project Impacts

The potential impacts that the project would bring to each issue area are quantified. The analysis of impacts on the environment and specific resources is based on the Project Description as presented in Section 2 of this document. The impacts are identified then compared with predetermined, specific significance criteria, and were classified according to significance categories. The impacts found to be significant and unavoidable or unmitigable to a non-significant level are identified.

Mitigation Measures

Once an impact is identified, diligent effort is taken to identify mitigation measures that reduce the impact to a level that is not significant. Since some reviewing agencies require a demonstration of reduction of impacts to the maximum extent possible, mitigation measures were identified for all classes of impacts (except beneficial impacts). The mitigation measures recommended by this study have been identified in the impact assessment sections and presented in a Mitigation Monitoring Program (Section 6).

Impact Significance Categories

While the criteria for determining significant impacts are unique to each issue area, the classification of the impacts was uniformly applied in accordance with the following definitions:

Class I: Significant; cannot be mitigated to a less-than-significant level
Class II: Significant; can be mitigated to a less-than-significant level
Class III: Impacts that are less than significant and do not require mitigation
Class IV: Beneficial impacts

3.1 AESTHETICS (VISUAL ANALYSIS)

This aesthetics section focuses on visual resources of the area. It provides a visual setting based on a site visit of the project site and the evaluation of impacts using visual simulation photographs. This section covers the visual setting, visual impacts, and mitigation measures for the project.

3.1.1 Environmental Setting

Regional Landscape

The project is located within generally level and open terrain. Vegetation consists primarily of agricultural crops including row crops and orchards. The most significant water feature in the area is the St. Johns River located to the north of the site. There are also numerous dairies in close proximity to the site.

Views are typically panoramic in scale, encompassing large horizontal expanses of agricultural fields punctuated by occasional farm facilities and rural residences with little variation in terrain. Vegetation is primarily low growing and coloration is closely tied to current agricultural crops and uses. To the distant east and northeast are the Sierra foothills. Contrasting with horizontal and curving forms of the natural landscape are the vertical and rectilinear features of occasional structures, and to a lesser extent, the horizontal forms and lines of the region's transportation infrastructure.

Site Visibility

The location of the new WMU is immediately adjacent and to the east of the existing WMU. The site is level and is visible from many of the roads in the vicinity. From the west, the site is intermittently visible from northbound Highway 99 between Goshen and approximately 12 miles north of Goshen. Views are indirect and partially screened by roadside vegetation. Southbound on Highway 99, intermittent views of the site are available from approximately two miles south of Merrit to approximately six miles south of Merrit. Views from southbound Highway 99 are limited by median vegetation, the indirect angle of view, and high rates of vehicular speed. From the south, the site is visible from West Goshen, West Riggin, Avenues 308, 310, 312, 320, and 328 (immediately adjacent to the site), and Roads

76, 80, and 92. From the east the site is visible from Avenue 328 for a short distance until roadside orchards begin to screen the site from view of westbound traffic (at Road 92), and Road 112. From the north, the site is visible from Roads 80 (immediately adjacent and to the west of the existing landfill) and 112, and Avenue 352. Views are often intermittent due to screening by vegetation, residences, and agricultural facilities.

The site is most visible from roads and residences in close proximity to the site that have relatively open unobstructed views (Roads 76, 80, and 92 and Avenues 312, 320, and 328). Views from the other roads and areas tend to be intermittent due to differing directions of view and screening by vegetation, agricultural facilities, and residences. More distant views also tend to be more obscured by poor visibility conditions caused by haze or fog.

Several viewpoints were selected from which to either photograph the site or characterize the site and potential visual impacts in greater detail. Figure 3.1-1 shows the location of the selected viewpoints. Figure 3.1-2 shows the westbound view from the northwest corner of the intersection of Avenue 328 and Road 92. The existing WMU is visible in the right half of the photograph. The new WMU would be located to the right of the existing structures in the center of the photograph. This location would be representative of the eastern-most view of the site, which would start to become screened from view by roadside orchards further east. Figure 3.1-3 shows the view to the northeast from the intersection of Road 80 and Avenue 328. The existing WMU is located in the center of the photograph. The new WMU would appear behind and to the right of the existing WMU. This viewpoint offers a close-up perspective of the site from the busiest intersection in the immediate project vicinity. Figure 3.1-4 provides the view to the northeast, on eastbound Avenue 328, just east of the intersection of Avenue 328 and Road 76. The new WMU would be located behind the existing WMU as viewed from this location. A residence associated with an adjacent dairy on the north side of Avenue 328 would have a partially screened (by dairy facilities and the existing landfill) view of the new WMU. Some of the dairy facilities are visible in the left portion of Figure 3.1-4. In addition, two key viewpoints (KVPs) were selected for more detailed analysis as described below.

Key Viewpoint 1 – Road 80

KVP 1 is located on Road 80, just south of the St. Johns River, approximately 1.1 miles north of the facility (see Visual Analysis Data Sheet for KVP 1 in Appendix D). This viewpoint was selected for its open perspective and lack of background landforms that enhance a landscape's visual absorption capability. From this viewpoint, the southbound view encompasses unobstructed, panoramic scenes of agricultural lands, equipment, and structures including dairy facilities. The flat and generally uniform

Figure 3.1-1 Location of Key Viewpoints

Figures 3.1-2, 3.1-3 and 3.1-4 are all on one (1) 11 X 17 Color Graphic

Page 2 for color graphic (11 x 17)

landscape would be considered common to the region, exhibiting no unique or highly scenic characteristics. Overall visual quality of the foreground to middle ground landscape is considered low.

The new WMU would be located on level terrain in the middle ground of southeasterly views from KVP 1. The level, open terrain would offer minimal screening opportunities for a project resulting in landform modifications and an increase in topographic relief. Although the existing WMU (adjacent and to the west) would provide a similar landform context, the new WMU would extend noticeably above the horizon. Therefore, overall visual absorption capability is rated low.

Motorists on Road 80 and residents in the vicinity generally anticipate open level landscapes of agricultural lands, punctuated by agricultural facilities such as dairies. In the immediate vicinity of the project, viewers are accustomed to the landform modifications associated with the existing WMU, which are similar, though less pronounced, than would be apparent with the proposed expansion. Therefore, overall viewer sensitivity is rated low to moderate.

Viewer exposure is considered moderate to high and reflects the site's high visibility as a middle ground visual element to moderate numbers of viewers with moderate to extended views along Road 80. The low visual absorption capability, moderate range for viewer sensitivity, and moderate to high viewer exposure are somewhat balanced by the relatively low visual quality, leading to an overall moderate rating for visual impact susceptibility.

Key Viewpoint 2 – Avenue 312

KVP 2 is located on Avenue 312, two miles due south of the new WMU (see Visual Analysis Data Sheet for KVP 2 in Appendix D). This viewpoint was selected for its southerly perspective, its greater distance that allows for complete and more distinct views of each WMU, its distant backdrop of foothills, and its proximity to existing residences on Avenue 312.

The view north from Avenue 312 encompasses unobstructed, panoramic scenes of agricultural lands, equipment, and structures including dairy facilities. The flat and generally uniform landscape would be considered common to the region, exhibiting no unique or highly scenic characteristics. Overall visual quality of the foreground to background landscape is considered low.

The new WMU would be located on level terrain in the distant middle ground of northerly views from KVP 2. The level, open terrain would offer minimal screening opportunities for a project resulting in landform modifications and an increase in topographic relief. Although the existing WMU (adjacent and to the west) would provide a similar landform context, the new WMU would extend noticeably above the horizon. Although there is some topographic backdrop provided by the distant hills in the background, they are at a sufficient distance that their effectiveness in enhancing visual absorption capability is minimal and overall visual absorption capability is considered low.
Motorists on Avenue 312 and the nearby residents generally anticipate open level landscapes of agricultural lands, punctuated by agricultural facilities such as dairies. Viewers are accustomed to the

landform modifications associated with the existing WMU, which are similar, though less pronounced, than would be apparent with the project. Therefore, overall viewer sensitivity is rated low to moderate.

Viewer exposure is considered moderate to high and reflects the site's high visibility to viewers with moderate to extended views along Avenue 312. The angle of view for the existing residences would be direct and extended in duration while angles of views for motorists on Avenue 312 would be indirect with moderate to extended duration. The low visual absorption capability, moderate range for viewer sensitivity, and moderate to high viewer exposure are somewhat balanced by the relatively low visual quality, leading to an overall moderate assessment for visual impact susceptibility.

3.1.2 Project Impacts

Significance Criteria

This section addresses the potential for the project to impact the visual quality of the project area. The visual resources of the project consist of landforms, vegetation, water features, and cultural modifications (physical changes caused by human activities) that impart an overall visual impression of the area landscape. A number of factors are considered in the evaluation of impacts to a landscape's existing visual resources. These concepts are discussed below and are generally rated as low, moderate, or high.

Key Viewpoints (KVPs) are locations selected to be representative of the most common visual impact that will be experienced and/or critical locations from which the project will be seen. KVPs are often located in an effort to evaluate impacts on visual resources with various levels of sensitivity, in different landscape types and terrain, and from various vantage points. Typical KVP locations include: (1) along major or significant travel corridors; (2) at key vista points; (3) in proximity to residential uses; and (4) at significant recreation areas.

Visual Quality is a measure of the overall impression or appeal of an area as determined by the particular landscape characteristics such as landforms, rock forms, water features, and vegetation patterns, as well as associated public values. The attributes of variety, vividness, coherence, uniqueness, harmony, and pattern contribute to visual quality classifications of indistinctive (low), common (moderate), and distinctive (high). Visual quality is studied as a point of reference to assess whether a given project would appear compatible with the established features of the setting or would contrast noticeably and unfavorably with them.

Visual Absorption Capability refers to an existing landscape's ability to accept alteration without diminishment of visual quality (or creation of visual contrast). In the case of predominantly natural settings, a project should be compatible with the natural character of the existing landscape in terms of form, line, color, and texture. It is possible for new structures to be compatible with predominantly natural settings if such settings already contain some structures that are considered compatible and the new structures are similar to the existing structures (in their replication of the existing forms, lines, colors, and/or textures) and do not appreciably change the balance of natural and cultural elements.

Viewer Sensitivity addresses the level of interest or concern of viewers regarding an area's visual resources and is closely associated with viewers' expectations for the area. Viewer sensitivity reflects the importance placed on a given landscape based on the human perceptions of the intrinsic beauty of the existing landforms, rock forms, water features, vegetation patterns, and even cultural features.

Landscape Visibility describes the accessibility of the landscape to viewers, referring to one's ability to see and perceive the landscape. Landscape visibility can be a function of several interconnected considerations including proximity to viewing point, degree of discernible detail, seasonal variations (snow, fog, and haze can obscure landscapes), time of day, and presence or absence of screening features such as landforms, vegetation, and/or built structures.

Viewer Exposure describes the degree to which viewers are exposed to views of the landscape or are able to see it. Viewer exposure considers the visibility of the landscape, the proximity of the various landscape visual elements to the viewer, or distance zone (denoted as foreground, middle ground, or background), number of the viewers, the duration of view, and the proximity of viewers to the subject landscape. Even though a landscape may be highly scenic and have highly scenic qualities, it may be remote, receiving relatively few visitors and, thus, have a low degree of viewer exposure. Conversely, a subject landscape or project may be situated in relatively close proximity to a major road or highway utilized by a substantial number of motorists and yet still result in relatively low viewer exposure if the rate of travel speed on the roadway is high and viewing times are brief, or if the landscape is partially screened by vegetation or other features.

Visual Impact Susceptibility is a concluding assessment as to the existing landscape's vulnerability or sensitivity to change. In a sense it is an assessment of the degree of probability that a given landscape will demonstrate a noticeable visual impact with project implementation. Visual impact susceptibility is derived from a comparison of existing visual quality, visual absorption capability, viewer sensitivity, and viewer exposure.

An *adverse visual impact* occurs within public view when: (1) an action perceptibly changes existing features of the physical environment so that they no longer appear to be characteristic of the subject locality or region; (2) an action introduces new features to the physical environment that are perceptibly uncharacteristic of the region and/or locale; or (3) aesthetic features of the landscape become less visible (e.g., partially or totally blocked from view) or are removed. Changes that seem uncharacteristic are those that appear out of place, discordant, or distracting. The degree of the visual impact depends upon how noticeable the adverse change may be. The noticeability of a visual impact is a function of project features, context, and viewing conditions (angle of view, distance, and primary viewing directions). The key factors for consideration in determining the degree of visual impact or *Visual Impact Severity* are visual contrast, project dominance, and view impairment.

Visual Contrast evaluates a potential project's or activity's consistency with the visual elements of form, line, color, and texture already established in the landscape. Other elements that are considered in

evaluating visual contrast include the degree of natural screening by vegetation and landforms, placement of structures relative to existing vegetation and landforms, distance from the point of observation, and relative size or scale. Generally, visual contrast inversely correlates with visual absorption capability.

Project Dominance refers to the project's relationship to other visible landscape components in terms of vertical and horizontal extent. A project's scale and spatial relationship to the existing landscape can be categorized as subordinate, co-dominant, or dominant.

View Impairment refers to the extent to which a project's scale and position result in the blockage of higher quality visual elements by lower quality elements.

Visual Impact Severity characterizes the degree of impact caused by a project on a given landscape or view shed, typically, as experienced from key observation points. The assessment of visual impact severity is based on an analysis of visual contrast, project dominance, and the impairment (or blockage) of views from key observation points.

Visual Impact Significance is generally derived from an evaluation of visual impact severity within the context of the landscape's visual impact susceptibility. This analysis is often aided by the preparation of photograph simulations of the project or activity.

Key Viewpoint 1 – Road 80

KVP 1 was established to assess the characteristic visual impact that would occur to motorists on Road 80 and at foreground to middle ground distances up to approximately one and a half miles. Figure 3.1-5A presents the existing view to the southeast from KVP 1, located on the southbound shoulder of Road 80, just south of the St. Johns River. Figure 3.1-5B presents a photograph simulation that depicts the new WMU and existing WMU as it would appear at closure. As can be seen from the photograph simulation, the new WMU would appear substantially more massive than the existing WMU though it would be replicating similar form, line, and coloration. It would also extend substantially higher above the horizon than the existing WMU. The introduction of the more massive landform would result in a moderate to high degree of visual contrast with respect to form and a moderate degree of

Figure 3.1-5 Key Viewpoint 1 A and B are on the same 11 x 17 color graphic

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visual contrast with respect to line but would not cause any visual contrast with respect to vegetation or structures. Overall visual contrast as experienced from KVP 1 would be considered moderate to high.

The new WMU would be prominent in views from Road 80 but would appear equally dominant when compared to the expansive, horizontal landform that comprises the foreground agricultural fields. The higher landform would extend above the horizon line and block the view to a substantial portion of the landscape as viewed from KVP 1 and overall view impairment is considered moderate to high since the panoramic vistas along Road 80 (in the vicinity of KVP 1) would be moderately altered. When considered in the context of the moderate visual impact susceptibility of the existing landscape, the resulting moderate to high severity of the anticipated visual impact is anticipated to be significant and unavoidable (**Class I**) during the latter stages of the active facility when the facility has achieved most of its height and vehicles are operating. Post closure, after the surfaces have been revegetated, visual character of the landform would have the more natural appearance of a low hill. At that stage, the visual impact would be reduced.

Key Viewpoint 2 – Avenue 312

KVP 2 was established to assess the characteristic visual impact that would occur to motorists and residents south of the site with open unobstructed views of both the existing and new WMUs. It is also intended to illustrate the typical visual impact at a somewhat greater distance (at two miles). Figure 3.1-6A presents the existing view to the north from KVP 2, located on the westbound shoulder of Avenue 312, near two existing residences (on the south side of Avenue 312) that face north toward the facility. Figure 3.1-6B presents a photograph simulation that depicts the new WMU and existing WMU as it would appear at closure.

As shown in Figure 3.1-6, the new WMU would appear substantially more massive than the existing WMU though it would be replicating a similar form, line, and coloration. It would also extend higher above the horizon than the existing WMU. The form and line of the new WMU would also replicate the similar form and line of the distant hills in the background. The introduction of the more massive landform would result in a low to moderate degree of visual contrast with respect to form and a low degree of contrast with respect to line but would not cause any visual contrast with respect to vegetation or structures. Overall visual contrast as experienced from KVP 2 would is considered low to moderate.

The new WMU would be noticeable in views from Avenue 312 but would appear equally dominant when compared to the expansive, horizontal landform that comprises the foreground agricultural fields. The higher landform would extend above the horizon line and partially block the view to the distant hills to the north. However, overall visual impairment is considered low to moderate since the panoramic vistas from Avenue 312 would not be significantly altered. When considered in the context of the moderate visual impact susceptibility of the existing landscape, the resulting low to moderate severity of the anticipated visual impact is anticipated to be adverse, but not significant (**Class III**). This level of impact would generally be characteristic for the more distant views (two miles or greater) of the project.

The evaluation of project considered two different key viewpoints of the project. It determined that during the initial stages of the project there was unavoidable significant impacts but that upon closure when the WMU is vegetated the project would have a less than significant impact on the project area. Since the project is located in a rural area with no sensitive receptors in close proximity to the WMU, there are no scenic highways in close proximity, and the WMU expands an existing operation, the visual impacts associated with the project would be adverse but less than significant.

3.1.3 Mitigation Measure

Impact. View from Road 80 would be impacted by the development of the new WMU**.**

The evaluation of impacts determined that there would be a significant and unavoidable visual impact associated with the construction of the WMU from Road 80. The view of the WMU from this key viewpoint would be significantly altered. While there are no mitigation measures that will eliminate the visual impact, this visual impact can be reduced by the revegetation of the perimeter slopes of the WMU as soon as possible instead of waiting until final closure of the WMU. Even with the application of this mitigation measure, this impact would continue to be significant **(Class I)**.

Mitigation A1. The perimeter slopes will be revegetated throughout the active life of the WMU to reduce its visual impact.

3.2 AIR QUALITY

This section addresses the air quality setting, impacts, and mitigation measures related to the project. Specifically, Section 3.2.1 provides a description of the environmental settings, followed by an environmental impacts analysis of the project and mitigation measures in Sections 3.2.2 and 3.2.3, respectively.

3.2.1 Environmental Setting

Climate and Meteorology

The Visalia Landfill is located in the San Joaquin Valley Air Basin (Valley), which is approximately 250 miles long and averages 35 miles wide (Figure 3.2-1). The region's air quality is directly related to the basin's topographic features. The valley is defined by the Sierra Nevada mountains in the east

Figure 3.1-6 Key Viewpoint #2 A and B are on the same 11 x 17 color graphic

Page 2 for 11 x 17

Figure 3.2-1 San Joaquin Valley Air District Boundaries
B/W 8 ½ x 11

(8,000 to 14,000 feet in elevation), the Coast Ranges in the west (6,000 to 8,000 feet in elevation) and the Tehachapi mountains in the south (6,000 to 8,000 feet in elevation). The valley opens to the sea at the Carquinez Straits into the San Francisco Bay. The region's topographic features restrict air movement through and out of the basin. The Coastal Range hinders wind access into the San Joaquin Valley from the west, the Tehachapis prevent southerly passage of air flow, and the high Sierra Nevada range is a significant barrier to the east. These topographic features result in weak airflow that becomes blocked vertically by high barometric pressure over the valley. As a result, the air basin is highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers, which vary from 1,500 to 3,000 feet (SJVUAPCD, 1998).

Local climatological effects including temperature, precipitation, wind speed and direction, inversion layers, and precipitation and fog, can exacerbate the air quality problem in the valley air basin. These factors are described below.

Temperature and Precipitation

Temperature and solar radiation are particularly important in the chemistry of ozone formation. Ozone is formed in a photochemical reaction requiring sunlight. Generally, the higher the temperature, the more ozone formed, since reaction rates increase with temperature. However, extremely hot temperatures can "lift" the inversions layer. Typically, if the inversion layer doesn't lift to allow the build up of contaminants to be dispersed into the Southeast Desert, the ozone levels will peak in the late afternoon sometimes as late as 3 to 7 pm. If the inversion layer breaks and the resultant afternoon winds occur, the ozone will peak in the early afternoon and decrease in the late afternoon as the contaminants get transported to the Southeast Desert. Temperature is not as important in the formation of high carbon monoxide (CO) or particulate matter less than 10 microns in diameter (PM_{10}) levels (SJVUAPCD, 1998).

Precipitation and fog tend to reduce or limit some pollutant concentrations. Ozone needs sunlight for its formation, and clouds and fog block the required radiation. CO is slightly water-soluble so precipitation and fog tend to "reduce" CO concentrations in the atmosphere. PM_{10} is somewhat "washed" from the atmosphere with precipitation (SJVUAPCD, 1998).

A monthly climate summary for a monitoring station in Visalia that is in the vicinity of the study area was selected to represent the average climate of the study area. As described in Table 3.2-1, average summer (July) high and low temperatures in the Visalia area are 97.4˚F and 64.3˚F. Average winter (January) high and low temperatures in the Visalia area are 55.4˚F and 37.1˚F. Annual rainfall at the monitoring station averages approximately 10.25 inches. Most of the annual rainfall occurs between November and April, with minor precipitation during summer months. Snow and hailstorms are rare in the area and severe snow and hailstorms are very rare.

Table 3.2-1 Monthly Temperature and Precipitation in Visalia

Month	Temperature (˚F)		Precipitation (inches)
	Maximum	Minimum	
January	55.4	37.1	1.97
February	62.4	70.8	1.85
March	68.2	44.3	1.75

April	75.5	48.4	0.97
May	83.2	53.8	0.33
June	91.3	59.6	0.09
July	97.4	64.3	0.01
August	96.2	62.5	0.01
September	90.2	58.2	0.15
October	80.7	50.8	0.49
November	66.9	42.2	1.04
December	56.0	37.1	1.59

Note: The period of record for both monitoring stations is from December 1, 1927 to December 31, 1999.
Source: WRCC, 2000.

Wind Speed and Direction

Wind speed and direction play an important role in dispersion and transport of air pollutants. Wind can disperse pollution by mixing vertically and by transporting it to other locations.

During summer, wind speed and direction data indicate that summer wind usually originates at the north end of the Basin and flows in a south-southwesterly direction through the Basin, through Tehachapi pass, into the Southeast Desert air basin. In the winter, wind speed and direction data indicate that wind occasionally originates from the south and blows in a north-northwesterly direction. Also during the winter months, the Basin experiences light, variable winds, less than 10 mph (SJVUAPCD, 1998).

Temperature Inversions

The vertical dispersion of air pollutants in the Basin is limited by the presence of persistent temperature inversions. A temperature inversion is when air temperature increases with height to a point referred to as the "mixing height." The mixing height of a temperature inversion represents an abrupt density change where little exchange of air occurs. Inversions are more persistent (stable) during the winter months, when the inversion usually occurs 500 to 1000 feet above the valley floor (SJVUAPCD, 1998).

Existing Air Quality

Criteria Pollutants

The quality of the surface air (air quality) is evaluated by measuring ambient concentrations of pollutants that are known to have deleterious effects. The degree of air quality degradation is then compared to the current National and California Ambient Air Quality Standards (NAAQS and CAAQS). Because of unique meteorological problems in California, and because of differences of opinion by medical panels established by the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (USEPA), there is considerable diversity between state and federal standards currently in effect in California. In general, the CAAQS are more stringent than the corresponding NAAQS. The standards currently in effect in California are shown in Table 3.2-2.

Table 3.2-2 National and California Air Quality Standards

Pollutant	Averaging Time	California Standards[a,b]	National Standards[a, c]
Ozone	8-hour[c]	NS	0.08 ppm

(O_3)	1-hour[d]	0.09 ppm	0.12 ppm
Carbon Monoxide (CO)	8-hour	9.0 ppm	9.0 ppm
	1-hour	20 ppm	35 pm
Nitrogen Dioxide (NO_2)	Annual Average	NS	0.053 ppm
	1-hour	0.25 ppm	NS
Sulfur Dioxide (SO_2)	Annual Average	NS	0.03 ppm
	24-hour	0.04 ppm	0.14 ppm
	1-hour	0.25 ppm	NS
Fine Particulate Matter (PM_{10})	Annual[e]	30 ug/m^3	50 ug/m^3
	24-hour[f]	50 ug/m^3	150 ug/m^3
Fine Particulate Matter (PM2.5)	Annual Average[g]	NS	15 ug/m^3
	24-hour[h]	NS	65 ug/m^3

Notes: NS=no standard

a. Concentration expressed in the following units: ppm refers to parts per million by volume, and ug/m^3 is micrograms per cubic meter.
b. California standards for ozone, CO, SO_2, (1-hour averaging period), NO_2, and PM_{10} are not to be exceeded.
c. The standard is evaluated on the 4th highest (daily maximum) 8-hour average per year, averaged over 3 years.
d. The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is equal to or less than 1. Once attained this standard will no longer be in effect.
e. The PM_{10} annual standard is attained when the expected annual arithmetic mean concentration is less than or equal to 50 ug/m^3.
f. The 24-hour PM_{10} is based on the 99th percentile concentration averaged over 3 years.
g. The annual standard will be met when the 3-year average of the annual arithmetic mean PM2.5 concentration is less than or equal 15 ug/m^3.
h. The 24-hour standard will be met when the 3-year average of the 98th percentile of 24-hour PM2.5 concentration is less than or equal to 65 ug/m^3.

Source: SJVUAPCD, 1998.

Air quality standards are designed to protect those people most susceptible to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. Table 3.2-3 provides a summary of the health effects from the major criteria air pollutants. Healthy adults can tolerate occasional exposure to air pollutant concentrations above these minimum standards before adverse effects are observed.

Table 3.2-3 Summary of Health Effects of the Major Criteria Pollutants

Air Pollutant	Adverse Effects
Ozone	Eye irritation Respiratory function impairment Aggravation of respiratory and cardiovascular diseases
Carbon Monoxide	Impairment of oxygen transport in the bloodstream, increase of carboxyhemoglobin Aggravation of cardiovascular disease Impairment of central nervous system function Fatigue, headache, confusion, dizziness Death at high levels of exposure Aggravation of some heart diseases (angina)
Nitrogen Dioxide	Risk of acute and chronic respiratory disease
Suspended Particulates	Increased risk of chronic respiratory disease Reduced lung function With SO_2, may produce acute illness Particulate matter 10 microns or less in size (PM_{10}) may lodge in and/or irritate the lungs

Source: SCAQMD, CEQA Air Quality Handbook, 1993.

Attainment Status

A summary of the air quality status within the SJVAB relative to meeting the NAAQS and CAAQS is provided in Table 3.2-4. "Nonattainment" is a term used to indicate violations of the standards. In addition, San Joaquin Unified Air Pollution Control District (SJVUAPCD) has several levels of classification based on the severity of the problem. The SJVAB is classified as "severe nonattainment" for the state ozone standard and "serious nonattainment" for federal ozone and PM_{10}. All the non-

urbanized areas of the SJVAB are classified as "unclassified" while urbanized areas are classified "attainment" for federal carbon monoxide standards. Fresno, Tulare, Stanislaus, San Joaquin Counties, and the SJVAB portion of Kern County are designated as "attainment" and Merced, Madera, and Kings Counties are designated "unclassified" by the state for carbon monoxide standards. Current state and federal designations in the SJVAB are indicated in Table 3.2-4.

Table 3.2-4 San Joaquin Valley Attainment Status

Air Basin	O_3		CO		NO_2		PM_{10}	
	State	Federal	State	Federal	State	Federal	State	Federal
San Joaquin Valley Air Basin	N-Severe	N-Serious	A	U/A[a]	A	U/A	N	N-Serious

Notes: A = Attainment; N = Nonattainment; U = Unclassified
[a] 40 CFR Parts 52 and 81 – Fresno urbanized area, Bakersfield metropolitan area, Stockton urbanized area and Modesto urbanized area redesignated attainment on March 31, 1998. All non-urbanized areas of the SJVAB are classified as "unclassified" for federal carbon monoxide standards.
Source: SJVUAPCD, 1998

The SJVUAPCD operates a regional air quality monitoring network that regularly measures the concentrations of the major air pollutants. One of the monitoring stations is on N. Church Street in Visalia, near the project. Data from this monitoring station were selected to provide a general profile of the air quality within the study area. Table 3.2-5 presents the ambient air quality concentrations recorded from 1995 through 1998.

Table 3.2-5 Visalia Air Quality Summary

Standard	1995	1996	1997	1998
Ozone (1-Hour) Standard				
Max. Concentration (ppm)	0.13	0.14	0.13	0.15
Days>CAAQS (0.09 ppm)	48	53	24	54
Days>NAAQS (0.12 ppm)	2	4	1	6
NO_2 (Annual) Standard[a]				
Max. Concentration (ppm)	0.11	0.08	0.10	0.08
Days>CAAQS (0.25 ppm)	0	0	0	0
PM_{10} (24-Hour) Standard[b]				
Maximum Concentration (ug/m^3)	124	115	96	160
Days>CAAQS (50 ug/m^3)	8/63	25/61	11/61	17/62
Days>NAAQS (150 ug/m^3)	0/63	0/61	0/61	1/62
CO (8-Hour) Standard				
Max. Concentration (ppm)	4.4	4.0	4.1	3.8
Days>CAAQS (9.0 ppm)	0	0	0	0
Days>CAAQS (9.0 ppm)	0	0	0	0

ppm=parts per million; ug/m^3=micrograms per cubic meter;
[a] No federal (1-hour) NO_2 standard.
[b] "Days" for PM_{10} are the number of days above annual measurements.
Source: CARB, 1999. California Ambient Air Quality Data 1980 to 1998.

As indicated in Table 3.2-5, there were 13 violations of the NAAQS for ozone during the monitoring period from 1995 to 1998. However, the station recorded 179 exceedences of the CAAQS during the same 4-year monitoring period. With regard to fine particulate matter (PM_{10}), the Visalia station recorded 61 days that exceeded the CAAQS over the 3-year monitoring period. One violation of the NAAQS for PM_{10} was recorded in 1998. There were no violations recorded for nitrogen dioxide or carbon monoxide.

Toxic Air Contaminants

Toxic air contaminants (TACs) are regulated because they are suspected or known to cause cancer, genetic mutations, birth defects, or other serious illnesses in exposed people. TACs are not regulated by the NAAQS and CAAQS but are addressed by the National Emission Standards for Hazardous Air Pollutants (NESHAPs) and Title III of the 1990 Clean Air Act Amendments.

Table 3.2-6 contains the mean concentrations of selected toxic pollutants that are monitored at the SJVUAPCD Fresno 1st Street Air Monitoring station, which is the closest station to the study area that monitors toxic air contaminants. This monitoring program was designed to determine the concentrations in air of various gaseous toxic pollutants that USEPA has defined as those that may reasonably be anticipated to result in increased deaths or serious illness and that are not already regulated.

Table 3.2-6 Toxic Air Pollutant Measurements (Fresno 1st Street Air Monitoring Station)

Parameter	Average Concentrations (parts in billion)		
	1996	1997	1998
Benzene	0.590	0.750	0.640
1,3-Butadiene	0.192	0.200	0.243
Carbon Tetrachloride	0.078	0.107	0.134
Chloroform	0.026	0.024	0.026
ortho-Dichlorobenzene	0.090	0.080	0.100
para-Dichlorobenzene	0.11	0.13	0.15
Ethyl Benzene	0.34	0.33	0.36
Methyl Chloroform	0.096	0.079	0.071
Methyl Ethyl Ketone	0.100	0.230	0.210
Perchloroethylene	0.040	0.045	0.042
Styrene	0.070	0.070	0.130
Toluene	1.57	1.87	2.01
Trichloroethylene	0.014	0.015	0.019
meta/para-Xylene	0.77	0.78	0.91

NA = yearly mean concentration is currently not available
Source: CARB, 1999

The concentrations of toxic pollutants are determined by the level of emissions at the source and the meteorological conditions encountered as these pollutants are transported away from the source. Thus, risks from toxic pollutant emissions tend to be site-specific and their intensity is subject to constantly changing meteorological conditions. The worst meteorological conditions that affect short-term impacts (low wind speed, highly stable air mass, and constant wind direction) occur relatively infrequently.

Existing Landfill Gas Emissions

Municipal solid waste (MSW) landfill emissions, commonly called landfill gas (LFG), are generated by naturally occurring methanogens that decompose complex organic materials into organic compounds of lower molecular weight. Landfill gas consists primarily of carbon dioxide ($C0_2$), methane (CH_4), and non-methane organic compounds (NMOC). The methane strips or transports NMOC through the landfill to the atmosphere (USEPA, 1995). USEPA requires the reduction of MSW landfill emissions from new and existing MSW landfills emitting 50 megagrams (Mg) per year of NMOC or more with: (1) a well-designed and well-operated gas collection system, and (2) a control device capable of reducing NMOC in the collected gas by 98 weight-percent (USEPA, 1995).

A registered civil engineer on the behalf of the County initiated a LFG monitoring program in 1988. Monthly monitoring indicated that methane limits were exceeding the regulatory limits at the eastern edge of the facility property line (County, 1996). To correct the methane exceedances, in 1996 and 1997, Tulare County received permits from SJVUAPCD to construct a landfill gas collection station with an electrical generator to capture and destroy landfill gas, and in 1997 the station began flaring gas. Generation of electricity began in June of 1998, and is distributed through Southern California Edison. Two conditions of the permits require that the generator engines VOC destruction/treatment efficiency shall be at least 98 percent by weight, and overall engine emission rates shall not exceed PM_{10}: 0.19 lb/hr, NOx (oxides of nitrogen): 2.87 lb/hr, and CO: 6.21 lb/hr. Although the gas collection system runs continuously, it should be noted that the destruction/treatment flare only needs to operate about one hour a month. A private contractor who runs the landfill gas collection system transports the collected landfill gas off site to be sold to electric companies (County, 2000a).

Existing Criteria Pollutant Emissions

Many constituents of landfill gas fall under the category of VOC, which is a precursor to ozone formation (ESA, 1998). Other existing sources of criteria pollutants are generated from on-site and off-site sources. Off-site sources are associated with refuse haul trips and trips by commuting workers to and from the facility. On-site sources are associated with heavy-duty diesel equipment and trucks handling soil and refuse on the site. Existing ozone precursors (NOx and VOCs) exhaust emissions were estimated using USEPA (USEPA, 1994, 1995, and 1998) and South Coast Air Quality Management District (SCAQMD, 1993) emission factors and existing project factors and assumptions. Fugitive dust emissions from truck travel over unpaved surfaces and earthmoving associated with dumping of refuse and applications of daily cover are also generated by operations of the existing landfill. Refer to Appendix E for the NOx and VOC emissions factors, project factors, and other assumptions as they relate to existing on-site and off-site sources. Table 3.2-7 presents existing criteria pollutant emissions at Visalia Landfill.

Table 3.2-7 Existing Ozone Precursor Emissions at Visalia Landfill

Source	Ozone Precursors (tons per year)	
	VOC	NOx
Off site	4.88	6.14
On site	1.36	12.29
Total	6.24	18.43

Applicable Regulations, Plans, and Standards

Federal, state, and regional agencies have established air quality standards, regulations, and plans that affect projects. The following federal and state regulatory considerations may apply to the project and to all alternatives.

Federal Regulations and Standards

- The Federal Clean Air Act of 1970 directs the attainment and maintenance of National Ambient Air Quality Standards (NAAQS). The 1990 Amendments to this Act determine attainment and maintenance of NAAQS (Title I), motor vehicles and fuel reformulation (Title II), hazardous air pollutants (Title III), acid deposition (Title IV), operating permits (Titles V), stratospheric ozone protection (Title VI), and enforcement (Title VII).

- The USEPA implements New Source Review (NSR) and Prevention of Significant Deterioration (PSD). PSD applies to major sources with annual emissions exceeding either 100 or 250 tons per year (TPY) depending on the source, or that cause or contribute adverse impacts to any Federally classified Class I area.

- The USEPA implements the NAAQS and determines attainment of federal air quality standards on a short- and long-term basis.

- Section 111(b) and 111(d) of the Clean Air Act Amendments, known as New Source Performance Standards (NSPS) and associated Emission Guidelines (EG), require municipal solid waste landfill owners and operators to evaluate and possibly control landfill air emissions.

- All landfills subject to NSPS or EG are also subject to Title V, regardless of emissions or major sources status. A Title V permit is an umbrella permit, which consolidates all federal, state, and local air quality regulations and requirements into one permit. Although the Title V permit is required in addition to any Authority to Construct permits or Permits to Operate required by any local agency, these additional permits are pulled into the Title V permit and, thus, becomes the guiding document for air quality compliance at a site.

State Regulations and Laws

- The California Air Resources Board (CARB) has established the California Ambient Air Quality Standards (CAAQS) and determines attainment status for criteria air pollutants.

- The California Clean Air Act (CCAA) went into effect on January 1, 1989 and was amended in 1992. The CCAA mandates achieving the health-based CAAQS at the earliest practicable date.

- The California Health and Safety Code, Division 26 Air Resources, Part 6 Air Toxics Hot Spots Information and Assessment, Section 44300, requires an inventory of air toxics emissions from individual existing facilities, an assessment of health risk, and notification of potential significant health risk when found to be present.

- California Health and Safety Code, Division 26 Air Resources, Chapter 6 Facility Toxic Air Contaminant Risk Reduction Audit and Plan, Section 44390, provides guidelines to identify a more realistic health risk, requires high risk facilities to submit an air toxic emission reduction plan, holds air districts accountable for ensuring that the plans will achieve their objectives, and high risk facilities will be required to achieve their planned emission reduction.

- California Health and Safety Code, Division 26 Air Resources, Chapter 3.5 Toxic Air Contaminants, Article 2.5 Coordination with the Federal Act, Section 39656, sets forth provisions to implement the Federal program for hazardous air pollutants.

- The Calderon Amendments to the California Health and Safety Code (Section 41805.05) require that all landfill owners/operators perform gas and ambient air testing for ten compounds (vinyl chloride, benzene, ethylene dibromide, ethylene dichloride, methylene chloride, perchloroethylene, carbon tetrachloride, methyl chloroform, trichloroethylene, and chloroform), and report the results to the local air districts.

SJVUAPCD Plans

- *1991 Air Quality Attainment Plan for the San Joaquin Valley.* Establishes the regulatory groundwork in order to bring the SJVAB into compliance with CAAQS for ozone and CO.

- *1992 Federal Attainment Plan for Carbon Monoxide.* Establishes the regulatory groundwork in order to bring the SJVAB into compliance with NAAQS for CO.

- *The Ozone Attainment Demonstration Plan.* Establishes the regulatory groundwork in order to bring the SJVAB into compliance with NAAQS for ozone. This plan also satisfies the required triennial review for the CAAQS.

- *PM_{10} Attainment Demonstration Plan.* Establishes the regulatory groundwork in order to bring the SJVAB into compliance with the NAAQS for PM_{10}.

3.2.2 Air Quality Impacts

Significance Criteria

This discussion provides information on the significance criteria for construction and operation related activities. It provides regulatory thresholds that have been established to determine if a project would impact air quality.

Construction. A project's construction phase produces many types of emissions, but PM_{10} is the pollutant of greatest concern (SJVUAPCD, 1998).[1] The SJVUAPCD emphasizes implementation of effective and comprehensive control measures outlined in Regulation VIII to reduce potential significant construction impacts to a level of less than significant. Regulation VIII Control Measures are presented below in Table 3.2-8.

Table 3.2-8 SJVUAPCD Control Measures For Construction Emissions of PM_{10}

Regulation VIII Control Measures
All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.
All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizers/suppressant.
All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of container shall be maintained.
All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. (The use of dry rotary brushes is expressly prohibited except where proceeded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)
Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.

Source: SJVUAPCD, 1998

Operations. The thresholds for ozone precursors, carbon monoxide concentrations, and offensive odors are presented below:

Ozone Precursor Emissions Thresholds. Ozone precursor emissions from project operations should be compared to the thresholds provided in Table 3.2-9. Projects that emit ozone precursor air pollutants in excess of the levels presented in Table 3.2-9 would be considered to have a significant air quality impact

[1] It is recognized that construction equipment emits carbon monoxide and ozone precursor emissions. The SJVUAPCD has determined that these emissions may cause a significant air quality impact only in the cases of very large or very intense construction project.

(SJVUAPCD, 1998). Both direct (on site) and indirect (off site) operational emissions should be compared to the thresholds provided in Table 3.2-9.

Table 3.2-9 Ozone Precursor Thresholds of Significance for Project Operations

Pollutant	Tons/year
ROC	10
NOx	10

ROC= reactive organic compounds [same as volatile organic compound (VOC)]
Source: SJVUAPCD, 1998.

Local Carbon Monoxide (CO) Concentrations Thresholds. Estimated CO concentrations exceeding the CAAQS of 9 parts per million (ppm) averaged over 8 hours and 20 ppm for 1 hour would be considered a significant impact (SJVUAPCD, 1998).

Offensive Odors. Any project with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact (SJVUAPCD, 1998).

3.2.3 Project Impacts

Air quality construction impacts associated with the project would result from closure of the existing WMU, development of the new WMU, and construction of the new entrance complex. However, some activities would occur continuously throughout project operations and would not occur as a discrete event as construction activities do in typical development projects. Consequently, project-related air quality impacts are considered to occur as long-term impacts due to project operation.

Landfill Gas Emissions. As described in Section 3.2.1, the existing WMU has a gas collection and flaring system in place permitted by the SJVUAPCD, which is designed to have a destruction efficiency of 98 percent.

With regards to the new WMU, when organic waste is initially placed in a landfill, it contains oxygen and decomposes aerobically for a short period of time, and produces mainly carbon dioxide. After the oxygen is largely depleted, anaerobic microbes begin producing primarily methane, carbon dioxide, and water. The gas produced by the anaerobic decomposition seeps through the layers of waste and soils until it reaches the surface and is emitted to the atmosphere.

New Source Performance Standards (NSPS) will regulate the installation of a gas collection and control system at the new Visalia Landfill expansion. Pursuant to NSPS, and the State Calderon Amendments, the County would be required to solicit an independent contractor to initiate a landfill gas monitoring program at the new WMU site and submit reports on a regular basis to the Tulare County Health and Human Services Agency, acting as the local enforcement agency for the California Integrated Waste Management Board. NSPS will require the County to direct landfill gas to the existing gas flare system when the landfill passes a specific gas production threshold of 50 megagrams (Mg) per year. Flares operate at a destructive removal efficiency of at least 98 percent for volatile organic compounds.

Generation of landfill gas emissions at the new WMU would increase in future years. However, the operation of a gas collection and control system would substantially reduce future landfill gas emissions. Impacts would therefore be considered adverse, but less than significant (**Class III**).

Off-site Emissions. It is anticipated that the proposed project would increase daily waste trips associated with the existing facility by approximately 800 trips per day to a maximum of approximately 1,020 trips per day. The daily trips associated with commuting workers would be approximately 30 trips per day. Annual off-site NOx and VOC emissions where estimated for the new WMU (Table 3.2-7) using USEPA (USEPA, 1998) and SCAQMD (SCAQMD, 1993) emission factors. Trips were estimated to be approximately 20 miles (roundtrip) because it is anticipated that the new WMU would provide service to the City of Visalia, the City of Dinuba, the City of Woodlake, residential self-haul, and commercial self-haul. Please refer to Appendix E for all other assumptions regarding off-site NOx and VOC emissions associated with the project.
As shown in Table 3.2-10, VOCs and NOx emissions associated with off-site project operations are 20.51 and 33.29 tons per year, which exceeds the SJVAPCD threshold for project operations. In addition, fugitive dust associated with approximately 800 additional truck trips would be generated. The project is not expected to significantly change the regional number of overall trips within the SJVAB or Tulare County related to refuse collection and disposal because without the project, truck trips would still occur, but would involve use of alternative landfills.

Table 3.2-10 Ozone Precursor Emissions at the Proposed Visalia Landfill Expansion

Source	Ozone Precursors (tons per year)	
	VOC	NOx
Off site	20.51	33.29
On site	4.12	39.79
Total	21.63	73.08

Off-site emissions associated with the new WMU would increase over what is currently experienced at the existing facility. The total number of vehicle trips within the SJVAB and Tulare County would not increase as a result of the project so the project is expected to have minor impacts on regional emissions. However, calculated off-site ozone precursor emissions for the proposed project exceed the VOC and NOx significance criteria of 10 tons per year; therefore, these emissions would trigger an unavoidable significant impact **(Class 1**).

With regard to PM_{10} emissions, SJVUAPCD requires applicants to implement specific measures to control off-site and on-site fugitive dust, referred to as Regulation VIII Control Measures (see Table 3.2-8). Regulation VIII Control Measures are not considered mitigation because they are required by law. Section 3.2.4 contains "enhanced and additional measures" (Mitigation Measures AQ-1 through AQ-4) that SJVUAPCD recommends for construction sites of significant size, such as the proposed project. Implementation of SJVUAPCD Regulation VIII Control Measures and Mitigation Measures AQ-1 through AQ-4 would reduce PM_{10} emissions. However, because the proposed project is unlike typical construction projects in that PM_{10} emissions would be generated over a long period of time, PM_{10} impacts associated with the project are considered significant and unavoidable **(Class I)**.

On-site Emissions. Landfill equipment and vehicles handling materials on the landfill site would generate on-site exhaust and fugitive dust emissions. With the worst case scenario of 2,000 tons of refuse brought to the site per day (proposed permit capacity), this analysis assumes equipment and vehicles at the new WMU include three bulldozers, two compactors, two graders, two scrapers, two loaders, two water trucks, two cage trucks, a bin truck, and three ¾ ton trucks. Project exhaust emissions were estimated using USEPA (USEPA, 1994, 1995, and 1998) and South Coast Air Quality Management District (SCAQMD, 1993) emission factors and existing project factors and assumptions (see Appendix E for all assumptions and calculations). Project NOx and VOC exhaust emissions are presented in Table 3.2-10.
Project fugitive dust emissions associated with additional truck travel over unpaved surfaces and earthmoving associated with dumping of refuse would be elevated over levels associated with existing operations at the landfill. These increases would be in proportion to actual increases in waste volumes.

On-site emissions associated with operations of the new WMU would increase over current emissions levels of the existing WMU. To address fugitive dust, the project has been designed to incorporate the following project commitments: Personnel will implement procedures to control and minimize the creation of dust and prevent safety hazards due to obscured visibility. A water truck will be used on unpaved roadways during the dry season for dust suppression. The application rate of liquids discharged to the cover for dust control will be performed in a manner that minimizes the potential for through flow to the underlying waste. The implementation of the project commitments described above, Regulation VIII Control Measures, and Mitigation Measures AQ-1 through AQ-4 described in Section 3.2.4 would reduce potentially significant fugitive dust emission levels. However, because the project is unlike typical construction projects in that PM_{10} emissions would be generated over a long period of time, PM_{10} impacts associated with the project are considered significant and unavoidable (**Class I**).

The total amount of equipment exhaust associated with on-site project activities would exceed the significance criteria of 10 tons per year for NOx and VOCs, thus triggering a significant impact. Although, implementation of Mitigation Measures AQ-5 through AQ-7 described in Section 3.2.4 would not reduce potentially significant impacts to less than significant (Class II), the measures are included to reduce ozone precursor emissions as much as feasible. Impacts associated with on-site exhaust emissions are considered to be significant and unavoidable **(Class I**).

Table 3.2-11 shows the difference in estimated emissions associated with existing operations at the Visalia Landfill compared to the estimated emissions associated with proposed operations at the new WMU. The difference in emissions between existing operations and proposed operations reflect the approximately 800 additional daily trips and elevated on-site construction equipment hours that are associated with the project maximum scenario of 2,000 tons of refuse per day.

Table 3.2-11 Criteria Pollutant Emissions at the Proposed Visalia Landfill Expansion

Source	Ozone Precursors (tons per year)	
	VOC	NOx
Proposed	24.63	73.08
Existing	6.24	18.43

Difference	+18.39	+54,65

Odor Emissions. Municipal waste is a source of objectionable odors. However, there is no history of odor complaints associated with the existing landfill (Tulare County, 2000). Odors associated with the recycling facilities are not normally a problem if there is a sufficient buffer distance to the nearest sensitive receptor.

Odors associated with operations of the new WMU could be potentially significant. However, implementation of Mitigation Measure AQ8 and AQ9 described in Section 3.2.4 would reduce potentially significant impacts to less than significant (**Class II**).

3.2.4 Mitigation Measures

In addition to the Regulation VII Control Measures, the following measures shall be implemented to reduce potential fugitive dust emissions:

AQ-1 Limit traffic speeds on unpaved roads to 15 mph.

AQ-2 Install erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.

AQ-3 Suspend excavation and grading activity when sustained winds exceed 20 mph.

AQ-4 Limit area subject to excavation, grading, and other construction activity at any one time.

The following measures shall be implemented by the County to reduce exhaust emissions from construction equipment:

AQ-5 Minimize idling time.

AQ-6 Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use.

AQ-7 Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.

The following measures shall be implemented by the County to reduce potential impacts associated with landfill odors:

AQ-8 The landfill operator shall bury excessively odorous wastes immediately with other landfill wastes, depending on their nature and source.

AQ-9 The landfill operator shall ensure that loading, unloading, and material handling activities are carried out efficiently and without delays to avoid excessive odors.

3.3 BIOLOGICAL RESOURCES

3.3.1 Environmental Setting

Regional Overview

Of the four natural communities that originally covered most of the San Joaquin Valley, riparian woodland, valley grassland, freshwater marshland, and saltbush scrub, less than five percent remains undeveloped, and what remains is in fragmented, scattered parcels. These tiny remnants have been severely altered and degraded from their natural state. Reduction has largely been due to the development of the region's agricultural potential, and the introduction of exotic species of plants and animals. As these natural communities disappeared, the species dependent on them also began to vanish. Today, the San Joaquin Valley has a greater number of endangered and threatened species than any other region of the United States outside of Hawaii (USFWS, 1998).

Tulare County is seated in the southern portion of San Joaquin Valley. Over 300 species of birds have been observed in the county (Hanson, et al., 1997) and just over 50 mammals are presumed present (Jameson and Peeters, 1988). Visalia, the closest city to the project, is generally surrounded by agricultural uses with shallow vernal pools and lakes scattered across the level landscape. The St. Johns River and Cross Creek are only about 2 miles northwest of the Project.

Local Environment

A reconnaissance survey of the existing landfill and proposed expansion area was conducted February 3 and 4, 2000 by Aspen biologists. All landfill expansion areas and the current landfill were walked at a moderate pace, and notes recorded for any wildlife or plant sightings. The discussion of the biological resources is based on this field visit.

The biological characteristics of the sites have been greatly altered as a result of human development and activity. The Project can be divided into six general sites that are described in more detail below (Figure 3.3-1, Table 3.3-1).

Vegetation

The northwest section of the Project is highly disturbed due to frequent discing and grading (Figure 3.3-1). Vehicle tracks cross the area and recent evidence of brush clearance was observed. Litter in the form of plastic and paper debris was scattered intermittently across the area. The borrow pit is completely devoid of vegetation with the exception of a small patch of vegetation along the western edge. The northwest section appears to be scrapped clean of vegetation and soil on a regular basis. Due to the highly disturbed nature of the storm water retention basin (SWRB), non-native grasses and weedy non-native annuals dominate the area. Non-native brome grasses such as ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordiaceous*) and foxtail chess (*Bromus madritensis*) dominate the slopes

Figure 3.3-1 Biological Resources on the Landfill Site
(8 ½ x 11 B/W)

Table 3.3-1 Summary of Biological Resources within the Project Area

Location/Site	Facilities	Vegetation	Wildlife	Potential for TES* Species
Northwest	Approximately 66 acres with landfill entrance, borrow pit, composting area and storm water retention basin (SWRB).	Vegetation observed along the borrow pit was limited to a small population of mesic species. Due to the highly disturbed nature of the SWRP non-native grasses and weedy non-native annuals dominate the area.	Numerous small burrows were located across the slopes of the SWRB. Urban birdlife is present.	A number of dens and burrows may provide suitable shelter for burrowing owls or San Joaquin kit fox.
West-Central	132 acres of highly disturbed non-native grassland and is currently in active use as a landfill. A former liquid waste area is also on the site.	The site appears to be disced and mowed on a regular basis. Most vegetation appears to be limited to the eastern and southern edge of the landfill where construction is limited.	Foraging gulls and other urban birdlife. Numerous pocket gopher and ground squirrel burrows were observed at the north end of the liquid waste site.	A single burrowing owl was observed perched at the mouth of a small burrow. Four possible active owl burrows were located at the northern edge of the liquid waste site with fresh scat and throws present near the mouth of the burrows.
Southwest	66-acre devoid of vegetation with the exception of an approximately 5.5 acre section along the southern border of the landfill (northern half of section), which contains a shallow depression. The landfill gas facility is here.	Vegetation located within the 5.5-acre parcel consists of a disturbed non-native grassland dominated by ripgut brome, soft chess, foxtail fescue (*Vulpia* sp.) and barly.	Large numbers of California and ring-billed gulls, large number of rodents, and raptors flying overhead.	A burrowing owl was observed within the parcel and approximately 10 possible burrowing owl dens were located along the rim of the drainage. A large burrow was located, which may offer suitable shelter for the San Joaquin kit fox.
Northeast	66 acres of recently planted row crops. A small irrigation canal surrounds the parcel.	New row crops of grain, limited weedy vegetation along the edges.	Mule deer tracks within the irrigation canal.	None
East-Central	Approximately 120 acres of fallow fields.	The eastern border of the site is devoid of vegetation with recent signs of discing. The central portion of the parcel has recently been planted with row crops while a recently disced fallow field characterizes the western section.	Due to the disturbed nature of the area and present agricultural use it is unlikely that many species utilize the site.	None
Southeast	The eastern 33-acre section is devoid of vegetation with recent evidence of discing. A cotton gin, grain silos and storage yard comprise the remaining 33-acres.	Non-native grasses dominate the disturbed area.	Urban wildlife throughout the area and raptors overhead.	A large burrow was located at the southern end of the cotton gin building, which may offer suitable habitat for the San Joaquin kit fox.

* TES = threatened, endangered, or sensitive species

of the SWRB. Additional non-native grasses include dense stands of peppergrass (*Lepidium* sp.), Italien rye (*Lolium* sp.) and small populations of bermuda grass (*Cynodon dactylon*). Weedy species include scattered populations of Russian thistle (*Salsola trago*), black mustard (*Brassica nigra*), telegraph weed (*Heterotheca grandiflora*), prickly lettuce (*Lactuca serriola*) and horse weed (*Conyza Canadensis*). A single mulefat (*Baccharis salicifolia*) was located at the northwest corner of the SWRB while isolated populations of dove weed (*Eremocarpus setigerus*), fireweed (*Epilobium* sp) and sunflower (*Helianthus* sp) are found across the slopes of the basin. The bottom of the basin is scrapped clean and is primarily devoid of vegetation. Vegetation observed along the borrow pit was limited to a small population of mesic species including mulefat, tree tobacco (*Nicotianna glauca*), lady's thumb (*Polygonum* sp.), prickly lettuce and rabbits foot grass (*Polypogon monospeliensis*). Isolated populations of telegraph weed, black mustard, cudweed (*Gnaphalium* sp), and horseweed (*Conyza canadensis*) were located along the perimeter of the borrow pit.

Landfill operations dominate the west-central section of the project. The landfill contains approximately 132 acres of highly disturbed non-native grassland and is currently in active use. Several dirt roads lead into the site and construction activity is continuous. The former liquid waste area is included within this section. Currently the liquid waste site is not in use. However recent evidence of burning was observed within the parcel in addition to numerous tire tracks. The surface sections of this area are scattered with methane retention hoses, vehicle tracks, and litter in the form of plastic and paper debris. This section of the project appears to be disced and mowed on a regular basis. Most vegetation appears to be limited to the eastern and southern edge of the facility where construction is limited. The western section of the facility appears to be mowed regularly and consists of a low diversity, weedy slope. Dominated by non-native brome grasses, emerging mustards, telegraph weed and ragweed's (*Ambrosia* sp.) other species could not be discerned due to the disturbed nature of the site. The eastern slope of the landfill consists of highly disturbed non-native grassland including brome grasses, barly (*Hordeum* sp.), and weedy annuals including black mustard, tumble pigweed (*Amaranthus albus*), ragweeds, Russian thistle, and wild heliotrope (*Phacelia sp.*). A narrow section of hillside bisected by an access road contained an isolated castor bean and several small populations of horseweed. Within the former liquid waste site small populations of Russian thistle, black mustard, tumble pigweed, and non-native grasses were scattered across the otherwise burnt and barren site.

The southwest section is devoid of vegetation with the exception of an approximately 5.5 acre piece along the southern border of the landfill (northern edge of this section), which contains a shallow depression. The landfill gas facility is located adjacent to Road 80 at the western edge of the depression. The depression acts as a drainage that may hold water after a rain event. Vegetation located within the 5.5-acre piece consists of disturbed non-native grassland dominated by ripgut brome, soft chess, foxtail fescue (*Vulpia* sp.) and barly. Disturbance to the site includes recent evidence of discing; tire tracks, paper and plastic litter and target shooting. A recently disced cotton field is located to the south of the existing landfill at the intersection of Avenue 328 and Road 80. The southern half of the section is devoid of vegetation with the exception of isolated emerging Russian thistle and non-native grasses. Small populations of telegraph weed, mustard and burr clover (*Medicago polymorpha* ssp. *hispida*) are found across the slope while Russian thistle and black mustard are scattered intermittently across this section. Small populations of mulefat, Gooddings willow (*Salix gooddingii*), narrow-leaved willow (*Salix exigua*) and Fremont's cottonwood (*Populus fremontii*) were located along the bottom of the drainage and intermixed with groups of rush (*Juncus* sp), fireweed, saltgrass (*Distichlis* sp.), prickly lettuce, and johnsongrass (*Sorghum halepense*).

The northeast section of the proposed expansion area consists of 66 acres of recently planted row crops (grain). A small irrigation canal surrounds the parcel; however vegetation was limited to weedy non-native species. A small population of cheeseweed (*Malva parviflora*), Russian thistle, sow thistle (*Sonchus asper*), shepard's purse (*Capsella bursa-pastoris*) and red stemmed filaree (*Erodium cicutarium*) border the area.

The east-central section has three different uses. The eastern section of the site is presently devoid of vegetation due to recent discing. Most likely the site is in preparation for new row crop planting. Row crops of wheat or barly have recently been planted within the central portion of the site. Numerous tire

tracks were observed within the western section and recent signs of burning were discovered. Remnants of telegraph weed, Russian thistle, horseweed and milk thistle (*Silybum margianum*) were observed along the recently cleared western section.

The southeastern portion of the proposed expansion area is approximately 66 acres in size and is located adjacent to Avenue 328. Currently the eastern 33 acres of the section is devoid of vegetation with recent evidence of discing. A cotton gin, grain silos, and storage yard adjacent to some highly disturbed non-native grassland comprise the remaining 33 acres. Further, numerous cotton trailers are in storage north of the facility. Disturbance includes recent evidence of burning, discing and mowing. Corn waste and litter are located across the section. Non-native grasses dominate the disturbed area and include foxtail chess, barly, soft chess and ripgut chess. Red-stemmed filaree, cheeseweed, telegraph weed and Russian thistle were located intermittently across the parcel. Several small populations of nightshade (*Solanum* sp.) were located adjacent to debris piles and concrete blocks.

Wildlife

In the northwest site, the SWRB had the most evidence of wildlife use. Numerous small burrows were located across the slopes of the SWRB and may support California ground squirrel (*Spermophylius beecheyi*), Botta's pocket gopher (*Thomomys bottae*), and California vole (*Microtus californicus*). A feral domestic cat (*Felis domesticus*) was observed along the perimeter of the basin while scat from coyotes or domestic dogs (*Canus* sp.) and black tailed hare (*Lepus californicus*) were observed in the basin bottom. Ravens (*Corvus corax*), western meadowlark (*Sturnella neglegta*) and savannah sparrows (*Passerculus sandwichensis*) were flushed from the brush during the survey while a loggerhead shrike (*Lanius ludovicianus*) was observed roosting along the fence line. Several Lincoln's sparrows (*Melospiza lincolnii*) and a horned lark (*Eremophila alpestris*) were observed foraging in the basin while the remains of a ringed neck pheasant (*Phasianus colchicus*) were found at the western edge of the property. A killdeer (*Charadrius vociferous*) was heard vocalizing near the borrow pit and an American crow (*Corvus brachyrhynchos*) was observed in the empty western portion of the borrow.

California ground squirrel burrows, vole trails and rabbit scat were observed across the eastern border of the existing WMU, which dominates the west-central section of the proposed expansion area. American crows, meadowlarks, savannah sparrows and an American pipit (*Anthus rubescens*) were observed within the underbrush. Ringbilled gulls (*Larus delawarensis*) and California gulls (*Larus californicus*) were observed foraging at the existing WMU. Numerous pocket gopher and ground squirrel burrows were observed at the north end of the liquid waste site. In addition, a single burrowing owl was observed perched at the mouth of a small burrow. Four possible active owl burrows were located at the northern edge of the liquid waste site with fresh scat and throws present near the mouth of the burrows.

The southwest section has large numbers of California and ring-billed gulls within the center of the disced cotton field. Northern harrier (*Circus cyaneus*), American kestral (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*) and a turkey vulture (*Cathartes aura*) were observed in flight over the site. A Northern shrike (*Lanius excubitor*) was flushed from the willows during the survey and at least one

burrowing owl was located within the drainage. Numerous pocket gophers, vole trails, and ground squirrel burrows were located across the parcel and two black tailed hares were spotted moving through the grass. The large number of rodents associated with the site most likely offers suitable forage for the variety of raptors observed.

The northwest and west-central sections have few wildlife resources. Mule deer (*Odocoileus hemionus*) tracks were observed within the irrigation canal. Ravens, horned larks, and western meadowlarks were observed moving within the area. Two black tailed hares were flushed from hiding and several pocket gopher and vole trails were observed. Due to the disturbed nature of the area and present agricultural use it is unlikely that many species utilize the two sections.

In the southeast section, rabbit scat was found, in addition to numerous pocket gopher and vole trails. A red-tailed hawk was observed flying over the parcel and a barn owl (*Tyto alba*) feather was located within the cotton gin building. Similarly, several rock doves (*Columba livia*), horned larks, and house finches (*Carpodacus mexicanus*) were observed adjacent to the cotton gin.

Endangered, Threatened, Candidate, and Sensitive Species

To provide a comprehensive analysis of the baseline conditions for endangered, threatened, candidate, and sensitive species, a records search of the California Natural Diversity Database (CNDDB), and a reconnaissance survey in the field were performed. No federal or state-listed rare, endangered, proposed for listing or candidate wildlife species were observed during the course of the reconnaissance survey within the northeast or west-central portions of the proposed expansion area (Table 3.3-2).

Table 3.3-2 Sensitive Species Potentially Occurring in the Vicinity of the Project

Common Name *Scientific Name*	Status		Habitat and Potential Locations
	State	Federal	
San Joaquin Kit fox (*Vulpes macrotis mutica*)	Threatened	Endangered	Some dens of the size appropriate for kit fox were identified on site, but no individuals were present during a winter survey.
Burrowing owls (*Athene cunicularia)*	Species of Concern	None	Several individuals seen during a winter survey. Suitable habitat present along some berms.
Vernal Pools Species			Recorded locations are more than 1 mile from the Project, and no evidence was seen during the reconnaissance survey

The results of the survey and records search are presented in Table 3.3-2 and discussed in more detail below.

San Joaquin Kit Fox. The San Joaquin kit fox (*Vulpes macrotis mutica*) is a state-listed threatened and a federally listed endangered species. The fox is a small dog-like species with a body length of 20 inches, a tail of 12 inches, and weighs up to 5.5 pounds. Kit foxes are primarily nocturnal. Kit foxes use their dens year-around, occupying several dens through the year. Activities that reduce the number of denning sites are a major threat to the fox. For instance, the conversion of valley lands to irrigated cropland has been the primary factor in the decline of fox populations. Kit foxes forage on small rodents and rabbits; a large forage base is available for the San Joaquin kit fox in the nearby fields and at the facility. According to

the California Natural Diversity Database the San Joaquin kit fox occupies the land surrounding the facility (CNDDB, 2000).

Based on a site survey several areas were identified as potential locations that may support denning by the San Joaquin kit fox. These potential locations (Figure 3.3-1) include:

- A large coyote den located at the southeast corner of the storm water retention basin
- A large possible burrow was located in the southwest section
- A possible burrow at the southern end of the cotton gin building (southeast section).

Burrowing Owls. Burrowing owls, a CDFG Species of Special Concern, are protected year round and nest burrows cannot be legally disturbed during the nesting season (February 1 to August 31). The owls are small (10 inch) with relatively long legs and are active just before and after sunrise and sunset. Preferred nest sites are in abandoned burrows of ground squirrels and other mammals. This species is very site tenacious and use the same burrows from year to year. They are not easily forced to move to a new burrow, especially during the nesting season. The decline of burrowing owl in California can be attributed to habitat loss and urban development.

According to the California Natural Diversity Database populations of burrowing owls were recorded in 1998 approximately 2 miles northeast of the project (CNDDB, 2000). Burrowing owls (*Athene cunicularia*) were observed on site the former liquid waste site and the southeast section, and several locations were suitable for occupation (Figure 3.3-1). Burrows were identified in the following locations:

- Several smaller burrows along the eastern edge of the storm water retention basin
- Approximately 10 possible burrowing owl dens were located along the rim of the southern drainage to the landfill
- A single burrowing owl was observed within the former liquid waste site
- Along the depression on the north side of the southeast section.

Vernal Pool Species. Vernal pools are rare, meadow-like habitats with a unique flora and fauna adapted to ephemeral aquatic conditions. These habitats are typically inundated during and after the winter rainy period, flourish with rapid growth and reproduction in the spring, and become dry and dormant during the Mediterranean summer. Vernal pools only hold water a portion of the year, and are typically shallow (2 to 12 inches). Over 95 percent of vernal pool habitat is estimated to be lost from human activities, including urban and agricultural development, off-road vehicle disturbance, alteration of watersheds, trash dumping, and water pollution. The loss of these pools has had a large impact on sensitive species, which depend on this habitat.

The California Natural Diversity Database search indicates that vernal pools are present within the grasslands of the valley, but none have been located within 1 mile of the project (CNDDB, 2000). No vernal pools were observed during the reconnaissance surveys in the proposed expansion areas.

However, due to the paucity of recent rainfall and the time of the survey some annual species may have not been discernable.

3.3.2 Project Impacts

Significance Criteria

Consistent with the CEQA Guidelines, an impact is considered significant for biological resources if it would:

- Conflict with locally adopted environmental plans, policies, and ordinances, especially those that protect biological resources of recognized ecological, scientific, educational, or recreational importance, including established thresholds and guidelines on impact significance.
- Substantially affect an endangered, rare or threatened species, or its habitat as recognized by local, state or federal agencies or scientific organizations.
- Interfere substantially with the movement of resident or migratory fish and wildlife species.
- Substantially diminish habitat for plants, fish or wildlife.

An impact is considered to be substantial if it is potentially of large magnitude and/or long duration, taking into account the abundance, distribution, and sensitivity to impact the affected resource.

Construction Impacts

Several direct impacts to wildlife would be expected with the proposed facility expansion. These impacts are summarized and discussed in more detail immediately following this summary.

- The removal of vegetation on landscape features that results in the temporary loss of wildlife habitat along with the displacement and/or potential elimination of resident wildlife species (**Class II**)
- Temporary degradation of the value of adjacent habitat areas due to disturbance, noise, increased human presence, and vehicle traffic during construction (**Class III**)
- Temporary disruption of movement corridors crossed by the project (**Class III**).

The new WMU would occupy a maximum footprint of approximately 115 acres upon completion of the base liner system. Development of the new WMU would require excavation and placement of engineered fill in order to meet proposed base liner grades. The area is currently used for fields and is periodically disced, so development only removes marginally potential habitat for species (**Class III**). The new borrow and retention basins would also have minimal impacts due to the highly disturbed nature of the current land uses (**Class III**). However, if grading activities must occur on the north edge of the former liquid waste area, or along the drainage (north edge of the southeast section), burrowing owls and potential San Joaquin kit fox dens would be impacted (**Class II**). The installation of the new entrance and associated facilities will add additional paving to the area and the removal of the east wall from the cotton

gin building. The loss of this land is not expected to substantially effect the forage base for San Joaquin kit fox, however, the potential den site, if lost during construction, would cause potentially significant impacts (**Class II).**

During the construction phase for a new WMU, the amount of human presence would exceed or be similar to the amounts during current and future operations. Both burrowing owls and kit foxes must tolerate a human presence now due to the existing WMU. However, current activities do not present an imminent and direct threat to their dens. If construction can avoid sensitive areas or sensitive times, the impact of human disturbance is expected to be minimal (**Class III**). Implementation of mitigation measures B1 through B4 would reduce impacts to the burrowing owl and to the San Joaquin kit fox.

The installation of the new WMU would require construction equipment and personal vehicles to travel to the site on a daily basis. The increased number of cars however is not expected to change the movement patterns of the nearby wildlife. The expansion area does not include habitat normally associated with a wildlife corridor (e.g., riparian zones or tree rows), and its loss would not be expected to alter movement patterns.

The above impacts of the proposed expansion are based on the following assumptions:

- Grading activities do not occur on the east edge of the existing Storm Water Retention Basin, the north edge of the former liquid waste area, or along the drainage to the landfill gas facility (north edge of the southeast section)
- The existing cotton gin building would be converted into the public tipping facility, but no additional paving or landscaping is installed on the southern side of the building.

Failure to meet these assumptions could result in potentially significant impacts on wildlife (**Class II**).

Operation Impacts

Increased traffic to the southern edge of the proposed expansion (Avenue 328) would change the patterns of wildlife movement, but this should not be to a significant degree because some of the current trash disposal traffic likely uses this route to access the eastern entrance (**Class III**).

Typical landfill operation procedures such as emptying trucks, covering the trash with soil, and the gas collection piping would result in impacts to wildlife only if landfill personnel or their contractors take actions that cause harm to sensitive wildlife or their habitat (**Class II**). The actions themselves, if carried out following protective guidelines, however, will cause minimal impact. Implementation of mitigation measure B5 would reduce this impact to a less than significant level (**Class III**). The result of the operations, a new mound and two borrow areas could change the movement patterns of wildlife to a minimal degree (**Class III**).

3.3.3 Mitigation Measures

No significant and unavoidable biological impacts have been identified for the facility expansion. However, mitigation measures are proposed for activities that can be reduced to an insignificant level. These measures are described below.

B-1 Two months before construction of the new WMU, a biologist with experience in burrowing owl surveys should follow the California Burrowing Owl Consortium (1999) survey guidelines for burrowing owls to determine if a passive relocation program is needed (http://www2.ucsc.edu/~scpbrg/owls.htm). The guidelines specify four phases that should be implemented. The first two phases have been completed as part of this EIR. The four phases are summarized below:

Phase I: Habitat Assessment [completed on February 3 and 4, 2000]

Burrowing owls will use annual and perennial grassland, deserts, and scrublands characterized by low-growing vegetation. A burrowing owl site must contain burrows made by fossorial mammals such as ground squirrels (*Citellus* sp.) or badgers, or suitable man-made structures such as culverts. Suitable burrowing owl habitat is verified by the observation of at least one burrowing owl, or conclusive signs (e.g., feathers, cast pellets, etc.).

A Phase II burrow survey is required if burrowing owl habitat is confirmed on the site or buffer zone (150 meters [500 feet] surrounding the site).

Phase II: Burrow Survey [completed on February 3 and 4, 2000]

A survey for burrows and owls should be performed over the entire site and areas within 150 meters (500 feet) of the project impact zone. Pedestrian surveys should be spaced to allow 100 percent visual coverage of the ground surface. From the surveys, maps should be prepared of the burrow concentration areas.

A Phase III survey is required if the project site contains suitable burrows.

Phase III: Burrowing Owl Surveys, Census and Mapping

A complete burrowing owl survey consists of an initial visit and four site visits, repeated on separate days. An initial site visit should be performed to examine burrows for owl sign and map the locations of occupied burrows. Then perform four surveys from two hours before sunset to one hour after sunset, or one hour before or two hours after sunrise. Surveys should avoid heavy rain, high winds (>20 mph) or dense fog.

Nesting Season Survey: The peak breeding season is April 15 to July 15, although breeding can occur from February 1 to August 31. Records of number of pairs and juveniles, and behavior such as courtship and copulation should be made.

Survey for Winter Residents: Survey for individuals between December 1 and January 31.

Surveys that are outside of these periods may be adequate to determine presence of owls on site, but are considered inadequate for mitigation planning.

Phase IV: Resource Summary and Written Report

A report should be prepared for CDFG that gives the result of each phase of the surveys.

B-2 If the results of the protocol surveys in Mitigation Measure B-1 indicate burrowing owls are present in areas that are planned for construction, a passive relocation program shall be implemented by a

biologist with experience in relocations. The passive relocation program shall include methods to create artificial burrows on site and measures to ensure the complete vacancy of occupied burrows. A CDFG representative shall approve the program.

B-3 To determine the likelihood of occupation, a qualified biologist shall survey the San Joaquin kit fox dens identified during the reconnaissance phase and other areas that seem likely to have dens.

B-4 If the results of the protocol surveys in Mitigation Measure B-3 indicate San Joaquin kit fox are present in the areas that are planned for construction, a mitigation program, approved by CDFG and USFWS must be established. The plan should conform to the Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS, 1998).

B-5 Employee education (e.g., via handouts and a 30-minute program) for sensitive wildlife should be part of the orientation of every employee or contractors that will be on site for more than one month. This education should be documented by the retention of a signature sheet in the County Solid Waste Management Office and at the landfill.

3.4 CULTURAL RESOURCES

3.4.1 Environmental Setting

The property is located in the eastern flank of the Great Valley geomorphic province, 12 miles from the foothills of the Sierra Nevada Mountains. The surface materials are characterized as semi-consolidated Quaternary alluvial deposits consisting of coarse-grained sand, silty sand, and sandy-clay units. The source of these materials is either the St. John's River flood plain or fan deposits originating in the nearby Sierra Nevada range (McLeod, 2000). Depths of deposits may vary and, as Quaternary deposits, there is always a potential for buried fossil bearing materials. Substantial excavation may yield evidence of paleontologic specimens.

The surface sediments of the project area have also be categorized as stable and not subjected to significant change. The absence of Holocene deposits, generally associated with Native American occupation, suggests a relatively low potential for buried cultural remains.

Cultural History Background

The Visalia Landfill is located in an area ethnographically associated with the Southern Valley Yokuts (Wallace 1978:448). Located in a relatively harsh environment, the rivers running down from the Sierra Nevadas made habitation possible in the San Joaquin Valley. Archaeological evidence currently shows prehistoric occupation of the San Joaquin Valley dating back 8,000 years, following herds and practicing hunting and gathering (Fredrickson, 1965; Riddell and Olsen 1969). Over the course of 6,000 years, the Yokuts developed a system of resource diversity, experienced population growth, larger settlements appeared and relative wealth was realized (Wedel, 1941). By the beginning of the historic period, no less

than fifteen Yokut groups were identified, each speaking a different dialect (Kroeber, 1925). Occupations tended to be located along major waterways (e.g. the St. John's River), although areas away from these watercourses were also exploited.

Archaeological Records Check

The archaeological records check was requested through the California State University Bakersfield South San Joaquin Valley Information Center (SSJVIC). The formal response from the Information Center has net been received as of this writing. However, a phone conversation with Adele Baldwin, Senior Researcher and Acting Coordinator for the Information Center (6-7-00) indicated that the project site was likely not previously surveyed and, therefore, the presence or absence of resources is unknown. Nonetheless, she also indicated that the likelihood of any cultural resources being identified within the project area was relatively low. Without a formal survey of the property, an assessment of resources cannot be presented.

Paleontologic Overview

There are no known paleontological resources in the vicinity of the project area and the potential for such is low (McLeod, 2000). However, excavations may uncover fossil-bearing soils and, therefore, Dr. McLeod has recommended monitoring of the required excavations for the new WMU, especially if the excavations are to exceed depths that can be associated with recent alluvial deposits.

Results of the Investigations

A field survey of the project site was conducted on June 10, 2000. The project area is defined by the boundaries of agricultural fields and existing roadways. The expansion area would be constructed east of the existing WMU. The excavation of a trough (east/west) designed to catch run-off from the existing WMU disturbed the southern boundary of the property (and the location of the proposed new entrance). The berm, located north of the trough, is relatively low and includes a dirt access road.

The eastern boundary of the property is also defined by the presence of a trough and berm separating the landfill property from the agricultural fields to the east. Evidence of testing wells, surface water pipes, and redeposition of soils from the trough are evident within the project area. The USGS quad map of the area identified a gravel pit in the location of the existing WMU. This pit has now been filled with refuse. The existing WMU now consists of a mound of cover soils well above the natural topographic elevations. The landfill mound could be seen for well over one mile while traveling north of Road 80. The surface of the project site undulated slightly (three to five meters across the property). Dirt access roads lead to and from the test well locations. There is grass over the majority of the property, which, at times, is relatively dense. The surface of the property was surveyed by walking the existing roads where the cleared surface could be observed and sampling the grass-covered areas for evidence of cultural materials.

Refuse was observed throughout the property, partially buried by dust originating from the existing WMU or by soils overturned by road clearance. Plastic bags, remnants of clothing, fragments of plastic and glass were noted along the main access road and similar materials were scattered sporadically through the property. Despite accessibility and visual inspection, no evidence of prehistoric or historic cultural remains was found within the project area.

3.4.2 Cultural Resource Impacts

The following measures were completed to determine if the closure of the existing WMU and the construction of the new WMU would have an impact on archaeological, paleontological, and cultural resources.

1. Archaeological Records Check: completed through the Cal State Bakersfield South San Joaquin Valley Information Center. This research provided data on the project area and surrounding properties to determine whether or not the property had been previously surveyed or if any sites are known for the area. The records search did not identify cultural resources in the project area (Appendix F).

2. Native American Consultation: The Native American Heritage Commission was contacted regarding any documentation available for the project area. In addition, the Native American Heritage Commission provided a list of local Native Americans interested in commenting on any projects in the area. A letter was sent to the individuals on the list on May 25, 2000. No response has been received (Appendix F).

3. Paleontological Research: A paleontological overview was requested from the Natural History Museum of Los Angeles County to determine the potential for surface or buried paleontologic resources for the area. The museum concluded that the project area is unlikely to contain significant vertebrae fossils. Deeper excavations may have the possibility of uncovering fossil vertebrae remains. The museum suggested that excavations should be monitored to collect remains if discovered (Appendix F).

4. Field Survey: A pedestrian reconnaissance survey of the project area was completed on Saturday, June 10, 2000. Two surveyors completed the survey to determine the nature of the study area and to ascertain whether or not evidence of prehistoric or historic resources were identifiable within the project area. Field notes and a photographic record supplemented the field studies. The survey found no evidence of prehistoric or historic remains.

The project area was investigated for evidence of paleontologic, prehistoric and historic resources. No evidence of paleontologic resources was found, although there is a potential for buried deposits in deep excavations (**Class II).** The implementation of mitigation measure C-1 would reduce this impact to a less than significant level**.** There was no evidence of prehistoric or historic remains identified during the field survey. The likelihood of such remains is relatively low, but still a potential, given the relative proximity of the St. John's Rivers **(Class III)**.

3.4.3 Mitigation Measures

C-1 A paleontological monitor must be on site for excavations of the new WMU. To insure the protection of any buried prehistoric or historic resources, an archaeological monitor should also be present for the initial grading of the property. In some cases, the archaeological monitor may fulfill the requirements of the paleontological monitor, or visa versa. The extent of the monitoring will be dependent upon the final grading and excavation plans.

3.5 GEOLOGY AND SOILS

This section presents a discussion of geology and soil for the regional and local project area. The information is based on the project's Joint Technical Document (EBA, 2000). Figure 3.5-1 provides a topographical illustration of the site.

Figure 3.5-1 Site Topography
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3.5.1 Environmental Setting

Regional Geologic Setting

The Visalia Landfill is located in the San Joaquin Valley, a prominent fault-bounded, northwest-trending topographic and structural trough in Central California. Alluvial plains consisting of broad coalescing alluvial fans and flood-basin deposits characterize the Valley floor. Localized vertical relief on the Valley floor rarely exceeds five to ten feet. The valley is bound on the east by the Sierra Nevada Mountains and on the west by the Coast Ranges. The Sierra Nevada Mountains, a fault block dipping gently southwestward beneath the San Joaquin Valley, are comprised of granitic and metamorphic rocks of pre-Tertiary age. These rocks comprise the basement complex beneath the valley. The Coast Ranges, in turn, are comprised of folded and faulted sedimentary rocks of Mesozoic and Cenozoic age. The Valley itself consists of a thick sequence of marine and continental sediments as much as six vertical miles thick. The Sierran block underlies these sediments, which are Jurassic to Holocene in age.

The stratigraphic sequence of much of the San Joaquin Valley consists of a pre-Tertiary basement complex overlain by consolidated continental and marine sediments (Cretaceous to Pliocene in age) and unconsolidated sediments ranging from Pliocene to Recent in age. The unconsolidated deposits generally exist within the upper 500 to 600 feet of the stratigraphic sequence and may be divided into the following units (in ascending order):

Continental Deposits:	Plio-Pleistocene age sediments consisting of poorly sorted clayey sands, silts, sands, clays and gravels.
Lacustrine/Marsh Deposits:	Pleistocene deposits consisting of silt, silty clay and clay. Included within these deposits is the Corcoran Clay ("E-Clay"), a laterally extensive aquitard[2] in the San Joaquin Valley.
Older Alluvial Deposits:	Pleistocene-Recent age deposits consisting of gravel, silts, clay, and hardpan.
Younger Alluvial Deposits:	Recent age deposits composed of silty sand, fine sand, and gravel with little or no hardpan.
Flood Plain Deposits:	Recent age deposits consisting of fine sands, silts, and clay. These deposits are the least extensive of the units described herein.

Local Geologic Setting

Soils in the Visalia area are part of the mid-fan deposit of the Kaweah River alluvial fan. In general, soils beneath the Visalia Landfill are comprised primarily of interbedded deposits of sands, silty sands, and sandy silts, with minor fractions of clay and gravel. The interbedded and discontinuous nature of these deposits is considered typical of erosional/depositional patterns of stream flow across alluvial fans in an arid environment. The uppermost soils are generally considered to represent younger alluvium and extend to depths of approximately 10 to 20 feet below ground surface. Older alluvial deposits that exhibit

[2] Saturated zone of low permeability that will not provide significant quantities of water for a well or spring.

higher soil densities and increasing amounts of relatively "clean" sand lenses underlie the younger alluvium. The stratigraphic transition between the younger and older alluvium is typically characterized by a zone of oxidation and a thin hardpan layer (Croft and Gordon, 1968). Such conditions have been noted at the site during exploratory drilling operations.

3.5.2 Project Impacts

Significance Criteria

CEQA identifies several geologic impacts that would normally be considered significant. These include: exposing people or structures to major geologic hazards; erosion, or siltation; causing substantial changes in topography; or adversely affecting unique geologic or topographic feature. In addition, state and federal regulations have been established for the siting, design, construction, operation, closure, and postclosure of new landfills. These standards incorporate state-of-the-art engineering principles that are intended to reduce the risks associated with waste disposal facilities to an acceptable level. Any inconsistency between the project and regulations related to geology, soils, and seismicity would have the potential to result in significant impacts.

Faulting and Seismicity

Title 27 CCR, Section 20370 requires that Class III facilities be designed to withstand the Maximum Probable Earthquake (MPE) without damage to the foundation or structures that control leachate, surface drainage, erosion, or landfill gas. The MPE is defined in Title 27 CCR, Section 20164 as the maximum earthquake that is likely to occur during a 100-year interval. Facilities that accept hazardous or designated wastes are required to be designed to the stricter Maximum Credible Earthquake (MCE). The MCE is defined in Title 27 CCR, Section 20164 as the maximum earthquake that appears capable of occurring under the presently known geologic framework and is considered the upper bound earthquake for a given seismic source. In order to provide a conservative estimate of seismic shaking at the site, established MCEs for the nearest faults were used to evaluate the peak ground acceleration (PGA) in bedrock for the project.

The project site is characterized by relatively low seismicity, due to its distant location from major seismic sources in California. The Great Valley and San Andreas faults are located west of the site within the Central Coast Ranges, and the Owens Valley fault is located on the eastern flank of the Sierra Nevada, east of the site. Information regarding the most critical seismic sources was compiled and evaluated for this project in order to estimate the anticipated PGA at the site (Table 3.5-1). PGAs were evaluated using moment magnitudes reported by Peterson et al. (1996), distances to causative faults, and attenuation relationships developed by Abrahamson and Silva (1997), Campbell (1997), Idriss (1993), and Sadigh et al. (1997) which account for local soil or bedrock conditions. The San Andreas Fault, with an estimated MCE of 7.8 (Peterson et al., 1996) is located approximately 112 km southwest of the site and is expected to generate the highest PGA (0.06g). There are no significant historic earthquake epicenters known to have occurred within 10 miles of the project site (SWAT, 1987).

Table 3.5-1 Significant Seismic Sources

Fault	MCE[1]	Recurrence Interval (yrs)	Distance (km)	PGA (g)
San Andreas	7.8	206	112	0.06
Great Valley	6.7	4,000	70	0.05
Owens Valley	7.6	4,000	124	0.05
White Wolf	7.2	839	136	0.03

[1] Moment magnitude (M_w) reported by Peterson et al. (1996).
Notes: PGA = Peak Ground Acceleration
MCE = Maximum Credible Earthquake

Additional factors affecting the landfill response to seismic motions were also considered. Low to moderate ground shaking generated from distant sources is typically characterized by relatively low frequencies, resulting in ground motions that correspond with longer fundamental periods characteristic of solid waste, thereby amplifying motions ascending through refuse from the base of the landfill. In addition, California Division of Mines and Geology (CDMG) maps that consider local site conditions indicate the PGA for the site falls within the range of 0.10g and 0.20g (CDMG, 1999), which is greater than the PGA calculated from attenuation relationships (Table 3.5-1).

Ground shaking during an earthquake could cause the landfill to fail as a result of differential settlement, ground lurching, and cracking of cover materials, or slope failure. Damage to the landfill cover by effects of ground shaking could expose previously buried fill, creating potentially significant health and safety impacts and allowing infiltration of surface water into the landfill increasing leachate generation. Failure of landfill slopes could damage drainage and leachate collection systems and block emergency or other access to the site. Such failures could result in temporary closure of the landfill and require corrective measures.

Stability of the new WMU was evaluated to determine the minimum factor of safety for slope failure during static and pseudo-static (evaluated for a peak horizontal ground acceleration of 0.11g) conditions (EBA, 2000). The factor of safety is a common index used in the evaluation of slope stability and is defined as the ratio of forces resisting failure (the shear strength of the soil or refuse) to forces driving failure (the shear stress induced on the potential failure surface). Therefore, a factor of safety of 1.0 indicates conditions on the threshold of failure, whereas a factor of safety greater than 1.0 indicates stable conditions (EBA, 2000). A minimum static factor of safety of 1.5 is regarded as the industry standard for permanent slopes, while the minimum pseudo-static factor of safety requirement is 1.0. The results of the most critical trials of the slope stability analysis for the new WMU indicates minimum static and pseudo-static factor of safety levels ranging from 1.68 and 1.16, respectively (along the north-south ridge at the toe, 3:1 fill slopes) to 2.29 and 1.41, respectively (transverse direction through sump, 3:1 fill slopes) (EBA, 2000).

The project has been designed to meet state and federal regulations regarding slope stability criterion that includes both seismic and static conditions. Compliance with these requirements and geotechnical design

recommendations identified in the Joint Technical Document (EBA, 2000) would reduce the potential for slope instability impacts to an acceptable level of risk and would reduce potential impacts to a less-than-significant level (**Class III**). Therefore no additional mitigation measures are needed as part of this environmental assessment.

Subsidence and Liquefaction

Liquefaction occurs when saturated or near saturated, unconsolidated shallow soil deposits of wwell sorted sand experience a sudden loss of strength during strong earthquake shaking (Richardson et al., 1995). The potential for liquefaction and subsidence for the project site was assessed by evaluating local soil and groundwater conditions, and the likelihood of seismic shaking at the site.

Surface effects, such as subsidence, are not likely to result from liquefaction occurring more than 50 feet below the ground surface (Richardson et al., 1995). Therefore, liquefaction at the project site is limited to susceptible soil conditions at depths between the highest anticipated groundwater (20 to 30 feet beneath the new WMU) and a depth of approximately 50 feet.

The joint technical document for the landfill expansion included an evaluation of logs of exploratory borings drilled at the site since 1985 including lithology, groundwater levels and normalized standard penetration tests (SPT) blow counts (N_c). For the proposed project, a critical N_c value of 7 was determined for the estimated seismic shaking, depth to sand and groundwater of 20 feet, and no clay content. N_c values less than 7 would indicate the potential for liquefaction. The mean minimum N_c value measured in subsurface materials at depths ranging from 20 to 35 feet is 21. Based on this conservative evaluation, liquefaction of soils beneath the site is unlikely to occur (**Class III**) (EBA, 2000).

The WMU slopes could potentially fail under seismic stress. Failure could occur due to inconsistent fill compaction, slopes that are too steep, and infiltration of surface water. Failures could occur during project operation, closure or at any time after closure. Such failures could disrupt landfill cover materials, exposing wastes and resulting in potential odor, litter, infiltration, and vector control problems. In addition, if large quantities of waste were to be exposed as a result of slope failure, drainage facilities could be impacted.
However, the new WMU has been designed to comply with the seismic requirement of Title 27 and will comply with engineering design recommendations presented in the Joint Technical Document (EBA, 2000) to address seismic hazards. These project commitments would reduce potential impacts from a seismic event to less-than-significant levels (**Class III**).

Settlement

Settlement of the landfill surface could occur from compaction of the refuse, decomposition of organic materials that could form voids within the refuse mass, vibrations from earthmoving and landfill equipment, or seismic ground shaking. The rate of settlement due to increased overburden could increase as the landfill reaches the maximum proposed height of 210 feet above the existing grade.

Uneven settlement of the landfill could create sags and depressions in the refuse liner, base liner, or final cover. Excessive settlement could cause cracks to develop in the final cover, which could allow surface water to infiltrate into the landfill. Infiltration would increase the rate of leachate generation, or settlement due to decomposition of organic wastes. Cracks in the final cover could also allow landfill gas to escape, creating potential fire or odor problems. Settlement could also damage surface structures, such as roads and drainage facilities, or subsurface systems, such as the landfill gas collection system (ESA, 1998). Excessive settlement could result in potentially significant environmental impacts (**Class II**).

The landfill has been designed to comply with Title 27 requirements for final cover design, final surface grades, and monitoring and maintenance of the new WMU to reduce potential impacts due to settlement. A description of these measures is presented in Section 2, Project Description. With the implementation of these project commitments, no other mitigation measures are needed. Potential impacts associated with settlement of the new WMU are considered to be less than significant (**Class III**).

3.5.3 Mitigation Measures

With implementation of the project commitments design specifications outlined in this document and the Joint Technical Document (EBA, 2000), no additional mitigation measures are recommended.

3.6 HAZARDS

3.6.1 Environmental Setting

This section presents potential hazards associated with the operation of a landfill. It provides a summary level discussion of applicable regulations and provides brief information on the environmental setting with regard to issues like sensitive receptors, vector, toxic air emissions, hazardous materials/waste, leachate/water quality, and accidents. Some of these issues are discussed in more detail in other sections of this report. In these cases, the reader is referred to the appropriate section within this report.

Applicable Regulations

The discussion of environmental setting for this section (Hazards) summarizes pertinent regulations that provide for landfill control measures that prevent the landfill from having adverse impacts on public health, safety, or the environment. The regulations focus on waste handling and disposal, landfill gas control, groundwater monitoring, hazardous waste management, and vector control. These regulations are briefly presented below.

Code of Federal Regulations (CFR) Title 40, Volume 17, Part 258 (Criteria for Municipal Solid Waste Landfills) establishes national criteria under the Resource Conservation and Recovery Act (RCRA) for all municipal solid waste landfill units. The criteria apply to owners and operators of new municipal solid waste landfill units, existing units, and lateral expansions. The contents of 40 CFR, Part 258, as amended

through November 27, 1996 include: Subpart B – Location Restrictions; Subpart C – Operating Criteria; Subpart D – Design Criteria; Subpart E – Groundwater Monitoring and Corrective Action; Subpart F – Closure and Post Closure Care; and Subpart G – Financial Assurance Criteria.

California Code Regulations (CCR) Title 27, Division 2, Chapter 3, establishes minimum standards for solid waste handling and disposal in California. Articles 4 and 6 contain specific landfill disposal site controls that relate to public health and safety. They include regulations for Nuisance Control (20760), Animal Feeding (20770), Leachate Control (20790), Dust Control (20800), Vector and Bird Control (20810), Drainage and Erosion Control (20820), Litter Control (20830), Noise Control (20840), Traffic Control (20860), Hazardous Wastes (20870), and Gas Control (20919). The joint technical document developed for the Visalia Landfill expansion addresses each on of the items identified in Title 27.

The Occupational Safety and Health Act of 1970 includes regulations pertaining to worker safety (29 CFR). These regulations set standards for safe workplaces and work practices, including standards relating to hazardous materials handling. Title 8 of the CCR includes regulations concerning the use of hazardous materials in the workplace and includes requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation.

Regulations covering waste disposal site operations specifically are given in CCR, Title 23 Division 2, Chapter 3, Section 20550-20750. Several sections deal with worker health and safety. The regulations also specify that it is the responsibility of the site operator to provide adequate numbers of qualified personnel to staff the site and deal effectively and promptly with matters of environmental controls, emergencies, and health and safety. The site operator is required to provide adequate supervision to insure proper compliance with all applicable laws, regulations, permit conditions, and other requirements.

Sensitive Receptors

There are no sensitive receptors within 1/2 mile of the property boundary. There is one residence west of the property and across Road 80 at the dairy, there are no schools or residential communities in close proximity to the site. The project area is situated among agricultural properties with agricultural uses on the north, south, east, and west of the landfill property.

There are two known airports within 4 to 5 miles of the project site. They include: the Visalia Municipal Airport, which is about 4 miles southwest of the facility, and the Sequoia Field Airport is about 5 miles northeast of the project. The project is not within two miles of an airport and is not expected to have any impact on an airport plan.

Hazardous Waste Exclusion

Current operations at the Visalia Landfill include a load-checking program. The load-checking program conforms to the requirements found in CCR Title 27, Division, 12, Chapter 3, Article 2, Section 20220. An area separate from the active landfilling site would be used to separate white goods, vegetation, tires, or other miscellaneous household trash.[3] If hazardous waste is identified, the hauler is asked by the Refuse Site Caretaker to remove the material or waste from the landfill. Haulers requesting an alternative for disposal would be directed to the Environmental Health Services Division of the Tulare County Health and Human Services Agency.

Inappropriate wastes that are illegally deposited at the landfill would be temporarily stored in a hazardous materials storage container, which would be located at the drop-off or diversion area in the new entrance complex. This storage container incorporates necessary safety features, including secondary containment and restricted access. Collected wastes would be returned to the generator, if known. A registered hazardous waste hauler would remove any remaining wastes.

The County Health and Human Services Agency now has a permanent site in the City of Visalia for hazardous waste collection, which is open to the public. In addition, the County sponsors eight public collection events a year throughout the County. This program has been in effect for the last four to five years and serves to deter the public from disposing of household hazardous waste in local landfills.

The existing WMU is included on the California Department of Toxic Substances Control Facility Inventory Data Base, Hazardous Waste and Substances Sites List (1998). The landfill previously included a liquid waste disposal area, but this area has been partially cleaned-up and this operation has stopped. The partial cleanup was conducted as a result of a Notice and Order of the California Waste Management Board in May 1988. The partial cleanup effort was carried out consistent with an approved work plan (County, 1991 and Geomatrix, 1993) and the environmental impacts were evaluated in a Negative Declaration (County, 1990).

Liquid Waste Disposal Area. The existing WMU is included on the California Department of Toxic Substances Control Facility Inventory Data Base, Hazardous Waste and Substances Sites List (1998). The landfill site previously included a 20-acre liquid waste disposal area north of the existing landfill. The former liquid waste area was used between 1984 and May 1988 to dispose of wastewater, including grease trap materials, septic tank wastewater, food processing wastewater, and car wash trap wastewater. Liquid wastes were spread in rows on the soil by trucks and allowed to evaporate, leaving sludge on the ground surface.

Cleanup was initiated by the County in 1990 as a result of a Notice and Order issued by the California Integrated Waste Management Board in May 1988, which required the County to clean up and abate the

[3] The existing landfill facility includes a diversion/drop off area. This diversion/drop area would be relocated to the entrance complex as part of the landfill master plan.

effects of the liquid disposal site. The County removed a 1-foot thick layer of sludge materials on the ground surface from the eastern one-third to one-half of the former liquid waste area (Geomatrix, 1993).

In 1994, Geomatrix collected soil gas samples on behalf of the County to assess the level of remaining contamination. Based on the results of the soil gas samples, Geomatrix prepared a health and safety plan for the County in 1994 to address potential soil gas and dust exposures during excavation of soil from the former liquid waste area. The County plans to excavate the soil from the former liquid waste area and use the soil as cover material for the new lined WMU (Geomatrix, 1994).

Other Hazards

Public health and safety concerns are related to ongoing operation at the existing WMU. These include the probable presence of household hazardous waste, the potential for toxic air emissions, toxic releases to surface and groundwater, accidents, explosions from buildup of landfill gas, and vectors. These items are briefly discussed below.

Toxic Air Emissions. Toxic air emissions (TACs) are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer-causing) adverse human health effects. TACs include both organic and inorganic chemical substances. Section 3.2 of this report provides more information on the project's impact with regard to TACs.

Leachate and Water Quality. Leachate, excess water containing soluble substances, is generated when the absorptive capacity of refuse is exceeded. Depending on how it is handled, leachate can affect surface and groundwater quality. Leachate control generally includes: (1) operation procedures that limit and control moisture entering refuse: (2) construction of a base liner and blanket drainage layer to collect and remove any liquid released through the refuse, and (3) implementation of a leachate management plant to collect and utilize data on the nature and quantity of liquid released (ESA, 1998)

The existing WMU at the landfill is unlined and does not have a leachate collection system in place. Groundwater monitoring wells have been installed at the existing WMU to sample and analyze water on a quarterly basis. The groundwater evaluations are part of the County's effort to address previous contamination of the groundwater by the operation of an unlined landfill. Section 3.7 of the report provides more detail on the status of this evaluation.

Landfill Gas. Natural processes in landfills generate carbon dioxide, a nontoxic gas, and methane, a non-toxic but flammable and explosive gas. Organic wastes and refuse buried in landfills gradually decompose through physical and biochemical processes. As decomposition proceeds, methane and carbon dioxide are produced as organisms degrade organic matter in simpler compounds (ESA, 1998).

Existing landfill operations generate gas on site as described in Section 3.2 of this report. The existing WMU has a gas collection and flaring system permitted by the SJVUAPCD. This system has been designed to limit the release of fugitive landfill gas into the atmosphere by 98 percent.

Fire Hazard. All refuse entering the existing WMU would be inspected by the Refuse Site Caretaker for possible fire hazards. All on-site construction equipment would have fire extinguishers. If a fire were to occur that is not immediately extinguishable, the California Division of Forestry would be contacted for assistance. Site personnel would use both earth moving equipment and a water truck to contain and/or smother a fire (County 1996).

Within the last 5 years there have been two minor trash fires at the existing WMU. Landfill staff was able to control and extinguish these fires and, thus, local fire authority services were not required (County, 2000c).

Vectors. A vector is an animal capable of carrying pathogenic microorganisms (disease) from one host to another. Pathogenic microorganisms can originate from a number of sources in municipal solid waste, such as animal feces, human feces in diapers, sewage sludge, and even from contaminated materials such as glass, metal, plastic, paper, and yard wastes. The vectors of greatest concern are flies and rats because of their ability to reproduce rapidly and disperse from the site. Rats can also damage slopes by burrowing. Other vectors of concern include birds and other insects.

Control measures that are currently used at the existing WMU to handle the vector population are as follows:

- Insects: The practice of daily cover has been sufficient to eliminate an insect problem
- Rodents: Under the direction of the Agricultural Commissioner, poisons are placed to control rodent populations that might damage slopes and berms from burrowing, or pose a health threat
- Birds: The seagull or other bird population has not been significant. If the bird population increases to a point that it may generate a problem situation, under the direction of the Agricultural Commissioner, poisoned bait will be spread to keep the birds in check (County 1996).

3.6.2 Project Impacts

Significance Criteria

To assess the potential for hazards from the new WMU, the design of the WMU was compared to regulatory requirements. An impact would be considered significant if the new WMU were to involve unmitigated generation, handling, or release of hazardous materials or wastes that poses a threat to public health and safety of if waste handling activities at the new WMU would violate county or state waste handling policies or regulations.

Hazardous Wastes and Materials

The operation of the new WMU would not involve the routine use of hazardous materials. In addition, the site would not handle household hazardous waste and would not handle hazardous materials in the day-to-

day operation of the landfill. Signs would be posted at the new facility entrance, which would read: "No Hazardous Waste Accepted." These signs would also list the most commonly encountered household and commercial items that would be considered hazardous waste.

The Refuse Site Caretaker would be responsible for inspecting incoming loads and rejecting hazardous or other unacceptable materials on a daily basis. The Refuse Site Supervisor would also document periodic load checks on a daily basis. Load checking inspections would be recorded on a "Solid Waste Load-Checking Program" form that would be placed into the operating record. The Refuse Site Supervisor would be trained to identify hazardous and unacceptable materials through the Tulare County Hazardous and Prohibited Waste Recognition Training Program. This training would be documented on a "Record of Training" form and placed into the operating record.

The Tulare County Hazardous and Prohibited Waste Recognition Training Program for the landfill expansion would be based on specific rules used to eliminate the potential for hazardous and unacceptable materials. These rules prohibit disposal of pesticide containers, barrels (except old burn barrels), free liquids, solvents or greases, lead-acid batteries, ballasts from fluorescent light fixtures, liquid filled transformers, and capacitors associated with large electrical motors. Emphasis would be placed on accepting only residential type generated refuse, tires, and construction/demolition wastes. Any questionable wastes would be deemed unacceptable.
Under the program, all loads would be inspected for inappropriate contents and all containers would be inspected to be sure they do not contain prohibited waste types. Haulers found with unacceptable material in their loads would be informed by the Refuse Site Caretaker of their responsibility to remove the material from the site. Haulers requesting an alternative for disposal are directed to contact the Environmental Health Services Division of the Tulare County Health and Human Services Agency.

Loads of sorbent materials or soils associated with spills would not be accepted without prior approval from supervisory staff. Approvals would only be made following submittal of results of certified analytical laboratory testing which determine that the subject materials are not hazardous, liquid, or designated waste.

A contingency plan for accidental discharge of hazardous wastes or materials has been established in the joint technical document for the landfill expansion (EBA, 2000b). This contingency plan includes a process for (1) determining whether the unacceptable item a non-hazardous liquid or unknown hazardous liquid or solid, (2) identifying appropriate disposal method for each type of waste including temporary storage of hazardous wastes for subsequent disposal in an appropriate landfill, (3) a methodology for addressing accidental spills and clean-up, and (4) reporting requirements. With the implementation of contingency plan and the measures presented above, which are in effect for the existing landfill operations, the impact of potential hazardous materials or waste would be adverse but less than significant (**Class III**).

Landfill Gas

Anaerobic decomposition of organic waste disposed at the site will produce carbon dioxide, methane gas and minor concentrations of associated organic constituents. Gas production rates will vary with refuse composition, daily soil cover ratio, moisture content, and the availability of oxygen. Landfill emissions are regulated under Rules 4001 and 4642 adopted by the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD). Rule 4001 enables the SJVUAPCD to implement federal requirements and incorporates, by reference, New Source Performance Standards (NSPS) promulgated by the USEPA in 40 CFR Part 60. NSPS applies to Municipal Solid Waste Landfills with a design capacity greater than 3.27 million CY. Because the design capacity of the new WMU will exceed this limit, installation of a LFG control system is required.

LFG generation for the new WMU was evaluated using refuse disposal rates of 400 and 1,200 tons per day, six days per week (308 days per year) over site life projections of 62 years and 22 years, respectively. These estimates are based on total refuse volume estimates of 12,780,000 CY and 13,308,000 CY for the 400 tpd and 1,200 tpd scenarios, respectively. Both estimates assume a refuse density of 1,200 PCY. For the purpose of evaluating LFG generation rates, daily refuse disposal rates were converted to annual rates of 123,200 and 369,600 tons per year, respectively. In addition, annual disposal rates were held constant over the site life of the new WMU.
Several different models were employed to evaluate LFG generation rates. These models included the Landfill Gas Emissions Model developed by the USEPA Office of Research and Development (1998) and a series of models developed by SCS Engineers (1998) for the Solid Waste Association of North America (SWANA). Pertinent input values utilized in the respective models included 0.02 yr^{-1} and 100 m^3/Mg refuse for the methane generation rate k and methane generation potential L_o, respectively. These values were selected to represent a landfill environment located in a dry and arid climate, indicative of the Visalia area. These values are also consistent with the EPA's air pollution emission factors (AP-42 factors) for dry sites.

Results from the LFG generation modeling revealed maximum LFG generation rates of approximately 1,150 and 1,570 SCFM for the 400 and 1,200 tpd disposal rate scenarios, respectively. These estimates assume a typical LFG methane content of 50 percent by volume. In both cases, occurrence of the maximum LFG generation rate approximately coincides with the estimated closure date of the new WMU. LFG extraction systems are seldom able to recover all of the LFG generated by a landfill. A recovery efficiency of 70 percent is typical for most extraction systems and considered appropriate by regulatory agencies. Based on a 70 percent recovery efficiency applied to calculated generation rates, the maximum anticipated flow rates for the new WMU are approximately 800 and 1,100 SCFM, respectively.

LFG will be collected from the new WMU by means of a modular system that will include a series of horizontal landfill gas collection laterals connected to a pipe manifold system installed during site development and waste filling operations. The horizontal collectors will consist of perforated HDPE piping surrounded by gravel, spaced approximately 200 feet apart, and placed every 40 to 50 vertical feet in refuse. The collection system may also be connected to LCRS piping to enhance LFG collection from

the base of refuse. Horizontal collectors will be connected to a condensate collection system and the existing flare station via aboveground manifold piping.

Landfill gas will be extracted from the collectors and drawn into a flare with a vacuum induced by blowers located near the flare complex. LFG flares are designed for the combustion of landfill gas, in the presence of oxygen, to carbon monoxide, sulfur dioxide, oxides of nitrogen (NO_x), and other related gases. The existing WMU is currently equipped with a LFG collection system and flare with a capacity of 1,500 SCFM. Thus, future LFG collection system components associated with the new WMU will be connected to the existing system for processing and subsequent destruction of the LFG. The residual flow capacity of the existing flare will be utilized for processing LFG generated by the new WMU until such time as a new flare is required.

LFG will be controlled to ensure the concentration of methane gas does not exceed 1.25 percent by volume in air within on-site structures and 5 percent at the property boundary. Gas monitoring during closure will be conducted to protect public health and safety and the environment.

Monitoring of subsurface gas will be conducted by installing several perimeter probes at various depths surrounding the project site. The perimeter monitoring system will be installed in accordance with Title 27 CCR, Section 20925 and will incorporate existing gas monitoring probes located west of the existing unlined WMU. The purpose of the probes will be to monitor the presence of subsurface gases, which may have migrated beyond the fill limits. The geosynthetic component of the base liner and operation of the landfill gas extraction system should reduce the likelihood of LFG being detected outside of the limits of the base liner for the new lined WMU.

In accordance with Title 27 CCR, Section 20425(d)(3), LFG monitoring will be coordinated with any future corrective action program involving the design, installation, and operation of the LFG monitoring system. With the implementation of these project design measures, the impact of landfill gas would be adverse but less than significant (**Class III**).

Fire Hazards

All refuse entering the site will be inspected by the Refuse Site Caretaker for possible fire hazards. All landfill equipment and vehicles will be furnished with fire extinguishers. Tires will be stored in a segregated area of the site and regularly removed before stockpiled tires exceed the permissible quantity.

In the event of a fire, the California Division of Forestry will be contacted for assistance. Site personnel will use both earth moving equipment and the water truck to contain and extinguish the fire. Clearances required by Public Resources Code 4373 will be maintained on and around the site by blading and applying herbicides. Vegetation will be kept clear of structures and fuel storage facilities. The facility will comply with Tulare County Fire Department protection requirements.

Fire protection of facility equipment and vehicles will be provided by portable fire extinguishers located in the equipment and vehicles. All structures will be equipped with fire extinguishers for extinguishing minor fires and for personnel safety. Site personnel will be trained periodically in the proper use of fire extinguishers. Facility equipment and vehicle fire prevention will be provided by frequently removing oil and grease buildup, debris, and dust from undercarriages and engine compartments**.** With the implementation of these project design measures, the impact of fire would be adverse but less than significant (**Class III**).

Vectors

Section 17707 of the CCR, Title 14 directs landfill operators to take adequate steps to control or prevent the propagation, harborage or attraction of flies, rodents or other vectors and to minimize bird populations. As a properly run facility, the Visalia Landfill has not had significant problems with vectors. With the development of a new WMU and a potential for a greater daily waste throughput, the active area of the landfill could attract more vectors. However, the landfill expansion would include the application of a daily cover, which is the most effective measure taken to minimize the propagation of vector populations. Rodent populations that damage slopes by burrowing or pose a health threat would be controlled using poisons placed under the direction of the Agricultural Commissioner.

Insects, rodents, and birds have not presented a problem at the existing WMU due to operating procedures, which control and prevent propagating, harboring, and attracting flies, rodents, birds, or other vectors. The same methods vector control measures that are currently used at the existing WMU facility would be used at the new WMU site (see "Vector" discussion in Section 3.6.1).

Operations at the new WMU would include a program for controlling litter and windblown materials in order to prevent the accumulation of quantities, which cause a public nuisance or other problems. The litter control program would focus on weekly (or more frequent, if necessary) collection of windblown litter in the immediate vicinity of the active face and surrounding areas by site personnel. In addition to the collection program, portable litter fencing would be erected downwind of the active face and repositioned in response to changing wind direction and refuse filling operations (**Class III**).

3.6.3 Mitigation Measures

The design of the landfill expansion includes measures or project commitments that would reduce hazards to public health and safety from the construction and operation of the landfill expansion. With the incorporation of these measures as part of the project as described in this section and in Section 2, the hazard impacts are expected to be adverse but less than significant. No other mitigation measures are necessary.

3.7 HYDROLOGY AND WATER QUALITY

This section provides the hydrologic and water quality setting of the Visalia Landfill site. The existing WMU and the new WMU are subject to numerous regulations regarding landfill siting, design, operation, ground and surface water quality monitoring, corrective action, and closure and post-closure requirements. These regulations include California Code of Regulations Title 27, Chapter 3, Criteria for All Waste Management Units, Facilities, and Disposal Sites and 40 Code of Federal Regulations (CFR) parts 257 and 258. In response to these requirements, Tulare County has prepared a Joint Technical Document for the new WMU that would be approved by the Regional Water Quality Control Board and the California Waste Management Board (EBA, 2000). This analysis is based on this technical document.

The Solid Waste Assessment Test report for the Visalia facility identifies 35 domestic and agricultural wells within a 1-mile radius of the site (SWAT, 1987). The approximate location of these wells are shown on Figure 3.7-1.

Placeholder for Figure 3.7-1 Wells within a One Mile Radius of the Project

3.7.1 Environmental Setting

Climate

Mean annual precipitation recorded at the monitoring station is 10.25 inches. Mean annual pan evaporation measured at the nearest station located approximately 7 miles northwest of the site at Traver is 57.48 inches based on data collected from 1962 through 1966 (DWR, 1979). The annual evaporation rate of the project area is 70.7 inches. The 100-year, 24-hour precipitation for Visalia is 3.38 inches (WDR, 1999). The 100-year annual precipitation for Visalia is 21.49 inches (DWR, 1986).

Flooding

Title 27 CCR, Section 20260(c) requires that new Class III WMUs be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency. The potential for inundation and washout from the 100-year flood event was evaluated by examination of the 100-year floodplain shown on the Flood Insurance Rate Map (FIRM) prepared for the region by the Federal Emergency Management Agency (FEMA) (FIRM, 1986). The FIRM map indicates the landfill is within Zone B (the 500-year flood boundary) and outside the 100-year flood hazards area. Based on the FIRM map, the 100-year flood event is confined within the banks of the St. Johns River.

Surface Water

Major rivers and streams in the vicinity of the project area include the Kaweah and St. John's Rivers. The St. Johns River, which is the nearest surface water body to the facility, is located approximately one-half mile to the north of the site. Pre-landfilled contours shown on the 1994 USGS Quad Map indicate that the natural drainage at the site flowed in a uniform northwesterly direction with no naturally occurring surface water features. Currently, the only surface water features at the existing site are two drainage detention basins at the north and south portions of the site (County, 1996).

Regional Hydrogeology

The Visalia Landfill is located within the Kaweah Groundwater Basin, which encompasses areas between the Kings Basin on the north, the Tule Basin on the south, the Sierra Nevada foothills on the east, and the Kings River Conservation District on the west. Major rivers and streams in the basin include the Kaweah and St. Johns Rivers, with the Kaweah River representing the primary source of recharge to the area (DWR, 1995). The St. Johns River is located approximately one-half mile north of the facility. Regional groundwater flow within the basin has historically been to the west and southwest at a hydraulic gradient of approximately 0.003 to 0.005 (County, 1996).

The major aquifer in the Kaweah Groundwater Basin is situated within the older alluvial deposits. These deposits are considered to be moderately to highly permeable with specific yields on the order of 13 percent. Moderately to highly permeable deposits associated with the younger alluvium are also

important sources of groundwater supply in localized areas, particularly in the Hanford-Lemoore area. Groundwater supply sources of secondary importance include the flood-basin and lacustrine/marsh deposits. The flood-basin deposits have lower specific yield characteristics (less than 10 percent) than the aforementioned aquifers and typically exhibit poor water quality. Similar conditions can be described for the lacustrine/marsh deposits. Clay beds within these deposits form aquitards that control the vertical and lateral movement of groundwater. The most prominent of these clay beds is the Corcoran Clay that underlies the western half of the Kaweah Groundwater Basin at depths ranging from approximately 200 to 500 feet. Due to the extensive nature of this unit, groundwater below the Corcoran Clay occurs under confined conditions. Conversely, groundwater above and east of the Corcoran Clay occurs under unconfined and semi-confined conditions (DWR, 1995).

Groundwater use in the Kaweah Groundwater Basin is primarily for agricultural and domestic purposes. Based on preliminary information compiled by DWR (1995), annual groundwater extraction volume for the basin is on the order of 758,000 acre-feet per year, with approximately 92 percent (699,000 acre-feet per year) of this volume being used for agricultural purposes (DWR 1995). The remaining 8 percent (59,000 acre-feet per year) is used for urban development and water supply. Overall groundwater extraction rates in the basin exceed natural and artificial recharge, thereby resulting in an annual overdraft of approximately 57,000 acre-feet per year.

Local Hydrogeology

Locally, first encountered groundwater beneath the site occurs within the older alluvial deposits under unconfined conditions. Depth to groundwater currently ranges from approximately 30 to 50 feet below ground surface across the site, with a hydraulic gradient of approximately 0.002 to 0.006 to the southwest. It should be noted, however, that depth to groundwater and groundwater flow conditions have varied substantially since the commencement of monitoring activities in the mid 1980's. At the time of initial groundwater monitoring well installation at the site in 1985, depth to groundwater ranged from approximately 20 to 30 feet below ground surface. Between 1985 and 1993, groundwater levels substantially declined to depths in excess of 80 feet below ground surface. This was followed by a period of groundwater recovery between 1993 and 1998 that resulted in groundwater levels rising to within 20 to 40 feet below ground surface. Since 1998, groundwater levels have declined approximately 10 feet. As noted above, groundwater flow conditions have also varied significantly. The direction of groundwater flow over the aforementioned period has ranged from due south to approximately North 30° West with a hydraulic gradient of 0.007 to 0.028 (County, 1996). The cause of these fluctuations is reportedly due to variations in local groundwater extraction by nearby agricultural wells.

Groundwater Degradation

Groundwater degradation has occurred beneath the site as a result of operations within the existing WMU. Groundwater impacts were originally detected as part of an engineering study conducted at the site in 1985, and subsequently confirmed in 1987 as part of the landfill's Solid Waste Water Quality Assessment Test (SWAT) investigation. Since these initial investigations, a series of site investigations have been

implemented to characterize the nature and extent of the groundwater impacts. The scope of these investigations have included the drilling of exploratory soil borings, performance of soil gas surveys, installation of groundwater monitoring wells (both on site and off site), and the collection of groundwater samples using the aforementioned monitoring wells and Hydropunch® sampling techniques. Pertinent findings from these investigations are summarized as follows (RWQCB, 1999).

- Groundwater has been impacted by a variety of volatile organic compounds (VOCs). Individual VOCs detected in groundwater on multiple occasions include: trans-1,2-dichloroethene (trans-1,2-DCE); tetrachloroethylene (PCE); trichloroethylene (TCE); benzene; ethylbenzene; toluene; diethylphthalate; 1,1-dichloroethane (1,1-DCA); cis-1,2-dichloroethylene (cis-1,2-DCE); dichlorodifluoromethane; chloroform; vinyl chloride; methylene chloride; trichlorofluoromethane; methyl bromide; chloroethane; carbon disulfide; and acetone.

- A number of the VOCs outlined above have been detected at concentrations exceeding applicable primary maximum contaminant levels (MCLs) as outlined in Title 22 of the California Code of Regulations (22CCR), Section 64444. These VOCs include: trans-1,2-DCE; PCE; TCE; benzene; 1,1-DCA; 1,1-DCE, cis-1,2-DCE; and vinyl chloride. In addition, vinyl chloride has been detected in several on-site monitoring wells at concentrations exceeding this compound's corresponding RCRA Hazardous Waste Level.

- Inorganic waste constituents have also been detected in groundwater at concentrations exceeding applicable background levels. These constituents include: specific electrical conductance (EC); total dissolved solids (TDS); alkalinity; arsenic; mercury; chloride; hardness; iron; manganese; sodium; bicarbonate; and aluminum. Arsenic, barium, mercury, and aluminum have been detected at concentrations exceeding applicable primary MCLs as outlined in 22CCR, Section 64431. In addition, manganese and iron have been detected at concentrations exceeding applicable Secondary MCLs as outlined in 22CCR, Section 64449.

- The groundwater degradation plume extends beyond the landfill property boundary to the south and west. Results from the Evaluation Monitoring Program (EMP) implemented in 1991 revealed that the plume extends at least 1,500 feet west, approximately 1,200 feet southwest, and approximately 800 feet south of the WMU. Confirmation as to the maximum lateral and vertical extent of groundwater impacts is ongoing to date.

The Tulare County Resource Management Agency currently conducts detection and evaluation groundwater monitoring in accordance with Waste Discharge Requirements Order No. 99-047. A tabulated summary of groundwater analytical data for the 1999 calendar year is enclosed in Appendix C.

In September 1999, the RWQCB issued Cleanup and Abatement Order No. 99-718 (RWQCB, 1999). This Order requires the Tulare County Resource Management Agency to implement an EMP and to establish a Corrective Action Program (CAP) at the Visalia Landfill. In general, the purpose of the EMP is to complete the characterization of the groundwater degradation plume, including final confirmation as to the maximum lateral and vertical extent of groundwater impacts and preparation of an updated engineering feasibility study for corrective action. The CAP, in turn, requires development and implementation of corrective action measures to remediate the groundwater degradation plume.

3.7.2 Project Impacts

Significance Criteria

The key areas of concern for the development of the new WMU are the potential for the landfill to impact groundwater, mainly through surface water coming in contact with the refuse and infiltrating into the

subsurface. The other area of concern is the potential of the area to flood causing water to become contaminated impacting groundwater, surface water, and soils.

Section 21068 of CEQA defines a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." A project may have a significant impact on the environment if it will:

- Substantially degrade water quality
- Contaminate a public water supply
- Substantially degrade or deplete groundwater resources
- Cause a substantial flooding, erosion, or siltation.

Flooding

The project site is not within the 100-year flood plain and is not expected to be significantly impacted by flooding. The design of the landfill will include measures for drainage and erosion control. The stormwater control system for the site will utilize an internal drainage scheme whereby all runoff generated from the existing and new WMUs will be routed to on-site borrow excavations, which will function as retention basins where stormwater will be retained to evaporate and percolate. The stormwater control system will be designed to accommodate peak surface water flows for 100-year, 24-hour precipitation in accordance with Title 27 CCR, Section 20365, and occurring during the most critical stage of site development when runoff is anticipated to be a maximum. The system will be assessed and modified on a continuous basis during site development as refuse filling operations proceed and new phases are constructed. Runoff from the active disposal area that has contacted refuse will be contained and diverted to the LCRS. Because all surface runoff will be retained on site, a National Pollution Discharge Elimination System (NPDES) permit will not be required.

The proposed final closure configuration would include a perimeter ditch to convey runoff from final landfill slopes and all outside cut slopes. Drainage from the new WMU would be split and conveyed to either the northern borrow area or the southern borrow area. Drainage calculations were performed for the new WMU using a 100-year annual precipitation of 21.49 inches. Results of the analysis indicate the volume of proposed retention ponds exceeds the runoff volume by a factor of more than 5 (EBA, 2000).

Drainage and Erosion Control

During the active life of the facility expansion, clean storm water would be routed and collected separately from the leachate system. The proposed drainage system for the new WMU would be designed to prevent safety hazards and exposure of waste. Intermediate slopes will be graded no steeper than 3H:1V for purposes of maintaining slope stability and reducing erosion. Proposed final slopes will be graded at 4H:1V with 20-foot wide intermediate benches spaced every 40 vertical feet. Benches would be battered back toward the slope at a grade of 5 percent and would drain at a minimum slope of 3 percent to drop inlets spaced periodically along benches. Water will be conveyed from benches with appropriately sized down drains.

All on-site drainage control facilities will be designed to prevent inundation of the new WMU or impairment of environmental control systems resulting from a 100-year storm event in accordance with Title 27 CCR, Section 20320(e), which outlines construction standards for Class III WMUs.

The final cover system for the new WMU would include an erosion-resistant vegetative layer placed over all portions of the geosynthetic components of the cover. Soil used in construction of the vegetative layer would be appropriately amended in accordance with an approved revegetation plan to promote sustainable vegetative growth of native grasses and herbaceous perennials. An erosion analysis has been prepared for the final cover system. The analysis was performed for the 2-year, 6-hour precipitation event in order to compare results with USEPA guidelines established at 2.0 tons per acre for this particular precipitation event (USEPA, 1982). Following final closure and establishment of vegetative cover, annual soil loss is estimated to be less than 2.0 tons per acre. The potential for drainage or soil erosion problems is considered adverse but less than significant (**Class III**).

Groundwater Monitoring

The existing groundwater monitoring system includes nineteen wells installed around the perimeter of the facility for purposes of monitoring potential groundwater impacts from the existing WMU. An additional three detection groundwater monitoring wells would be installed for the new WMU. These detection monitoring wells would be part of the exiting Monitoring and Reporting Program established for the landfill and approved by the RWQCB.

Water Quality

Landfill leachate is a liquid generated by the percolation of water contained in solid waste, by the anaerobic decomposition of organic matter (i.e. in the absence of fee oxygen), and /or by waste mixing with water that has entered the landfill from external sources, such as surface drainage, precipitation, or groundwater intrusion. If released through failure or leakage of the liner system, leachate could migrate into surface water or groundwater. The most direct route would be leakage of leachate into the groundwater beneath the landfill.

To address the potential for surface and groundwater contamination from the facility expansion, the new WMU has been designed with a composite liner system that will be placed at the landfill base. This liner is consistent with the requirements of 40 CFR, Part 258 and Title 27 CCR and includes the following environmental controls in ascending order:

- A vadose monitoring system would be installed beneath the base liner in accordance with the waste discharge requirements issued for the new WMU.
- Reinforced geosynthetic clay liner (GCL) would be placed directly on prepared subgrade.
- Double-sided textured 60-mil high-density polyethylene (HDPE) geomembrane liner would be placed over the GCL and welded together to form a continuous sheet.

- LCRS, which consists of geocomposite drainage layer that blankets the entire lined area, a 6-inch pipe that is placed on the center of each waste management cell, a lined leachate sump, and pipes/pumps to remove leachate from sumps.

- Two feet of operations soil would be placed over the LCRS and lined areas.

With the installation of the above environmental controls it is unlikely that leachate would pass through the landfill refuse to the underlying groundwater table. Excavation of the landfill cells were designed to meet or exceed the siting criteria for groundwater protection in Title 27 CCR (requiring minimum base liner and final cover permeability requirements and a five-foot separation between wastes and groundwater) and the requirements in 40 CFR Part 258 regarding permeability limits.

40 CFR Part 258, Section 4.3.3 requires the LCRS to meet the regulatory performance standard of maintaining less than 30 cm (12 inches) of head above the liner to minimize the flow of leachate through potential imperfections in the liner system. Analyses conducted on the LCRS designed for the project indicate a maximum of leachate head of less than 1 inch. The maximum daily generation rate predicted in the joint technical document was approximately 126 gallons per day per acre. In accordance with Title 27 CCR, Section 20340(b), the LCRS has been designed, and would be constructed, maintained, and operated to collect and remove twice the maximum anticipated daily volume of leachate from the new WMU.

Leachate collected from sumps in the landfill expansion would be pumped to centrally located storage tanks fitted with secondary containment and a spill detection monitoring system. The proposed method of disposal is by tanker truck to any of three treatment plants, including the Visalia Wastewater Treatment Plant (owned and operated by the City of Visalia) located approximately 7 miles southwest of the site, the Traver Wastewater Treatment Plant located approximately 7 miles northwest of the site, and the Delft Colony Wastewater Treatment Plant located approximately 9 miles northwest of the site. Both the Traver and Delft Colony plants are owned and operated by the County of Tulare.

With the environmental controls proposed as part of the project design and the removal of leachate if it collects, the potential for any significant impact is considered adverse but not significant (**Class III**). No impacts are expected to groundwater with the implementation of these project design measures.

Actual quantities of leachate collected over any time period would vary depending upon various factors including the size of the active disposal area, cover soil placement and compaction, moisture content of incoming waste, and seasonal climatologic conditions. Operational provisions for the storage, removal and disposal of leachate would be assessed continuously using generation analyses and empirical measurements of leachate production as development of the new WMU progresses. Leachate generation is anticipated to decline gradually throughout the postclosure period following construction of the geosynthetic final cover system.

Due to the arid climate of the region, leachate seeps emanating from inactive portions of the landfill cover are unlikely. If a surface seep is detected, the area would be isolated, and leachate would be collected and transferred to on-site leachate storage tanks.

The final landfill cover system would also provide another measure of protection from the potential of surface and groundwater contamination. The final cover system would be constructed in place at the time of closure to prevent the infiltration of water and generation of leachate. In accordance with Title 27 CCR, Sections 21140(a) and 21142(a), the final cover system will be compatible with postclosure land use. The final cover system would include, in ascending order:

- Foundation layer consisting of a 24-inch compacted soil layer,
- Geosynthetic gas pressure relief layer,
- Geosynthetic clay liner,
- Geomembrane barrier layer,
- Geosynthetic drainage layer for pore pressure relief, and
- 24-inch vegetative layer to prevent erosion and provide protection for underlying components.

All soil material required for construction of the final cover system will be obtained on site. Approximately 840,000 CY of material will be required for construction of the foundation and vegetative layers.

3.7.3 Mitigation Measures

The design of the landfill expansion includes measures or project commitments that would reduce any impacts from landfill leachate and storm water run-off in either surface or groundwater, and would reduce the potential for soil erosion. With the incorporation of these measures as part of the project as described in this section and in Section 2, the impacts to water quality are expected to be adverse but less than significant. No other mitigation measures are necessary.

3.8 LAND USE

3.8.1 Environmental Setting

The project site is located in the County of Tulare, California, approximately six miles northwest of Visalia at the intersection of Road 80 and Avenue 328. The proposed expansion area is located immediately adjacent to the east and south sides of the existing WMU.

The existing facility includes:

- A storm water retention basin, located in the northwest corner of the facility
- An entrance and drop-off area, located immediately south of the stormwater retention basin
- A borrow area and former liquid waste area, located east of the entrance/drop-off area and stormwater retention basin

- The landfill area itself, located south of the above-referenced project elements
- A gas plant, located south of the landfill and adjacent to Road 80.

The proposed landfill expansion area is currently under agricultural production. An abandoned cotton gin mill and its related ancillary facilities are located along the south, central edge of the site, adjacent to Avenue 328.

Land uses surrounding the entire project site are agricultural. Lands west of the site include field crops and an active dairy. Lands north, east and south of the project site are dominated by field crops. The closest residence is approximately one-half mile southeast of the project site.

The County has historically entered into agricultural lease agreements on undeveloped portions of landfill facility property (Figure 2.2-1). The Visalia Landfill property currently contains two such leases; a third lease (Agricultural Lease Agreement 19041) recently terminated. Agricultural Lease Agreement 16212 contains 78.12 acres and is located in the northeast portion of the facility property. Agricultural Lease Agreement 19417 contains 140 acres and is located along the eastern perimeter of the facility property. Both of these leases contain provisions for renewal.

At the time of preparation of this Draft EIR, Lease 16212 is not anticipated to be renewed and Lease 19417 is anticipated to be renewed with revised boundaries incorporating Lease 16212. It is unknown if the property contained in Lease 19041 will be incorporated into an agricultural lease.

Tulare County Land Use Plans and Policies

The project site is addressed under the "Rural Valley Lands Plan" (Element) of the County's General Plan. Under this Element, the project site's land use designation is Agriculture; the site does not fall within any Urban Area Boundaries (County, 1998). The project site is zoned AE-40, Exclusive Agriculture with a 40-acre minimum parcel size. Lands surrounding the project site fall under the same General Plan land use and zoning designations.

In addition to the above, County staff and County Counsel concluded that:

- The proposed landfill expansion would not require amendment to the existing landfill's M-2 Use Permit Number 50 (as approved February 27, 1952) as the County is exempt from it's own Zoning Ordinances
- The proposed landfill expansion is exempt from the provisions of the Surface Mining and Reclamation Act because: (1) the operation is conducted on site; (2) the operation would not represent commercial mining; and (3) the operation would be limited to typical landfill activities
- Per requirements of Government Code Section 512381, the acquisition and proposed expansion would need to be consistent with the "Principles of Compatibility" (Assembly Bill 2663).

County staff and County Counsel determined that acquisition of the subject properties for the purpose of the proposed landfill expansion would not conflict with the County's General Plan and Zoning Ordinances, and would be consistent with all requirements of Government Code.

The following County planning policies also apply to this project. They are noted below:

Solid Waste Planning Document Consistency. The Countywide Integrated Waste Management Plan (IWMP) is not considered part of the County of Tulare General Plan (County, 2000). The IWMP was enacted in 1990. This plan establishes policies and programs for managing and reducing the quantity of solid waste generated in the county. The plan describes and identifies the Visalia Landfill as an existing Class III landfill. Policies from this plan that apply to the project include the following:

- The County will continue the green waste diversion program established at the Visalia, Woodlake, and Teapot Dome Landfills
- The County will continue its coordination with the Tulare County recycling material recovery facility (a private facility)
- The County will continue its coordination with Tulare County Compost and Biomass (a private facility).

The landfill expansion would continue to include a diversion area similar to existing operations at the landfill. The diversion or drop-off area would include areas for separating green waste, white goods, tires, glass, and aluminum. As such the project would be consistent with these solid waste policies.

Tulare County General Plan Consistency. The Tulare County Area General Plan (1963) does not specifically identify any of the county's landfills. To demonstrate general plan consistency, the County Solid Waste Division requested that the Planning and Development Department prepare General Plan Referrals on all its solid waste facilities. The referrals included specific findings of consistency on all county landfills and transfer stations. The following policies from the Comprehensive Policy Plan of the General Plan are related to solid waste facilities:

- Policy 111.405 Water Resources, Groundwater Recharge and Withdrawal
  Source Document: Environmental Resource Management Element

  Identifiable groundwater recharge areas must be protected from ground surface covering which would reduce porosity. Such recharge areas should be termed "Water Preserves" and also be protected from uses, which could introduce polluting elements into the groundwater supply.

  According to County hydrologic maps, the Visalia Landfill is not located adjacent to or in the proximity of any identified aquifer recharge area. Therefore, the landfill expansion is consistent with this policy.

- Policy 111.710 Water Resources, Water Quality
  Source Document: Environmental Resource Management Element

  Solid waste disposal areas should not be located where there is possibility of contamination of ground or surface water. (At least 4 feet above the water table where there is a surface mantle of finely grained natural soil, well compacted and at least 10 feet above the water table where toxics are involved.) Unlined sewage lagoons should be similarly situated.

Site-specific conditions, such as groundwater depth (20 to 80 feet) and distance from surface water, are consistent with the requirements of this policy. In addition, current landfill requirements for landfill design (base liner, leachate collection, gas collection, and final cover) would provide further protection of ground and surface water in the area. The landfill expansion is therefore consistent with this policy.

- Policy 122.605 Parks and Recreation, Facility Planning and Development
  Source Document: Land Use/Circulation Element

  Only related public facilities need to be close to one another. Site selection should be approached on an integrated basis (city, county, state, and federal) where practical and feasible. Certain public facilities will have to be planned and provided on a regional basis requiring a multiple jurisdictional approach. Notable among them are facilities for medical care and recreation.

  The landfill expansion is consistent with this policy since it would developed adjacent to the existing landfill operations and no other public facilities are located near the project site. In addition, the County has been the sole provider of waste disposal to both the unincorporated portions of the county and its incorporated cities. The county and all eight cities have adopted the Countywide Siting Element, which identifies the Visalia Landfill. The establishment of a recycling and/or composting facility on or near the landfill would be in conformance with this section (County, 2000b).

- Policy 213.103 Community Facilities, General Goals and Intent
  Source Document: Land Use and Circulation Element

  The local health program should be evaluated carefully to determine areas requiring special attention in relation to the planning program. Regulations and advisory activities relating to on-lot water supplies, ***refuse collection and disposal****, on-lot sewage disposal, interim sewage treatment plants, sewer and water connection, air pollution, water pollution, radiation and housing are essential for maintaining a proper living environment. Regulations which are based on a "comprehensive environmental health plan" will provide assurance that the programs of the planning, health and public works agencies are being effectively coordinated. While state and county regulations deal with each of these factors, a "planning" approach is needed to evaluate their adequacy, and an interagency approach is needed to assure their effective application and enforcement.*

  Since the adoption of this policy in 1963, additional state and federal regulations have been promulgated that require environmental controls on landfills. The project would be reviewed and monitored by the SJVUAPCD, the Regional Water Quality Control Board, and the Integrated Waste Management Board, and other County departments such as the Planning Department and the County Health and Human Services Agency (Local Enforcement Agency for the project). Through implementation of the regulatory requirements and involvement of the responsible agencies, the project is consistent with this policy.

- Policy 213.105 Community Facilities, General Goals and Intent
  Source Document: Housing Element

  When land is purchased by the County in conjunction with installation of new public facilities, consideration should be given to making any excess land available for sale to accommodate affordable housing.

  The entire amount of property is intended for landfill operations. Thus, no excess land is available for low-income housing.

- Policy 213.207 Community Facilities, Transportation
  Source Document: Land Use and Circulation Element

  Agricultural policy of the Area General Plan (AGP) recognizes the necessity for mutually exclusive and nearly exclusive agricultural areas. The AGP proposes that strip commercial development of rural highway frontage be avoided and that uses of a highway commercial character be concentrated at those freeway interchanges and major road intersections where considerations of design, traffic control and property access permit,

consistent with functions of the highways involved. While large industrial areas are shown on the GP diagram and in the plans of individual communities, the necessity for accommodating certain industries directly related to agriculture and extraction in rural areas is recognized. Such industries require rural locations to be in close proximity to their source of supply or to agricultural operations served. Public facilities such as schools, fire stations, and ***refuse sites*** *similarly are required in rural areas.*

The Visalia Landfill is located in a rural area and is surrounded by agricultural properties to the north, south, east, and west of the site. The landfill expansion would be directly adjacent to the existing landfill operations. Since the existing landfill and the proposed expansion areas are located in a rural agricultural area, the project is consistent with this policy.

- Policy 213.210 Community Facilities, Transportation
  Source Document: Land Use and Circulation Element

  County and State Highways proposed for development as limited access primaries are: Road 80 from Visalia Municipal Airport to Fresno County line.

- Policy 213.211 Community Facilities, Transportation
  County and state highways proposed as primaries without limit of access are: Avenue 328 from State Route 133 east of Ivanhoe to State Route 99 and beyond, connecting via diagonal with Excelsior Avenue in Kings County.

  The project includes the relocation of the landfill entrance from Road 80 to Avenue 328. The relocation of the entrance is consistent with the intent of policy 213.210 and 213.211.

3.8.2 Project Impacts

Significance Criteria

The land use analysis presented below evaluates if it would result consistency with Tulare County land use designations, goals, objectives, or policies; or would otherwise conflict with adopted environmental plans and goals of the community where it is located. An impact would be considered significant if it would result in disruption of adjacent land uses. Potential land use conflicts or incompatibility are usually the result of other environmental effect, such as generation of noise or objectionable odors.

Adjacent Land Uses

The landfill expansion area would be directly adjacent to the existing landfill operations. When the new WMU is operational the existing landfill area would be closed. The facility is located in an agricultural area with no sensitive receptors close by. The new WMU would continue an existing land use. The new WMU would not cause land use conflicts, thus, no mitigation measures are necessary **(Class III).**

County Land Use and Solid Waste Management Plans

The proposed landfill closure and expansion project would be consistent with the County Integrated Solid Waste Management Plan. The Visalia Landfill is described and identified in the text and the expansion design considers the diversion requirements in the plan.

While the County General Plan does not specifically call out County landfills, the referrals established by the County established that the Visalia Landfill is consistent with the General Plan. An evaluation of the applicable policies also established the project's consistency with the General Plan. There are no conflicts with the General Plan policies or goals.

The County does not have an adopted "Habitat Conservation Plan" or "Natural Communities Conservation Plan." However, development of the project would displace burrowing owl, and potentially San Joaquin kit fox. Potential impacts associated with these displacements are addressed in Section 3.3 (Biological Resources).

Agricultural Uses

Although the project would convert agricultural lands that are currently under the Williamson Act, this conversion would be consistent with the findings necessary under California Government Code Section 51291(b). Subsequently, no impacts would occur. It is noted, however, that the acquisition and conversion of these lands does require notice to the Department of Conservation and the local governing body responsible for administration of lands under the Williamson Act (County, 1998).

3.8.3 Mitigation Measures

No land use impacts would occur due to development of the project. Consequently no mitigations measures are recommended.

3.9 NOISE

This section addresses the environmental setting and impacts related to the project. Specifically, Section 3.9.1 provides a description of the environmental setting, followed by an environmental impacts analysis of the project in Section 3.9.2.

3.9.1 Environmental Setting

General Characteristics of Community Noise

To describe noise environments and to assess impacts on noise sensitive areas, a frequency weighting measure that simulates human perception is customarily used. It has been found that *A-weighting* of sound intensities best reflects the human ear's reduced sensitivity to low frequencies and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels are logarithmic units that conveniently compare the wide range of sound intensities to which the human ear is sensitive. Figure 3.9-1 is an illustration of a typical range of common sounds heard in the environment.

Noise environments and consequences of human activities are usually well represented by an equivalent A-weighted sound level over a given time period (L_{eq})[4], or by the average day-night noise levels (L_{dn})[5]. Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. As shown on Table 3.9-1, outdoor L_{dn} levels vary over 50 dBA depending on the specific type of land use. In wilderness areas, the L_{dn} noise levels average approximately 35 dBA, 50 dBA in small towns or wooded residential areas, 75 dBA in major metropolis downtown areas, and 85 dBA near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse levels of noise to public health.

[4]The Equivalent Sound Level (L_{eq}) is a single value of sound level for any desired duration, which includes all of the time-varying sound energy in the measurement period.

[5]Day-night average sound level that is equal to the 24 hour A-weighted equivalent sound level with a 10 decibel penalty applied to nighttime levels.

Figure 3.9-1 (typical range of common sounds heard in the environment)

Table 3.9-1 Examples of Outdoor Day-Night (L_{dn}) Average Sound Levels in dB Measured at Various Locations

Noise Level (L_{dn} in dB)	Common Outdoor Noise Levels
90	
	Apartment next to Freeway
	¾ mile from touchdown at Major Airport
80	
	Downtown with some Construction Activity; Urban High Density Apartment
70	
	Urban Row Housing on Major Avenue
60	Old Urban Residential Area
50	Wooded Residential
	Agricultural Crop Land
40	
	Rural Residential
	Wilderness Ambient
30	

Source: USEPA, 1978. Protective Noise Levels Condensed Version of EPA Levels Document

Levels that are generally considered acceptable or unacceptable can characterize various environments. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding average daytime levels. The day-to-night difference in rural areas away from roads and other human activity can be considerably less. Areas with full-time human occupation that are subject to nighttime noise that are the same as daytime levels are often considered objectionable relative to noise disturbance. Noise levels above 45 dBA at night can result in the onset of sleep interference effects (USEPA, 1971). At 70 dBA, sleep interference effects become considerable.

Noise Environment in the Project Area

The major noise sources in the project area are vehicular traffic on Road 80, Avenue 328, and operations associated with the existing Visalia Landfill.

The existing noise environment was measured at three locations with a calibrated sound-level meter. The measurement locations were selected to characterize the existing noise environment adjacent to the project area. Table 3.9-2 summarizes the noise survey results in terms of 10-minute equivalent sound levels (L_{eq}), and the maximum and minimum sound levels reached during the 10-minute sample period (L_{max} and L_{min}, respectively).

Table 3.9-2 Noise Survey Results Adjacent to Existing Landfill

#	Description	Survey Time	L_{eq}	L_{max}	L_{min}	Notes
1	North of Avenue 328 at the location of the recycling/drop-off area	12:25 pm	59.9	77.4	35.4	The maximum sound was from a large truck. Avenue 328 had a low level of traffic when the study was conducted.
2	About 50 feet east of the active/existing landfilling area	12:50 pm	71.8	82.3	47.4	The landfilling area included one compactor and two to three refuse vehicles unloading. Maximum sound was from the landfilling operations but a loud voice close to the monitor also influenced the noise level, although it was not the maximum sound
3	Entrance to the landfill on the east side of Road 80	1:10 pm	75.5	93.2	44.1	Road 80 had a moderate to heavy amount of traffic. The maximum noise level was from a diesel truck moving north on the Road. The second highest noise level was at 90.2 dBA and it was from a refuse vehicle exiting the landfill.

All measurements are in dBA and were taken on May 4, 2000 by Aspen Environmental Group.
L_{eq} = Equivalent Sound Level, a measurement (in this case 10 minutes) that accounts for the moment to moment fluctuations due to all sound sources during the measurement period combined.
L_{max} = The maximum sound level reached during a sampling period.
L_{min} = The minimum sound level reached during a sampling period.

Sensitive Receptors

Noise-sensitive receptors are facilities or areas (e.g., residential areas, hospitals, schools, offices) where excessive noise may cause annoyance or loss of business. There are no residences within 1,000 feet of the proposed property boundary. Three residences are located approximately 0.5 miles from the property boundary.

Regulatory Setting

Federal and State Standards and Regulations. There are no federal noise standards that directly regulate environmental noise from construction or operation of a transmission line project. However, it should be noted that the USEPA has developed guidelines on recommended maximum noise levels to protect public health and welfare (USEPA, 1974). Table 3.9-3 provides a summary of noise levels identified as requisite to protect public health and welfare with an adequate margin of safety. With regard to noise exposure and workers, the Occupational Safety and Health Administration (OSHA) regulations safeguard the hearing of workers exposed to occupational noise. Refer to 29 CFR Section 1910.95 (Code of Federal Regulations) for a list of permissible noise exposures.

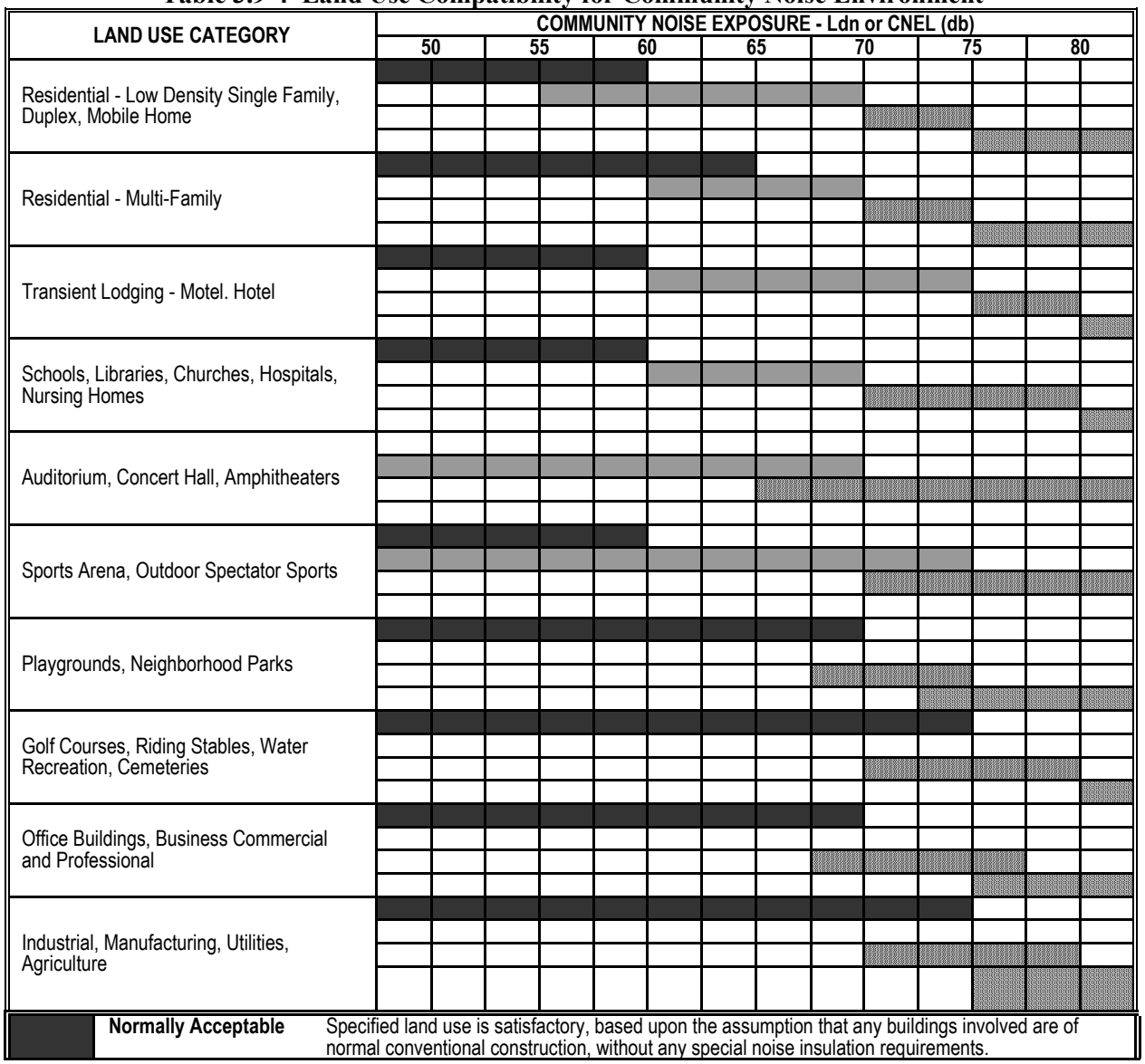
California encourages each local government entity to perform noise studies and implement a noise element as part of their general plan. The California Office of Noise Control administers standards and implementation. California Administrative Code, Title 4, has guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The State land use compatibility guidelines are listed in Table 3.9-4.

Table 3.9-3 Examples of Protective Noise Levels Recommended by USEPA

Effect	Level	Area
Hearing Loss	Leq (24)<70 dB	All areas
Outdoor Activity Interference and Annoyance	Ldn<55 dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	Leq (24)<55 dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor Activity Interference and Annoyance	Ldn<45 dB	Indoor residential areas
	Leq (24)<45 dB	Other indoor areas with human activities such as schools, etc.

Source: USEPA, 1974.
Note: Leq (24) = Represents the sound energy averaged over a 24-hour period.
Ldn = Represents the Leq with a 10 dB nighttime weighting.

Table 3.9-4 Land Use Compatibility for Community Noise Environment



LAND USE CATEGORY		COMMUNITY NOISE EXPOSURE - Ldn or CNEL (db)						
		50	55	60	65	70	75	80
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.						
	Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.						
	Clearly Unacceptable	New construction or development generally should not be undertaken.						

Source: State of California General Plan Guidelines, Office of Planning and Research, June 1990.

Local Noise Policy. Tulare County uses the L_{dn} to determine land use compatibility with respect to noise (County, 1988). The Noise Element defines noise levels as significant if they exceed 75 dBA L_{dn} at the site property line adjacent to agricultural uses or 60 dBA L_{dn} at the nearest residence.

3.9.2 Project Impacts

Significance Criteria

An impact would be considered significant if project noise levels exceed 75 dBA L_{dn} at the site property line adjacent to agricultural uses or 60 dBA L_{dn} at the nearest residence per the Noise Element of the Tulare County General Plan.

On-site Noise

Construction noise or on-going operations would occur primarily from heavy-duty equipment (e.g., dozers, compactors, trucks). Short-term noise measurements were collected approximately 50 feet from the active face of the existing WMU (see Table 3.9-2). At the time of the measurement, one compactor and three refuse vehicles were active. The average noise level for the 10-minute monitoring period (L_{eq}) was 71.8 dBA. There are no sensitive receptors in the vicinity of the facility. However, the facility is surrounded by agricultural uses. The closest boundary of an agricultural land use to the boundary of the landfill expansion is approximately 350 feet east of the landfill boundary. It should be noted that noise levels are calculated based on the assumption that noise from a line source is reduced by 6 dBA with each doubling of distance from the source of noise. This would result in a L_{eq} dBA level of approximately 55 at the nearest agricultural boundary. It is estimated that nighttime ambient noise levels in the project area are no greater than 50 dBA. This would result in an L_{dn} well below the County's regulatory standard of 75 dBA, L_{dn} at an agricultural boundary. Therefore, potential impacts associated with on-site noise levels are considered to be adverse, but less than significant (**Class III**).

Off-site Noise

Proposed operations of the new WMU could generate up to approximately 1,020 vehicle roundtrips. It is anticipated that most of these trips would arrive at the facility from the Visalia Area and other nearby communities via Road 80 or Avenue 328. These roads currently generate noise levels in the high 50 dBA to mid 70 dBA range (see Table 3.9-2). Additional trips associated with the operations of the project could adversely impact residential receptors along these road; generally it takes a doubling of traffic to

raise the noise level by 3 dBA. However, it is not anticipated that the additional trips would result in significant impacts to residential receptors located along Road 80 and Avenue 328. Thus, potential impacts associated with offsite noise levels are considered to be adverse, but less than significant (**Class III**).

3.9.3 Mitigation Measures

No significant noise impacts are expected from the landfill expansion and there are no sensitive receptors near the project area. Therefore, no mitigation measures are required.

3.10 TRANSPORTATION

3.10.1 Environmental Setting

The project would consist of the development and operation of a new Class III WMU, recycling facility and a new entrance at the existing Visalia Landfill. The project would be constructed to meet State of California Code Regulations Title 27 landfill design requirements and would increase the permitted average daily tonnage from 570 tons per day (tpd) to 1,200 tpd. The existing 132-acre landfill located at the intersection of Road 80 and Avenue 328 has been in operation since 1952. The new WMU would be located directly adjacent to the existing WMU as indicated in Figure 2.2 and would include relocation of the current entrance from Road 80 to Avenue 328 approximately 3,500 feet east of Road 80. The project would also include a recycling and drop-off area.

Regional Roadway System

Regional access is provided to the project area by U.S. Highway 99 (U.S. 99), a primary regional arterial extending north and south through the San Joaquin or Central Valley and linking the Visalia area with the City of Tulare to the south and Kingsburg, Selma, and Fresno to the north. State Route 198 (SR 198) extends westerly from Visalia through Hanford and Lemoore to Interstate 5 (I-5).

U.S. 99 is generally improved to freeway status through the Central Valley and typically includes two to three lanes in each direction. Access to U.S. 99 in the project vicinity is limited to grade separated interchanges at Route 198 (east and west), Avenue 304 (Goshen Avenue), Elder Street, Traver, Merrit Drive, and Avenue 384 (Dodge Avenue). SR 198 is currently being improved to freeway status.

Local Road System

Local roadways providing access to the site and linking it with regional arterials and other areas of the county include Road 80 and Avenue 328 as indicated in Figure 3.10-1. Road 80 is a north/south roadway extending northerly from the City of Visalia past the westerly edge of the project site and continuing north through the community of Dinuba. It currently has a two-lane, two-way configuration in the project vicinity with 12-foot travel lanes, 8-foot paved shoulders on both sides and approximately 15-foot wide

gravel shoulders on both sides behind paved shoulder areas. Traffic on cross street approaches is typically controlled with stop signs. However, the intersections of Road 80 with Avenue 384, Avenue 408, West Sierra Way, and El Monte are signalized. The intersection of Road 80 with Avenue 328 is currently controlled with stop signs on the east and westbound approaches of Avenue 328. Traffic leaving the current entrance/exit to the landfill site is required to stop at Road 80. No exclusive turn lanes or deceleration lanes are present on Road 80 at the entrance currently.

Avenue 328 is a two-way facility with one 12-foot lane in each direction, which extends easterly from U.S. 99 past and adjacent to the southerly edge of the project site as indicated in Figure 3.10-1. It includes 4-foot paved shoulders with an additional approximately 15-foot wide gravel shoulder area on each side.

Study Area Traffic Volumes

Existing traffic volumes on local roadways in the project vicinity, which are summarized in Table 3.10-1 and shown in Figure 3.10-2, were obtained from several sources. Peak hour traffic volumes at the intersection of Road 80 and Avenue 328 were obtained from the *Project Study Report for Road 80 From Goshen Avenue to El Monte Way* (County, 1998b). Peak hour traffic volumes at the entrance to the facility were counted in May 2000 as part of this study. Daily traffic volumes on Road 80 and Avenue 328 were counted by Tulare County while traffic volumes on U.S. 99 and SR 198 were obtained from CALTRANS.

Review of Table 3.10-1 will indicate Road 80 currently accommodates a two-way daily or 24 hour traffic volume of approximately 9,700 vehicles north of the current entrance to the facility and 9,900 vehicles immediately south of the entrance. Avenue 328 currently accommodates approximately 3,550 vehicles per day east of Road 80 while U.S. 99 currently accommodates approximately 38,500 vehicles per day in the vicinity of Goshen Avenue (CALTRANS, 1998).

Placeholder for Figure 3.10-1 8.5X11 BW

Placeholder for Figure 3.10-2

Table 3.10-1 Existing Two-Way Daily and Peak Hour Traffic Volumes on Local Roadways Serving the Project Site

Roadway	24-Hour (vpd)	Peak Hour Traffic (vph)	
		AM	PM
Road 80[a] North/ Landfill Entrance	9,700	725	785
Road 80[a] South/ Landfill Entrance	9,900	770	830
Avenue 328[a] East/ Road 80	3,550	320	280
U.S. Highway 99[b] At Goshen Avenue	38,500	N/A	N/A
SR 198[b] At Road 80	29,500	N/A	N/A

Source: (a) Tulare County, 1999; (b) CALTRANS, 1998.

Roadway Operating Characteristics

A total of two intersections were identified as having the potential to be directly affected by project related traffic from a traffic capacity perspective and warranting a detailed traffic capacity analysis to quantify the degree of impact. These intersections include:

- Road 80/ Avenue 328
- Road 80/Existing Landfill Entrance.

The capacity of a roadway network is typically controlled by the capacity of its intersection with other roadways. Operating characteristics and capacities of intersections are typically described using a level of service (LOS) analysis, which provides a standardized means of quantifying a roadway or intersection's operation in terms of capacity, delay, and maneuverability available to drivers.

Potential LOS ranges from LOS A representing best possible or virtually free flow conditions to LOS F representing the worst or jammed conditions.

Methodology

Intersections were evaluated using methodologies described in the 1994 Edition of the *Highway Capacity Manual* for signalized and unsignalized intersections (Transportation Research Board, 1994). This methodology characterizes an intersection's operations in terms of LOS as a function of the amount of delay encountered by drivers entering the intersection. A description of the LOS criteria for signalized intersections is presented in Table 3.10-2.

A description of the LOS criteria for unsignalized intersections is presented in Table 3.10-3. Unsignalized one-way or two-way stop controlled intersections are evaluated both as a whole or overall and by stop controlled movement. Stop controlled approaches at a two-way stop intersection generally experience significantly more delay than the uncontrolled approaches where vehicles have the right-of-way and are not required to stop.

Table 3.10-2 Level of Service Criteria for Signalized Intersections

Level of Service	Typical Operating Charactertics	Average Vehicle Delay in

		Seconds [a]
A	Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is encountered. No vehicles wait longer than one red traffic signal indication. The traffic operation can be described as excellent.	Delay ≤ 5 seconds
B	Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.	Delay = 5.1 - 15 seconds
C	Level of Service C describes a condition where the approach to an intersection is often fully utilized and backups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally may have to wait more than one red traffic signal indication. The traffic operation can generally be described as very good.	Delay = 15.1 - 25 seconds
D	Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive backups. The traffic operation can generally be described as fair.	Delay = 25.1 - 40 seconds
E	Capacity occurs at Level of Service E. It represents the most any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting upstream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.	Delay = 40.1 - 60 seconds
F	Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of jammed conditions, this volume would be less than capacity.	Failure Delay > 60 seconds

Notes: (a) Capacity is defined as Level of Service E
Source: Transportation Research Board, 1980, 1985, 1994

Table 3.10-3 Level of Service Criteria for Unsignalized Stop Sign Controlled Intersections

Level of Service	Typical Operating Characteristics	Average Vehicle Delay in Seconds[a]
A	Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is encountered. No vehicles wait longer than one red traffic signal indication. The traffic operation can be described as excellent.	Delay ≤ 5 seconds
B	Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.	Delay = 5.1 - 10 seconds
C	Level of Service C describes a condition where the approach to an intersection is often fully utilized and backups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The traffic operation can generally be described as very good.	Delay = 10.1 - 20 seconds
D	Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on stop controlled approaches to the intersection during short intervals within the peak period. However, there are enough intervals with lower demand such that queues are periodically cleared, thus preventing excessive backups. The traffic operation can generally be described as fair.	Delay = 20.1 - 30 seconds
E	Capacity occurs at Level of Service E. It represents the most any particular intersection can accommodate. At capacity	Delay = 30.1 - 45 seconds

Level of Service	Typical Operating Characteristics	Average Vehicle Delay in Seconds[a]
	there may be long queues of vehicles waiting upstream of the intersection and vehicles may be delayed up to several minutes on select approaches. The traffic operation can generally be described as poor.	
F	Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary through the peak period. Because of jammed conditions, this volume would be less than capacity.	Failure Delay > 45 seconds

Note: (a) Average delay per vehicle on stop controlled approaches or turning movements on uncontrolled approaches. Capacity is defined as Level of Service E.
Source: Transportation Research Board, 1980, 1985, 1994.

Intersection Operations

A summary of existing levels of service within the study area is presented in Table 3.10-4. Currently the intersection of Road 80 with Avenue 328 and the existing landfill entrance road both operate at an LOS A/B during the morning and evening peak period periods. The major street approaches of Road 80 are not required to stop and operate at an LOS A. The cross street approaches of Avenue 328 and the landfill exit are controlled with stop signs and operate at an LOS B.

Table 3.10-4 Peak Hour Intersection Levels of Service

Intersection	Peak Period	Condition							
Movement[a]		Existing		Existing With Project		Base Year 2020[b]		Year 2020 With Project[b]	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Road 80/ Avenue 328									
Whole[c]		1.0	A	1.0	A				
EB[d]	A.M. Peak	7.0	B	8.0	B				
WB	Hour	6.6	B	7.5	B	13.5	B/b/	13.7	B/b/
NB Left		0.1	A	0.1	A				
SB Left		0.2	A	0.2	A				
Whole[c]		1.1	A	1.1	A				
EB[d]	P.M. Peak	7.4	B	8.3	B				
WB	Hour	6.9	B	7.8	B	15.8	C/b/	15.9	C/b/
NB Left		0.2	A	0.1	A				
SB Left		0.2	A	0.2	A				
Road 80/ Existing Landfill Entrance									
									-
Whole[c]	A.M. Peak	0.2	A	1.0	A	0.3	A		
WB[d]	Hour	8.2	B	10.2	C	17.8	C	-	
SB Left		0.1	A	0.2	A	0.1	A		-
Whole[c]	P.M. Peak	0.2	A	1.1	A	0.5	A		
WB[d]	Hour	7.5	B	10.5	C	21.4	A	-	
SB Left		0.1	A	0.2	A	0.1	B		
Avenue 328/ Future Landfill Entrance									
	A.M. Peak								
Whole[c]	Hour							1.0	A
EB Left[d]		-	-	-	-	-	-	2.9	A
SB								7.0	B
	P.M. Peak								
Whole[c]	Hour							0.9	A
EB Left[d]		-	-	-	-	-	-	2.7	A
SB								6.9	B

Intersection	Peak Period	Condition							
Movement[a]		Existing		Existing With Project		Base Year 2020[b]		Year 2020 With Project[b]	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS

a. Intersection approach/ turning movement, EB = Eastbound Approach
b. Assumes Road 80 widened to four lanes and the intersection of Road 80/Avenue 328 signalized
c. Average vehicle delay for entire intersection
d. Average vehicle delay for worst case stop sign controlled approach only

Delay = average vehicle delay in seconds
Source: Aspen Environmental Group, 2000

Proposed Roadway Improvements

Tulare County in cooperation with CALTRANS is planning significant improvements for Road 80 between Avenue 304 (Goshen Avenue) and El Monte Way. The proposed improvements in the project vicinity include widening the roadway to provide two travel lanes with paved shoulders in each direction separated by a depressed 18-foot median. The intersection of Road 80 with Avenue 328 will include exclusive north and southbound left turn lanes on Road 80. The intersection of Road 80 and Avenue 328 is forecast to warrant signalization by the Year 2020 (County, 1998b).

Project Trip Generation

Trip generation forecasts for the project utilized for this analysis assume a peak or worst-case scenario with the new WMU operating at the peak permitted capacity of 2,000 tons per day (tpd). Trips, which would be generated by the project at 2,000 per day, were estimated using existing peak hour entrance traffic counts expanded at the rate of forecast tonnage increase. When operating at 2,000 tons per day, the new WMU is forecast to generate 87 inbound and 70 outbound trips during a weekday morning peak hour and 70 inbound and 77 outbound trips during the evening peak hour versus 21 inbound and 17 outbound trips during a weekday morning peak hour and 17 inbound and 28 outbound trips during the evening peak hour when currently operating at approximately 480 tpd (current annual average, County, 2000d). The new WMU when operating at 2,000 tons per day, is forecast to generate 1,020 inbound and 1,020 outbound trips over a daily or 24-hour period (County, 2000d).

Trip Distribution and Assignment

Future trips to and from the project site were distributed to the surrounding area and assigned to the roadway network based upon current travel patterns observed during turning movement traffic counts completed at the landfill entrance. Existing travel patterns indicated approximately 75 percent of site related traffic is oriented to and from the south on Road 80 with the remaining 25 percent oriented to and from the north.

Future Conditions Without the Project

The analysis of future conditions without the project reflects projected increases in vehicular traffic expected to occur due to growth on both the local and regional level. This scenario serves as a baseline against which future impacts of the project can be assessed.

Background Traffic Growth

Traffic forecasts utilized for the future baseline of this analysis assume a Year 2020 horizon and were developed as part of the *Project Study Report for Road 80 From Goshen Avenue to El Monte Way* using the Tulare County Regional Traffic Model (County, 1998b). Baseline Year 2020 peak hour traffic volumes at the intersection of Road 80 with Avenue 328, at Road 80 at the existing landfill entrance and on Avenue 328 near the proposed future entrance to the WMU are summarized in Figure 3.10-3.

Intersection Levels-of-Service

Baseline Year 2020 am and pm peak hour LOS at the previously identified two study locations is summarized in Table 3.10-4. The LOS in the table assumes completion of the widening of Road 80 to four lanes and signalization of the intersection of Road 80 and Avenue 328. Review of the table will indicate the intersection of Road 80 with Avenue 328 is forecast to operate at an LOS B during the morning peak hour and LOS C during the evening peak hour when signalized. The intersection of Road 80 with the existing landfill entrance is forecast to operate at an LOS A/C during the morning peak hour and LOS A/B during the evening peak period assuming the landfill continues to accommodate current traffic levels with a waste stream of up to 570 tons per day.

3.10.2 Project Impacts

Significance Criteria

According to CEQA standards, a project, which would cause an increase in traffic that is substantial relative to the existing traffic load and capacity of the street system is considered to have a significant adverse impact of the environment. Tulare County's goal is that an LOS D be maintained at major intersections.

Placeholder for figure 3.10-3

In addition, the project would be considered to cause a significant impact if project-generated traffic would cause an increase in traffic safety hazards on area roadways, or deterioration of the physical condition of area roadways.

Daily and Peak Hour Traffic

Future Year 2020 peak hour traffic volumes, which include completion of the new WMU with a new entrance to Avenue 328, are summarized in Figure 3.10-4. Corresponding Year 2020 am and pm peak hour LOS at the intersection of Road 80 and Avenue 328 and the new entrance to Avenue 328, which assume implementation of the project, are summarized in Table 3.10-4. Review of the table will indicate forecast increases associated with a new WMU operating at 2,000 tpd are expected to have a minimal effect on baseline Year 2020 peak hour LOS at either location. During both the morning and evening peak hours, the intersection of Road 80 with Avenue 328 would continue operating at baseline 2020 levels (LOS B/C). The relocated entrance to Avenue 328 is forecast to operate at an LOS A/B during both the morning and evening peak periods. Thus, the project would have an adverse but less than significant impact on the intersection of Road 80 and Avenue 328 (**Class III**).

Traffic into the new WMU at the proposed entrance on Avenue 328 would have the potential to cause traffic delays and congestion due to increased traffic associated with the landfill expansion. Truck traffic waiting to turn left into the site could increase the potential for traffic accidents and increase delay to through traffic on Avenue 328 **(Class II)**. Implementation of mitigation measure T1 would reduce this impact to a less-than-significant level.

3.10.3 Mitigation Measures

The following mitigation measure has been developed to address potential congestion, which could cause traffic accidents at the Avenue 328 entrance.

T1 The project proponent should widen Avenue 328 at the relocated entrance to include an exclusive eastbound left turn lane and a westbound right turn deceleration lane in accordance with CALTRANS design standards.

Placeholder for Figure 3.10-4

4. IMPACT OVERVIEW

This section provides an evaluation of growth inducing impacts, cumulative impacts, unavoidable significant impacts, and impacts not considered significant.

4.1 GROWTH INDUCING IMPACTS OF THE PROPOSED EXPANSION

Section 15126.2 (d) of the CEQA Guidelines state that the growth-inducing impact of the project should be discussed. The EIR should discuss "… the ways in which the proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas)."

The project does not propose to expand services beyond the current service area. Rather, it proposes to continue operations to accommodate current capacity needs. It would provide additional municipal waste disposal capacity that could be used in future residential and commercial developments. Although not directly a growth-inducing project, the facility would provide service within its service area that could include future development.

Since the project involves the expansion of an existing landfill, the project would not create the need for more housing. There would be no change in employment with the development of the WMU. The construction of the new WMU would require the need for temporary construction labor but this would not require the need for additional housing because of the short-term duration of actual construction activities.

4.2 CUMULATIVE IMPACTS

Cumulative impacts are most likely to arise when a relationship exists between the project and other projects in a similar location, time period, and/or involving similar actions. Projects in proximity to the proposed project would be expected to have more potential for a relationship that could result in potential cumulative impacts than those more geographically separated. CEQA Guidelines Section 15130(b) requires that cumulative impacts reflect the severity of the impacts and their likelihood of occurrence. The cumulative discussion need not provide as much detail as provided by impacts of the project alone and should be practical and reasonable.

This section presents major projects proposed in the project area and assesses potential impacts associated with the proposed expansion of the Visalia Landfill in relation to these potential projects.

Proposed or Potential Projects

Six projects are proposed in the general project area. These projects include the development of a new dairy, the Road 80 expansion, a new distribution center, an annexation proposal to the City of Visalia, possibly new city incorporation, and closure of the existing WMU at the Visalia Facility. Figure 4.2-1

shows the location of these projects in relation to the project site. These projects are discussed briefly below.

California Dairy Design. The County has approved a use permit for a new dairy approximately two miles north and west of the project site. This dairy would be accessed from Road 80. The dairy would be located 1 mile west of Road 80, north of the St. Johns River, 1½ miles south of Avenue 360 in the County of Tulare. The dairy would house a new dairy/feedlot with 2500 cows and 2775-support stock of various sizes. Total herd would be 5275. The dairy would occupy 2777 acres. A conditional use permit is under review with the County. The proposed site for the dairy and surrounding land uses are currently in agricultural use with row crops.

Road 80 Expansion. The County of Tulare along with the cities of Dinuba and Visalia are proposing the improvement of 14 miles of Road 80 from Plaza Drive to Avenue 416 (El Monte Way). This improvement area falls within the County of Tulare and the Cities of Visalia and Dinuba. This expansion is proposed to increase capacity on this regional roadway. Road 80 is the only regional north/south road between Visalia and Dinuba; the City of Dinuba is the only city in Tulare County that is not served by a state highway (County, 1998). The planning document for the Road 80 improvement project specifies that access to the Visalia Landfill would not be impeded with the construction of this project. A Notice of Preparation has been issued on this project and an EIR is expected to be released in the spring of 2001.

Jo-Ann Fabrics. A 610,344 square foot Jo-Ann Fabrics distribution center is proposed in the City of Visalia, about two miles south of the Visalia Landfill. The center would be located on the corner of Road 80 and Ferguson Street in an industrial site. A signal would be placed at this intersection to improve the flow of traffic in this area. This center would be located about two miles south of the project on an approximately 80-acre lot. Ingress and egress for the distribution center would be on Road 80 and Ferguson; trucks would exclusively use Ferguson Street. The City of Visalia is currently reviewing the application for this distribution center.

Shannon Ranch Annexation. The City of Visalia is considering annexation of 680 acres of land to the city. The annexation site is primarily covered in large walnut orchards and is approximately 4 miles southeast of the facility. Surrounding land uses are primarily agricultural and rural residential. The annexation site is currently under Agricultural Preserve Contracts Nos. 848 and 649; these contracts were executed in 1970. The City's General Plan designates this property for mixed development of multi-family residential, community center, park, convenience center, and an elementary school. An Initial Study was released in June 2000 on this project.

Figure 4.2-1 Location of Cumulative Projects

B/W 8 ½ X 11

Cutler and Orosi Communities. The unincorporated communities of Cutler and Orosi are proposed for incorporation. These areas are about 1 mile apart from each other and are located about 10 miles northeast of the project site. The number of residential units proposed has not been defined since these communities are under preliminary discussion on the feasibility of incorporating them into one new city.

Existing WMU Closure. The existing unlined WMU would be closed according to state and federal regulations when the new lined WMU becomes operational. As described in the Preliminary Closure and Post Closure Plan prepared for the existing WMU, the closure of the existing WMU would generally include a prescriptive final cover that consists of a soil foundation layer, a low-permeability compacted clay layer, and a vegetative soil layer. The closure of this site would also include post closure maintenance as described in the 1996 Preliminary Closure and Postclosure Plan (County, 1996).

The existing and new WMUs will be operated concurrently for a short period of time to accomodate unforeseen situations that could delay the full operation of the new WMU. While the two facilities will be operating at the same time, there is not expected to be an overlap in the construction of the final cover and the construction of the new WMU. For the most part, the construction of the new WMU would occur before the existing WMU is closed, although the County has been conducting soil and groundwater investigations of the existing WMU in preparation of closure activities. A separate environmental analysis of the closure of the existing WMU would be completed.

Analysis of Cumulative Impacts

Aesthetics. Development of the cumulative projects would contribute to changing the visual character of the area, although the proposed projects are compatible with surrounding land uses. Visual changes in the project area are associated with the conversion of agricultural land to a built environment or topographical changes as with the development of the Visalia Landfill Master Plan. The height and bulk of the new WMU would decrease the visual qualities of the area. Revegetation of perimeter slopes would reduce, but not eliminate, this visual impact. At closure, the visual quality of the landfill would be improved by the completion of final grading and vegetation. While the new WMU would incrementally impact visual quality of the area, it would not be cumulatively significant since local permitting and environmental review on each specific project and the development of project-specific mitigation, where possible, would reduce cumulative visual impacts (**Class II**). In addition, closure of the existing landfill would include planting vegetation on the site that would improve the visual quality.

Air Quality. The project would result in a significant (**Class I**) impact to air quality as a result of fugitive dust and exhaust emissions. The project is considered to have a significant cumulative effect on air quality since the operation of the landfill would incrementally increase PM_{10} and exhaust emissions. Operation of the new WMU would overlap with closure of the existing WMU, which would contribute to air impacts. Any increase to PM_{10} has been deemed by the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) as a significant impact to air quality of the area. Thus, any other increase of PM_{10} would contribute to cumulative air quality impacts. The implementation of mitigation measures for PM_{10} and exhaust emissions would reduce the impact to air quality although they would continue to be a significant cumulative impact (**Class I**).

Biological Resources. The project area is primarily agricultural land used for row crops. The conversion of agricultural fields (open space) to more intensive human occupation uses has intensified in Tulare County in recent years, and is expected to face continued development pressure in the future (Department of Conservation, 2000). The landfill expansion contributes to the decrease in open space available to wildlife and the establishment of wildlife habitat. Eventually agricultural land losses or open space would reach a point where few species would use the project site or surrounding areas. Over the long-term, at the end of the facility's lifetime (23 to 83 years), the site could provide beneficial impacts (**Class IV**) if disturbance is kept low after closure, and the site is established with native species. In addition, maintaining the area as open space in the future could act as a counterbalance to the short-term losses of biological resources at the Visalia Landfill.

Cultural Resources. Implementation of the project would not result in the disturbance of any known archeological site or structures eligible for listing in the National Register for Historical Places (NRHP). Thus, the project would not contribute to cumulatively significant impacts to regional cultural resources.

Geology and Soils. Any geology and soils impacts associated with development on surrounding projects would be site specific. These projects would be evaluated and mitigated on a project-by-project basis. Therefore, no cumulative geology and soils impacts would occur.

Hazards. The project would not result in significant cumulative impacts associated with hazards. The project design, consistent with regulatory requirements, provides for a hazardous waste exclusion program that involves periodic checking of waste loads, a gas collection and flaring system, vector control, and other environmental controls (base liner and leachate collection and removal system) that would reduce hazards associated with landfill operation. The operation of the existing WMU has caused groundwater degradation in the immediate project area. As the groundwater is currently being studied and a remediation plan is in process, the project would not have a cumulative impact with regard to groundwater contamination hazards.

Hydrology and Water Quality. The effects of the project on hydrology and water quality are localized in the vicinity of the project site, but have the potential to contribute cumulatively to hydrologic effects from other projects in the project vicinity. However, impacts to water quality from the new WMU would be insignificant **(Class III)** with the implementation of project-specific mitigation measures protecting surface and ground water. As mentioned above, the operation of the existing WMU has caused groundwater degradation in the immediate area. However, a remediation plan is in process, and the existing WMU would be closed. Therefore, the project, in conjunction with other cumulative projects, would not result in significant cumulative impacts to water resources.

Land Use. As presented in Section 3.8 of this report the project would be consistent with the County General Plan and Zoning and the County Integrated Waste Management Plan. The development of the cumulative projects mentioned in the previous section would not result in significant land use compatibility impacts. With the exception of the closure of the existing WMU, the planned projects are located at least two miles away from the site. None of the proposed projects in the area would be in

conflict with the landfill expansion and their compatibility with agricultural land uses or land uses surrounding each individual project.

Noise. The project would not change noise levels associated with current operations of the landfill. Based on noise measurements collected at the project site, the loudest noise source in the project area comes from traffic on Road 80. Increased development in the area would increase traffic noise in the project area. Operation of the new WMU would overlap with the closure of the existing WMU, which would contribute noise impacts to the project area. By increasing the potential maximum daily truck trips to the Visalia Landfill, the project would contribute to increased noise levels on haul routes in the greater project area. However, effects would be dispersed in location and time of the noise impact such that the project's contribution to traffic noise would be minimal except near the Visalia Landfill. Since the project would include a new entrance on Avenue 328 and there are no sensitive receptors in close proximity to the facility, the project would not significantly add to cumulative traffic noise effects in the project area.

Transportation. Development of the planned projects and implementation of the project would result in an overall increase in traffic volumes on existing roadways, especially Road 80. The project would generate about 1,020 vehicle trips per day both inbound and outbound of the landfill facility. This translates into about 87 inbound and 70 outbound trips during a weekday morning peak hour. Although this project does not cause the existing deficiencies on the adjacent roads, cumulative development in the area would incrementally affect the existing regional street network. Also, operation of the new WMU would overlap with closure of the existing WMU, which would add to traffic in the project area. Improvements on Road 80 would provide the capacity for the roadway's projected demand in the project area and would reduce cumulative traffic impacts in the project area. Also, the project includes the relocation of the landfill entrance to Avenue 328. This relocation would slightly reduce the amount of truck traffic on Road 80 from this project. Therefore, this project is not expected to cumulatively impact traffic.

4.3 UNAVOIDABLE SIGNIFICANT IMPACTS

The potentially significant adverse effects of the Visalia Landfill are listed in Sections 3 of this report. Mitigation measures have been identified that would reduce many of the significant impacts to a level of insignficance. Those impacts that cannot be reduced to a less-than-significant level, and which constitute unavoidable significant adverse impacts of the project are listed below:

- **Fugitive dust** (PM_{10}) would increase if the landfill operates at its maximum permitted daily tonnage rate of 2,000 tpd. Control measures specified in the SJVUAPCD guidelines would be applied to reduce project impacts, but impacts would remain significant.

- **Visual impacts** would be expected with the development of a new WMU at the Visalia Landfill. To reduce this impact, the perimeter revegetation should begin as soon as feasible and should not wait until final closure of the landfill. This impact would continue to be significant after mitigation.

4.4 EFFECTS FOUND NOT TO BE SIGNIFICANT

An Initial Study was completed in May 2000. In this study it was determined that the following issues would not be evaluated because they were thought to be insignificant for this project.

- Mineral Resources
- Population and Housing
- Public Services
- Recreation.

5. ALTERNATIVES TO THE PROJECT

5.1 SELECTION OF ALTERNATIVES

The CEQA Guidelines require EIRs to describe and evaluate a range of reasonable alternatives to a project, or to the location of a project, which would feasibly attain most of the basic project objectives and avoid or substantially lesson significant project impacts. The Guidelines set forth the following criteria for selecting alternatives:

1. "An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation…" [§15126.6 (a)]

2. "…focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." [§15126.6 (b)]

3. "The specific alternative of 'no project' shall also be evaluated along with its impact." [§15126.6 (e)(1)]

4. "The range of alternatives required in an EIR is governed by the 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice." [§15126.6 (f)]

5. "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)." [§15126.6 (f)(1)]

Three alternatives were determined to meet these criteria and provide a range of reasonable alternatives, and are discussed in detail in this chapter. These alternatives are:

- No Project Alternative
- Reduced Project Alternative
- Off-Site Alternative (Transport of municipal solid waste to the Woodville Landfill).

Other possible alternatives that were considered but were rejected because they did not meet some or all of the criteria listed above, include the following:

Alternative Site for the New WMU. Alternative sites were considered for the development of a new WMU in a separate location from the existing Visalia facility. The alternative sites were not carried forward because they would have the same or greater environmental impacts, they would have the potential to take more agricultural land out of productive service, and a new location may expose sensitive receptors to environmental impacts in comparison to the proposed project site, which is not located near sensitive receptors.

Alternative Waste Treatments. Several alternative waste treatments are available for disposing of municipal solid wastes, as well as designated and special wastes. These include: (a) municipal solid waste composting; (b) incineration; and (c) intensive recycling and source reduction, combined with

composting of organic wastes. Of these, municipal solid waste composting and incineration are rejected because of their economic infeasibility (higher capital and operating costs) and, in the case of incineration, potential air quality impacts. Alternative (c), intensive recycling, source reduction, and composting, is economically and technologically feasible, though in some instances the direct costs may be higher than for landfilling, due to potentially weak markets for recycled materials. Developing comprehensive recycling, composting, and source reduction capacity would allow the County to expand Visalia Landfill's service area to other communities, because the comprehensive recycling, composting, and source reduction would reduce the amount of waste disposal at the Visalia Landfill from the existing service area. This alternative may, however, have similar air quality impacts associated with increased truck traffic, and would not enable maximization of the lined landfill area.

Expansion of the Existing Landfill. Two different alternatives were considered with regard to expansion of the existing WMU. Vertical expansion of the existing WMU was considered but eliminated because compliance with regulatory requirements and design of a liner between the existing refuse and proposed refuse would be difficult to design as well as significantly increase construction costs. In addition, vertical expansion of the existing WMU would not be a favorable alternative to regulators because of existing groundwater contamination identified under the existing unlined landfill. The expansion would need to demonstrate that leachate would not pass from lined to the unlined area. Horizontal expansion of the existing WMU was also considered but eliminated. In this alternative the existing WMU could be expanded horizontally to the east and to the south. A liner would also be installed in this alternative between the existing WMU and proposed expansion areas of the existing WMU. Similar to vertical expansion there would need to be a demonstration of the effectiveness of the liner system. The demonstration would have to prove that the project would not allow leachate to pass from the lined to the unlined portions of the landfill. Under the vertical or horizontal expansion scenarios it would be difficult, although not impossible, to design a liner that would meet regulatory requirements on an existing unlined WMU. In addition vertical or horizontal expansion would make it more difficult to abate the existing groundwater impacts from the unlined WMU.

Waste to Rail. This alternative would involve transporting waste that would normally go to the Visalia Landfill to a rail haul facility or "mega landfill" in a remote area of the desert. There are four rail haul projects proposed in California. They include Bolo Station Landfill in San Bernardino County, Eagle Mountain Landfill in Riverside County, Mesquite Regional Landfill in Imperial County, and Campo Solid Waste Management Project in San Diego County. There are also a number of facilities proposed or in operation in the states of Utah, Oregon, Washington, Arizona, Nevada, and Idaho that could be used for remote disposal (CIWMB, 1998). This option was eliminated from consideration because it would still require truck trips to transport waste to a transfer facility or require the rail facilities (rail spur) in closer proximity to the facility. The rail haul alternative would reduce visual impacts associated with the development of the facility expansion, but may not reduce air quality emissions. Furthermore, remote disposal of the County's municipal waste would not be feasible or practical given the County's rural, small metropolitan environment.

The alternatives that were carried forward include the No Project Alternative, the Reduced Project Alternative, and the Off-site Alternative. Each of these proposed alternatives are discussed in more detail in the following sections.

5.2 NO PROJECT ALTERNATIVE

The No Project Alternative would not affect the current design or operation of the existing Visalia Landfill. Operations at the Visalia Landfill would continue until the site life is reached. Currently, the landfill is anticipated to close in 2002. With the No Project Alternative the Visalia Landfill would not serve as a regional landfill for the County.

Impacts. The No Project Alternative offers a short-term solution to solid waste management in Tulare County. The landfill would continue to operate for a few more years. However, once the landfill site life is reached the County would need to plan for landfill capacity at another facility to meet the County's solid waste management needs. In the long-term this alternative would reduce capacity at other County landfills to accommodate the refuse from the Visalia service area. This would shift traffic and air quality impacts to another area of the County.

The existing WMU does not meet contemporary landfill design requirements. Impacts to soil and groundwater from the operation of the unlined WMU would continue under this alternative. With continued operation of the landfill, monitoring and remediation of groundwater would be complicated and possibly delayed.

5.3 REDUCED PROJECT ALTERNATIVE

To reduce the significant unavoidable impacts identified in this EIR, the Reduced Project Alternative should include both a reduction in the proposed height of the new WMU, and a reduction of the proposed increase in the maximum daily allowable volume of waste entering the facility. A common sense approach to defining the reduced project alternative would be to split the difference between the maximum height of the existing WMU and the proposed maximum height of the new WMU, and also between the maximum daily rate of waste accepted at the existing landfill and the proposed maximum acceptance rate. The medium points between current and proposed height and the currently permitted rate of acceptance are shown in Table 5.3-1.

Table 5.3-1 Maximum Height and Daily Tonnage of the Reduced Project Alternative

Parameter	Current	Proposed	Reduced Project Alternative
Maximum Height	80 feet	210 feet	145 feet
Maximum Daily Tonnage	570 tpd	2,000 tpd	1,285 tpd

Note: tpd = tons per day

Impacts. This alternative would reduce, but not eliminate, the visual impacts associated with the proposed height and bulk of the new WMU. Also, air quality impacts would be reduced, but not eliminated, with this alternative. The project objectives would be met to a lesser degree because the Reduced Project Alternative would not provide the same long-term capacity (air space) as projected for the project. Not achieving the proposed site life could be a problem for the county in the long-term. This alternative would have the reduced ability to accommodate growth in the county and, therefore, has the potential to increase the demand for solid waste management facilities. In addition, while impacts would be less, there would continue to be visual and air quality impacts with the implementation of the Reduced Project Alternative. The Reduced Project Alternative would continue to require the development of a separate WMU. This would require the same regulatory compliance measures and the same displacement of biological resources as with the project. The Reduced Project Alternative would create more expensive air space since it would have the same capital costs over a shorter facility life but with less air space.

5.4 OFF-SITE ALTERNATIVE (TRANSPORT WASTE TO THE WOODVILLE LANDFILL)

This alternative involves transporting waste from the Visalia Service area to the Woodville Landfill. An EIR was certified in 1996 for the expansion of this landfill. The expansion areas have been designed to meet current regulatory standards for landfill design. The County is in the process of finalizing the purchase of land to the north and the west of the Woodville Landfill to expand and upgrade existing service at this landfill.

The Woodville Landfill is located in Tulare County, approximately 13 miles south-southeast of Visalia, seven miles southeast of Tulare, and thirteen miles west-northwest of Porterville. The Woodville Landfill has a planned capacity of 36 million cubic yards, and is anticipated to have a site life of approximately 54 years. The site life is based on the assumptions that the landfill would receive 105,000 tons per year (about 490 tpd) until the year 2005. It was assumed that in the year 2005, Woodville Landfill would receive all County waste except that going to the Visalia Landfill, which was projected to close in the year 2019. After 2019 the projected annual intake at Woodville is 330,000 (about 1078 tpd) until site closure (QUAD Consultants, 1996).

The Woodville Landfill service area covers the central portion of Tulare County. Refuse entering the facility is from the following:

- Exclusive refuse hauler areas
- The cities of Tulare, Lindsay, Exeter, Farmersville, and portions of Visalia
- Transferred from the Earlimart Transfer Station
- Self-hauled directly to the facility.

Impacts. Transporting waste from the Visalia service area to the Woodville landfill would cause some of the waste stream to be transported longer distances for refuse disposal. It would have the potential to increase air quality and traffic impacts. In addition, the visual impacts associated with development of the landfill expansion would be transferred from one area of the County to another. While the Woodville Landfill expansion was projected to take all waste in the County, the expansion of the landfill was based on directing the Visalia service area to the Visalia Landfill. The use of the Woodville Landfill has the potential to reduce environmental impacts since a new WMU would not be built at the Visalia Landfill. However, in the long-term this alternative could require the development of additional landfill space in the future. As such, this alternative would reduce visual impacts in the Visalia service area but air quality impacts would continue because of the need to have some of the refuse transported longer distances for disposal. This alternative would not reduce overall environmental impacts in the long term.

5. 5 ENVIRONMENTAL SUPERIOR ALTERNATIVE

The CEQA Guidelines require that an EIR evaluate the merits of the alternatives and to determine which alternative is environmentally superior (§15126.6). The CEQA Guidelines also state that if the No Project Alternative is identified as the environmentally superior alternative that another alternative must be selected (§15126.6). The environmentally superior alternative was selected based on the evaluation of the following measures:

- Which alternative avoids or substantially mitigates project impacts, particularly those impacts identified as significant and unavoidable?
- Which alternative would create impacts that the proposed project would not?
- Which alternative would result in benefits to the environment that the proposed project would not?

After careful review of the project alternatives, the environmentally superior alternative is the Reduced Project Alternative. As presented in Table 5.5-1, the No Project Alternative, Reduced Project Alternative, and the Off-site Alternative (use of Woodville Landfill) partially reduce project impacts. None of these alternatives completely reduces the impacts associated with the project. Visual impacts would be reduced in the immediate project area but all of these alternatives would continue to have a visual impact, although to a lesser degree than the project. Although the significance of air quality impacts would not be reduced in any scenario (since any increase in fugitive dust (PM_{10}) would be a significant impact in the San Joaquin Valley), the Reduced Project Alternative, by limiting the daily volume would result in less PM_{10} emissions at the Visalia Landfill.

Table 5.5-1 Ability of Alternatives to Meet Project Objectives and Reduce Significant Unavoidable Impacts

Achieve Objective	No Project Alternative	Reduced Project Alternative	Woodville Landfill
Reduce Air Quality Impact	Partly	Yes	No
Reduce Visual Impact	Yes	Partly	Yes

Although the Reduced Project Alternative is selected as the Environmentally Superior Alternative, the project may in fact provide the best long-term waste management solution for the County. The project would set aside a larger area of land for refuse disposal, delay the closure of the Visalia Landfill, and eliminate the need to develop another landfill site or export waste to another county. In addition, the Visalia Landfill is situated in a desirable location with no sensitive receptors and has sufficient land area for solid waste diversion projects.

6. MITIGATION MONITORING PROGRAM

6.1 BACKGROUND

Pursuant to California Public Resources Code 21081.6 and the California Environmental Quality Act (CEQA) Guidelines Sections 15091(d) and 15097, when a Lead Agency makes findings of significant effects in adopting an Environmental Impact Report (EIR), the agency must also adopt a program for the monitoring of the mitigation measures identified in the EIR. The primary purposes of the monitoring program are to ensure that the mitigation measures identified in the EIR are implemented and that environmental effects are minimized. Additionally, the monitoring program provides a: (1) mechanism for giving agency staff and decisions makers feedback on the effectiveness of their actions; (2) learning opportunity for improved mitigation measures on future projects; and, (3) means of identifying corrective actions, if necessary, before irreversible environmental damage occurs.

6.2 PROJECT LOCATION AND DESCRIPTION

The proposed Visalia Landfill Master Development Plan (project) would be located immediately adjacent to the east and south sides of the existing Waste Management Unit (WMU). The facility is located in the County of Tulare, approximately six miles northwest of Visalia at the intersection of Road 80 and Avenue 328. The existing site address is 33466 Road 80, Visalia, CA 93291-8856.

A detailed description of the proposed project is provided in Section 2 of the EIR. In summary, the proposed project consists of a new Class III WMU, including a waste diversion/drop-off area, and a new entrance complex. The new WMU would be located on 631 acres owned by the County of Tulare, of which 132 acres are currently permitted for disposal of solid waste under an existing Solid Waste Facilities Permit (SWFP). The new WMU would occupy a 115-acre footprint of the property; borrow areas would occupy an additional 175 acres.

6.3 ROLES AND RESPONSIBILITIES

The Solid Waste Division of the Tulare County Resource Management Agency (County) is acting as the Lead Agency under CEQA for the project. Acting as the Lead Agency, the County is required to monitor the development and operation of the project to ensure that the mitigation measures identified in the adopted EIR are implemented [California Public Resources Code 21081.6 and CEQA Guidelines Sections 15091(d) and 15097]. However, because of the nature of some of the mitigation measures identified in the EIR, the County may delegate duties and responsibilities to environmental monitors or other professionals as warranted.

6.4 ENFORCEMENT METHOD

The Tulare County Resource Management Agency, and its contractors, would be required to comply with all applicable plans, permits, and conditions of approval. The contractor bid packages would include the mitigation measures/conditions of approval required to complete the construction of the new WMU and their implementation schedule. The mitigation presented in this document includes measures that would be implemented before construction, during construction, and during operation of the new WMU. The WMU operator would be responsible for implementing each of the mitigation measures identified in this report, and for ensuring that approval from state and federal agencies is obtained prior to proceeding with construction.

Three different agencies would be responsible for enforcing the measures identified in this report: the Tulare County Health and Human Services Agency, the SJVUAPCD, and the Regional Water Quality Control Board (RWQCB). The Local Enforcement Agency (LEA), the Tulare County Health and Human Services Agency, would be responsible for making sure that all measures designed to protect public health and safety are addressed. Air quality protection measures would be the responsibility of the SJVUAPCD, and groundwater protection measures would be the responsibility of the RWQCB. The LEA however would include a condition of approval in the Solid Waste Facilities Permit that requires the Tulare County Resource Management Agency to implement the Mitigation Monitoring Plan.

6.5 CONFLICT RESOLUTION PLAN

As identified in Table 6.4-1 there are several agencies involved in the evaluation of the mitigation measures identified for this project. The operator, the LEA, and applicable regulatory agencies would maintain frequent communication to facilitate compliance with the adopted mitigation measures. However, disputes may arise and a process for their resolution is required. Should a dispute arise on the assignment, interpretation or implementation of a mitigation measure, the following steps would be used:

1. Disputes and complaints (including those from the public) should be directed first to the Tulare County Resource Management Agency. They will attempt to resolve the dispute in consultation with the LEA and the landfill supervisor.

2. Should this informal process fail, the LEA may initiate compliance action through a Notice and Order to address deviations from the Mitigation and Monitoring Plan adopted as part of the Final EIR.

3. If a dispute or complaint regarding the implementation or interpretation of a measure cannot be resolved through enforcement, the LEA will issue a “cease and desist” order. Existing regulatory framework allows for issuance of fines for noncompliance actions.

6.6 COMPLIANCE WITH AB 314 AND SB 749

This Mitigation Monitoring Plan complies with AB 314 and SB 749. Both of these bills address updates to the California Environmental Quality Act. The changes generally pertain to revised requirements for the content of the EIR, the need to ensure that mitigation measures are enforceable, focus the EIR on significant effects, and other applicable requirements. This document is consistent with applicable revisions to the CEQA as a result of the adoption of these two bills.

6.7 PROJECT IMPACTS AND MITIGATION

Section 3 of the EIR describes, on a resource-specific basis, the potential impacts associated with development and operation of the project. These impacts have been categorized according to their potential severity. The impact categories include:

- Class I Impacts: Significant impacts that cannot be mitigated to a less-than-significant level
- Class II Impacts: Significant impacts that can be mitigated to a less-than-significant level
- Class III Impacts: Impacts that are less-than-significant and do not require mitigation
- Class IV Impacts: Beneficial impacts

In summary, 3 Class I, 16 Class II, and 5 Class III impacts are identified in the EIR. For each Class II impact, a mitigation measure has been identified to reduce the impact to a level of not significant. These impacts and their corresponding mitigation measures are listed in Table 6.4-1.

Mitigation Monitoring Plan

In adopting a mitigation monitoring plan, a Lead Agency may choose whether the plan would monitor mitigation, report on mitigation, or both [CEQA Guidelines Section 15097(c)]. Reporting generally consists of written compliance reviews that are presented to either a decision making body or authorized agency representative. Monitoring is generally an on-going process of project oversight and is suited to projects involving mitigations, which may: (1) exceed the expertise of the Lead Agency; (2) need to be implemented over an extended period of time; or, (3) require careful implementation to ensure compliance.

In this instance, the County has opted to implement a monitoring program. The monitoring plan would adhere to the mitigation requirements specified in Table 6.4-1, which outlines the resource-specific impacts, the proposed mitigation to minimize these impacts, and the timing (project phase) of mitigation implementation.

Table 6.4-1 Mitigation Monitoring Plan

Impact	Mitigation Measure(s)	Monitoring Action	Responsible Party	Implementation Phase
Asethetics				
View from Road 80 will be impacted during operation of the landfill.	A-1: Mitigation measures can reduce, but not eliminate, this significant impact. Revegetation of WMU perimeter slopes should begin as soon as feasible and not wait until final closure of the landfill.	Identify critical time periods when revegetation of perimeter slopes is necessary. Implement plan for vegetation planting and maintenance. Monitor and report progress to Resource Management Agency, Solid Waste Division (County).	County	Operation.
Air Quality				
On- and Off-site Emissions: Increased fugitive dust and equipment/vehicle exhaust that exceed current conditions.	AQ-1: Limit traffic speeds on unpaved roads to 15 mph.	Post speed limits at all entrances to ensure vehicles and equipment adhere to speed limits. Periodically patrol facility roads to ensure compliance.	County; trucking/equipment operators; construction contractors.	Construction and Operation.
	AQ-2: Install erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.	Install erosion control measures and periodically inspect to ensure physical integrity. Replace as necessary to ensure effectiveness.	County.	Operation.
	AQ-3: Suspend excavation and grading activity when sustained winds exceed 20 mph.	Monitor weather conditions daily. Suspend grading activities as necessary.	County; construction contractors.	Construction.
	AQ-4: Limit area subject to excavation, grading, and other construction activity at any one time.	Forecast daily construction activities. Identify daily area to be constructed and minimize total area of disturbance to the extent feasible.	County; construction contractors.	Construction.
	AQ-5: Minimize idling time.	Post idling requirements at all entrances to ensure vehicles and equipment adhere to restrictions. Periodically patrol facility construction and operation to ensure compliance.	County; trucking/equipment operators; construction contractors.	Construction and Operation.
	AQ-6: Limit the hours of operation of heavy equipment and/or the amount of equipment in use.	Develop and implement a schedule for heavy equipment operations that minimizes exhaust emissions. Advise all workers of schedule and periodically monitor for compliance.	Trucking/equipment operators; construction contractors.	Construction and Operation.
	AQ-7: Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.	Monitor daily air quality conditions and develop strategy for project-related activities that curtail equipment and vehicular operations during periods of high pollutant concentrations. Implement strategy as necessary and monitor for compliance.	County; construction contractors.	Construction.
Odor Emissions: Increased odor emissions over current conditions.	AQ-8: The landfill operator shall bury excessively odorous wastes immediately with other landfill wastes, depending on their nature and source.	Develop criteria for identifying excessively odorous materials and strategy for their immediate disposal. Train landfill personnel in established criteria and strategy. Monitor compliance-related activities and pro-actively address any odor-related complaints.	County.	Operation.
	AQ-9: The landfill operator shall ensure that loading, unloading, and material handling activities are carried out efficiently and without delays to avoid excessive odors.	Develop operational strategy for waste handling that minimizes excessive odor. Train landfill personnel in established strategy. Monitor compliance-related activities and pro-actively address any odor-related complaints.	County.	Operation.

Impact	Mitigation Measure(s)	Monitoring Action	Responsible Party	Implementation Phase
Biological Resources				
Temporary loss of wildlife habitat, and displacement and/or potential elimination of resident wildlife species.	B-1: Two months prior to construction of the proposed landfill, a biologist with experience in burrowing owl surveys, shall conduct burrowing owl surveys per the California Burrowing Owl Consortium (1999) survey guidelines.	Arrange for a qualified biologist to conduct surveys two months prior to construction-related activities. Coordinate the surveys with the California Department of Fish and Game (CDFG) as appropriate. Prepare a post-survey report if requested by CDFG.	County; qualified biologist; CDFG.	Pre-Construction.
	B-2: If the results of the protocol surveys in Mitigation Measure B-1 indicate burrowing owls are present in areas that are planned for construction, a biologist shall implement a passive relocation program with experience in relocations. The passive relocation program shall include methods to create artificial burrows on site and measures to ensure the complete vacancy of occupied burrows. A CDFG representative shall approve the program.	Develop passive relocation plan for CDFG approval. Following CDFG approval implement plan by a qualified biologist. Prepare post-relocation report if requested by CDFG.	County; qualified biologist; CDFG.	Pre-Construction.
Loss of suitable habitat for San Joaquin kit fox.	B-3: To determine the likelihood of occupation, a qualified biologist shall survey the San Joaquin kit fox dens identified during the reconnaissance phase, as well as other areas that seem likely to have dens.	Arrange for a qualified biologist to conduct surveys prior to construction-related activities. Coordinate the surveys with the CDFG and USFWS as appropriate. Prepare a post-survey report if requested by CDFG and/or USFWS.	County; qualified biologist; CDFG; USFWS.	Pre-Construction.
	B-4: If the results of the protocol survey specified by Mitigation Measure B-3 indicate San Joaquin kit fox are present in areas that are planned for construction, a mitigation program, approved by CDFG and USFWS shall be established. The plan should conform to the Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS, 1998).	If San Joaquin kit foxes are present, prepare a mitigation program for their protection. Submit the program to CDFG and USFWS for review and approval. Implement the program by a qualified biologist following agency approval. Prepare and submit reports on the program as requested by CDFG and/or USFWS.	County; qualified biologist; CDFG; USFWS.	Pre-Construction
Disturbance or loss of sensitive species or their habitat as a result of actions by landfill employees or their contractors.	B-5: Employee education (e.g., via handouts and a 30-minute program) for sensitive wildlife should be part of the orientation of every employee or contractors that will be on site for more than one month. This education should be documented by the retention of a signature sheet in the Operation building.	Prepare employee education program by a qualified biologist. Submit the program to CDFG and USFWS for review and approval if requested. Implement program following agency approval (if necessary).	County, qualified biologist, CDFG, USFWS.	Operation.
Cultural and Paleontological Resources				
Potential disturbances to buried pre-historic, historic, and paleontological resources due to construction and closure-related grading and excavation.	C-1: Ensure cultural and paleontological monitoring during initial construction and closure activities. Continue monitoring as necessary if monitoring results in the identification of sensitive resources.	Retain qualified cultural and paleontological professionals to oversee initial construction and closure grading and excavation activities. Should significant, sensitive resources be identified during monitoring, contact appropriate agency and institutional personnel for guidance and continue monitoring. Re-direct or stop construction related activities should significant, sensitive resources be identified.	County; qualified cultural and paleontological professionals.	Construction and Closure.

Impact	Mitigation Measure(s)	Monitoring Action	Responsible Party	Implementation Phase
Transportation				
Increased traffic into the new landfill facility entrance on Avenue 328 could increase the potential for traffic accidents (particularly truck traffic waiting to turn left into the new entrance) and increase delays to through traffic on Avenue 328.	T-1: Widen Avenue 328 at the new entrance to include an exclusive eastbound left turn lane and a westbound right turn deceleration lane in accordance with County design standards.	Prepare design and construction plans for modifications to Avenue 328. Submit plans to appropriate County agencies for review and approval. Proceed with construction following review and approval.	County; appropriate County agencies.	Pre-Construction and Construction.

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A number of agency and County representatives were contacted to prepare this EIR. Those individuals or agencies that were consulted are referenced in each section of this report and listed in Section 9 (References).

8. GLOSSARY AND ACRONYMS

8.1 GLOSSARY

Active Face: the area where daily disposal operations are conducted at a landfill. It is usually on a slope, where waste is deposited and compacted with landfill equipment, prior to the placement of cover material (same as working face).

Aquifer: a geological formation, group of formations, or portions of a formation capable of yielding significant quantities of groundwater to well or springs.

California Environmental Quality Act (CEQA): California law requiring the disclosure of environmental effects of proposed projects before discretionary approval can be issued.

Cell: a portion of compacted solid waste in a landfill that is enclosed by natural soil or cover material during a designated period.

Class III Landfill: sanitary Landfill typically permitted to accept only municipal solid waste. No hazardous wastes are allowed in a Class III landfill.

Clay Liner: a continuous layer of clay installed beneath or on the sides of a waste management unit, which acts as a barrier to vertical or lateral movement of fluid, including waste and leachate.

Composite Liner: liner system that is constructed of a single clay liner, over which a synthetic liner (such as a liner made of high density polyethylene plastic) is placed in direct contact.

Cover Material: material (usually soil) used at a landfill to cover compacted waste at specific, designated intervals. Its purpose is to serve as a barrier to: the emergence or attraction of vectors, the progress of fires within the landfill, the escape of odor, and excess infiltration of surface water runoff.

Daily Cover: cover material spread and compacted on the entire surface of the active face of the sanitary landfill at least at the end of each operating day in order to control vectors, fire, water infiltration, erosion, and to prevent unsightliness, and scavenging.

Facility: see "waste management facility"

Facility Boundary: means the boundary surrounding the entire area on which solid waste activities occur and are permitted.

Fill: compacted solid waste and cover material.

Final Cover: the cover material that represents the permanently exposed final surface of a fill.

Geotextile: either a woven or non-woven polyester or polypropylene fabric. The woven fabrics often are used for support (strength) while the non-woven fabrics are used for filtration, drainage, and separation. Applications include improving soil-bearing capacity and slope stabilities (woven) preventing fine particles from entering the LCRS, padding for gravel placed above a synthetic liner (such as HDPE material), and increased slope stabilities for synthetic liners.

Groundwater: water below the land surface.

HDPE (High Density Polyethylene): plastic material commonly used in a liner system.

Intermediate Cover: cover material that is applied on areas where additional cells are not to be constructed for extended periods of time, and therefore, must resist erosion for a longer period of time than daily cover.

Joint Technical Document (JTD): a document combining the Report of Disposal Site Information, Preliminary Closure Plan and Preliminary Postclosure Maintenance Plan.

Landfill: means a waste management unit at which waste is discharged in or on land for disposal. It does not include surface impoundment, waste pile, land treatment unit, injection well, or soil amendments.

Lateral Expansion (of RWQCB Permitted Area): for any new or existing waste management unit (Unit), means any increase-in map view-of the Unit's RWQCB-Permitted Area (as defined in this section).

Leachate: liquid that has come in contact with or percolated through waste materials and has extracted or dissolved substances there from.

LCRS (Leachate Collection and Removal System): a drainage layer directly above the bottom liner and a series of perforated pipes that convey leachate to a central collection point where it can be properly managed.

Maximum Credible Earthquake: the maximum earthquake that appears capable of occurring under the presently known geologic framework. In determining the maximum credible earthquake, little regard is given to its probability of occurrence except that its likelihood of occurring is great enough to be of concern.

Maximum Probable Earthquake: the maximum earthquake that is likely to occur during a 100-year interval.

Municipal Solid Waste: solid waste from residential, commercial and institutional sources that is generally disposed of in Class III landfills.

On Site: means located within the permitted boundary.

Operating Area: means that portion of a solid waste facility, which is currently in use for the unloading, management or disposal of wastes.

Operator: the person or entity responsible for the overall operation of the landfill facility or part of a landfill facility.

Owner: the person or entity who owns a landfill facility or a part of a facility.

Post Closure Maintenance Period: the period after closure during which the waste could have an adverse affect on the environment.

Sanitary Landfill: a disposal site employing engineering method of disposing of solid wastes in a manner that minimizes environmental hazards by spreading, compacting to the smallest practical volume and applying cover material over all exposed wastes at the end of each operating day.

Site-Specific: means specific to the local site.

Solid Waste Facilities Permit: permit issued by the Local Enforcement Agency (LEA) in concurrence with the CIWMB, which authorizes a landfill to operate.

Unit: see "waste management unit"

Waste Discharge Requirements (WDRs): the permit issued by the Regional Water Quality Control Board for the discharge of waste to land (i.e., a landfill).

Waste Management Facility (Facility): means the entire parcel of property at which waste discharge operations are conducted. Such a facility may contain one or more waste management units.

Waste Management Unit (WMU): means an area of land, or a portion of waste management facility, at which waste is discharged. The term includes containment features and ancillary features for precipitation and drainage control and for monitoring.

Working Face: the area where daily disposal operations are conducted at a landfill. It is usually on a slope, where waste is deposited and compacted with landfill equipment, prior to the placement of cover material (same as active face).

8.2 ACRONYMS

ADC
Alternative Daily Cover

CAAQS
California Ambient Air Quality Standards

CAP
Corrective Action Program

CARB
California Air Resources Board

CCAA
California Clean Air Act

CCR
California Code of Regulations

CDMG
California Division of Mines and Geology

CH_4
Methane

CNDDB
California Natural Diversity Database

CEQA
California Environmental Quality Act

CFR
Code of Federal Regulations

CIWMB
California Integrated Waste Management Board

CO
Carbon Monoxide

CO_2
Carbon Dioxide

CY
Cubic Yards

DEIR
Draft Environmental Impact Report

EC
Electrical Conductance

Eg
Emission guidelines

EIR
Environmental Impact Report

EMP
Evaluation Monitoring Program

FEMA
Federal Emergency Management Agency

FIRM
Flood Insurance Rate Map

GCL
Geosynthetic Clay Liner

HELP
Hydrologic Evaluation of Landfill Performance [Model]

HDPE
High-Density Polyethylene

IWMP
Integrated Waste Management Plan

JTD
Joint Technical Document

KVP
Key View Point

LCRS
Leachate Collection and Removal System

LFG
Landfill Gas

LOS
Level of service

MCE
Maximum Credible Earthquake

MCLs
Maximum Contaminant Levels

MMRP
Mitigation Monitoring and Reporting Plan

NMOC
Non Methane Organic Compounds

mg
Megagrams

MPE
Maximum Probable Earthquake

mph
Miles per hour

MSW
Municipal Solid Waste

NAAQS
National Ambient Air Quality Standards

NESAPS
National Emission Standards for Hazardous Air Pollutants

NO_x
Oxides of Nitrogen

NPDES
National Pollution Discharge Elimination System

NSPS
New Source Performance Standards

NSR
New Source Review

PCE
Tetrachloroethylene

PCF
Pounds per Cubic Foot

PCY
Pounds per Cubic Yard

PGA
Peak Ground Acceleration

PM_{10}
Particulate Matter of less than 10 microns in diameter

ppm
Parts per million

psd
Prevention of significant deterioration

PSF
Pounds per Square Foot

RCRA
Resource Conservation and Recovery Act

ROC
Reactive Organic Compound

ROGs
Reactive Organic Gases

RWQCB
Regional Water Quality Control Board

SCFM
Standard Cubic Feet per Minute

SJVAB
San Joaquin Valley Air Basin

SJVUAPCD
San Joaquin Valley Unified Air Pollution Control District

STP
Standard Penetration Test

SWANA
Solid Waste Association of North America

SWAT
Solid Waste Assessment Test

SWFP
Solid Waste Facilities Permit

SWRD
Stormwater Retention Basin

TACs
Toxic Air Contaminants

TCE
Trichloroethylene

TES
Threatened, Endangered or Sensitive species

TDS
Total Dissolved Solids

tpd
Tons per day

tpy
Tons per year

USEPA
United States Environmental Protection Agency

WDRs
Waste Discharge Requirements

WMU
Waste Management Unit

µg
Micrograms

VOCs
Volatile Organic Compounds

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TABLE OF CONTENTS

SECTION 1

INTRODUCTION

This Response Document includes comments and responses to the Draft Environmental Impact Report (Draft EIR) for the expansion of the Visalia Landfill. As presented in the Draft EIR, the expansion includes the development and operation of a new Class III waste management unit (municipal solid waste, no hazardous waste), public diversion/drop-off area, and a new entrance complex. This document is a companion document to the Draft EIR and, together with the Draft EIR, constitutes the Final EIR for the project.

For reference, changes to the text of the Draft EIR are set forth in Section 2. The agencies and persons who submitted comments to the Visalia Landfill Draft EIR are listed in the Table of Contents and are reproduced in Section 3. Responses to the comments are set forth in Section 3 and in Exhibits "1" and "2".

In connection with the responses to the comments, it should be noted that each response to the comment letters to the Draft EIR contains a response corresponding to identification numbers in the left-hand margin of each comment letter. These numbers identify salient comments raised by the commenting agency or person necessitating a response from the lead agency, the County of Tulare. Lead agency responses follow each comment received. Additional responses are contained in Exhibits "1" and "2".

The Draft EIR for the Visalia Landfill was circulated for public agency and public comment on December 18, 2000. The 45-day public comment period ended on January 31, 2001, but was extended to February 13, 2001 to allow for additional comments from state agencies and the public.

Finally, a public hearing to consider the certification of the Final EIR for this project has been set for September 18, 2001. Written notice of the public hearing has been sent to each affected public agency and person at least 10-days before said hearing.

SECTION 2.

CHANGES TO THE DRAFT EIR

2.1 Changes to Section 1 (Introduction) of the Draft EIR

Section 1.1 (Overview of the Project), Page 1-1, the first sentence of the second paragraph is modified as follows:

> The facility is located in the County of Tulare approximately two miles north of the City of Visalia city limits and six miles northwest of the City of Visalia's downtown area, at the intersection of Road 80 and Avenue 328 (Figure 1.1-1).

2.2 Changes to Section 2 (Project Description) of the Draft EIR

Section 2.1 (Project Location), Page 2-1, the second sentence of the first paragraph is modified as follows:

> The facility is located in Tulare County approximately two miles north of the City of Visalia city limits and six miles northwest of the City of Visalia's downtown area, at the intersection of Road 80 and Avenue 328 (Figure 1.1-1).

Section 2.8 (Closure of the Existing WMU), Page 2-23 after the paragraph that starts with "The existing WMU …", the following paragraphs are added:

> Based upon the preparation of the Preliminary Closure and Postclosure Plan, it is anticipated that there will be no significant environmental impacts. Furthermore, by following federal and state regulations (California Code of Regulations, Title 27, Subchapter 4, sections 21769 to 21900) applicable to the closure of the existing WMU, there should not be any significant environmental impacts because of the effectiveness of the design mitigation measures that would be required by such regulations. As previously stated, the closure of the existing WMU will be addressed through a separate environmental review process.
>
> The closure plan is not a crucial element of the expansion of the Visalia landfill without which the project as defined in the EIR could got not go forward. It should be noted that the County needs this additional landfill capacity in order to meet the public health and safety needs of its residents, and to satisfy the aggregate disposal requirements mandated by the Integrated Waste Management Act.
>
> In order to comply with the siting criteria required in the Tulare County Integrated Waste Management Plan's Siting Element approved by the CIWMB, the siting of a facility at a new location would take approximately five to seven years to complete. The capacity of the existing unit is anticipated to be exhausted in approximately three years, therefore, the expansion at the existing facility is required in order to maintain public health and safety of the County.
>
> The County acknowledges that the draft EIR adequately addresses those surface water and groundwater bodies that have the potential to be impacted by the proposed expansion, and those mitigation measures proposed to mitigate potential impacts to groundwater and surface water that may result from such expansion.

The County concurs with the Regional Water Quality Control Board (RWQCB) that the closure and post closure maintenance of the existing unit will be evaluated in greater detail during the preparation of the revised Waste Discharge Requirements for the solid waste facility. In addition, the County commits to working with the RWQCB with respect to the closure and post closure of the existing waste management unit (WMU).

2.3 Changes to Section 3 (Environmental Setting) of the Draft EIR

Continuation of Section 3.3.3 (Mitigation Measures), Page 3-41, Mitigation Measure B-3 is modified as follows:

B-3 The County is committed to work cooperatively with the CDFG and USFWS to determine a mutually acceptable approach for addressing the potential for San Joaquin kit fox on the project site. This may include participation in a mitigation bank. It may also require that ~~To determine the likelihood of occupation~~, a qualified biologist ~~shall~~ survey the San Joaquin kit fox dens identified during the reconnaissance phase and other areas that seem likely to have dens.

Continuation of Section 3.7.2 (Project Impacts), Page 3-67, the third paragraph that begins with "With the installation …", is modified as follows:

With the installation of the above environmental controls, and the development and implementation of a gas management plan as described in Section 2 (page 2-22) and Section 3 (page 3-57), it is unlikely that leachate or landfill gas would pass through the landfill refuse to the underlying groundwater table. Excavation of the landfill cells were designed to meet or exceed the siting criteria for groundwater protection in Title 27 of the California Code of Regulations (requiring minimum base liner and final cover permeability requirements and a five-foot separation between wastes and groundwater) and the requirements in 40 CFR Part 258 regarding permeability limits.

Section 3.8.1 (Environmental Setting), Page 3-69, after the paragraph that begins with "Land uses surrounding…", the following is added:

As noted in Section 3.3 of this report, areas south, northeast and east of the existing WMU have been used or are currently used for agricultural use. Row crops of grain (wheat, barley, corn) and cotton have been planted in areas adjacent to the existing WMU. Figure 3.3-1 shows the location of these row crops in relation to the existing WMU. The row crops grown on the landfill property are similar to the crops grown in neighboring areas. As the second largest County in agricultural production, the County of Tulare provides milk, grapes, oranges, cattle and calves, cotton lint and seed and other products.

SECTION 3

COMMENTS AND RESPONSES

3.1 Comment from the California Regional Water Quality Control Board

California Regional Water Quality Control Board
Central Valley Region

Winston H. Hickox
Secretary for Environmental Protection

Fresno Branch Office
Internet Address: http://www.swrcb.ca.gov/~rwqcb5
3614 East Ashlan Avenue, Fresno, California 93726
Phone (559) 445-5116 • FAX (559) 445-5910

Gray Davis
Governor

8 January 2001

Mr. Jeff Monaco
Tulare County Resource
Management Agency
Solid Waste Division
5961 South Mooney Blvd.
Visalia, CA 93277

REPORT REVIEW – DRAFT ENVIRONMENTAL IMPACT REPORT, SCH# 2000051098, VISALIA LANDFILL MASTER DEVELOPMENT PLAN, TULARE COUNTY

We have reviewed the Draft EIR regarding the proposed lateral expansion at the Visalia Landfill. Our comments are provided in greater detail in the enclosed memorandum.

The Draft EIR adequately addresses those surface water and groundwater bodies that have the potential to be impacted by the proposed expansion waste management unit, and proposed measures to mitigate potential impacts to groundwater and surface water that may result from the proposed expansion waste management unit.

3.1 a

The proposed mitigation measures for the proposed expansion waste management unit and the plans for the closure and post-closure maintenance of the existing Unit, will be evaluated in greater detail during the preparation of the revised waste discharge requirements for the facility.

If you have any questions, please call Scott Moore at (209) 445-5170.

DANE S. JOHNSON
Senior Engineering Geologist
CRG No. 4239

Enclosure

cc: Ms. Lisa Babcock, State Water Resources Control Board, Sacramento
California Integrated Waste Management Board, Redlands
Mr. Jay Johnson, Tulare County Health Department, Visalia
State Clearing House, Sacramento

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3.1 Comment from the California Regional Water Quality Control Board, *continued*

California Regional Water Quality Control Board
Central Valley Region

Winston H. Hickox
Secretary for Environmental Protection

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TO: DANE S. JOHNSON
Senior Engineering Geologist

FROM: V. SCOTT MOORE
Associate Engineering Geologist
CRG No. 6176

DATE: 8 January 2001

SIGNATURE: V. Scott Moore

SUBJECT: ***REPORT REVIEW – DRAFT ENVIRONMENTAL IMPACT REPORT), SCH #2000051098, VISALIA LANDFILL MASTER DEVELOPMENT PLAN, TULARE COUNTY***

3.1 b

I have reviewed the DEIR, dated December 2000, for the subject landfill. The report was prepared by Aspen Environmental Group (AEG) in association with EBA Wastechnologies, and submitted by the Tulare County Resource Management Agency (County) on 18 December 2000. The DEIR was prepared in accordance with the California Environmental Quality Act (CEQA) in order for public agencies to determine whether the project at the subject landfill poses any potentially significant environmental impacts. The DEIR was reviewed as it pertains to water quality.

BACKGROUND

On 24 May 2000, we received a Notice of Preparation of a Draft Environmental Impact Report from the County (Lead Agency) for the proposed project at the Visalia Landfill. The County proposed in the report, to expand its Class III solid waste disposal operations from a 127-acre existing waste management unit (existing Unit) to an additional 115-acres immediately to the east of the existing Unit (see Attachment 1). The addition of the expansion waste management unit (proposed expansion Unit) is anticipated to extend the life of the Visalia Landfill by approximately 22 to 78 years. The proposed project consists of three main components: the proposed expansion Unit; a new entrance complex; and closure of the existing and proposed expansion Units.

The existing Unit is regulated by Waste Discharge Requirements, Order No. 99-047. The existing Unit is scheduled to close in 2002.

Board Staff evaluated the Notice of Preparation of a Draft Environmental Impact Report, and in a 12 June 2000 letter to the County made the following conclusions:

1. The current waste discharge requirements (WDRs) do not cover the proposed expansion of the existing Unit. The proposed expansion Unit is a significant change in operations with potential impacts to water quality. Mitigation measures (e.g., composite liner, LCRS, etc.) need to be included in revised WDRs prior to construction.

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3.1 Comment from the California Regional Water Quality Control Board, *continued*

2. The County needs to submit an amended Report of Waste Discharge (ROWD) for revision of the current WDRs prior to building the proposed expansion Unit. The amended ROWD may be submitted as a part of the Joint Technical Document and needs to include information such as: a topographic map showing the location of the proposed expansion Unit; a water supply well map; a Design Report; monitoring system plans and rationale; and background water quality based on data from quarterly sampling of wells upgradient from the unit for one year.

3. Since an engineered alternative liner design is proposed for the proposed expansion Unit, Board approval is necessary prior to the construction of the engineered alternative liner.

4. The Evaluation Monitoring Program for the site has not been completed. The County needs to delineate the vertical and lateral extent of groundwater degradation east of the landfill prior to the construction of the proposed expansion Unit.

3.1 c

5. The existing WDRs do not cover closure of the existing Unit. The current waste discharge requirements will need to be revised to include the closure of the existing Unit. In order to revise the WDRs, the County needs to include with the amended ROWD, a Final Closure Plan for the existing Unit that addresses the regulations in §21090 of Title 27. Any proposed engineered alternative final cover designs for the existing Unit will need to be approved by the Board.

The County submitted a Joint Technical Document (JTD) in May 2000. The JTD included an amended Report of Waste Discharge (ROWD) for the proposed expansion Unit and closure of the existing Unit.

COMMENTS

The Draft EIR will be evaluated to determine whether it addresses: 1) the surface water and groundwater bodies that can potentially be impacted by the proposed expansion Unit; 2) the pathways for waste constituent migration from the proposed expansion Unit to surface water and/or groundwater; and 3) mitigation measures to protect the quality of surface waters and groundwater surrounding the project site.

Groundwater and/or Surface Water Near the Project Area

Surface Water

3.1 d

EBA identified the St. Johns River as the nearest major surface water body to the project site. The St. Johns River is approximately one-half mile north of the site (see Attachment 2). EBA states that pre-landfilled contours shown on a 1994 USGS Quad map indicate that the natural drainage at the site flowed in a uniform northwesterly direction with no naturally-occurring surface water features. The St. Johns River is topographically co-gradient of the project site. EBA also states that the only surface water features at the existing site are two drainage detention basins located north and south of the existing waste management unit (existing Unit).

3.1 Comment from the California Regional Water Quality Control Board, *continued*

The designated beneficial uses of surface waters within the St. Johns River, as specified in the *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (Basin Plan), are agricultural supply, industrial service and process supply, contact and noncontact water recreation, warm fresh water habitat, preservation of rare, threatened and endangered species, and groundwater recharge.

Groundwater

3.1 e

EBA states that the first encountered groundwater beneath the site is unconfined and currently occurs at depths ranging between approximately 30 to 50 feet below ground surface (bgs). EBA indicates that the previous groundwater levels have been as high as 20 feet bgs at the site. According to EBA, the direction of flow of the first encountered groundwater is to the southwest, but may range between due South and North 30° West. The hydraulic gradient of the first encountered groundwater ranges between 0.002 and 0.006.

Background groundwater contains nitrate concentrations that range between 88 and 140 mg/l, and consistently exceed the Primary Maximum Contaminant Level of 45 mg/l. Monitoring data also indicates that Total Dissolved Solids concentrations in background groundwater range between 530 and 780 mg/l, and consistently exceed the Secondary Maximum Contaminant Level of 500 mg/l.

Available monitoring data has demonstrated that operations at the existing Unit have impacted the first encountered groundwater body and localized areas of a deeper groundwater body, with a variety of volatile organic compounds (VOCs) and naturally-occurring inorganic waste constituents. Evaluation monitoring has demonstrated that impacted groundwater exists to the west, southwest, and south of the existing Unit. Cleanup and Abatement Order No. 99-718, requires the County to implement and complete an Evaluation Monitoring Program (EMP) to delineate the vertical and lateral extent of the VOC plume and to implement a Corrective Action Program (CAP).

Potential Impacts to Surface Water and Groundwater

Impacts to Surface Water

Potential impacts to groundwater and/or surface water resulting from inundation and washout of the proposed expansion Unit due to the 100-year flood event, appear to be insignificant based on examination of the 1986, Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA). According to the FIRM map, the 100-year flood event is confined within the bank of the St. Johns River, which is one-half mile north of the proposed expansion Unit, and topographically co-gradient to the proposed expansion Unit.

Although the project site is not within a 100-year flood plain, it is within a flood zone designated as Zone "B" (500-year flood boundary) according to the FIRM map. According to EBA, flooding of the project site could generate degraded surface runoff water should the storm water runoff contact refuse.

3.1 Comment from the California Regional Water Quality Control Board, *continued*

Impacts to Groundwater

EBA states that the key concern for the development of the proposed expansion Unit is the potential for the landfill to impact groundwater. Surface water coming into contact with the refuse, incorporating waste constituents, and then infiltrating into the subsurface, is a mechanism by which groundwater could become impacted by the proposed expansion Unit.

Since the project site is not within a 100-year flood plain, and it is within a flood zone designated as Zone "B" (500-year flood boundary), EBA states that flooding of the project site could generate degraded floodwater that could infiltrate the subsurface and degrade groundwater.

Leachate generated within the refuse has the potential to impact groundwater beneath the site. Available information has shown that landfill leachate may contain a variety of volatile organic compounds, inorganic waste constituents, and naturally-occurring inorganic constituents at high concentrations. Leachate is generated when the moisture content of the refuse exceeds field capacity. The sources of the moisture are the refuse itself, precipitation, and possibly flooding.

3.1 f

EBA does not specifically address the potential impact of landfill gas on groundwater. Available information has shown that landfill gases often contain a variety of volatile organic compounds. Available information has also shown that landfill gases have been a primary source of groundwater degradation beneath landfills.

Surface Water and Ground Water Mitigation Measures

Flood and Storm Water Runoff Mitigation Measures

The proposed project site is not expected to be impacted by flooding as a result of the 100-year, 24-hour storm event. As a precautionary measure however, all on-site drainage control facilities will be designed to prevent inundation of the proposed expansion Unit or impairment of environmental control systems resulting from a 100-year, 24-hour storm event in accordance with Title 27 CCR, §20320(e).

To control potential flooding resulting from the 100-year, 24-hour storm event or lesser storm events, the design of the proposed expansion Unit will include measures for drainage and erosion control. The storm water control system for the project site will utilize an internal drainage scheme whereby all storm water runoff generated from the existing and proposed expansion Units will be routed to on-site borrow excavations that will function as storm water retention basins for percolation and evaporation. The storm water control system will be designed in accordance with Title 27 CCR, §20365, and will accommodate peak surface water flows from the 100-year, 24-hour storm event occurring when storm water runoff is anticipated to be at a maximum. All storm water runoff will be contained on-site and any storm water runoff that contacts refuse will be contained and diverted to the Leachate Collection and Removal System (LCRS).

3.1 Comment from the California Regional Water Quality Control Board, *continued*

3.1 g

Upon final closure, a perimeter ditch would be constructed around the landfill slopes and outside berms to convey storm water runoff to the storm water retention basins.

Leachate Mitigation Measures

To address the potential for leachate impacting groundwater beneath the site, the proposed expansion Unit will be constructed with a composite liner, including and LCRS, that is consistent with the requirements of 40 CFR, Part 258 and Title 27 CCR. The engineered alternative composite liner for the proposed expansion Unit will consist from bottom to top of: a prepared subgrade; a geosynthetic clay liner (GCL); a double-sided, textured 60-mil high-density polyethylene (HDPE) geomembrane liner; an LCRS, and a two-feet thick operations layer. The proposed LCRS will consist of a geocomposite drainage layer that blankets the entire lined area, a 6-inch pipe that is placed on the center of each proposed expansion Unit cell, a lined leachate sump, and pipes and pumps to remove the leachate from the sumps. The LCRS has been designed and will be constructed, maintained, and operated to collect and remove twice the maximum anticipated daily volume of leachate from the proposed expansion Unit.

EBA states that due to the arid climate of the region, leachate seeps emanating from the inactive portions of the landfill cover are unlikely. However, if a leachate seep is detected, the area will be isolated and the leachate collected and transported to on-site leachate storage tanks for proper disposal.

3.1 h

To minimize the infiltration of precipitation and storm water runoff into refuse and the subsequent generation of leachate, six inches of daily cover soils and/or alternative daily cover materials (ADC), will be placed over the refuse at the active sites at the end of an operational day. One-foot of intermediate cover soils will be placed over areas where no additional refuse would be discharged within 180 days.

Landfill Gas Mitigation Measures

3.1 i

To address the potential impacts of landfill gas on groundwater, an active landfill gas collection system will be installed to remove landfill gas from the proposed expansion Unit. The landfill gas collection system may also be connected to the LCRS to remove landfill gas from the base of the proposed expansion Unit. Collected landfill gas pipes are proposed to be connected to a condensate collection system and to the existing flare station via aboveground manifold piping, where the landfill gas will be processed and destroyed.

Monitoring

The vadose zone beneath the expansion Unit is proposed to be monitored by installing a vadose zone monitoring system beneath the base liner in accordance with Waste Discharge Requirements, Order No. 99-047. EBA states that geomembrane-lined pan lysimeters will be installed beneath the

3.1 Comment from the California Regional Water Quality Control Board, *continued*

LCRS main pipes and sumps to monitor saturated flow in the vadose zone. The pan-lysimeters will be accessed via an HDPE riser pipe located near each sump.

Three detection groundwater monitoring wells (M-17, M-18, and M-19) will be constructed at the proposed expansion Unit's Point of Compliance (see Attachment 3) to monitor for potential leaks from the proposed expansion Unit. The three new detection groundwater monitoring wells will be included in the facility's Detection Monitoring Program for detecting potential impacts to groundwater from both the existing and proposed expansion Units.

3.1 j

Landfill gas monitoring will be conducted by installing several perimeter probes (G-8 through G-14) at various depths surrounding the proposed expansion Unit (see Attachment 3). The perimeter landfill gas monitoring system will be installed in accordance with Title 27 CCR, §20925 and will incorporate existing landfill gas monitoring probes located west of the existing Unit. The purpose of the landfill gas probes will be to monitor the presence of subsurface landfill gases that may have migrated beyond the fill limits.

BOARD STAFF'S EVALUATION OF POTENTIAL IMPACTS AND MITIGATION MEASURES

3.1 k

Board Staff finds that the Draft EIR adequately addresses: those surface water and groundwater bodies that have the potential to be impacted by the proposed expansion Unit; and proposed measures to mitigate potential impacts to groundwater and surface water that may result from the proposed expansion Unit. The specifics of the proposed mitigation measures (e.g., engineered alternative liner including the LCRS, drainage control facilities, landfill gas collection system, monitoring, etc.) will be evaluated in greater detail during the preparation of the revised WDRs.

OTHER COMMENTS

3.1 l

Board Staff evaluated the JTD/ROWD and in a 15 September 2000 letter to the County, Board Staff concluded that additional information was needed from the County in order to complete the ROWD and revise the WDRs (see the Board's 15 September letter and memorandum). Preparation of the revised WDRs will begin when the County submits the additional information to complete the ROWD.

3.1 m

The Evaluation Monitoring Program for the site is ongoing. The County is conducting work to delineate the vertical and lateral extent of groundwater degradation west, southwest, and south of the existing Unit. However, since volatile organic compounds (VOCs) have been detected in monitoring well M-1 at the southeast corner of the existing Unit, the County needs to delineate the vertical and lateral extent of groundwater degradation east of the existing Unit prior to the construction of the proposed expansion Unit. Board Staff is concerned that the construction of the proposed expansion Unit prior to the completion of the EMP may inhibit work to delineate the vertical and lateral extent of possible groundwater degradation east of the existing Unit.

3.1 Comment from the California Regional Water Quality Control Board, *continued*

DRAFT EIR
STATE CLEARING HOUSE NO. 2000051098
VISALIA LANDFILL
TULARE COUNTY

- 7 –

CONCLUSIONS

3.1 n

Board Staff finds that the Draft EIR adequately addresses: those surface water and groundwater bodies that have the potential to be impacted by the proposed expansion Unit; and measures to mitigate potential impacts to groundwater and surface water that may result from the proposed expansion Unit.

The specifics of the proposed mitigation measures (e.g., engineered alternative liner including the LCRS, drainage control facilities, landfill gas collection system, monitoring, etc.) and the closure of the existing Unit, will be evaluated in greater detail during the preparation of the revised WDRs for the facility.

3.1 Response to the California Regional Water Quality Control Board

3.1 a The County commits to work cooperatively with the Regional Water Quality Control Board (RWQCB) to revise the waste discharge requirements for the facility and to implement effective mitigation measures.

In addition, the County is committed to work cooperatively with the RWQCB in revising the existing Preliminary Closure Plan. This will begin once the proposed WMU becomes operational. Until the proposed Waste Management Unit (WMU) becomes operational, there is insufficient information available to revise the plan. In addition, Road 80 adjacent to the western perimeter of the existing WMU is in the planning stages for expansion. Certain aspects of this separate CALTRANS-governed project may require changes to the final design of the existing WMU. This information is currently not available. Revising the existing Preliminary Closure Plan is not crucial for the proposed project to move forward. For further discussion, see the response to comment set forth in Section 3.6.a.

3.1 b Comment noted.

3.1 c As noted in your letter, the County has submitted a Joint Technical Document (JTD) and a Report of Waste Discharge (ROWD) to expressly address the five items presented in this comment. The County is committed to working cooperatively with the RWQCB to address the requirements for revising the ROWD.

3.1 d The discussion of surface water features presented in this comment are consistent with the description provided in the Draft EIR. No changes are requested as part of this comment.

3.1 e The discussion of groundwater characteristics presented in this comment are consistent with the description provided in the Draft EIR. No changes are requested as part of this comment.

3.1 f The landfill gas collection system is discussed extensively on pages 2-22, 3-57 and 3-66 of the Draft EIR. The installation of a Subtitle D geomembrane composite liner combined with the landfill gas collection system (40 C.F.R. Part 258) are measures that address the potential impacts of landfill gas on groundwater. As noted on page 2-22, the proposed landfill will include a gas management plan to collect and dispose of landfill gas.

To clarify this issue we have made the following text change to the third paragraph on page 3-67 of the Draft EIR:

> With the installation of the above environmental controls, and the development and implementation of a gas management plan as described in Section 2 (page 2-22) and Section 3 (page 3-57), it is unlikely that leachate or landfill gas would pass through the landfill refuse to the underlying groundwater table. Excavation of the landfill cells were designed to meet the siting criteria for groundwater protection in Title 27, California Code of Regulations (requiring minimum base liner and final cover permeability requirements and a five-foot separation between wastes and groundwater) and the requirements in 40 Code of Federal Regulations Part 258 regarding permeability limits.

3.1 g The discussion of the storm water management system presented in this comment is consistent with the description provided in the Draft EIR (page 2-21). No changes are requested as part of this comment.

3.1 h The discussion of leachate mitigation measures presented in this comment is consistent with the description provided in the Draft EIR. No changes are requested as part of this comment.

3.1 i The discussion of the landfill gas system presented in this comment is consistent with the description provided in the Draft EIR (pages 2-22 and 3-57). No changes are requested as part of this comment.

3.1 j The discussion of landfill gas monitoring presented in this comment is consistent with the description provided in the Draft EIR. No changes are requested as part of this comment.

3.1 k As noted in the comment, the proposed mitigation measures (e.g. engineered alternative liner, drainage control facilities, landfill gas collection system, monitoring, etc.) will be evaluated in greater detail during consideration of the ROWD. A discussion of the measures used to protect surface and groundwater are described in Sections 2 and 3.6 of the Draft EIR.

3.1 l The County is currently working on revisions to the ROWD. The County commits to working cooperatively with the RWQCB in addressing revisions to the ROWD.

3.1 m The Evaluation Monitoring Program (EMP), through a separate project, is underway on the existing waste management unit. The County is working diligently to characterize the groundwater and will continue to aggressively obtain groundwater data that delineates the vertical and lateral extent of contamination. The County does not foresee that the development of the new waste management unit will impede progress on the EMP. The County commits to continue to work cooperatively with the RWQCB on this issue to insure that the groundwater monitoring continues to effectively address and mitigate any groundwater contamination.

3.1 n Comment noted.

3.2 Comment from the City of Visalia

City of Visalia
315 East Acequia Ave., Visalia, CA 93291

Community Development
Planning Division
Tel: (209) 738-3369 Fax: (209) 738-3519

Founded 1852

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MANAGEMENT
AGENCY

January 22, 2001

Kevin Shannon, Planner III
Tulare County Resource Management Agency
Solid Waste Division
5961 S. Mooney Blvd.
Visalia CA, 93277

RE: Visalia Landfill Master Plan Draft EIR (SCH#2000051098)

Dear Mr. Shannon:

3.2 a

Thank you for the opportunity to comment on the Draft EIR for expansion of the Visalia Landfill. The proposed landfill expansion will be a great benefit to Visalia, as well as to the cities of Dinuba and Woodlake, and the unincorporated communities and areas in northern Tulare County.

3.2 b

The City of Visalia is in general agreement with the information in the EIR. Given the analysis of the project alternatives the City agrees that the proposed project is superior to the proposed alternatives.

3.2 c

With regard to traffic and circulation, the City is supportive of the relocation of the entrance and drop-off area to Avenue 328. The appropriate road widenings to accommodate large solid waste vehicles is recommended, including a left turn and right turn deceleration lane at the entrance to the site, and left turn lanes and right turn deceleration lanes at the Road 80/Avenue 328 intersection.

3.2 d

With regard to the drop-off facility and recycling area, the City would encourage the County to consider including an asphalt and concrete recycling facility on the site. This type of facility would help to increase the amount of solid waste tonnage that is recycled. A recycling facility of this type at the landfill site would benefit the City and other urban communities that are not able to provide such a facility in the urbanized area because of the land use conflicts that can occur.

The City again reiterates its support for the project and the Draft EIR. The City would appreciate receiving a copy of the Final EIR and notice of any hearings. If you have any questions, please feel free to contact me at (559) 738-3369.

Steve Brandt
Senior Planner

RECYCLED PAPER

3.2 Response to the City of Visalia

3.2 a The County concurs with the City that the proposed expansion will be of great benefit to the cities of Visalia, Dinuba and Woodlake and to the unincorporated communities and areas in northern Tulare County. Essentially, these benefits are in the nature of economic, legal, social, technological and land use and are summarized as follows:

(1) Economic

Should this landfill abruptly close, no other County landfills are configured to accept this waste. Moreover, although solid waste facilities in other jurisdictions could accept this waste, no plans or agreements are currently in place or under consideration. A long term planning horizon would be required to affect such an out-of-county agreement. This is reflected in the December 21, 1999, Board of Supervisors Agenda Item.

Without the proposed expansion project, higher hauling costs to other county landfills could be incurred, in which case, higher rates, subject to county approval, could be charged to consumers. By not limiting landfill capacity, there will not be an undue burden on new development activity, thus conferring additional employment and construction benefits throughout the county.

(2) Legal

The California Integrated Waste Management Board (CIWMB), through the Integrated Waste Management Act, requires 15-years of aggregate solid waste disposal capacity (CCR §18755.3) be maintained at all times. Expansion of the landfill fulfills this requirement and produces the benefit of having the necessary landfill capacity for progressive growth and development.

Further, Tulare County Ordinance Code, Chapter 3, section 4-03-1000, requires, in part, that "… in order to protect the health, safety and welfare of the residents of Tulare County, the Board of Supervisors has determined that it is necessary to adopt a coordinated County-wide program for the safe, economical and efficient collection, storage, transportation, diversion and disposal of solid waste, and to assure standards of service of said …." Thus, maintaining a permitted landfill designed and operated consistent with regulations is required by the ordinance code designed to protect the public health, safety and welfare. Expanding the landfill fulfills this requirement and produces this benefit.

Each City Council within Tulare County passed a resolution adopting the Countywide Siting Element, which included a finding that referenced the Solid Waste Management Technical Advisory Committee (SWMTAC) review and recommended approval of the Countywide Siting Element. Therefore, each of the incorporated cities have endorsed the continued operation of this facility, thereby recognizing the public benefit of the Countywide Siting Element to expand the landfill capacity to serve the needs of the respective cities and their residents.

Environmentally safe land disposal is a required component of the CIWMB waste management hierarchy as contained in Public Resources Code section 40051, and this expansion project will provide an increased benefit of public health and safety.

(3) Social

The expansion is deemed beneficial for Visalia and the surrounding communities as proclaimed in two Visalia Times-Delta articles, namely, in a front page article, entitled "Current site nearing capacity", dated January 16, 2001, and in an editorial page opinion, entitled "Expanding dump site seems best option for county", dated January 20, 2001.

The findings of CIWMB Resolution No. 1999-144, approved on April 27, 1999, approving the Countywide Siting Element reflect that the County has determined to maintain the existing disposal capacity and service to the residents by continuing operation and, when and where necessary, expand existing facilities rather than site and develop new, separate facilities.

On April 2, 1998, the SWMTAC also serving as the Local Task Force (LTF) reviewed, commented and recommended approval of the Draft Siting Element. This SWMTAC agenda item was a noticed public hearing published in the Visalia Times-Delta.

On August 6, 1998, the SWMTAC also serving as the Local Task Force (LTF) reviewed, commented and recommended approval of the Final Draft Siting Element. This SWMTAC agenda item was a noticed public hearing published in the Visalia Times-Delta.

On December 4, 1997, the Tulare County Solid Waste Technical Advisory Committee (SWMTC) also serving as the Local Task Force (LTF) held a public comment period on the development and criteria for preparation of the Siting Element. This SWMTAC agenda item was a publicly noticed meeting published in the Visalia Times-Delta.

Relocation of the existing entrance to the proposed location on Avenue 328 eliminates traffic conflicts with the increased traffic resulting from the Road 80 widening project. This intersection represents an accident rate higher than the State average according to the Road 80 Project Study Report prepared by the Transportation Planning Group in February of 1998.

Based on the foregoing, public opposition to landfill issues has been non-existent.

(4) Technological

Development of the new Waste Management Unit (WMU) will incorporate design and operation features, (including environmental control features), that will conform to Federal and State statutes and regulations, as opposed to landfilling on a WMU without said features. Hence, the new WMU is using

technological advancements to protect the environment, which will be a substantial improvement to the existing environmental condition.

(5) Land Use

The Tulare County Area General Plan, Part II, Tools for Achieving Policies and Goals of the Area General Plan, Section 3, Development Regulations, sub-section on Health Regulations, states, in part: "Regulations and advisory activities relating to on-lot water supplies, refuse collection and disposal, interim sewage treatment plants, sewer and water connections, air pollution, water pollution, radiation and housing are essential to maintaining a proper living environment".

The Tulare County Area General Plan, Part I, Plan Proposals, Section 4, Proposals of the Tulare County Area General Plan, sub-section on Agriculture, states, in part: "Public facilities such as schools, fire stations and refuse sites similarly are required in rural areas".

This facility has been consistently identified as a disposal facility in every solid waste-related planning document: Solid Waste Disposal Study, Phase I, 1972, Tulare County Department of Public Works; County Solid Waste Management Plan, 1975 and its 1985 revision, Tulare County Department of Public Works; and, the recently adopted Integrated Waste Management Plan.

Therefore, there is a consistent stream of land use support for the kinds of projects undertaken here.

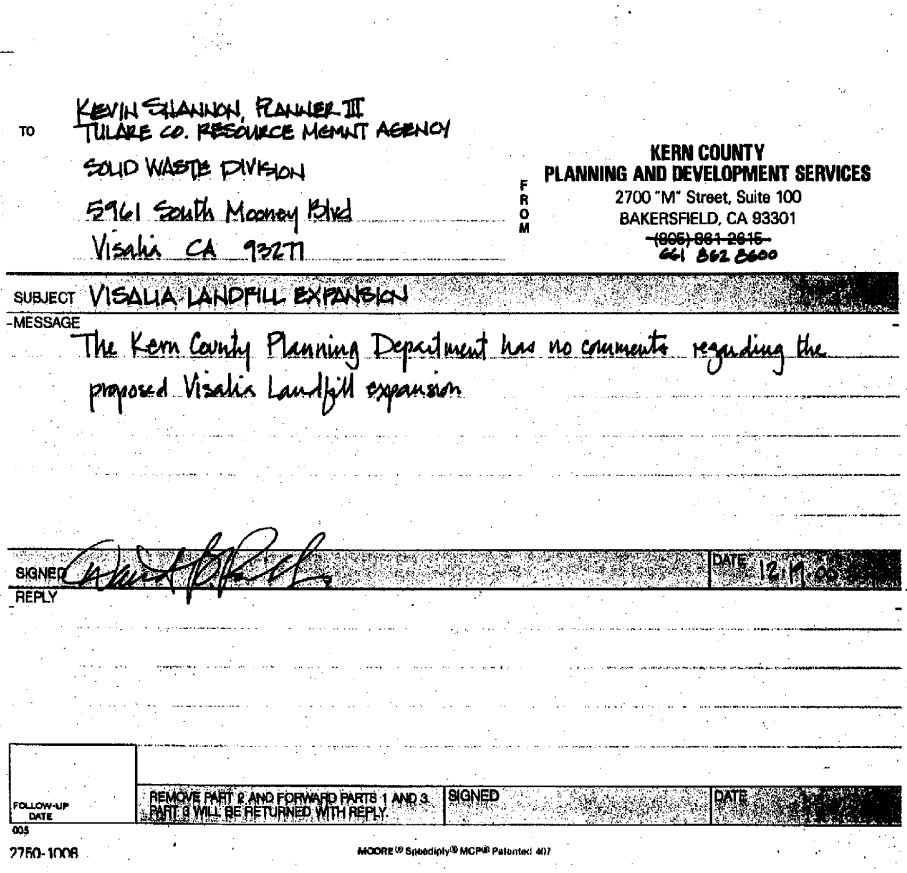
The foregoing will be used as a basis for the County's Statement of Overriding Considerations.

3.2 b Your comments regarding the relocation of Avenue 328 and the left and right turn lanes at the new entrance and associated recommendations are consistent with the current project design of this facility.

3.2 c The County is not considering an asphalt and concrete recycling facility at this site.

3.2 d Thank you for your support of the project. The County will continue to keep you informed of our progress, future public meetings regarding this project, and will send you a copy of the Final EIR when it is available.

3.3 Comment from the County of Kern



TO: KEVIN SHANNON, PLANNER III
TULARE CO. RESOURCE MGMNT AGENCY
SOLID WASTE DIVISION
5961 South Mooney Blvd
Visalia CA 93277

FROM:
KERN COUNTY
PLANNING AND DEVELOPMENT SERVICES
2700 "M" Street, Suite 100
BAKERSFIELD, CA 93301
~~(805) 861-2615~~
~~661 862 8600~~

SUBJECT: VISALIA LANDFILL EXPANSION

MESSAGE:

3.3 a

The Kern County Planning Department has no comments regarding the proposed Visalia Landfill expansion.

SIGNED: [signature] DATE: 12.11.00

REPLY

FOLLOW-UP DATE

REMOVE PART 2 AND FORWARD PARTS 1 AND 3. PART 3 WILL BE RETURNED WITH REPLY.

SIGNED

DATE

005

2750-1008

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3.3 Response to the County of Kern

3.3 a Thank you for your letter.

3.4 Comment from the Tulare County Health and Human Services Agency

For your brighter tomorrow

COUNTY OF TULARE
Health & Human Services Agency
Health ▪ Human Services ▪ Mental Health

Ronald W. Probasco
HHSA Director

ENVIRONMENTAL HEALTH SERVICES

January 24, 2001

KEVIN SHANNON
COUNTY OF TULARE
RESOURCE MANAGEMENT AGENCY
SOLID WASTE DIVISION
5961 SOUTH MOONEY BLVD
VISALIA CA 93277

Re: Draft Environmental Impact Report for the Visalia Landfill Expansion

Dear Mr. Shannon:

This office has received the Draft Environmental Impact Report (D.E.I.R.), dated December 2000 for the Visalia Landfill Expansion, and has the following comments regarding the project:

3.4 a

1. The proposed expansion of the Visalia Landfill must be constructed and operated to meet California Code of Regulations, Title 27 and Title 14, and the Public Resources Code.

3.4 b

2. A revised full Solid Waste Facility Permit shall be obtained from the Tulare County LEA/California Integrated Waste Management Board prior to operating the new Waste Management Unit.

3.4 c

3. It should be noted that in 1970, the Tulare County Agricultural Commissioner's Office disposed 74 metal canisters of 42 percent active Calcium Cyanide (CaCN) Powder. On June 26, 1990, the California Regional Water Quality Control Board (C.R.W.Q.C.B.) issued Cleanup and Abatement Order # 90-713, requiring Tulare County to assess the lateral and vertical extent of the CaCN Powder and its byproducts. A subsequent investigation was conducted by Tulare County. On June 14, 1994, the C.R.W.Q.C.B. determined that the buried CaCN Powder and its byproducts did not pose a threat to groundwater quality.

If you have any questions please contact Keith Jahnke at (559) 733-6441.

Sincerely,

Keith Jahnke
Environmental Health Specialist
Environmental Health Services Division

KJ:jp

5957 S. Mooney Blvd. Visalia, CA 93277 (559) 733-6441 FAX 733-6932

3.4 Response to the Tulare County Health and Human Services Agency

3.4 a As noted in the Draft EIR, the project design for the new Class III waste management unit would meet the requirements of Title 27 and Title 14 of the California Code of Regulations and the Public Resources Code which govern the landfill issues applicable here.

3.4 b The County will obtain a Revised Solid Waste Facility Permit prior to operating the new waste management unit.

3.4 c As noted in your comment, the California Regional Water Quality Control Board investigated the CaCN powder and determined on June 1994 that it posed no threat to groundwater and thus no remedial action was required.

3.5 Comment from the California Department of Transportation (CALTRANS)

STATE OF CALIFORNIA - BUSINESS, TRANSPORTATION AND HOUSING AGENCY GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
1352 WEST OLIVE AVENUE
P. O. BOX 12616
FRESNO, CA 93778-2616
(559) 488-4066
OFFICE (559) 488-4347
FAX (559) 488-4088

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January 24, 2001

2135-IGR/CEQA
6-TUL-099-04340
DRAFT EIR VISALIA LANDFILL
SCH # 2000051098

Mr. Kevin B. Shannon
Tulare County Resource Management Agency
Solid Waste Management
5961 South Mooney Boulevard
Visalia, CA 93277

Dear Mr. Shannon:

Thank you for providing Caltrans with the opportunity to review the Draft Environmental Impact Report (DEIR) for the Visalia Landfill Master Development Plan. The project proposes to expand the existing landfill. The landfill is located on the northeast corner of Road 80 and Avenue 328, east of State Route (SR) 99. Caltrans has the following comments regarding this project:

3.5 a

1. When operating at peak capacity, this facility would generate 87 inbound and 70 outbound trips during a weekday morning peak hour and 70 inbound and 77 outbound trips during a weekday evening peak hour. The Transportation section of the Draft EIR estimates that 75% of the site-related traffic would be oriented to and from the south on Road 80. The SR 198 at Road 80 (Plaza Drive) interchange could be impacted by over 100 project generated vehicle trips during peak travel times.

3.5 b

2. Improvements to Road 80 and the interchange at SR 198 are currently being planned. Tulare County recently completed a Project Study Report for Road 80 improvements, including the SR 198 interchange. If the increase of landfill-project trips at the SR 198/Road 80 interchange was accounted for in the Road 80 traffic analysis, then further study should not be necessary. If the landfill-project trips were not taken into account at the SR 198 interchange, then the DEIR traffic study will need to be expanded to include this. The Traffic Impact Study (TIS) needs to follow the Caltrans Guide for the Preparation of Traffic Impact Studies, dated January 2001 (enclosed).

3.5 c

Please send a response to our comments prior to staff's recommendations to the Planning Commission and the Board of Supervisors. Questions regarding the TIS need

3.5 Comment from the California Department of Transportation (CALTRANS), *continued*

to be referred to Bill Bigbee, Transportation Engineer, at (559) 445-5999. If you have any other questions, please call me at (559) 488-7306.

Sincerely,

for AL DIAS
Office of Transportation Planning

Enclosure

C: State Clearinghouse

3.5 Response to the California Department of Transportation

3.5 a The proposed project will not have a significant impact to the proposed SR 198/Road 80 interchange. The project is forecast to result in a worst-case net increase of 66 inbound and 53 outbound trips during the morning peak hour. Of these, 75 percent or 50 inbound and 40 outbound trips are forecast to be oriented to or from the south on Road 80.

These southbound trips will be dispersed south of Avenue 328 on assorted cross roads including Avenues 320, 312 (Riggin Avenue), and 304. Less than 50 percent of the traffic oriented to and from the south on Road 80 will actually travel through the SR 198 interchange. The net increases in traffic associated with the project will be limited to the extent they should not have a significant impact at the proposed interchange.

In addition, the traffic forecasts for the Road 80 Project Study Report were based upon Year 2020 traffic forecasts from the Tulare County Association of Government's (TCAG) Tulare County Regional Traffic Model. This model includes forecasts for continued development in the surrounding areas, which are the source of increases in traffic in the project area. These traffic projections, including traffic associated with the landfill, were included in the model runs and therefore no additional analysis is necessary.

3.5 b See response to comment 3.5 a.

3.5 c The County will provide responses to your comments at least 10 days prior to taking any action to certify the EIR.

3.6 Comment from Ruddell, Hornburg, Cochran, Stanton, Smith & Gulla, LLP

RUDDELL, HORNBURG, COCHRAN, STANTON, SMITH & GULLA, LLP
ATTORNEYS AT LAW

GARY H. RUDDELL
PHILIP T. HORNBURG
RICHARD H. COCHRAN
GLENN A. STANTON
D. ZACKARY SMITH
MICHAEL A. GULLA

MATTHEW W. BIXLER

1102 N. CHINOWTH STREET
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(559) 733-5770
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ERLING H. KLOSTER
1916-1999

January 31, 2001

VIA FACSIMILE (730-2653) and
HAND DELIVERY

Tulare County Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

ATTENTION: KEVIN SHANNON

Re: Visalia Landfill Master Development Plan
State Clearing House No. 2000051098

Dear Mr. Shannon:

On behalf of our clients, Robert and Willemina Van Grouw, we are writing to provide you with comments regarding the Draft Environmental Impact Report, dated December, 2000 ("DEIR") submitted in connection with the Visalia Landfill Master Development Plan ("Project").

3.6 a

First, our clients are concerned about the breadth of the Project. Tulare County's Initial Study states: "The project consists of three main components: the new Class III WMU, new entrance complex, and closure of the existing WMU." (See Initial Study p.5.) However, the Executive Summary portion of the DEIR seems to make a contradictory statement by stating that "closure activities associated with the existing WMU would require a separate environmental analysis and permit process." (See DEIR p.ES-2.) If the closure of the existing facility is part of the Project, then the DEIR must discuss the environmental impacts, mitigation measures and the mitigation monitoring programs associated with the closure. The DEIR does not contain an adequate analysis of the environmental impacts caused by the closure. We do not believe it is allowable to ignore one of the "three main components" of the Project in the DEIR and relegate it to some future "separate environmental document." (See DEIR p.2-23.)

3.6 b

Second, the DEIR is deficient because it does not discuss the volume of water contained in the aquifer or the size of the aquifer underlying the Project. The Project is being proposed for an area which has relatively little precipitation. It is being developed on land that overlies a groundwater basin that provides water for both agricultural and domestic purposes. The DEIR acknowledges that the underlying groundwater basin is

3.6 Comment from Ruddell, Hornburg, Cochran, Stanton, Smith & Gulla, LLP, continued

overdrafted. In such a situation, §15125(c) of the CEQA Guidelines mandates a discussion of the volume of water contained in the underling aquifer or the size of the aquifer. (See Cadiz Land Company, Inc. v. County of San Bernardino (2000) 83 Cal.App.4th 74, 92.)

3.6 c

Third, my clients object to the conclusion of the DEIR that "the impacts to water quality are expected to be adverse but less than significant." (DEIR p.3-69.) My clients' position is that groundwater contamination should have been identified as an unavoidable risk of the Project. As you know from the existing landfill, just a few drops of contaminants into the groundwater under the Project could have a significant adverse impact on the groundwater. The DEIR identifies groundwater contamination as a potential impact. While the proposed composite liner system should prevent the impact, the DEIR necessarily implies the possibility of perforations in the liner by its statement that "it is unlikely that leachate would pass through the landfill's refuse to the underlying groundwater table." Other modern landfills with extensive liner systems have acknowledged the potential of a significant impact on groundwater and have included substantial mitigation measures in their environmental impact reports, such as posting large bonds to indemnify third parties for remediation efforts resulting from potential groundwater contamination. However, since the DEIR does not identify the volume of the groundwater resource at stake, it would be premature to determine what remediation efforts are appropriate. All of these items must be rectified in a revised DEIR.

3.6 d

Fourth, the generalized references to local agricultural activities in the DEIR constitute an inadequate description of the environmental setting for the Project. CEQA Guidelines §15125(a) requires that an environmental review include "a description of the physical environmental conditions in the vicinity of the project . . .." In the case of Galante Vineyards v. Monterey Peninsula Water Management Dist. (1997) 60 Cal.App.4th 1109, the court found a final environmental impact report to be deficient because it only briefly described nearby farming operations with statements as follows:

> East and west of the project site "is mostly undeveloped land with some grazing, agriculture and scattered rural residential use . . .. " The "Climate and Air Quality" chapter of the final EIR describes the area as "sparsely populated, with no industry other than several vineyards in the Cachagua Valley." Id. at p. 1122.

3.6 e

Similarly, the DEIR makes vague references like the "lands west of the site include field crops and an active dairy." (DEIR p. 3-69.) There is no description of the field crops

3.6 Comment from Ruddell, Hornburg, Cochran, Stanton, Smith & Gulla, LLP, continued

RUDDELL, HORNBURG, COCHRAN, STANTON, SMITH & GULLA, LLP

Tulare County Resource Management
January 31, 2001
Page 3

grown by our clients, nor the number of cows on their dairy. Similarly, the DEIR does not provide the precise distances of the field crops or the dairy from the Project. The additional detail should be included and then analyzed to determine such things as whether the Project will increase the prolific bird population that is constantly eating our clients' cattle feed. Even the reference to our clients' water wells fails to describe the wells, their use or capacity. More importantly, the DEIR fails to mention that some of our clients' wells have already been contaminated by the existing landfill. Finally, the DEIR fails to provide the precise size, all of the contaminants, the growth rate or other details about the growing plume of contaminated groundwater created by the existing landfill.

3.6 f

Fifth, the DEIR does not adequately identify or analyze air quality impacts, such as the impact of ozone and additional exhaust emissions on the adjacent environment. While the DEIR acknowledges that the Project will cause substantial additional emissions of ozone precursors and carbon monoxide and that "the operation of a gas collection and control system will substantially reduce future landfill gas emissions," it does not state what impact, if any, the additional uncollected landfill gas emissions will have on our clients' cows or other neighboring agricultural operations. Of course, if the predicted impact is significant, the DEIR should also include mitigation measures with respect to such impact.

3.6 g

Sixth, our clients object to the conclusion in the DEIR that they will not suffer a significant visual impact as a result of the Project. The Project proposes a landfill that will be 210 feet in height as opposed to the 85-foot height of the existing landfill. It will obscure their view of both the mountains to the east and other nearby farmland. The visual impact of the Project will be significant for our clients, which impact should be acknowledged and mitigated.

3.6 h

Seventh, our clients object to the inaccurate description of "Adjacent Land Uses" in the DEIR. The brief and vague description includes the statement that: "The facility is located in an agricultural area with no sensitive receptors close by." (See DEIR p.3-73.) While the term "sensitive receptors" is not defined in the document, our clients and their six children, all of whom live within approximately one mile of the Project, consider themselves "sensitive receptors." They believe the DEIR should be rewritten to analyze the environmental impacts considering them to be "sensitive receptors."

3.6 i

A similar inaccuracy appears in the statement that the Project will be located "approximately six miles northwest of Visalia . . . ." (See DEIR p.2-1.) Actually, the city limits for the City of Visalia lie only about 2 miles south of the Project. Of course, with

3.6 Comment from Ruddell, Hornburg, Cochran, Stanton, Smith & Gulla, LLP, continued

RUDDELL, HORNBURG, COCHRAN, STANTON, SMITH & GULLA, LLP

Tulare County Resource Management
January 31, 2001
Page 4

the projected growth of the City of Visalia, residences may be located much closer to the Project, before it reaches the end of its expected useful life. The DEIR should describe and address the impact of the Project on the approaching urban development.

3.6 j

The foregoing is not intended to be a finite list of objections our clients have to the Project. We reserve the right to present further objections they may have, at any public hearing on the DEIR. We invite you to contact us to discuss the requested changes to the DEIR and mitigation measures that will satisfy our clients.

Very truly yours,

RUDDELL, HORNBURG, COCHRAN,
STANTON, SMITH & GULLA, LLP

By D. Zackary Smith

DZS/jk
#19472
Cc: David A. Gardner
Fugro West, Inc.

3.6 Response to Ruddell, Hornburg, Cochran, Stanton, Smith & Gulla, LLP

3.6 a The closure of the existing waste management unit (WMU) is not part of this project as defined in the Draft EIR and, therefore, was not evaluated in the Draft EIR. The reasons why the closure plan was not deemed to be part of this project are as follows: (1) the closure plan is severable from this project because the closure plan is not legally necessary to approve and operate the new WMU; (2) the closure plan is not crucial to the design, approval and safe implementation of the proposed new WMU; (3) the Regional Water Quality Control Board – Central Valley Region (RWQCB) does not object to severing the closure plan from the proposed new WMU; and (4) there are no foreseeable cumulative impacts arising out of the closure plan because the solid waste will be deposited in the new WMU, water will no longer percolate through the landfill refuse because of the final cover, and landfill gas will be easier to extract because the gas will be locked in by the final cover.

The County has worked with, and commits to continue to work with, the RWQCB in revising the existing Preliminary Closure Plan. This will begin once the proposed WMU becomes operational. Until the proposed WMU becomes operational, there is insufficient information available to enable the County to revise the plan because the final shape of the existing unit cannot be determined since the County does not know exactly when waste will no longer be placed in the existing unit. The County is expected to know when the closure will occur after the proposed WMU is approved by the County Board of Supervisors and the California Integrated Waste Management Board.

In addition, Road 80 adjacent to the western perimeter of the existing WMU is in the planning stages for expansion. Certain aspects of this separate CALTRANS-governed project may require changes to the final design of the existing WMU. This information is not reasonably available at this time from CALTRANS.

In connection with Section 2.8 (Closure of the Existing WMU), Page 2-23 after the paragraph that starts with "The existing WMU …", the following paragraphs are added:

> Based upon the preparation of the Preliminary Closure and Postclosure Plan, it is anticipated that there will be no significant environmental impacts. Furthermore, by following federal and state regulations (California Code of Regulations, Title 27, Subchapter 4, sections 21769 to 21900) applicable to the closure of the existing WMU, there should not be any significant environmental impacts because of the effectiveness of the design mitigation measures that would be required by such regulations. As previously stated, the closure of the existing WMU will be addressed through a separate environmental review process.
>
> The closure plan is not a crucial element of the expansion of the Visalia landfill without which the project as defined in the EIR could got not go forward. It should be noted that the County needs this additional landfill capacity in order to meet the public health and safety needs of its residents, and to satisfy the aggregate disposal requirements mandated by the Integrated Waste Management Act.
>
> In order to comply with the siting criteria required in the Tulare County Integrated Waste Management Plan's Siting Element approved by the CIWMB, the siting of a

facility at a new location would take approximately five to seven years to complete. The capacity of the existing unit is anticipated to be exhausted in approximately three years, therefore, the expansion at the existing facility is required in order to maintain public health and safety of the County.

The County acknowledges that the draft EIR adequately addresses those surface water and groundwater bodies that have the potential to be impacted by the proposed expansion, and those mitigation measures proposed to mitigate potential impacts to groundwater and surface water that may result from such expansion.

The County concurs with the Regional Water Quality Control Board (RWQCB) that the closure and post closure maintenance of the existing unit will be evaluated in greater detail during the preparation of the revised Waste Discharge Requirements for the solid waste facility. In addition, the County commits to working with the RWQCB with respect to the closure and post closure of the existing waste management unit (WMU).

For further discussion, see Exhibit "1" (Memorandum from Philip Slitor, Engineer III).

3.6 b In connection with presenting comments concerning the groundwater issue, the commenter has referred us to the recent case of *Cadiz Land Company, Inc. v. County of San Bernardino* (2000) 83 Cal.App.4th 74, 92. In this case, the Cadiz Land Company filed a lawsuit challenging the County of San Bernardino's Environmental Impact Report (EIR) and related approvals of the Rail Cycle Landfill. The Rail Cycle Landfill was proposed on about 4,870 acres of land near the town of Amboy in the Mojave Desert. About 2,100 acres would be used for landfilling and the remaining area would be used for ancillary facilities and buffer. Cadiz owned about 26,000 acres of land in the project area. Although the company's agriculturally developed lands were about four miles east of the proposed landfill site, Cadiz still owned some property within two miles of the proposed landfill site which could be used for agriculture. Cadiz also intended to extract and sell groundwater to the Mojave Water Agency.

There, the EIR discussed an aquifer containing potable water under the landfill site; however, it did not discuss the volume of water contained in the aquifer or its size, which was a valuable and "relatively scarce resource in the desert region."

The *Cadiz* case is significantly different from the proposed Visalia landfill facility project. For example, in *Cadiz* the County was proposing to develop a regional or mega-landfill in a remote area of the desert. The landfill site was surrounded by open undeveloped land on the north and south, agricultural lands to the east, and a salt mining company on the west. Thus, groundwater had very limited impacts from industrial, agricultural, or other development.

In the present case, a mega-landfill is not being proposed. Instead, an expansion to an existing landfill is being proposed. In addition, the Visalia landfill facility is proposed in a developed area of Tulare County. Although the groundwater in the project area is a valuable resource, its presence in an area with years of agricultural use and prior landfill operation makes it such that it cannot be considered a "relatively scarce" or unique resource.

In addition, Section 15125 of the State CEQA Guidelines requires a general description of the physical conditions in the vicinity of the project. It does not require an exhaustive description of each of the conditions in the project vicinity. For this project, exhaustive and exacting details on the characteristics and attributes of the aquifer would not alter the environmental evaluation of any potentially significant impacts. Furthermore, the new waste management unit (WMU) would provide substantially greater environmental protection to the groundwater than the existing unlined WMU, that is, through this project, substantial environmental benefit will accrue to the overall environment which includes the Van Grouw's property. For example, the environmental benefits as a result of the installation and utilization of the new lined WMU include containing contaminants within municipal waste from the existing unlined WMU and isolating the contaminants from the underlying soil and groundwater.

Section 3.7.1 of the Draft EIR provides significant detail regarding the existing groundwater conditions and current evaluation and remediation efforts. Section 2.3.1 of the Draft EIR explicitly states that the existing groundwater contamination from the existing WMU is the primary reason for constructing a new WMU. As such, Section 15125(c) has been satisfied. Moreover, since State and Federal law prescribe liner systems for newly constructed WMUs, compliance with these stringent requirements serves as an effective mitigation measure that will reduce the potentially significant impact to groundwater to a less-than-significant level.

In addition to the foregoing response, the County has endeavored to clarify and amplify its discussion of the groundwater issue as originally set forth and described in detail in the Draft EIR in Section 3.7 (Hydrology and Water Quality) at pages 3-60 to 3-65. Therefore, based on the reasoned response developed by James W. Babcock, Ph.D., Malcolm Pirnie, Inc., a refined estimate of the volume of the groundwater resources is provided. Additionally, the response from Dr. Babcock concludes that the project will not cause any significant impacts to groundwater, particularly as affecting the Van Grouw's property. (See Exhibit "2", [Memorandum and Statement of Qualifications of Dr. Babcock].)

3.6 c The Draft EIR acknowledges that the new waste management unit has the potential to impact surface and groundwater. On page 3-69 the Draft EIR states that the project's impact to water quality is expected to be adverse, but less than significant because of the environmental controls and mitigation measures incorporated into the design of the landfill project. These controls, project commitments or mitigation measures are delineated on page 3-67 and discussed in more detail in the project description on pages ES-1 and 2-6. These effective environmental mitigation measures include the following:

- Vadose zone monitoring system
- Reinforced geosynthetic clay liner
- Double-sided textured 60-mil high density polyethylene geomembrane liner
- Leachate collection and recovery system (LCRS)
- Two feet of operation soil over the LCRS and lined areas.

It is through the implementation of these environmental controls or mitigation measures that the impacts to groundwater are considered adverse but less than significant. And, as outlined below, the County is legally required to meet a number of financial assurances before they can operate the new waste management unit.

Specifically, operators of solid waste facilities are required to provide several types of financial assurance in accordance with applicable sections of Title 27, California Code of Regulations, Division 2, Subdivision 1, Chapter 6, Subchapter 2 (Financial Assurance Requirements). The types of financial assurance include the following:

- Landfill closure and postclosure maintenance
- Operating liability, including an environmental liability fund to compensate third parties for damages caused by accidental occurrence
- Corrective action, including initiating and completing corrective action for all known and reasonably foreseeable releases from the disposal facility.

Financial assurance requirements for closure, postclosure maintenance, and corrective action are based on estimated engineering costs to implement the required work. For Subtitle D lined sites, the estimates assume a breach of the liner system; this assumption should not be inferred as acknowledgment that significant impacts to groundwater would occur.

The County of Tulare is in compliance with, and commits to continue to be in compliance with, applicable financial assurance provisions contained in Title 27 referred to above.

The current remediation efforts are associated with the existing WMU only. There are no remediation efforts associated with the new, proposed WMU. Rather, potential impacts associated with the proposed new WMU are addressed through mitigation measures.

In connection with remediation efforts currently associated with the unlined WMU, extensive work has been undertaken by the County. The following is a partial list of key documents which evidence the nature and extent of these extensive remediation efforts:

Malcolm Pirnie, Inc. 1999. *Well Abandonment Plan for Inactive Water Supply Well at the Visalia Solid Waste Disposal Site, Visalia California*. April 22.

RMA. 1999. Sent to RWQCB. [Transmittal] *Proposed Well Abandonment Work Plan Dated April 22, 1999; Visalia Solid Waste Disposal Site, Tulare County*. May 19.

RMA. 1999. Sent to RWQCB. *Meeting Regarding Tentative Cleanup and Abatement Order (CAO); Visalia Solid Waste Disposal Site (SWDS), Tulare County*. August 19.

Malcolm Pirnie, Inc. 1999. Sent to RMA. *Immediate action points from RWQCB meeting concerning Visalia Solid Waste Disposal Site, Visalia*. *California.* August 19.

Malcolm Pirnie, Inc. 1999. *Work Plan, Groundwater Monitoring Well Installation, Visalia Solid Waste Disposal Site, Visalia California.* October.

RMA. 1999. Sent to RWQCB. [Transmittal] *Well Installation Work Plan; Visalia Solid Waste Disposal Site, (SWDS), Tulare County*. October 20.

RWQCB. 1999. *Report Review - Well Installation Work Plan for the Visalia Solid Waste Disposal Site, Tulare County*. November 15.

Malcolm Pirnie, Inc. 1999. *Modification to scope of work and clarification of RWQCB response to Work Plan for Groundwater Monitoring Well Installation, Visalia Solid Waste Disposal Site.* November 18.

RMA. 1999. Sent to RWQCB. [Transmittal] *Well Installation Work Plan Modification; Visalia Solid Waste Disposal Site (SWDS)*, *Tulare County.* November 22.

Malcolm Pirnie, Inc. 1999. *Well Abandonment Plan for the Inactive Agricultural Irrigation Well located on the South 80-Acres at the Visalia Solid Waste Disposal Site, Visalia, California.* November 22.

Carlson, D., 1999. Record of Telephone Conversation. Communication with Scott Moore of the RWQCB. Scott Verbally communicated that the Malcolm Pirnie Off-Site Well Installation work plan addendum is acceptable. He will put a note to the file to this effect and will NOT be sending an approval letter per Dane Johnson's instructions. December 1, 10:55 am.

RMA. 2000. Sent to RWQCB. *Proposed Well Abandonment Work Plan Dated November 22, 1999; Visalia Solid Waste Disposal Site (SWDS), Tulare County*. January 12.

Malcolm Pirnie, Inc. 2000. *Supplemental Work Plan for Evaluation Monitoring Program, Visalia Solid Waste Disposal Site.* January 18.

RMA. 2000. Sent to RWQCB. *Proposed Evaluation Monitoring Program* [Supplemental] *Work Plan, Dated January 18, 2000; Visalia Solid Waste Disposal Site (SWDS), Tulare County*. January 18.

RWQCB. 2000. *Report Review - Well Abandonment Plan For An Inactive Irrigation Well at the Visalia Landfill, Tulare County*. February 25.

Malcolm Pirnie, Inc. 2000. *Groundwater Monitoring Well Installation Report, Visalia Solid Waste Disposal Site, Visalia California*. March.

RWQCB. 2000. *Report Review - Supplemental Work Plan For Evaluation Monitoring Program, Visalia Solid Waste Disposal Site, Tulare County*. March 14.

Malcolm Pirnie, Inc. 2000. *Work Plan - Evaluation of Off-Site Threat to Groundwater and Interim Correction Measures, Visalia Solid Waste Disposal Site, Visalia, California*. June.

RWQCB. 2000. *Report Review - Work Plan for Evaluation Of Potential Impacts to Off-Site Receptors & Interim Corrective Action Measures, Visalia Solid Waste Disposal Site, Tulare County*. July 3.

Malcolm Pirnie, Inc. 2000. *Response to RWQCB review of Work Plan for Evaluation of Off-Site Threat to Groundwater & Interim Corrective Measures, Visalia Solid Waste Disposal Site, Visalia, California.* July 12.

RMA. 2000. Sent to RWQCB. *Evaluation Monitoring Program; Visalia Solid Waste Site (SWDS), Tulare County.* [Transmittal of July 12, 2000 Malcolm Pirnie response to

RWQCB review of Work Plan for Evaluation of Off-Site Threat to Groundwater and Interim Corrective Measures, Visalia, California.] July 13.

RMA. 2000. Sent to RWQCB. *Evaluation Monitoring Program (EMP) First Semi-Annual Period 2000 Status Report, Visalia Solid Waste Disposal Site (SWDS), Tulare County*. July 31.

RMA. 2000. *Agenda Item before the Tulare County Board Of Supervisors Regarding: Consideration of an Agreement between the County and Malcolm Pirnie, Inc*. August 29.

RWQCB. 2000. *Report Review - Interim Evaluation Monitoring Program; Visalia Solid Waste Disposal Site (SWDS), Tulare County*. August 30.

RWQCB. 2000. *Semi-Annual Compliance Review - Cleanup And Abatement Order 99-718, Visalia Landfill, Tulare County*. August 30.

Malcolm Pirnie, Inc. 2000. Sent to Mr. Robert Van Grouw. *Transmittal - Welenco video log of Agriculture Well 13 on the Van Grouw Dairy, Tulare County, California*. September 18.

Malcolm Pirnie, Inc. 2000. Sent to Mr. Robert Van Grouw. *Transmittal - Welenco video survey report for Agriculture Well 13 on the Van Grouw Dairy, Tulare County, California*. September 26.

Malcolm Pirnie, Inc. 2000. Sent to RWQCB, Rob Van Grouw, Jim Waters, and J. Johnson. *Well Abandonment Plan For The Agricultural Water Supply Well 13 at the Van Grouw Dairy adjacent to the Visalia Solid Waste Disposal Site, Visalia, California*. November 3.

RWQCB. 2000. *Report Review - Agricultural Well* [13] *Abandonment Adjacent to Visalia Landfill, Tulare County*. November 28.

Malcolm Pirnie, Inc. 2000. Sent to RWQCB & TCRMA. *Request for Modification to the approved Evaluation Monitoring Work Plan, Visalia Solid Waste Disposal Site, Tulare County, California*. November 30.

Malcolm Pirnie, Inc. 2001. *Work Plan for Aquifer Test, Visalia solid Waste Disposal Site, Visalia California*. March.

RWQCB. 2001. *NOTICE OF VIOLATION: Van Grouw Dairy, 32743 Road 76, Tulare County.* March 12.

Malcolm Pirnie, Inc. 2001. *Transmittal* [To the RWQCB] *of the Work Plan for Aquifer Test, Visalia Solid Waste Disposal Site, Tulare County.* March 23.

Malcolm Pirnie, Inc. 2001. *Evaluation Monitoring Program Report, An Interim Report for Phase I Investigations, Visalia Solid Waste Disposal Site, Visalia, California.* 2 Volumes . May.

RMA. 2001. Sent to RWQCB. *Evaluation Monitoring Program; Visalia Solid Waste Disposal Site, Tulare County.* [Transmittal - Evaluation Monitoring Program Report, An

Interim Report for Phase I Investigations, Visalia Solid Waste Disposal Site, Visalia California. 2 Volumes. May.] May 10.

Malcolm Pirnie, Inc. 2001. *Engineering Feasibility Study Letter Report, Visalia Solid Waste Disposal Site (SWDS) Visalia, California*. May 10.

RMA. 2001. Sent to RWQCB. *Engineering Feasibility Study Letter Report For Interim Groundwater Corrective Measures, Visalia Solid Waste Disposal Site, Tulare County.* May 14.

RMA. 2001. Sent to Mr. and Mrs. Van Grouw. *Evaluation Monitoring Program; Visalia Solid Waste Disposal Site, Tulare County.* . [Transmittal - Evaluation Monitoring Program Report, An Interim Report for Phase I Investigations, Visalia Solid Waste Disposal Site, Visalia California. 2 Volumes. May] May 14.

Malcolm Pirnie, Inc. 2001. Sent to RMA & RWQCB. *Summary of June 19, 2001 meeting [with RWQCB staff] regarding Evaluation Monitoring Program, Off-Site Threat to Ground-water & Interim Corrective Action Measures, Visalia Solid Waste Disposal Site, Tulare County, California*. June 28.

RMA. 2001. Sent to Mr. and Mrs. Rob Van Grouw. *Transmittal: Summary of June 19, 2001 Meeting with Staff of the Regional Water Quality Control Board*. July 3.

RMA. 2001. *Agenda Item before the Tulare County Board Of Supervisors Regarding: Consideration of an Amendment to Agreement No. 20294.* June 12.

RMA. 2001. *Agenda Item before the Tulare County Board Of Supervisors Regarding: Consideration of an Amendment to Agreement No. 20294.* June 12.

RWQCB. 2001. *Report Review - Interim Evaluation Monitoring Program, Visalia Landfill, Tulare County.* July 31.

Malcolm Pirnie, Inc. 2001. *Addendum One, GROUNDWATER QUALITY DATA – An Addendum to Interim EVALUATION MONITORING PROGRAM REPORT For Phase I Investigations, Visalia Solid Waste Disposal Site, Visalia, California.* August.

Malcolm Pirnie, Inc. 2001. *FINAL DESIGN REPORT including the Basis of Design, INTERIM GROUNDWATER CORRECTIVE ACTION MEASURE, Visalia Solid Waste Disposal Site, Visalia, California*. August.

A copy of the foregoing documents have been provided either to the Van Grouw's or their counsel.

Thus, in connection with the existing unlined WMU (which is not part of this project), the County's remediation efforts have been and continue to be both extensive and reasonable. The Van Grouws have been kept fully informed of the County's remediation efforts and the County is continuing to work a reasonable solution to the problem.

However, through the new lined WMU (which is part of this project), the environmental condition in the vicinity, including the Van Grouws property, is expected to improve

substantially. Without this project, the environmental benefits accruing to adjacent properties may not occur.

3.6 d The commentor refers us to the case of *Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal.App.4th 1109. In this case, Galante Vineyards challenged the adequacy of the Final EIR and approval of the New Los Padres Dam and Reservoir project by the Monterey Peninsula Water Management District. The Final EIR was found to be inadequate in its description of the project site and the project's impacts on viticulture, particularly with regard to traffic, air quality, and climate. As will be explained below, these impact issues have been effectively addressed through mitigation measures required for this project.

Additionally, consistent with Section 15125 of the State CEQA Guidelines, a description of the physical conditions in the vicinity of the project was presented. However, the Draft EIR for the Visalia landfill considered surrounding land uses in the evaluation of all resource areas. A description of surrounding land uses was called-out in the following issue areas: aesthetics (page 3-2), hazards (page 3-53), land use (page 3-69), and noise (page 3-77). The project description (page 2-2) and the biological resources (page 3-32) specifically call out that agricultural uses are found adjacent to existing landfill operations. The Draft EIR addressed those issues that could be a nuisance to surrounding uses by the continued operation of the landfill. Mitigation measures or project design commitments consistent with state and federal landfill regulations were incorporated in the project design and discussed in the Draft EIR to address vector and litter control, noise, traffic circulation, air pollution, aesthetic quality of the facility, protection of surface and groundwater, and protection of potential biological resources.

Further, the following paragraph will be added as the sixth paragraph on page 3-69 after the paragraph that starts with " Land uses surrounding…":

> As noted in Section 3.3 of this report, areas south, and northeast and east of theexisting WMU have been used or are currently used for agricultural use. Row crops of grain (wheat, barley, corn) and cotton have been planted in areas adjacent to the existing WMU. Figure 3.3-1 shows the location of these row crops in relation to the existing WMU. The row crops grown on the landfill property are similar to the crops grown in neighboring areas. As the second largest County in agricultural production, the County of Tulare provides milk, grapes, oranges, cattle and calves, cotton lint and seed and other products.

In connection with potential impacts to the Van Grouw's wells, the Van Grouw property has six groundwater supply wells. Four of the wells, AG#8, AG#9, AG#13R, and AG#15 are irrigation supply wells. The remaining two wells supply water for the Rob Van Grouw Dairy. The Primary (North) Well supplies water for the dairy operations, consumption by the cows, and the domestic supply for the Van Grouw residence. The Secondary (South) well provides water for other non-consumptive uses at the dairy. Based on current information, the two wells supply water for separate systems at the dairy.

The capacity of most of these wells is not known but may be estimated. Production test data from well AG#13R, 460 feet deep, indicate a capacity of about 900 gallons per minute (gpm). Data from well AG#8 indicates that it is about 160 feet deep with an open

bottom casing. Production from AG#8 is estimated to be about 800 gpm. Well information obtained from the well owner suggests that AG#9 is also a shallow well, about 140 feet deep, and also has an open bottom casing. Production is estimated to be about 800 gpm. AG#15 is about 365 feet deep. Production is estimated to be about 1,100 gpm. Based upon meter readings, production from the Primary (north) dairy supply well is about 200 gpm. Insufficient data is available for the Secondary (south) dairy supply well, but it's production is estimated to be slightly less than the Primary supply well due to a smaller pump motor.

The wells on the Van Grouw property have been sampled from the well discharge by personnel of the Tulare County Health and Human Services Agency, Environmental Quality Division. The samples were then analyzed for the presence of volatile organic compounds (VOCs). VOCs were detected in wells AG#8 and AG#9. VOCs were also intermittently detected, but at trace to very low level concentrations, in the discharge from the Secondary (South) dairy supply well. No VOCs were detected in samples collected from the discharge of wells AG#13R, AG#15 and the Primary (North) dairy supply well. Concentrations of VOCs detected from wells AG#8 and Secondary (South) dairy supply well were within drinking water standards.

Evaluation Monitoring Program investigations to determine the nature and extent of the groundwater contamination plume, purportedly from the landfill, are ongoing and not yet completed. Therefore, it is not possible to provide detailed plume information at this time. It is not known if the plume is "growing". Since the extent of the plume is not yet defined, the status of the plume's size cannot be assessed. However, extensive investigations to address any off-site groundwater contamination from the landfill are ongoing at considerable expense to the County.

Based upon the current state of reasonably available information, it is not anticipated that there will be any substantially adverse environmental impacts from VOCs to the cows, plants, or soils in the vicinity of the existing unlined WMU for the following reasons: (1) the low levels of VOCs detected in area supply wells are anticipated to volatize during application for irrigation purposes, and (2) VOCs have never been detected in the Primary dairy supply well (which supplies water for domestic and dairy cow consumption) during testing in the last year and a half.

The proposed lined waste management unit is not expected to have any significant environmental impacts to the agricultural crops located within the vicinity of the proposed project, including the Van Grouw's property, because the types of crops grown in the *Galante* case (viticulture) are not the types of crops grown in this case (row crops). Thus, the kinds of impacts experienced by viticulture in *Galante* are inapplicable to this project. For example, based upon the Disposal Site Inspection Reports prepared by the Tulare County Local Enforcement Agency during the periods February 1995 through July 2001, there is no evidence of any nuisance impacts or vector and bird control impacts caused by the existing landfill; and based on the mitigation and control measures proposed for the expansion project, it is highly unlikely that there will be any significant impacts to adjacent properties caused by the new lined expansion waste management unit.

Finally, according to the Notice of Violation (dated March 12, 2001) sent by the RWQCB to Robert Van Grouw, records indicate that there are 3,972 animal units within the confined animal facility located on the Van Grouw property. In addition, according

to the RWQCB, there should be 2,951 total animal units on the facility. Consequently, the RWQCB has declared that there is a violation of Water Code section 13260(c) for significantly changing the volume of discharge, and for not submitting a new Report of Waste Discharge or amending the previous submission.

3.6 e See response 3.6 d regarding surrounding land uses and measures to control birds. In addition, bird control is part of the performance requirement of any Solid Waste Facilities Permit and observable in regular inspections by the Local Enforcement Agency. As such, the new landfill would be regularly monitored and actions would be required if the bird population were to increase.

Page 3-64 of the Draft EIR summarizes the contamination identified in the project area. The fourth bullet on this page provides information on the contamination plume. Appendix C presents the actual data available from the monitoring wells in the project area.

3.6 f Section 3.2.3 (Project Impacts) identifies on-site and off-site ozone precursor exhaust emissions that would be associated with the Project. Table 3.2-11 in the Draft EIR identifies the potential increase of ozone precursors that would be associated with project exhaust emissions compared to the emissions that are currently generated at the site. The total amount of equipment exhaust associated with on-site and off-site sources would exceed the San Joaquin Valley Unified Air Pollution Control District (SJUAPCD) significance criteria of 10 tons per year for each of the ozone precursors (NOx and VOCs), thus triggering a significant impact. (See Table 3.2-9 of the Draft EIR for Ozone Precursor thresholds of significance.) Three mitigation measures (AQ-5, AQ-6, and AQ-7) were suggested in the Draft EIR to reduce exhaust emissions as much as feasible. However, it is anticipated that implementation of Mitigation Measures AQ-5 through AQ-7 would not reduce potentially significant impacts to less than significant levels. Therefore, exhaust emissions are considered to be significant and unavoidable. Although significant and unavoidable, ozone and PM10 are considered regional pollutants and these emissions would not be expected to substantially affect local concentration of these pollutants and therefore should not have a measurable affect upon clients' cows or neighboring agricultural operations.

As stated in Section 3.2.3 of the Draft EIR, the landfill operator would be required to hire an independent contractor to initiate a landfill gas monitoring program at the new WMU site and submit reports on a regular basis to the Tulare County Health and Human Services Agency, acting as the local enforcement agency for the California Integrated Waste Management Board. The County will be required to direct landfill gas to the existing flare system when the landfill passes a specific gas production threshold of 50 mega grams (Mg) per year. The gas collection system will be permitted with the San Joaquin Valley APCD, which is the local governing body with respect to air quality. Consistent with SJVAPCD regulations, potential impacts related to landfill gas are considered to be less than significant.

3.6 g Sections 3.1 and 4.3 of the Draft EIR thoroughly evaluated the impact of the proposed Waste Management Unit on aesthetics and determined the impact to be significant and unavoidable.

The Draft EIR determined that views from Road 80 would be significantly altered from the construction of the new waste management unit (WMU). This impact was

determined to be significant and unavoidable. As presented through the photo simulation, the other viewpoints were considered to be significant in the initial stages of the project but would become less significant upon landfill closure since the perimeter slopes of the landfill would be vegetated. Also, the other viewpoints already have a view of the existing waste management unit.

The view is already impacted by the existing WMU. The proposed WMU will not make this existing condition worse. The proposed WMU will require approximately 60 years to reach the proposed elevation. Revegetation of the existing and new WMU slopes will be required by the closure and post-closure maintenance plans so as to minimize any aesthetic impacts from the project. These vegetation and maintenance measures are required by law and will be followed by the County. See, e.g., former Title 14, California Code Regulations, section 17779 and current Title 27, California Code Regulations, section 21790.

3.6 h Section 15125 of the State CEQA Guidelines requires a description of the physical conditions in the vicinity of the project. This description is generalized and aggregate in nature rather than a detailed description and enumeration of each discrete land use in the project vicinity. The Draft EIR is consistent with this requirement.

The State CEQA Guidelines Environmental Checklist Form (Appendix G), Section III (d) require the determination to be made if the project would expose sensitive receptors to substantial pollution concentrations, not merely the determination that sensitive receptors may or may not exist in the vicinity of the project.

As noted in your comment, the Draft EIR does state "…with no sensitive receptors nearby." Page 3-77 defines sensitive receptors as residential areas, hospitals, schools, and offices. In addition, the Draft EIR in several places (pages 3-3, 3-53, 3-77 and 3-80) refers to residences and states that sensitive receptors are not located within ½ mile of the project site.

3.6 i Pages 1-1 and 2-1 of the Draft EIR state that the landfill is "..six miles northwest of Visalia.." In response to your comment this statement on both pages will be revised as follows:

> The facility is located in Tulare County approximately <u>two miles north of the City of Visalia city limits and</u> six miles northwest of the <u>City of</u> Visalia<u>'s downtown area</u>, at the intersection of Road 80 and Avenue 328 (Figure 1.1-1).

These distance references are provided for a general locational reference and utilized in any calculations.

The discussion presented in Section 4 of the report includes reference to projects proposed by the City of Visalia and considers the landfill's cumulative impact.

The City of Visalia reviewed and commented on the Draft EIR, see Section 3.2 of this report.

You will be notified of any public hearings or public meetings associated with this project.

3.6 j Although public hearings are not required by the CEQA Guidelines (§15087(i)), you will be notified of any public hearing associated with this project. In addition, you will be notified of any publicly noticed meetings associated with this project.

3.7 Comment from the California Integrated Waste Management Board

California Integrated Waste Management Board

Linda Moulton-Patterson, Chair
1001 I Street • Sacramento, California 95814 • (916) 341-6000
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Gray Davis
Governor

Winston H. Hickox
Secretary for Environmental Protection

MEMORANDUM

To: Brian Grattidge
State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044

Kevin Shannon
Tulare County
5961 South Mooney Boulevard
Visalia, CA 93277

Date: February 13, 2001

From:
John Loane, Integrated Waste Management Specialist
Environmental Review Section
Permitting and Inspection Branch
Permitting and Enforcement Division
CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

Subject: **SCH # 2000051098:** Draft Program Environmental Impact Report (EIR) for the Visalia Landfill Master Development Plan (VLFMDP) including development, expansion, and operation of a Class III Waste Management Unit (WMU), recycling facility, new entrance at the existing Visalia Landfill (VLF) requiring the issuance of Solid Waste Facility Permit (SWFP) No. 54-AA-0009, Tulare County

Environmental Review Section (ERS) staff, of the California Integrated Waste Management Board (IWMB or Board), have reviewed the DEIR for the project cited above. ERS staff thank the Lead Agency for the extension of the review period. Following is ERS staff's understanding of the project as proposed in the DEIR, a description of the IWMB's role as a Responsible Agency, and comments on the DEIR for response in the Final EIR.

3.7 Comment from the California Integrated Waste Management Board, *continued*

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3.7 a

If the following project description varies substantially from the project as understood by the Lead Agency, ERS staff request notification of any significant differences as soon a possible, and incorporation of any revisions of the Project Description in the FEIR.

PROJECT DESCRIPTION

(Please note that words in bold are added by ERS staff for emphasis on the specific proposals in the project description).

The VLF is located approximately six miles northwest of Visalia at the intersection of Road 80 and Avenue 328. The facility has been in operation since 1952 and is currently permitted to dispose municipal solid waste (MSW) within a 132-acre footprint with a designated height of approximately 85 feet. The landfill is currently owned and operated by the Solid Waste Division of the Tulare County Resources Management Agency (County). Although the landfill was developed in accordance with regulatory requirements at the time of its construction, changes in landfill design requirements now require new Class III landfills/waste management units (WMUs) to have liners and leachate and landfill gas (LFG) collection systems. The existing 127-acre permitted waste disposal area does not meet contemporary design requirements and is anticipated to close in the year 2002.

The proposed expansion would include: (1) expansion of the VLF to a total facility acreage of 631 and a total landfill footprint acreage of 247; (2) the **construction and operate** a **new 115-acre** Class III (municipal solid waste, no hazardous waste) **waste management unit** (WMU) with a **designated maximum height of 210 feet** above existing grade; (3) development and operation of a **demolition/recycling diversion area**; (4) development and operation of a **new entrance complex** to be located at on Avenue 328. Based on the amount of waste currently disposed of, the project could **extend the life** of the facility **by approximately 22 to 78 years**. The WMU project would be constructed to meet California Code of Regulations (CCR) Title 27 landfill design requirements. Future waste disposal needs require the proposal of an **increase in the average daily tonnage throughput** from 570 tons per day (tpd) **to 1,200 tpd**, with a **peak throughput of 2,000 tpd** with a corresponding **vehicle trip count of 800 trips per day**.

3.7 b

The Initial Study (IS) for the proposal concluded that the project would have no impact on: mineral resources, population and housing, public services, or recreation. The resource-specific concerns examined in this document include: aesthetics, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality (including utilities and service systems, as it relates to wastewater), and land use (including agriculture), noise, and transportation.

IWMB ROLE AS A RESPONSIBLE AGENCY

The IWMB is a Responsible Agency for the environmental review of this proposed project, and for concurrence on any required SWFP issuance or revision. The IWMB operates in cooperation with local government to assure protection of the public health and environment from the

3.7 Comment from the California Integrated Waste Management Board, *continued*

potentially detrimental effects of improper solid waste management. The IWMB concurs in the issuance, revision or modification of a SWFP with Local Enforcement Agencies (LEAs) to assure that a solid waste facility operates in a manner consistent with all applicable laws and regulations.

IWMB CEQA REVIEW

IWMB staff's review and comments on a DEIR are intended to assist the Lead Agency in developing a complete and adequate document as for use by the decision-makers of the Lead Agency and all subsequent Responsible Agencies. IWMB staff comments are intended to help decision-makers (1) identify potential impacts from proposed projects; (2) determine whether any such impacts are significant; and (3) ascertain whether significant impacts can be mitigated to a level of insignificance in compliance with the CEQA statutes and guidelines.

When evaluating the adequacy of a DEIR for purposes of SWFP concurrence, IWMB staff must compare the project as described and evaluated in the DEIR with the design and operation of the facility as specified in the proposed SWFP. In order for IWMB staff to evaluate whether or not the DEIR is adequate for use in the IWMB permitting process, the proposed project must be described in sufficient detail for ERS staff to understand and evaluate the proposed project, the potential environmental impacts, proposed mitigation measures, and findings.

The first question ERS staff must ask is: does the CEQA document clearly describe all phases of the project and assess the potential primary and secondary impacts to the environment and/or public health and safety that could occur if the project is implemented? The second question asked when the proposed SWFP is received is: does the CEQA evaluation in the DEIR support the requested specifications, revisions, and/or conditions of the proposed SWFP? For instance, does the DEIR clearly describe and assess the potential air quality, water quality, geological impacts, traffic, noise, dust, vector and other health and safety impacts that can be associated with a proposed solid waste facility? When this type of information is included and addressed, the DEIR, the SWFP concurrence process is greatly facilitated.

3.7 c

After comparison of the CEQA document with the proposed SWFP, ERS staff makes a recommendation to the IWMB regarding the adequacy of the CEQA document for IWMB SWFP concurrence purposes. The IWMB makes the final determination of the adequacy of the CEQA document and SWFP concurrence.

ERS STAFF COMMENTS AND QUESTIONS

Visalia Landfill Background

The facility is currently operating a 127-acre WMU. The site is operating out of compliance with the 1979 SWFP and Report of Disposal Site Information (RDSI) in several areas; including daily tonnage, fill method, landfill elevation, actual footprint, vehicular equipment, gas migration, and groundwater protection standards.

3.7 Comment from the California Integrated Waste Management Board, *continued*

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The site has a history of violations for operational standards, including the daily and intermediate cover requirements, site security, and litter. Areas of Concern have also been noted for ponded liquid, drainage and erosion control, grading of fill surface, entry signs, and tire disposal. The site has also been in violation of Section 17258.23, landfill gas (methane) migration. Also, the site was confirmed to have detected contaminants in the monitoring wells indicating groundwater degradation.

3.7 d

These violations are potentially environmentally significant. The violations must be corrected prior to seeking consideration from the Board in the issuance of a SWFP for the proposals in this Draft EIR.

Project EIR and Master Development Plan

3.7 e

Please describe in the Final EIR the intended *Master Development Plan* process for the VLF as it may pertain to subsequent future additions/changes to the project and the intended *Program* EIR use(s).

Section 3.10, page 3-87 of the Draft EIR states that the facility when operating at the proposed peak tonnage (2,000 tpd) "...is forecast to generate 1,020 inbound and 1,020 outbound trips over a daily or 24-hour period."

3.7 f

Would you please prorate the projected vehicle counts / traffic volumes (proposed vehicles per day). A table would be helpful projecting throughput by vehicle type over the first five years of the project at peak tonnage for both the short haul (packer trucks and self-haul vehicles) and possible long haul aspects of the proposed project.

Revision of Preliminary Closure Plan for Visalia Landfill

3.7 g

Page 1-1 of the Draft EIR states that "The closure of the existing WMU will be addressed through a separate environmental review process." If the Lead Agency has questions regarding the requirements for Closure Plans and closure-related activities (CEQA), please contact Scott Walker, Acting Branch Manager of the Remediation, Closure and Technical Services Branch at (916) 341-6319.

Financial Assurances

3.7 h

Please note that a financial assurance mechanism is required for project approval by the IWMB. Should you have any questions regarding compliance with the financial assurance mechanism, please call Diana Vaughn-Thomas, at (916) 341-6323.

3.7 Comment from the California Integrated Waste Management Board, *continued*

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February 13, 2001
Page 5

Significant and Unavoidable Environmental Impacts

Section 4.3, page 4-6 in the Draft EIR identified as *Unavoidable and Significant Impacts* after implementation of the proposed mitigation measures as: Air Quality (fugitivedust/PM_{10}); and Visual Impacts (visual alteration of the rural character of the surrounding area); and Cumulative Impacts (air quality/PM_{10}).

3.7 i

The proposed expansion of the VLF into a new WMU projects an extension of the site life of the facility by approximately 22 to 78 years. Section 3.2, page 3-21 of the Draft EIR, states that the "San Joaquin Unified Air Pollution Control District is classified as 'severe nonattainment' for the state ozone standard and 'serious nonattainment' for federal ozone and PM_{10} air quality standards. Ozone precursors: 'reactive organic gases' (ROC) and 'nitrous oxides' (NO_X), which, according to Section 3.2, will both directly and indirectly be in violation of the significance thresholds (Table 3.2-9) over the extended life of the VLF facility. Please explain why 'ozone precursors' are not considered to be Significant and Unavoidable Environmental Impacts for the long term effects over the extended life of the project as proposed.

3.7 j

California Code of Regulations (CCR), Title 14, Section 15093(b) states "Where the decision of the public agency allows the occurrence of significant effects which are identified in the final EIR but are not at least substantially mitigated, the agency shall state in writing the specific reasons to support its action...". Will a *Written Statement of Overriding Considerations* (WSOC) be included in the record at the time of the project approval/EIR certification? Will 'ozone precursors' also require a written *Statement of Overriding Considerations*? ERS staff request a copy of the WSOC be sent to Sue O'Leary, IWMB Permitting and Inspections Branch, ERS Supervisor.

Mitigation Reporting or Monitoring Program (MRMP)

As required by Public Resources Code (PRC) Section 21081.6, the Lead Agency should submit a MRMP at the time of local certification of the Environmental Impact Report or adoption of the Mitigated Negative Declaration. This should identify the environmental impacts associated with the proposed project, identify mitigation measures to reduce impacts to a less than significant level, identify agencies responsible for ensuring the implementation of the proposed mitigations, and specify a monitoring/tracking mechanism. PRC Section 21080 (c)(2) required that mitigation measures "...avoid the effects or mitigate the effects to the point where clearly no significant effects on the environment would occur." The MRMP is also required to be made a condition of project approval. Recent changes to this Section 21081.6(b) also requires that "A public Agency shall provide that measures to mitigate or avoid significant effects on the environment are fully enforceable through permit conditions, agreements, or other measures."

3.7 Comment from the California Integrated Waste Management Board, *continued*

3.7 k

The MRMP should also indicate that agencies designated to enforce mitigation measures in the Draft EIR have reviewed the MRMP and agreed that they have the authority and means to accomplish the designated enforcement responsibilities.

3.7 l

ERS staff requests copies of (and consultation on) any subsequent environmental documents for the proposed project, as well as a copy of the Notice of Determination (NOD) upon filing. If the document is to be adopted during a public hearing, staff requests prior notice of the hearing time, date and location. If the document is to be adopted without a public hearing, staff requests prior notice of the date of the adoption of the EIR and the approval of the project.

Board staff have no further comments on the project as proposed at this time. Thank you for the opportunity to comment on the Draft EIR. If you have any questions regarding these comments, please contact me at (916) 341-6327 or e-mail at jloane@ciwmb.ca.gov

cc: Keith Kennedy, IWMS
Brenda Saldana, Supervisor
Permitting and Inspection Branch, Region
Permitting and Enforcement Division
IWMB

Keith Jahnke
County of Tulare County
Department of Health Services
Division of Environmental Health
5957 S. Mooney Blvd.
Visalia, California 93277

3.7 Response to the California Integrated Waste Management Board

3.7 a No significant changes were made from the Draft EIR to the Final EIR.

3.7 b The description of the project as presented in the comment letter is consistent with the description in the Draft EIR. No changes or modifications are requested in the comment.

3.7 c Comments noted.

3.7 d The County, through a separate project, is currently working with the local enforcement agency and the CIWMB to effectively address these issues. These issues are associated with the existing Waste Management Unit (WMU). The development of a new WMU will provide continued solid waste management services for Tulare County while simultaneously addressing current concerns with the operation of the existing WMU.

The Master Development Plan and new WMU will effectively address these concerns.

The terms "violation" and/or "areas of concern", as used in the comment, are categories of compliance contained on a Local Enforcement Agency (LEA) Disposal Site Inspection Report. LEA personnel use this form during regular monthly facility inspections to determine a facility's compliance with various operational standards, such as daily cover. This terminology is utilized to identify issues that require correction (violation) and/or need resolution before becoming a violation (area of concern). However, the use of these terms does not imply that enforcement action, monetary fines or legal action is being rendered by the agencies. In most instances, the standards identified by the LEA as "violation" or "areas of concern" are corrected by the following monthly site inspection, thereby eliminating the need for any further action.

A review of Disposal Site Inspection Reports for calendar years 1999 and 2000 revealed only four "violations" and six "areas of concern" for operational standards. In addition, the operational standard Explosive Gas Control (§20919.5 of Title 27) was corrected in 1998 by the installation of a landfill gas plant/flare station. No "violations" or "areas of concern" have been identified with this standard since the September 1998 Disposal Site Inspection Report. Please see Section 3.7 (page 3-64) of the Draft EIR for a discussion of groundwater degradation and the corrective action measures.

The Visalia Landfill has been in operation since 1952. The County is an experienced landfill operator that has worked cooperatively with the LEA and the CIWMB in addressing "violations" or "areas of concern" with landfill operations. The County will continue to work cooperatively in the operation of the new WMU.

3.7 e The Master Development Plan is the title of the expansion project and as noted in the Draft EIR includes the development of a new Waste Management Unit, public diversion/drop-off area, and a new entrance complex. As identified on page ES-1, first paragraph, this is a project EIR. Any future changes or additions to the facility would be evaluated as a separate project.

3.7 f Based upon 1999 statistics approximately 275 of the 1020 inbound and 1020 outbound trips would be generated by packer and roll-off trucks with the balance of 745 trips being generated by self-haulers and a very limited amount of visitor/employee/vendor traffic. The traffic estimates do not include long-haul trips. As noted on page 2-2 of the Draft EIR, in 1997 the Board of Supervisors for Tulare County adopted a policy that does not allow the Visalia Facility to accept out-of–County wastes.

3.7 g The County will contact the CIWMB when preparing the Final Closure Plan for the existing WMU.

3.7 h Also, the County will contact the CIWMB if questions arise regarding financial mechanisms. Also see response to comment 3.6 c.

3.7 i The Draft EIR identifies potential impacts associated with on-site and off-site project exhaust emissions (including ozone precursors) to be significant and unavoidable. Please refer to pages 3-28 and 3-29 in Section 3.2.3 of the Draft EIR.

3.7 j A statement of overriding considerations will be prepared if the Board of Supervisors approves the project. The ozone precursors will be part of this consideration since they were found to be significant as noted in comment 3.7 i.

3.7 k The Draft EIR included a Mitigation Monitoring Program for the measures identified in the document. It includes the responsible parties and the implementation phase for the measures. The plan presented in Section 6 of the report also presented a conflict resolution plan or process for implementation of the mitigation measures and the program.

3.7 l The County will keep the CIWMB informed of all public meetings and any public hearings associated with this project. We will also send you copies of any future environmental or permitting documents related to this project. We will provide prior notice of any project meetings.

3.8 Comment from the U.S. Department of the Interior, Fish and Wildlife Service

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W2605
Sacramento, California 95825

IN REPLY REFER TO:
1-1-01-TA-0767

February 20, 2001

Mr. Kevin Shannon, Planner III
Tulare County Resource Management Agency
Solid Waste Division
5961 South Mooney Boulevard
Visalia, CA 93277

MAR 2001 RECEIVED RESOURCE MANAGEMENT AGENCY

Subject: Comments on Draft Environmental Impact Report for the Visalia Landfill Expansion

Dear Mr. Shannon:

We are providing comments on the Draft Environmental Impact Report (DEIR) for the Visalia Landfill Expansion, which we received on December 18, 2000. The project includes the development and operation of a new Class III waste management unit, public diversion/drop-off area, and a new entrance complex. The project may result in temporary loss of wildlife habitat, and displacement and/or potential elimination of resident wildlife species. Our comments address issues related to the Endangered Species Act of 1973, as amended (Act).

Section 9 of the Act and its implementing regulations prohibit the "take" of federally-listed species of wildlife. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such wildlife species. Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50**CFR** Section 17.3).

3.8 a

We are concerned about the effects of the project on the San Joaquin kit fox (*Vulpes macrotis mutica*), which is protected under the Act. As stated in the DEIR, several areas were identified as potential San Joaquin kit fox dens. Kit foxes are known to forage in agricultural fields and to use them as travel corridors. The buildings and excavation of approximately 115 acres associated with the landfill will permanently remove that land from possible use by the kit fox, thus resulting in take, for which the applicant will need take authorization.

3.8 b

Before implementing the project, the County may need incidental take authorization which may be authorized by one of two procedures. If a Federal agency is involved with the permitting, funding, or carrying out of this project, then initiation of formal consultation between that agency and the Service pursuant to section 7 of the Act is required if it is determined that the proposed project may affect a federally-listed species. Such consultation would result in a biological

3.8 Comment from the U.S. Department of the Interior, Fish and Wildlife Service, *continued*

Mr. Kevin Shannon 2

opinion that addresses anticipated effects of the project to listed and proposed species and may authorize a limited level of incidental take. If no federal funding or authorization is involved, please contact this office about developing a Habitat Conservation Plan. The Service may issue an "incidental take" permit upon completion by the permit applicant of a satisfactory conservation plan for the listed species that would be affected by the project.

Please contact Karen Harvey or Peter Cross of the Sacramento Fish and Wildlife Office at (916) 414-6600, if you have any questions. Please refer to File Number 1-1-01-TA-0767 in any future correspondence.

Sincerely,

Jan C. Knight
Chief, Endangered Species Division

cc: California Department of Fish and Game, Fresno (Attn: Mike Mulligan)

3.8 Response to the U.S. Department of the Interior, Fish and Wildlife Service

3.8 a The project primarily involves the construction of a new waste management unit (WMU) containing approximately 115 acres and relocation of the facility entrance. Construction of the new WMU occurs in phases during the life of the project with each phase containing approximately 30 acres. The undeveloped portion of the new WMU will be available for foraging habitat. In addition, the phases already developed and subsequently closed will also be available for foraging habitat.

Relocation of the facility entrance will occur on a previously developed portion of the facility containing a recently closed cotton gin. Some or all of the existing structures may be incorporated into the new entrance.

3.8 b The Draft EIR includes two mitigation measures that relate directly to the San Joaquin kit fox. The surveys conducted in January and February 2000 identified burrows in the project area that could be used by the kit fox. Thus, the Draft EIR has recommended further study of this issue and has recommended that if any evidence is found regarding this species on the project site that the County work in cooperation with the USFWS and the California Fish and Game to identify appropriate mitigation. The measure specifically references the USFWS Recovery Plan for Upland Species of the San Joaquin Valley. The County contacted Karen Harvey of the USFWS on March 8, 2001 to clarify the service's comments on the Draft EIR and to discuss mitigation options. The USFWS stated that participation in the Kern County Water Bank Authority mitigation bank qualifies as a mitigation option. The County also called Cheryl Harding of the Kern County Water Bank Authority on March 13, 2001 for information on participation in this mitigation bank. The County will work with the USFWS in determining the appropriate and feasible action for addressing the potential impact to the San Joaquin kit fox.

To allow the County flexibility in working collaboratively with the USFWS on this issue, mitigation measure B-3 was modified as noted below:

B-3 <u>The County is committed to working cooperatively to determine a mutually acceptable approach for addressing the potential for San Joaquin kit fox on the project site. This may include participation in a mitigation bank. It may also require that</u> ~~To determine the likelihood of occupation,~~ a qualified biologist ~~shall~~ survey the San Joaquin kit fox dens identified during the reconnaissance phase and other areas that seem likely to have dens.

State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044

State of California
Integrated Waste Management Board
P.O. Box 4025
Sacramento, CA 95812-4025

San Joaquin Valley Unified APCD
2700 M Street, Suite 275
Bakersfield, CA 93301-2370

Tulare County Association of Governments
5961 South Mooney Boulevard
Visalia, CA 93277

County of Tulare
Health and Human Services Agency
Environmental Health Services Division
5957 South Mooney Boulevard
Visalia, CA 93277

City of Visalia
Community Development Department
315 East Acequia Avenue
Visalia, CA 93291

Jones and Stokes Associates
2600 V Street
Sacramento, CA 95818
ATN: Christine Engel

County of Fresno
Planning and Resource Management
2200 Tulare Street, 8th Floor
Fresno, CA 93721

County of Kings
Planning Agency
1400 West Lacey Boulevard
Hanford, CA 93230

County of Kern
Planning Department
2700 M Street, Suite 100
Bakersfield, CA 93301-2323

US Fish and Wildlife Service
California/Nevada Operations Office
Federal Building
2800 Cottage Way, Suite W-2606
Sacramento, CA 95825-1846

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

3.1 Aesthetics (Visual Analysis)

3.1.2 Project Impacts

Significance Criteria

This section addresses the potential for the project to impact the visual quality of the project area. The visual resources of the project consist of landforms, vegetation, water features, and cultural modifications (physical changes caused by human activities) that impart an overall visual impression of the area landscape. A number of factors are considered in the evaluation of impacts to a landscape's existing visual resources. These concepts are discussed below and are generally rated as low, moderate, or high.

Key Viewpoints (KVPs) are locations selected to be representative of the most common visual impact that will be experienced and/or critical locations from which the project will be seen. KVPs are often located in an effort to evaluate impacts on visual resources with various levels of sensitivity, in different landscape types and terrain, and from various vantage points. Typical KVP locations include: (1) along major or significant travel corridors; (2) at key vista points; (3) in proximity to residential uses; and (4) at significant recreation areas.

Visual Quality is a measure of the overall impression or appeal of an area as determined by the particular landscape characteristics such as landforms, rock forms, water features, and vegetation patterns, as well as associated public values. The attributes of variety, vividness, coherence, uniqueness, harmony, and pattern contribute to visual quality classifications of indistinctive (low), common (moderate), and distinctive (high). Visual quality is studied as a point of reference to assess whether a given project would appear compatible with the established features of the setting or would contrast noticeably and unfavorably with them.

Visual Absorption Capability refers to an existing landscape's ability to accept alteration without diminishment of visual quality (or creation of visual contrast). In the case of predominantly natural settings, a project should be compatible with the natural character of the existing landscape in terms of form, line, color, and texture. It is possible for new structures to be compatible with predominantly natural settings if such settings already contain some structures that are considered compatible and the new structures are similar to the existing structures (in their replication of the existing forms, lines, colors, and/or textures) and do not appreciably change the balance of natural and cultural elements.

Viewer Sensitivity addresses the level of interest or concern of viewers regarding an area's visual resources and is closely associated with viewers' expectations for the area. Viewer sensitivity reflects the importance placed on a given landscape based on the human perceptions of the intrinsic beauty of the existing landforms, rock forms, water features, vegetation patterns, and even cultural features.

Landscape Visibility describes the accessibility of the landscape to viewers, referring to one's ability to see and perceive the landscape. Landscape visibility can be a function of several interconnected considerations including proximity to viewing point, degree of discernible detail, seasonal variations (snow, fog, and haze can obscure landscapes), time of day, and presence or absence of screening features such as landforms, vegetation, and/or built structures.

Viewer Exposure describes the degree to which viewers are exposed to views of the landscape or are able to see it. Viewer exposure considers the visibility of the landscape, the proximity of the various landscape visual elements to the viewer, or distance zone (denoted as foreground, middle ground, or background), number of the viewers, the duration of view, and the proximity of viewers to the subject landscape. Even though a landscape may be highly scenic and have

highly scenic qualities, it may be remote, receiving relatively few visitors and, thus, have a low degree of viewer exposure. Conversely, a subject landscape or project may be situated in relatively close proximity to a major road or highway utilized by a substantial number of motorists and yet still result in relatively low viewer exposure if the rate of travel speed on the roadway is high and viewing times are brief, or if the landscape is partially screened by vegetation or other features.

Visual Impact Susceptibility is a concluding assessment as to the existing landscape's vulnerability or sensitivity to change. In a sense it is an assessment of the degree of probability that a given landscape will demonstrate a noticeable visual impact with project implementation. Visual impact susceptibility is derived from a comparison of existing visual quality, visual absorption capability, viewer sensitivity, and viewer exposure.

An *adverse visual impact* occurs within public view when: (1) an action perceptibly changes existing features of the physical environment so that they no longer appear to be characteristic of the subject locality or region; (2) an action introduces new features to the physical environment that are perceptibly uncharacteristic of the region and/or locale; or (3) aesthetic features of the landscape become less visible (e.g., partially or totally blocked from view) or are removed. Changes that seem uncharacteristic are those that appear out of place, discordant, or distracting. The degree of the visual impact depends upon how noticeable the adverse change may be. The noticeability of a visual impact is a function of project features, context, and viewing conditions (angle of view, distance, and primary viewing directions). The key factors for consideration in determining the degree of visual impact or *Visual Impact Severity* are visual contrast, project dominance, and view impairment.

Visual Contrast evaluates a potential project's or activity's consistency with the visual elements of form, line, color, and texture already established in the landscape. Other elements that are considered in evaluating visual contrast include the degree of natural screening by vegetation and landforms, placement of structures relative to existing vegetation and landforms, distance from the point of observation, and relative size or scale. Generally, visual contrast inversely correlates with visual absorption capability.

Project Dominance refers to the project's relationship to other visible landscape components in terms of vertical and horizontal extent. A project's scale and spatial relationship to the existing landscape can be categorized as subordinate, co-dominant, or dominant.

View Impairment refers to the extent to which a project's scale and position result in the blockage of higher quality visual elements by lower quality elements.

Visual Impact Severity characterizes the degree of impact caused by a project on a given landscape or view shed, typically, as experienced from key observation points. The assessment of visual impact severity is based on an analysis of visual contrast, project dominance, and the impairment (or blockage) of views from key observation points.

Visual Impact Significance is generally derived from an evaluation of visual impact severity within the context of the landscape's visual impact susceptibility. This analysis is often aided by the preparation of photograph simulations of the project or activity.

Key Viewpoint 1 – Road 80

KVP 1 was established to assess the characteristic visual impact that would occur to motorists on Road 80 and at foreground to middle ground distances up to approximately one and a half miles. Figure 3.1-5A presents the existing view to the southeast from KVP 1, located on the southbound shoulder of Road 80, just south of the St. Johns River. Figure 3.1-5B presents a photograph

simulation that depicts the new WMU and existing WMU as it would appear at closure. As can be seen from the photograph simulation, the new WMU would appear substantially more massive than the existing WMU though it would be replicating similar form, line, and coloration. It would also extend substantially higher above the horizon than the existing WMU. The introduction of the more massive landform would result in a moderate to high degree of visual contrast with respect to form and a moderate degree of visual contrast with respect to line but would not cause any visual contrast with respect to vegetation or structures. Overall visual contrast as experienced from KVP 1 would be considered moderate to high.

The new WMU would be prominent in views from Road 80 but would appear equally dominant when compared to the expansive, horizontal landform that comprises the foreground agricultural fields. The higher landform would extend above the horizon line and block the view to a substantial portion of the landscape as viewed from KVP 1 and overall view impairment is considered moderate to high since the panoramic vistas along Road 80 (in the vicinity of KVP 1) would be moderately altered. When considered in the context of the moderate visual impact susceptibility of the existing landscape, the resulting moderate to high severity of the anticipated visual impact is anticipated to be significant and unavoidable (Class I) during the latter stages of the active facility when the facility has achieved most of its height and vehicles are operating. Post closure, after the surfaces have been revegetated, visual character of the landform would have the more natural appearance of a low hill. At that stage, the visual impact would be reduced.

Key Viewpoint 2 – Avenue 312

KVP 2 was established to assess the characteristic visual impact that would occur to motorists and residents south of the site with open unobstructed views of both the existing and new WMUs. It is also intended to illustrate the typical visual impact at a somewhat greater distance (at two miles). Figure 3.1-6A presents the existing view to the north from KVP 2, located on the westbound shoulder of Avenue 312, near two existing residences (on the south side of Avenue 312) that face north toward the facility. Figure 3.1-6B presents a photograph simulation that depicts the new WMU and existing WMU as it would appear at closure.

As shown in Figure 3.1-6, the new WMU would appear substantially more massive than the existing WMU though it would be replicating a similar form, line, and coloration. It would also extend higher above the horizon than the existing WMU. The form and line of the new WMU would also replicate the similar form and line of the distant hills in the background. The introduction of the more massive landform would result in a low to moderate degree of visual contrast with respect to form and a low degree of contrast with respect to line but would not cause any visual contrast with respect to vegetation or structures. Overall visual contrast as experienced from KVP 2 would is considered low to moderate.

The new WMU would be noticeable in views from Avenue 312 but would appear equally dominant when compared to the expansive, horizontal landform that comprises the foreground agricultural fields. The higher landform would extend above the horizon line and partially block the view to the distant hills to the north. However, overall visual impairment is considered low to moderate since the panoramic vistas from Avenue 312 would not be significantly altered. When considered in the context of the moderate visual impact susceptibility of the existing landscape, the resulting low to moderate severity of the anticipated visual impact is anticipated to be adverse, but not significant (Class III). This level of impact would generally be characteristic for the more distant views (two miles or greater) of the project.

The evaluation of project considered two different key viewpoints of the project. It determined that during the initial stages of the project there was unavoidable significant impacts but that upon closure when the WMU is vegetated the project would have a less than significant impact on the

project area. Since the project is located in a rural area with no sensitive receptors in close proximity to the WMU, there are no scenic highways in close proximity, and the WMU expands an existing operation, the visual impacts associated with the project would be adverse but less than significant.

3.1.3 Mitigation Measure

Impact. View from Road 80 would be impacted by the development of the new WMU**.**

The evaluation of impacts determined that there would be a significant and unavoidable visual impact associated with the construction of the WMU from Road 80. The view of the WMU from this key viewpoint would be significantly altered. While there are no mitigation measures that will eliminate the visual impact, this visual impact can be reduced by the revegetation of the perimeter slopes of the WMU as soon as possible instead of waiting until final closure of the WMU. Even with the application of this mitigation measure, this impact would continue to be significant **(**Class I).

Mitigation A1. The perimeter slopes will be revegetated throughout the active life of the WMU to reduce its visual impact.

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

3.2 AIR QUALITY

3.2.3 Project Impacts

Air quality construction impacts associated with the project would result from closure of the existing WMU, development of the new WMU, and construction of the new entrance complex. However, some activities would occur continuously throughout project operations and would not occur as a discrete event as construction activities do in typical development projects. Consequently, project-related air quality impacts are considered to occur as long-term impacts due to project operation.

Landfill Gas Emissions. As described in Section 3.2.1, the existing WMU has a gas collection and flaring system in place permitted by the SJVUAPCD, which is designed to have a destruction efficiency of 98 percent.

With regards to the new WMU, when organic waste is initially placed in a landfill, it contains oxygen and decomposes aerobically for a short period of time, and produces mainly carbon dioxide. After the oxygen is largely depleted, anaerobic microbes begin producing primarily methane, carbon dioxide, and water. The gas produced by the anaerobic decomposition seeps through the layers of waste and soils until it reaches the surface and is emitted to the atmosphere.

New Source Performance Standards (NSPS) will regulate the installation of a gas collection and control system at the new Visalia Landfill expansion. Pursuant to NSPS, and the State Calderon Amendments, the County would be required to solicit an independent contractor to initiate a landfill gas monitoring program at the new WMU site and submit reports on a regular basis to the Tulare County Health and Human Services Agency, acting as the local enforcement agency for the California Integrated Waste Management Board. NSPS will require the County to direct landfill gas to the existing gas flare system when the landfill passes a specific gas production threshold of 50 megagrams (Mg) per year. Flares operate at a destructive removal efficiency of at least 98 percent for volatile organic compounds.

Generation of landfill gas emissions at the new WMU would increase in future years. However, the operation of a gas collection and control system would substantially reduce future landfill gas emissions. Impacts would therefore be considered adverse, but less than significant (**Class III**).

Off-site Emissions. It is anticipated that the proposed project would increase daily waste trips associated with the existing facility by approximately 800 trips per day to a maximum of approximately 1,020 trips per day. The daily trips associated with commuting workers would be approximately 30 trips per day. Annual off-site NOx and VOC emissions where estimated for the new WMU (Table 3.2-7) using USEPA (USEPA, 1998) and SCAQMD (SCAQMD, 1993) emission factors. Trips were estimated to be approximately 20 miles (roundtrip) because it is anticipated that the new WMU would provide service to the City of Visalia, the City of Dinuba, the City of Woodlake, residential self-haul, and commercial self-haul. Please refer to Appendix E for all other assumptions regarding off-site NOx and VOC emissions associated with the project.

As shown in Table 3.2-10, VOCs and NOx emissions associated with off-site project operations are 20.51 and 33.29 tons per year, which exceeds the SJVAPCD threshold for project operations. In addition, fugitive dust associated with approximately 800 additional truck trips would be generated. The project is not expected to significantly change the regional number of overall trips within the SJVAB or Tulare County related to refuse collection and disposal because without the project, truck trips would still occur, but would involve use of alternative landfills.

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

Off-site emissions associated with the new WMU would increase over what is currently experienced at the existing facility. The total number of vehicle trips within the SJVAB and Tulare County would not increase as a result of the project so the project is expected to have minor impacts on regional emissions. However, calculated off-site ozone precursor emissions for the proposed project exceed the VOC and NOx significance criteria of 10 tons per year; therefore, these emissions would trigger an unavoidable significant impact **(**Class 1).

With regard to PM_{10} emissions, SJVUAPCD requires applicants to implement specific measures to control off-site and on-site fugitive dust, referred to as Regulation VIII Control Measures (see Table 3.2-8). Regulation VIII Control Measures are not considered mitigation because they are required by law. Section 3.2.4 contains "enhanced and additional measures" (Mitigation Measures AQ-1 through AQ-4) that SJVUAPCD recommends for construction sites of significant size, such as the proposed project. Implementation of SJVUAPCD Regulation VIII Control Measures and Mitigation Measures AQ-1 through AQ-4 would reduce PM_{10} emissions. However, because the proposed project is unlike typical construction projects in that PM_{10} emissions would be generated over a long period of time, PM_{10} impacts associated with the project are considered significant and unavoidable (Class I).

On-site Emissions. Landfill equipment and vehicles handling materials on the landfill site would generate on-site exhaust and fugitive dust emissions. With the worst case scenario of 2,000 tons of refuse brought to the site per day (proposed permit capacity), this analysis assumes equipment and vehicles at the new WMU include three bulldozers, two compactors, two graders, two scrapers, two loaders, two water trucks, two cage trucks, a bin truck, and three ¾ ton trucks. Project exhaust emissions were estimated using USEPA (USEPA, 1994, 1995, and 1998) and South Coast Air Quality Management District (SCAQMD, 1993) emission factors and existing project factors and assumptions (see Appendix E for all assumptions and calculations). Project NOx and VOC exhaust emissions are presented in Table 3.2-10.
Project fugitive dust emissions associated with additional truck travel over unpaved surfaces and earthmoving associated with dumping of refuse would be elevated over levels associated with existing operations at the landfill. These increases would be in proportion to actual increases in waste volumes.

On-site emissions associated with operations of the new WMU would increase over current emissions levels of the existing WMU. To address fugitive dust, the project has been designed to incorporate the following project commitments: Personnel will implement procedures to control and minimize the creation of dust and prevent safety hazards due to obscured visibility. A water truck will be used on unpaved roadways during the dry season for dust suppression. The application rate of liquids discharged to the cover for dust control will be performed in a manner that minimizes the potential for through flow to the underlying waste. The implementation of the project commitments described above, Regulation VIII Control Measures, and Mitigation Measures AQ-1 through AQ-4 described in Section 3.2.4 would reduce potentially significant fugitive dust emission levels. However, because the project is unlike typical construction projects in that PM_{10} emissions would be generated over a long period of time, PM_{10} impacts associated with the project are considered significant and unavoidable (Class I).

The total amount of equipment exhaust associated with on-site project activities would exceed the significance criteria of 10 tons per year for NOx and VOCs, thus triggering a significant impact. Although, implementation of Mitigation Measures AQ-5 through AQ-7 described in Section 3.2.4 would not reduce potentially significant impacts to less than significant (Class II), the measures are included to reduce ozone precursor emissions as much as feasible. Impacts associated with on-site exhaust emissions are considered to be significant and unavoidable (Class I).

Table 3.2-11 shows the difference in estimated emissions associated with existing operations at the Visalia Landfill compared to the estimated emissions associated with proposed operations at

the new WMU. The difference in emissions between existing operations and proposed operations reflect the approximately 800 additional daily trips and elevated on-site construction equipment hours that are associated with the project maximum scenario of 2,000 tons of refuse per day.

Odor Emissions. Municipal waste is a source of objectionable odors. However, there is no history of odor complaints associated with the existing landfill (Tulare County, 2000). Odors associated with the recycling facilities are not normally a problem if there is a sufficient buffer distance to the nearest sensitive receptor.

Odors associated with operations of the new WMU could be potentially significant. However, implementation of Mitigation Measure AQ8 and AQ9 described in Section 3.2.4 would reduce potentially significant impacts to less than significant (Class II).

3.2.4 Mitigation Measures

In addition to the Regulation VII Control Measures, the following measures shall be implemented to reduce potential fugitive dust emissions:

AQ-1 Limit traffic speeds on unpaved roads to 15 mph.

AQ-2 Install erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.

AQ-3 Suspend excavation and grading activity when sustained winds exceed 20 mph.

AQ-4 Limit area subject to excavation, grading, and other construction activity at any one time.

The following measures shall be implemented by the County to reduce exhaust emissions from construction equipment:

AQ-5 Minimize idling time.

AQ-6 Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use.

AQ-7 Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.

The following measures shall be implemented by the County to reduce potential impacts associated with landfill odors:

AQ-8 The landfill operator shall bury excessively odorous wastes immediately with other landfill wastes, depending on their nature and source.

AQ-9 The landfill operator shall ensure that loading, unloading, and material handling activities are carried out efficiently and without delays to avoid excessive odors.

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

3.3 BIOLOGICAL RESOURCES

3.3.2 Project Impacts

Significance Criteria

Consistent with the CEQA Guidelines, an impact is considered significant for biological resources if it would:

- Conflict with locally adopted environmental plans, policies, and ordinances, especially those that protect biological resources of recognized ecological, scientific, educational, or recreational importance, including established thresholds and guidelines on impact significance.

- Substantially affect an endangered, rare or threatened species, or its habitat as recognized by local, state or federal agencies or scientific organizations.

- Interfere substantially with the movement of resident or migratory fish and wildlife species.

- Substantially diminish habitat for plants, fish or wildlife.

An impact is considered to be substantial if it is potentially of large magnitude and/or long duration, taking into account the abundance, distribution, and sensitivity to impact the affected resource.

Construction Impacts

Several direct impacts to wildlife would be expected with the proposed facility expansion. These impacts are summarized and discussed in more detail immediately following this summary.

- The removal of vegetation on landscape features that results in the temporary loss of wildlife habitat along with the displacement and/or potential elimination of resident wildlife species (Class II)
- Temporary degradation of the value of adjacent habitat areas due to disturbance, noise, increased human presence, and vehicle traffic during construction (Class III)

- Temporary disruption of movement corridors crossed by the project (Class III).

The new WMU would occupy a maximum footprint of approximately 115 acres upon completion of the base liner system. Development of the new WMU would require excavation and placement of engineered fill in order to meet proposed base liner grades. The area is currently used for fields and is periodically disced, so development only removes marginally potential habitat for species (Class III). The new borrow and retention basins would also have minimal impacts due to the highly disturbed nature of the current land uses (Class III). However, if grading activities must occur on the north edge of the former liquid waste area, or along the drainage (north edge of the southeast section), burrowing owls and potential San Joaquin kit fox dens would be impacted (Class II). The installation of the new entrance and associated facilities will add additional paving to the area and the removal of the east wall from the cotton gin building. The loss of this land is not expected to substantially effect the forage base for San Joaquin kit fox, however, the potential den site, if lost during construction, would cause potentially significant impacts (Class II).

During the construction phase for a new WMU, the amount of human presence would exceed or be similar to the amounts during current and future operations. Both burrowing owls and kit foxes must tolerate a human presence now due to the existing WMU. However, current activities do

not present an imminent and direct threat to their dens. If construction can avoid sensitive areas or sensitive times, the impact of human disturbance is expected to be minimal (Class III). Implementation of mitigation measures B1 through B4 would reduce impacts to the burrowing owl and to the San Joaquin kit fox.

The installation of the new WMU would require construction equipment and personal vehicles to travel to the site on a daily basis. The increased number of cars however is not expected to change the movement patterns of the nearby wildlife. The expansion area does not include habitat normally associated with a wildlife corridor (e.g., riparian zones or tree rows), and its loss would not be expected to alter movement patterns.

The above impacts of the proposed expansion are based on the following assumptions:

- Grading activities do not occur on the east edge of the existing Storm Water Retention Basin, the north edge of the former liquid waste area, or along the drainage to the landfill gas facility (north edge of the southeast section)

- The existing cotton gin building would be converted into the public tipping facility, but no additional paving or landscaping is installed on the southern side of the building.

Failure to meet these assumptions could result in potentially significant impacts on wildlife (Class II).

Operation Impacts

Increased traffic to the southern edge of the proposed expansion (Avenue 328) would change the patterns of wildlife movement, but this should not be to a significant degree because some of the current trash disposal traffic likely uses this route to access the eastern entrance (Class III).

Typical landfill operation procedures such as emptying trucks, covering the trash with soil, and the gas collection piping would result in impacts to wildlife only if landfill personnel or their contractors take actions that cause harm to sensitive wildlife or their habitat (Class II). The actions themselves, if carried out following protective guidelines, however, will cause minimal impact. Implementation of mitigation measure B5 would reduce this impact to a less than significant level (Class III). The result of the operations, a new mound and two borrow areas could change the movement patterns of wildlife to a minimal degree (Class III).

3.3.3 Mitigation Measures

No significant and unavoidable biological impacts have been identified for the facility expansion. However, mitigation measures are proposed for activities that can be reduced to an insignificant level. These measures are described below.

B-1 Two months before construction of the new WMU, a biologist with experience in burrowing owl surveys should follow the California Burrowing Owl Consortium (1999) survey guidelines for burrowing owls to determine if a passive relocation program is needed (http://www2.ucsc.edu/~scpbrg/owls.htm). The guidelines specify four phases that should be implemented. The first two phases have been completed as part of this EIR. The four phases are summarized below:

Phase I: Habitat Assessment [completed on February 3 and 4, 2000]

Burrowing owls will use annual and perennial grassland, deserts, and scrublands characterized by low-growing vegetation. A burrowing owl site must contain burrows made

by fossorial mammals such as ground squirrels (*Citellus* sp.) or badgers, or suitable man-made structures such as culverts. Suitable burrowing owl habitat is verified by the observation of at least one burrowing owl, or conclusive signs (e.g., feathers, cast pellets, etc.).

A Phase II burrow survey is required if burrowing owl habitat is confirmed on the site or buffer zone (150 meters [500 feet] surrounding the site).

Phase II: Burrow Survey [completed on February 3 and 4, 2000]

A survey for burrows and owls should be performed over the entire site and areas within 150 meters (500 feet) of the project impact zone. Pedestrian surveys should be spaced to allow 100 percent visual coverage of the ground surface. From the surveys, maps should be prepared of the burrow concentration areas.

A Phase III survey is required if the project site contains suitable burrows.

Phase III: Burrowing Owl Surveys, Census and Mapping

A complete burrowing owl survey consists of an initial visit and four site visits, repeated on separate days. An initial site visit should be performed to examine burrows for owl sign and map the locations of occupied burrows. Then perform four surveys from two hours before sunset to one hour after sunset, or one hour before or two hours after sunrise. Surveys should avoid heavy rain, high winds (>20 mph) or dense fog.

Nesting Season Survey: The peak breeding season is April 15 to July 15, although breeding can occur from February 1 to August 31. Records of number of pairs and juveniles, and behavior such as courtship and copulation should be made.

Survey for Winter Residents: Survey for individuals between December 1 and January 31.

Surveys that are outside of these periods may be adequate to determine presence of owls on site, but are considered inadequate for mitigation planning.

Phase IV: Resource Summary and Written Report

A report should be prepared for CDFG that gives the result of each phase of the surveys.

B-2 If the results of the protocol surveys in Mitigation Measure B-1 indicate burrowing owls are present in areas that are planned for construction, a passive relocation program shall be implemented by a biologist with experience in relocations. The passive relocation program shall include methods to create artificial burrows on site and measures to ensure the complete vacancy of occupied burrows. A CDFG representative shall approve the program.

B-3 To determine the likelihood of occupation, a qualified biologist shall survey the San Joaquin kit fox dens identified during the reconnaissance phase and other areas that seem likely to have dens.

B-4 If the results of the protocol surveys in Mitigation Measure B-3 indicate San Joaquin kit fox are present in the areas that are planned for construction, a mitigation program, approved by CDFG and USFWS must be established. The plan should conform to the Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS, 1998).

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

B-5 Employee education (e.g., via handouts and a 30-minute program) for sensitive wildlife should be part of the orientation of every employee or contractors that will be on site for more than one month. This education should be documented by the retention of a signature sheet in the County Solid Waste Management Office and at the landfill.

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

3.4 CULTURAL RESOURCES

3.4.2 Cultural Resource Impacts

The following measures were completed to determine if the closure of the existing WMU and the construction of the new WMU would have an impact on archaeological, paleontological, and cultural resources.

1. Archaeological Records Check: completed through the Cal State Bakersfield South San Joaquin Valley Information Center. This research provided data on the project area and surrounding properties to determine whether or not the property had been previously surveyed or if any sites are known for the area. The records search did not identify cultural resources in the project area (Appendix F).

2. Native American Consultation: The Native American Heritage Commission was contacted regarding any documentation available for the project area. In addition, the Native American Heritage Commission provided a list of local Native Americans interested in commenting on any projects in the area. A letter was sent to the individuals on the list on May 25, 2000. No response has been received (Appendix F).

3. Paleontological Research: A paleontological overview was requested from the Natural History Museum of Los Angeles County to determine the potential for surface or buried paleontologic resources for the area. The museum concluded that the project area is unlikely to contain significant vertebrae fossils. Deeper excavations may have the possibility of uncovering fossil vertebrae remains. The museum suggested that excavations should be monitored to collect remains if discovered (Appendix F).

4. Field Survey: A pedestrian reconnaissance survey of the project area was completed on Saturday, June 10, 2000. Two surveyors completed the survey to determine the nature of the study area and to ascertain whether or not evidence of prehistoric or historic resources were identifiable within the project area. Field notes and a photographic record supplemented the field studies. The survey found no evidence of prehistoric or historic remains.

The project area was investigated for evidence of paleontologic, prehistoric and historic resources. No evidence of paleontologic resources was found, although there is a potential for buried deposits in deep excavations (Class II). The implementation of mitigation measure C-1 would reduce this impact to a less than significant level**.** There was no evidence of prehistoric or historic remains identified during the field survey. The likelihood of such remains is relatively low, but still a potential, given the relative proximity of the St. John's Rivers (Class III).

3.4.3 Mitigation Measures

C-1 A paleontological monitor must be on site for excavations of the new WMU. To insure the protection of any buried prehistoric or historic resources, an archaeological monitor should also be present for the initial grading of the property. In some cases, the archaeological monitor may fulfill the requirements of the paleontological monitor, or visa versa. The extent of the monitoring will be dependent upon the final grading and excavation plans.

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

3.5 GEOLOGY AND SOILS

3.5.2 Project Impacts

Significance Criteria

CEQA identifies several geologic impacts that would normally be considered significant. These include: exposing people or structures to major geologic hazards; erosion, or siltation; causing substantial changes in topography; or adversely affecting unique geologic or topographic feature. In addition, state and federal regulations have been established for the siting, design, construction, operation, closure, and postclosure of new landfills. These standards incorporate state-of-the-art engineering principles that are intended to reduce the risks associated with waste disposal facilities to an acceptable level. Any inconsistency between the project and regulations related to geology, soils, and seismicity would have the potential to result in significant impacts.

Faulting and Seismicity

Title 27 CCR, Section 20370 requires that Class III facilities be designed to withstand the Maximum Probable Earthquake (MPE) without damage to the foundation or structures that control leachate, surface drainage, erosion, or landfill gas. The MPE is defined in Title 27 CCR, Section 20164 as the maximum earthquake that is likely to occur during a 100-year interval. Facilities that accept hazardous or designated wastes are required to be designed to the stricter Maximum Credible Earthquake (MCE). The MCE is defined in Title 27 CCR, Section 20164 as the maximum earthquake that appears capable of occurring under the presently known geologic framework and is considered the upper bound earthquake for a given seismic source. In order to provide a conservative estimate of seismic shaking at the site, established MCEs for the nearest faults were used to evaluate the peak ground acceleration (PGA) in bedrock for the project.

The project site is characterized by relatively low seismicity, due to its distant location from major seismic sources in California. The Great Valley and San Andreas faults are located west of the site within the Central Coast Ranges, and the Owens Valley fault is located on the eastern flank of the Sierra Nevada, east of the site. Information regarding the most critical seismic sources was compiled and evaluated for this project in order to estimate the anticipated PGA at the site (Table 3.5-1). PGAs were evaluated using moment magnitudes reported by Peterson et al. (1996), distances to causative faults, and attenuation relationships developed by Abrahamson and Silva (1997), Campbell (1997), Idriss (1993), and Sadigh et al. (1997) which account for local soil or bedrock conditions. The San Andreas Fault, with an estimated MCE of 7.8 (Peterson et al., 1996) is located approximately 112 km southwest of the site and is expected to generate the highest PGA (0.06g). There are no significant historic earthquake epicenters known to have occurred within 10 miles of the project site (SWAT, 1987).

Additional factors affecting the landfill response to seismic motions were also considered. Low to moderate ground shaking generated from distant sources is typically characterized by relatively low frequencies, resulting in ground motions that correspond with longer fundamental periods characteristic of solid waste, thereby amplifying motions ascending through refuse from the base of the landfill. In addition, California Division of Mines and Geology (CDMG) maps that consider local site conditions indicate the PGA for the site falls within the range of 0.10g and 0.20g (CDMG, 1999), which is greater than the PGA calculated from attenuation relationships (Table 3.5-1).

Ground shaking during an earthquake could cause the landfill to fail as a result of differential settlement, ground lurching, and cracking of cover materials, or slope failure. Damage to the landfill cover by effects of ground shaking could expose previously buried fill, creating potentially significant health and safety impacts and allowing infiltration of surface water into the landfill

increasing leachate generation. Failure of landfill slopes could damage drainage and leachate collection systems and block emergency or other access to the site. Such failures could result in temporary closure of the landfill and require corrective measures.

Stability of the new WMU was evaluated to determine the minimum factor of safety for slope failure during static and pseudo-static (evaluated for a peak horizontal ground acceleration of 0.11g) conditions (EBA, 2000). The factor of safety is a common index used in the evaluation of slope stability and is defined as the ratio of forces resisting failure (the shear strength of the soil or refuse) to forces driving failure (the shear stress induced on the potential failure surface). Therefore, a factor of safety of 1.0 indicates conditions on the threshold of failure, whereas a factor of safety greater than 1.0 indicates stable conditions (EBA, 2000). A minimum static factor of safety of 1.5 is regarded as the industry standard for permanent slopes, while the minimum pseudo-static factor of safety requirement is 1.0. The results of the most critical trials of the slope stability analysis for the new WMU indicates minimum static and pseudo-static factor of safety levels ranging from 1.68 and 1.16, respectively (along the north-south ridge at the toe, 3:1 fill slopes) to 2.29 and 1.41, respectively (transverse direction through sump, 3:1 fill slopes) (EBA, 2000).

The project has been designed to meet state and federal regulations regarding slope stability criterion that includes both seismic and static conditions. Compliance with these requirements and geotechnical design recommendations identified in the Joint Technical Document (EBA, 2000) would reduce the potential for slope instability impacts to an acceptable level of risk and would reduce potential impacts to a less-than-significant level (Class III). Therefore no additional mitigation measures are needed as part of this environmental assessment.

Subsidence and Liquefaction

Liquefaction occurs when saturated or near saturated, unconsolidated shallow soil deposits of wwell sorted sand experience a sudden loss of strength during strong earthquake shaking (Richardson et al., 1995). The potential for liquefaction and subsidence for the project site was assessed by evaluating local soil and groundwater conditions, and the likelihood of seismic shaking at the site.

Surface effects, such as subsidence, are not likely to result from liquefaction occurring more than 50 feet below the ground surface (Richardson et al., 1995). Therefore, liquefaction at the project site is limited to susceptible soil conditions at depths between the highest anticipated groundwater (20 to 30 feet beneath the new WMU) and a depth of approximately 50 feet.

The joint technical document for the landfill expansion included an evaluation of logs of exploratory borings drilled at the site since 1985 including lithology, groundwater levels and normalized standard penetration tests (SPT) blow counts (N_c). For the proposed project, a critical N_c value of 7 was determined for the estimated seismic shaking, depth to sand and groundwater of 20 feet, and no clay content. N_c values less than 7 would indicate the potential for liquefaction. The mean minimum N_c value measured in subsurface materials at depths ranging from 20 to 35 feet is 21. Based on this conservative evaluation, liquefaction of soils beneath the site is unlikely to occur (Class III) (EBA, 2000).

The WMU slopes could potentially fail under seismic stress. Failure could occur due to inconsistent fill compaction, slopes that are too steep, and infiltration of surface water. Failures could occur during project operation, closure or at any time after closure. Such failures could disrupt landfill cover materials, exposing wastes and resulting in potential odor, litter, infiltration, and vector control problems. In addition, if large quantities of waste were to be exposed as a result of slope failure, drainage facilities could be impacted.

However, the new WMU has been designed to comply with the seismic requirement of Title 27 and will comply with engineering design recommendations presented in the Joint Technical Document (EBA, 2000) to address seismic hazards. These project commitments would reduce potential impacts from a seismic event to less-than-significant levels (Class III).

Settlement

Settlement of the landfill surface could occur from compaction of the refuse, decomposition of organic materials that could form voids within the refuse mass, vibrations from earthmoving and landfill equipment, or seismic ground shaking. The rate of settlement due to increased overburden could increase as the landfill reaches the maximum proposed height of 210 feet above the existing grade.

Uneven settlement of the landfill could create sags and depressions in the refuse liner, base liner, or final cover. Excessive settlement could cause cracks to develop in the final cover, which could allow surface water to infiltrate into the landfill. Infiltration would increase the rate of leachate generation, or settlement due to decomposition of organic wastes. Cracks in the final cover could also allow landfill gas to escape, creating potential fire or odor problems. Settlement could also damage surface structures, such as roads and drainage facilities, or subsurface systems, such as the landfill gas collection system (ESA, 1998). Excessive settlement could result in potentially significant environmental impacts (Class II).

The landfill has been designed to comply with Title 27 requirements for final cover design, final surface grades, and monitoring and maintenance of the new WMU to reduce potential impacts due to settlement. A description of these measures is presented in Section 2, Project Description. With the implementation of these project commitments, no other mitigation measures are needed. Potential impacts associated with settlement of the new WMU are considered to be less than significant (Class III).

3.5.3 Mitigation Measures

With implementation of the project commitments design specifications outlined in this document and the Joint Technical Document (EBA, 2000), no additional mitigation measures are recommended.

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

3.6 Hazards

3.6.2 Project Impacts

Significance Criteria

To assess the potential for hazards from the new WMU, the design of the WMU was compared to regulatory requirements. An impact would be considered significant if the new WMU were to involve unmitigated generation, handling, or release of hazardous materials or wastes that poses a threat to public health and safety of if waste handling activities at the new WMU would violate county or state waste handling policies or regulations.

Hazardous Wastes and Materials

The operation of the new WMU would not involve the routine use of hazardous materials. In addition, the site would not handle household hazardous waste and would not handle hazardous materials in the day-to-day operation of the landfill. Signs would be posted at the new facility entrance, which would read: "No Hazardous Waste Accepted." These signs would also list the most commonly encountered household and commercial items that would be considered hazardous waste.

The Refuse Site Caretaker would be responsible for inspecting incoming loads and rejecting hazardous or other unacceptable materials on a daily basis. The Refuse Site Supervisor would also document periodic load checks on a daily basis. Load checking inspections would be recorded on a “Solid Waste Load-Checking Program” form that would be placed into the operating record. The Refuse Site Supervisor would be trained to identify hazardous and unacceptable materials through the Tulare County Hazardous and Prohibited Waste Recognition Training Program. This training would be documented on a “Record of Training” form and placed into the operating record.

The Tulare County Hazardous and Prohibited Waste Recognition Training Program for the landfill expansion would be based on specific rules used to eliminate the potential for hazardous and unacceptable materials. These rules prohibit disposal of pesticide containers, barrels (except old burn barrels), free liquids, solvents or greases, lead-acid batteries, ballasts from fluorescent light fixtures, liquid filled transformers, and capacitors associated with large electrical motors. Emphasis would be placed on accepting only residential type generated refuse, tires, and construction/demolition wastes. Any questionable wastes would be deemed unacceptable.
Under the program, all loads would be inspected for inappropriate contents and all containers would be inspected to be sure they do not contain prohibited waste types. Haulers found with unacceptable material in their loads would be informed by the Refuse Site Caretaker of their responsibility to remove the material from the site. Haulers requesting an alternative for disposal are directed to contact the Environmental Health Services Division of the Tulare County Health and Human Services Agency.

Loads of sorbent materials or soils associated with spills would not be accepted without prior approval from supervisory staff. Approvals would only be made following submittal of results of certified analytical laboratory testing which determine that the subject materials are not hazardous, liquid, or designated waste.

A contingency plan for accidental discharge of hazardous wastes or materials has been established in the joint technical document for the landfill expansion (EBA, 2000b). This contingency plan includes a process for (1) determining whether the unacceptable item a non-hazardous liquid or unknown hazardous liquid or solid, (2) identifying appropriate disposal method for each type of waste including temporary storage of hazardous wastes for subsequent

disposal in an appropriate landfill, (3) a methodology for addressing accidental spills and clean-up, and (4) reporting requirements. With the implementation of contingency plan and the measures presented above, which are in effect for the existing landfill operations, the impact of potential hazardous materials or waste would be adverse but less than significant (**Class III**).

Landfill Gas

Anaerobic decomposition of organic waste disposed at the site will produce carbon dioxide, methane gas and minor concentrations of associated organic constituents. Gas production rates will vary with refuse composition, daily soil cover ratio, moisture content, and the availability of oxygen. Landfill emissions are regulated under Rules 4001 and 4642 adopted by the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD). Rule 4001 enables the SJVUAPCD to implement federal requirements and incorporates, by reference, New Source Performance Standards (NSPS) promulgated by the USEPA in 40 CFR Part 60. NSPS applies to Municipal Solid Waste Landfills with a design capacity greater than 3.27 million CY. Because the design capacity of the new WMU will exceed this limit, installation of a LFG control system is required.

LFG generation for the new WMU was evaluated using refuse disposal rates of 400 and 1,200 tons per day, six days per week (308 days per year) over site life projections of 62 years and 22 years, respectively. These estimates are based on total refuse volume estimates of 12,780,000 CY and 13,308,000 CY for the 400 tpd and 1,200 tpd scenarios, respectively. Both estimates assume a refuse density of 1,200 PCY. For the purpose of evaluating LFG generation rates, daily refuse disposal rates were converted to annual rates of 123,200 and 369,600 tons per year, respectively. In addition, annual disposal rates were held constant over the site life of the new WMU.
Several different models were employed to evaluate LFG generation rates. These models included the Landfill Gas Emissions Model developed by the USEPA Office of Research and Development (1998) and a series of models developed by SCS Engineers (1998) for the Solid Waste Association of North America (SWANA). Pertinent input values utilized in the respective models included 0.02 yr^{-1} and 100 m^3/Mg refuse for the methane generation rate k and methane generation potential L_o, respectively. These values were selected to represent a landfill environment located in a dry and arid climate, indicative of the Visalia area. These values are also consistent with the EPA's air pollution emission factors (AP-42 factors) for dry sites.

Results from the LFG generation modeling revealed maximum LFG generation rates of approximately 1,150 and 1,570 SCFM for the 400 and 1,200 tpd disposal rate scenarios, respectively. These estimates assume a typical LFG methane content of 50 percent by volume. In both cases, occurrence of the maximum LFG generation rate approximately coincides with the estimated closure date of the new WMU. LFG extraction systems are seldom able to recover all of the LFG generated by a landfill. A recovery efficiency of 70 percent is typical for most extraction systems and considered appropriate by regulatory agencies. Based on a 70 percent recovery efficiency applied to calculated generation rates, the maximum anticipated flow rates for the new WMU are approximately 800 and 1,100 SCFM, respectively.

LFG will be collected from the new WMU by means of a modular system that will include a series of horizontal landfill gas collection laterals connected to a pipe manifold system installed during site development and waste filling operations. The horizontal collectors will consist of perforated HDPE piping surrounded by gravel, spaced approximately 200 feet apart, and placed every 40 to 50 vertical feet in refuse. The collection system may also be connected to LCRS piping to enhance LFG collection from the base of refuse. Horizontal collectors will be connected to a condensate collection system and the existing flare station via aboveground manifold piping.

Landfill gas will be extracted from the collectors and drawn into a flare with a vacuum induced by blowers located near the flare complex. LFG flares are designed for the combustion of landfill

gas, in the presence of oxygen, to carbon monoxide, sulfur dioxide, oxides of nitrogen (NO_x), and other related gases. The existing WMU is currently equipped with a LFG collection system and flare with a capacity of 1,500 SCFM. Thus, future LFG collection system components associated with the new WMU will be connected to the existing system for processing and subsequent destruction of the LFG. The residual flow capacity of the existing flare will be utilized for processing LFG generated by the new WMU until such time as a new flare is required.

LFG will be controlled to ensure the concentration of methane gas does not exceed 1.25 percent by volume in air within on-site structures and 5 percent at the property boundary. Gas monitoring during closure will be conducted to protect public health and safety and the environment.

Monitoring of subsurface gas will be conducted by installing several perimeter probes at various depths surrounding the project site. The perimeter monitoring system will be installed in accordance with Title 27 CCR, Section 20925 and will incorporate existing gas monitoring probes located west of the existing unlined WMU. The purpose of the probes will be to monitor the presence of subsurface gases, which may have migrated beyond the fill limits. The geosynthetic component of the base liner and operation of the landfill gas extraction system should reduce the likelihood of LFG being detected outside of the limits of the base liner for the new lined WMU.

In accordance with Title 27 CCR, Section 20425(d)(3), LFG monitoring will be coordinated with any future corrective action program involving the design, installation, and operation of the LFG monitoring system. With the implementation of these project design measures, the impact of landfill gas would be adverse but less than significant (Class III).

Fire Hazards

All refuse entering the site will be inspected by the Refuse Site Caretaker for possible fire hazards. All landfill equipment and vehicles will be furnished with fire extinguishers. Tires will be stored in a segregated area of the site and regularly removed before stockpiled tires exceed the permissible quantity.

In the event of a fire, the California Division of Forestry will be contacted for assistance. Site personnel will use both earth moving equipment and the water truck to contain and extinguish the fire. Clearances required by Public Resources Code 4373 will be maintained on and around the site by blading and applying herbicides. Vegetation will be kept clear of structures and fuel storage facilities. The facility will comply with Tulare County Fire Department protection requirements.

Fire protection of facility equipment and vehicles will be provided by portable fire extinguishers located in the equipment and vehicles. All structures will be equipped with fire extinguishers for extinguishing minor fires and for personnel safety. Site personnel will be trained periodically in the proper use of fire extinguishers. Facility equipment and vehicle fire prevention will be provided by frequently removing oil and grease buildup, debris, and dust from undercarriages and engine compartments. With the implementation of these project design measures, the impact of fire would be adverse but less than significant (Class III).

Vectors

Section 17707 of the CCR, Title 14 directs landfill operators to take adequate steps to control or prevent the propagation, harborage or attraction of flies, rodents or other vectors and to minimize bird populations. As a properly run facility, the Visalia Landfill has not had significant problems with vectors. With the development of a new WMU and a potential for a greater daily waste throughput, the active area of the landfill could attract more vectors. However, the landfill expansion would include the application of a daily cover, which is the most effective measure

taken to minimize the propagation of vector populations. Rodent populations that damage slopes by burrowing or pose a health threat would be controlled using poisons placed under the direction of the Agricultural Commissioner.

Insects, rodents, and birds have not presented a problem at the existing WMU due to operating procedures, which control and prevent propagating, harboring, and attracting flies, rodents, birds, or other vectors. The same methods vector control measures that are currently used at the existing WMU facility would be used at the new WMU site (see “Vector” discussion in Section 3.6.1).

Operations at the new WMU would include a program for controlling litter and windblown materials in order to prevent the accumulation of quantities, which cause a public nuisance or other problems. The litter control program would focus on weekly (or more frequent, if necessary) collection of windblown litter in the immediate vicinity of the active face and surrounding areas by site personnel. In addition to the collection program, portable litter fencing would be erected downwind of the active face and repositioned in response to changing wind direction and refuse filling operations (Class III).

3.6.3 Mitigation Measures

The design of the landfill expansion includes measures or project commitments that would reduce hazards to public health and safety from the construction and operation of the landfill expansion. With the incorporation of these measures as part of the project as described in this section and in Section 2, the hazard impacts are expected to be adverse but less than significant. No other mitigation measures are necessary.

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

3.7 Hydrology and Water Quality

3.7.2 Project Impacts

Significance Criteria

The key areas of concern for the development of the new WMU are the potential for the landfill to impact groundwater, mainly through surface water coming in contact with the refuse and infiltrating into the subsurface. The other area of concern is the potential of the area to flood causing water to become contaminated impacting groundwater, surface water, and soils.

Section 21068 of CEQA defines a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." A project may have a significant impact on the environment if it will:

- Substantially degrade water quality
- Contaminate a public water supply
- Substantially degrade or deplete groundwater resources
- Cause a substantial flooding, erosion, or siltation.

Flooding

The project site is not within the 100-year flood plain and is not expected to be significantly impacted by flooding. The design of the landfill will include measures for drainage and erosion control. The stormwater control system for the site will utilize an internal drainage scheme whereby all runoff generated from the existing and new WMUs will be routed to on-site borrow excavations, which will function as retention basins where stormwater will be retained to evaporate and percolate. The stormwater control system will be designed to accommodate peak surface water flows for 100-year, 24-hour precipitation in accordance with Title 27 CCR, Section 20365, and occurring during the most critical stage of site development when runoff is anticipated to be a maximum. The system will be assessed and modified on a continuous basis during site development as refuse filling operations proceed and new phases are constructed. Runoff from the active disposal area that has contacted refuse will be contained and diverted to the LCRS. Because all surface runoff will be retained on site, a National Pollution Discharge Elimination System (NPDES) permit will not be required.

The proposed final closure configuration would include a perimeter ditch to convey runoff from final landfill slopes and all outside cut slopes. Drainage from the new WMU would be split and conveyed to either the northern borrow area or the southern borrow area. Drainage calculations were performed for the new WMU using a 100-year annual precipitation of 21.49 inches. Results of the analysis indicate the volume of proposed retention ponds exceeds the runoff volume by a factor of more than 5 (EBA, 2000).

Drainage and Erosion Control

During the active life of the facility expansion, clean storm water would be routed and collected separately from the leachate system. The proposed drainage system for the new WMU would be designed to prevent safety hazards and exposure of waste. Intermediate slopes will be graded no steeper than 3H:1V for purposes of maintaining slope stability and reducing erosion. Proposed final slopes will be graded at 4H:1V with 20-foot wide intermediate benches spaced every 40 vertical feet. Benches would be battered back toward the slope at a grade of 5 percent and would drain at a minimum slope of 3 percent to drop inlets spaced periodically along benches. Water will be conveyed from benches with appropriately sized down drains.

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

All on-site drainage control facilities will be designed to prevent inundation of the new WMU or impairment of environmental control systems resulting from a 100-year storm event in accordance with Title 27 CCR, Section 20320(e), which outlines construction standards for Class III WMUs.

The final cover system for the new WMU would include an erosion-resistant vegetative layer placed over all portions of the geosynthetic components of the cover. Soil used in construction of the vegetative layer would be appropriately amended in accordance with an approved revegetation plan to promote sustainable vegetative growth of native grasses and herbaceous perennials. An erosion analysis has been prepared for the final cover system. The analysis was performed for the 2-year, 6-hour precipitation event in order to compare results with USEPA guidelines established at 2.0 tons per acre for this particular precipitation event (USEPA, 1982). Following final closure and establishment of vegetative cover, annual soil loss is estimated to be less than 2.0 tons per acre. The potential for drainage or soil erosion problems is considered adverse but less than significant (Class III).

Groundwater Monitoring

The existing groundwater monitoring system includes nineteen wells installed around the perimeter of the facility for purposes of monitoring potential groundwater impacts from the existing WMU. An additional three detection groundwater monitoring wells would be installed for the new WMU. These detection monitoring wells would be part of the exiting Monitoring and Reporting Program established for the landfill and approved by the RWQCB.

Water Quality

Landfill leachate is a liquid generated by the percolation of water contained in solid waste, by the anaerobic decomposition of organic matter (i.e. in the absence of fee oxygen), and /or by waste mixing with water that has entered the landfill from external sources, such as surface drainage, precipitation, or groundwater intrusion. If released through failure or leakage of the liner system, leachate could migrate into surface water or groundwater. The most direct route would be leakage of leachate into the groundwater beneath the landfill.

To address the potential for surface and groundwater contamination from the facility expansion, the new WMU has been designed with a composite liner system that will be placed at the landfill base. This liner is consistent with the requirements of 40 CFR, Part 258 and Title 27 CCR and includes the following environmental controls in ascending order:

- A vadose monitoring system would be installed beneath the base liner in accordance with the waste discharge requirements issued for the new WMU.
- Reinforced geosynthetic clay liner (GCL) would be placed directly on prepared subgrade.
- Double-sided textured 60-mil high-density polyethylene (HDPE) geomembrane liner would be placed over the GCL and welded together to form a continuous sheet.
- LCRS, which consists of geocomposite drainage layer that blankets the entire lined area, a 6-inch pipe that is placed on the center of each waste management cell, a lined leachate sump, and pipes/pumps to remove leachate from sumps.
- Two feet of operations soil would be placed over the LCRS and lined areas.

With the installation of the above environmental controls it is unlikely that leachate would pass through the landfill refuse to the underlying groundwater table. Excavation of the landfill cells

were designed to meet or exceed the siting criteria for groundwater protection in Title 27 CCR (requiring minimum base liner and final cover permeability requirements and a five-foot separation between wastes and groundwater) and the requirements in 40 CFR Part 258 regarding permeability limits.

40 CFR Part 258, Section 4.3.3 requires the LCRS to meet the regulatory performance standard of maintaining less than 30 cm (12 inches) of head above the liner to minimize the flow of leachate through potential imperfections in the liner system. Analyses conducted on the LCRS designed for the project indicate a maximum of leachate head of less than 1 inch. The maximum daily generation rate predicted in the joint technical document was approximately 126 gallons per day per acre. In accordance with Title 27 CCR, Section 20340(b), the LCRS has been designed, and would be constructed, maintained, and operated to collect and remove twice the maximum anticipated daily volume of leachate from the new WMU.

Leachate collected from sumps in the landfill expansion would be pumped to centrally located storage tanks fitted with secondary containment and a spill detection monitoring system. The proposed method of disposal is by tanker truck to any of three treatment plants, including the Visalia Wastewater Treatment Plant (owned and operated by the City of Visalia) located approximately 7 miles southwest of the site, the Traver Wastewater Treatment Plant located approximately 7 miles northwest of the site, and the Delft Colony Wastewater Treatment Plant located approximately 9 miles northwest of the site. Both the Traver and Delft Colony plants are owned and operated by the County of Tulare.

With the environmental controls proposed as part of the project design and the removal of leachate if it collects, the potential for any significant impact is considered adverse but not significant (Class III). No impacts are expected to groundwater with the implementation of these project design measures.

Actual quantities of leachate collected over any time period would vary depending upon various factors including the size of the active disposal area, cover soil placement and compaction, moisture content of incoming waste, and seasonal climatologic conditions. Operational provisions for the storage, removal and disposal of leachate would be assessed continuously using generation analyses and empirical measurements of leachate production as development of the new WMU progresses. Leachate generation is anticipated to decline gradually throughout the postclosure period following construction of the geosynthetic final cover system.

Due to the arid climate of the region, leachate seeps emanating from inactive portions of the landfill cover are unlikely. If a surface seep is detected, the area would be isolated, and leachate would be collected and transferred to on-site leachate storage tanks.

The final landfill cover system would also provide another measure of protection from the potential of surface and groundwater contamination. The final cover system would be constructed in place at the time of closure to prevent the infiltration of water and generation of leachate. In accordance with Title 27 CCR, Sections 21140(a) and 21142(a), the final cover system will be compatible with postclosure land use. The final cover system would include, in ascending order:

- Foundation layer consisting of a 24-inch compacted soil layer,
- Geosynthetic gas pressure relief layer,
- Geosynthetic clay liner,
- Geomembrane barrier layer,
- Geosynthetic drainage layer for pore pressure relief, and
- 24-inch vegetative layer to prevent erosion and provide protection for underlying components.

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

All soil material required for construction of the final cover system will be obtained on site. Approximately 840,000 CY of material will be required for construction of the foundation and vegetative layers.

3.7.3 Mitigation Measures

The design of the landfill expansion includes measures or project commitments that would reduce any impacts from landfill leachate and storm water run-off in either surface or groundwater, and would reduce the potential for soil erosion. With the incorporation of these measures as part of the project as described in this section and in Section 2, the impacts to water quality are expected to be adverse but less than significant. No other mitigation measures are necessary.

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

3.8 Land Use

3.8.2 Project Impacts

Significance Criteria

The land use analysis presented below evaluates if it would result consistency with Tulare County land use designations, goals, objectives, or policies; or would otherwise conflict with adopted environmental plans and goals of the community where it is located. An impact would be considered significant if it would result in disruption of adjacent land uses. Potential land use conflicts or incompatibility are usually the result of other environmental effect, such as generation of noise or objectionable odors.

Adjacent Land Uses

The landfill expansion area would be directly adjacent to the existing landfill operations. When the new WMU is operational the existing landfill area would be closed. The facility is located in an agricultural area with no sensitive receptors close by. The new WMU would continue an existing land use. The new WMU would not cause land use conflicts, thus, no mitigation measures are necessary (Class III).

County Land Use and Solid Waste Management Plans

The proposed landfill closure and expansion project would be consistent with the County Integrated Solid Waste Management Plan. The Visalia Landfill is described and identified in the text and the expansion design considers the diversion requirements in the plan.

While the County General Plan does not specifically call out County landfills, the referrals established by the County established that the Visalia Landfill is consistent with the General Plan. An evaluation of the applicable policies also established the project's consistency with the General Plan. There are no conflicts with the General Plan policies or goals.

The County does not have an adopted "Habitat Conservation Plan" or "Natural Communities Conservation Plan." However, development of the project would displace burrowing owl, and potentially San Joaquin kit fox. Potential impacts associated with these displacements are addressed in Section 3.3 (Biological Resources).

Agricultural Uses

Although the project would convert agricultural lands that are currently under the Williamson Act, this conversion would be consistent with the findings necessary under California Government Code Section 51291(b). Subsequently, no impacts would occur. It is noted, however, that the acquisition and conversion of these lands does require notice to the Department of Conservation and the local governing body responsible for administration of lands under the Williamson Act (County, 1998).

3.8.3 Mitigation Measures

No land use impacts would occur due to development of the project. Consequently no mitigations measures are recommended.

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

3.9 NOISE

3.9.2 Project Impacts

Significance Criteria

An impact would be considered significant if project noise levels exceed 75 dBA L_{dn} at the site property line adjacent to agricultural uses or 60 dBA L_{dn} at the nearest residence per the Noise Element of the Tulare County General Plan.

On-site Noise

Construction noise or on-going operations would occur primarily from heavy-duty equipment (e.g., dozers, compactors, trucks). Short-term noise measurements were collected approximately 50 feet from the active face of the existing WMU (see Table 3.9-2). At the time of the measurement, one compactor and three refuse vehicles were active. The average noise level for the 10-minute monitoring period (L_{eq}) was 71.8 dBA. There are no sensitive receptors in the vicinity of the facility. However, the facility is surrounded by agricultural uses. The closest boundary of an agricultural land use to the boundary of the landfill expansion is approximately 350 feet east of the landfill boundary. It should be noted that noise levels are calculated based on the assumption that noise from a line source is reduced by 6 dBA with each doubling of distance from the source of noise. This would result in a L_{eq} dBA level of approximately 55 at the nearest agricultural boundary. It is estimated that nighttime ambient noise levels in the project area are no greater than 50 dBA. This would result in an L_{dn} well below the County's regulatory standard of 75 dBA, L_{dn} at an agricultural boundary. Therefore, potential impacts associated with on-site noise levels are considered to be adverse, but less than significant (Class III).

Off-site Noise

Proposed operations of the new WMU could generate up to approximately 1,020 vehicle roundtrips. It is anticipated that most of these trips would arrive at the facility from the Visalia Area and other nearby communities via Road 80 or Avenue 328. These roads currently generate noise levels in the high 50 dBA to mid 70 dBA range (see Table 3.9-2). Additional trips associated with the operations of the project could adversely impact residential receptors along these road; generally it takes a doubling of traffic to raise the noise level by 3 dBA. However, it is not anticipated that the additional trips would result in significant impacts to residential receptors located along Road 80 and Avenue 328. Thus, potential impacts associated with offsite noise levels are considered to be adverse, but less than significant (Class III).

3.9.3 Mitigation Measures

No significant noise impacts are expected from the landfill expansion and there are no sensitive receptors near the project area. Therefore, no mitigation measures are required.

PROJECT IMPACT AND MITIGATION MEASURE EXCERPTS

3.10 TRANSPORTATION

3.10.2 Project Impacts

Significance Criteria

According to CEQA standards, a project, which would cause an increase in traffic that is substantial relative to the existing traffic load and capacity of the street system is considered to have a significant adverse impact of the environment. Tulare County's goal is that an LOS D be maintained at major intersections.

In addition, the project would be considered to cause a significant impact if project-generated traffic would cause an increase in traffic safety hazards on area roadways, or deterioration of the physical condition of area roadways.

Daily and Peak Hour Traffic

Future Year 2020 peak hour traffic volumes, which include completion of the new WMU with a new entrance to Avenue 328, are summarized in Figure 3.10-4. Corresponding Year 2020 am and pm peak hour LOS at the intersection of Road 80 and Avenue 328 and the new entrance to Avenue 328, which assume implementation of the project, are summarized in Table 3.10-4. Review of the table will indicate forecast increases associated with a new WMU operating at 2,000 tpd are expected to have a minimal effect on baseline Year 2020 peak hour LOS at either location. During both the morning and evening peak hours, the intersection of Road 80 with Avenue 328 would continue operating at baseline 2020 levels (LOS B/C). The relocated entrance to Avenue 328 is forecast to operate at an LOS A/B during both the morning and evening peak periods. Thus, the project would have an adverse but less than significant impact on the intersection of Road 80 and Avenue 328 (Class III).

Traffic into the new WMU at the proposed entrance on Avenue 328 would have the potential to cause traffic delays and congestion due to increased traffic associated with the landfill expansion. Truck traffic waiting to turn left into the site could increase the potential for traffic accidents and increase delay to through traffic on Avenue 328 **(Class II)**. Implementation of mitigation measure T1 would reduce this impact to a less-than-significant level.

3.10.3 Mitigation Measures

The following mitigation measure has been developed to address potential congestion, which could cause traffic accidents at the Avenue 328 entrance.

T1 The project proponent should widen Avenue 328 at the relocated entrance to include an exclusive eastbound left turn lane and a westbound right turn deceleration lane in accordance with CALTRANS design standards.

Impact	Mitigation Measure(s)	Monitoring Action	Responsible Party	Implementation Phase
Aesthetics				
View from Road 80 will be impacted during operation of the landfill.	**A-1:** Mitigation measures can reduce, but not eliminate, this significant impact. Revegetation of WMU perimeter slopes should begin as soon as feasible and not wait until final closure of the landfill.	Identify critical time periods when revegetation of perimeter slopes is necessary. Implement plan for vegetation planting and maintenance. Monitor and report progress to Resource Management Agency, Solid Waste Division (County).	County	Operation
Air Quality				
On- and Off-site Emissions: Increased fugitive dust and equipment/vehicle exhaust that exceed current conditions.	**AQ-1:** Limit traffic speeds on unpaved roads to 15 mph.	Post speed limits at all entrances to ensure vehicles and equipment adhere to speed limits. Periodically patrol facility roads to ensure compliance.	County; trucking/equipment operators; construction contractors.	Construction and Operation.
	AQ-2: Install erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.	Install erosion control measures and periodically inspect to ensure physical integrity. Replace as necessary to ensure effectiveness.	County	Operation
	AQ-3: Suspend excavation and grading activity when sustained winds exceed 20 mph.	Monitor weather conditions daily. Suspend grading activities as necessary.	County; construction contractors.	County; construction contractors.
	AQ-4: Limit area subject to excavation, grading, and other construction activity at any one time.	Forecast daily construction activities. Identify daily area to be constructed and minimize total area of disturbance to the extent feasible.	County; construction contractors.	Construction
	AQ-5: Minimize idling time.	Post idling requirements at all entrances to ensure vehicles and equipment adhere to restrictions. Periodically patrol facility construction and operation to ensure compliance.	County; trucking/equipment operators; construction contractors.	Construction and Operation.
	AQ-6: Limit the hours of operation of heavy equipment and/or the amount of equipment in use.	Develop and implement a schedule for heavy equipment operations that minimizes exhaust emissions. Advise all workers of schedule and periodically monitor for compliance.	Trucking/equipment operators; construction contractors.	Construction and Operation.

Impact	Mitigation Measure(s)	Monitoring Action	Responsible Party	Implementation Phase
	AQ-7: Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways.	Monitor daily air quality conditions and develop strategy for project-related activities that curtail equipment and vehicular operations during periods of high pollutant concentrations. Implement strategy as necessary and monitor for compliance.	County; construction contractors.	Construction.
	AQ-8: The landfill operator shall bury excessively odorous wastes immediately with other landfill wastes, depending on their nature and source.	Develop criteria for identifying excessively odorous materials and strategy for their immediate disposal. Train landfill personnel in established criteria and strategy. Monitor compliance-related activities and pro-actively address any odor-related complaints.	County.	Operation.
	AQ-9: The landfill operator shall ensure that loading, unloading, and material handling activities are carried out efficiently and without delays to avoid excessive odors.	Develop operational strategy for waste handling that minimizes excessive odor. Train landfill personnel in established strategy. Monitor compliance-related activities and pro-actively address any odor-related complaints.	County.	Operation.
Biological Resources				
Temporary loss of wildlife habitat, and displacement and/or potential elimination of resident wildlife species.	B-1: Two months prior to construction of the proposed landfill, a biologist with experience in burrowing owl surveys, shall conduct burrowing owl surveys per the California Burrowing Owl Consortium (1999) survey guidelines.	Arrange for a qualified biologist to conduct surveys two months prior to construction-related activities. Coordinate the surveys with the California Department of Fish and Game (CDFG) as appropriate. Prepare a post-survey report if requested by CDFG.	County; qualified biologist; CDFG.	Pre-Construction.

Impact	Mitigation Measure(s)	Monitoring Action	Responsible Party	Implementation Phase
	B-2: If the results of the protocol surveys in Mitigation Measure B-1 indicate burrowing owls are present in areas that are planned for construction, a biologist shall implement a passive relocation program with experience in relocations. The passive relocation program shall include methods to create artificial burrows on site and measures to ensure the complete vacancy of occupied burrows. A CDFG representative shall approve the program.	Develop passive relocation plan for CDFG approval. Following CDFG approval implement plan by a qualified biologist. Prepare post-relocation report if requested by CDFG.	County; qualified biologist; CDFG.	Pre-Construction.
Loss of suitable habitat for San Joaquin kit fox.	B-3: To determine the likelihood of occupation, a qualified biologist shall survey the San Joaquin kit fox dens identified during the reconnaissance phase, as well as other areas that seem likely to have dens.	Arrange for a qualified biologist to conduct surveys prior to construction-related activities. Coordinate the surveys with the CDFG and USFWS as appropriate. Prepare a post-survey report if requested by CDFG and/or USFWS.	County; qualified biologist; CDFG; USFWS.	Pre-Construction.
	B-4: If the results of the protocol survey specified by Mitigation Measure B-3 indicate San Joaquin kit fox are present in areas that are planned for construction, a mitigation program, approved by CDFG and USFWS shall be established. The plan should conform to the Recovery Plan for Upland Species of the San Joaquin Valley, California (USFWS, 1998).	If San Joaquin kit foxes are present, prepare a mitigation program for their protection. Submit the program to CDFG and USFWS for review and approval. Implement the program by a qualified biologist following agency approval. Prepare and submit reports on the program as requested by CDFG and/or USFWS.	County; qualified biologist; CDFG; USFWS.	Pre-Construction
Disturbance or loss of sensitive species or their habitat as a result of actions by landfill employees or their contractors.	B-5: Employee education (e.g., via handouts and a 30-minute program) for sensitive wildlife should be part of the orientation of every employee or contractors that will be on site for more than one month. This education should be documented by the retention of a signature sheet in the Operation building.	Prepare employee education program by a qualified biologist. Submit the program to CDFG and USFWS for review and approval if requested. Implement program following agency approval (if necessary).	County, qualified biologist, CDFG, USFWS.	Operation.
Cultural and Paleontological Resources				
Potential disturbances to buried pre-historic, historic, and paleontological resources due to construction and closure-related grading and excavation.	C-1: Ensure cultural and paleontological monitoring during initial construction and closure activities. Continue monitoring as necessary if monitoring results in the identification of sensitive resources.	Retain qualified cultural and paleontological professionals to oversee initial construction and closure grading and excavation activities. Should significant, sensitive resources be identified during monitoring, contact appropriate agency and institutional personnel for guidance and continue monitoring. Re-direct or stop construction related activities should significant, sensitive resources be identified.	County; qualified cultural and paleontological professionals.	Construction and Closure.
Transportation				
Increased traffic into the new landfill facility entrance on Avenue	T-1: Widen Avenue 328 at the new entrance to include an exclusive eastbound left turn	Prepare design and construction plans for modifications to Avenue 328. Submit plans to appropriate County	County; appropriate County agencies.	Pre-Construction and Construction.

Impact	Mitigation Measure(s)	Monitoring Action	Responsible Party	Implementation Phase
328 could increase the potential for traffic accidents (particularly truck traffic waiting to turn left into the new entrance) and increase delays to through traffic on Avenue 328.	lane and a westbound right turn deceleration lane in accordance with County design standards.	agencies for review and approval. Proceed with construction following review and approval.		

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IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA IN AND FOR THE COUNTY OF TULARE

CERTIFICATE OF PUBLICATION

STATE OF CALIFORNIA ss.
COUNTY OF TULARE

I, Luciana Pascua, hereby certify that the Visalia Times-Delta is a newspaper of general circulation within the provisions of the Government Code of the State of California, printed and published in the City of Visalia, County of Tulare, State of California, and that I am the principle clerk of the printer of said newspaper. I also certify that the

NOTICE OF AVAILABILITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT

of which the copy annexed on the margin hereof, is a true printed copy as published in said newspaper on the following date(s):

DECEMBER 19, 2000

I certify under penalty of perjury that the foregoing is true and correct. Executed in Visalia, California, on December 20, 2000.

Luciana Pascua

LUCIANA PASCUA

NOTICE OF AVAILABILITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT (EIR)

Pursuant to the requirements of Section 15087 of the Guidelines for the implementation of the California Environmental Quality Act (CEQA), a Draft EIR for the Visalia Landfill is available for public review.

The Visalia Landfill, owned by the County of Tulare and operated by the Solid Waste Division of the Resource Management Agency, is located at the northeast corner of Road 80 and Avenue 328. The project revises the Master Development Plan to include the development of waste cells, waste diversion/drop-off area, and relocation of the entrance complex to Avenue 328.

The Hazardous Waste and Substances Sites List enumerates this site pursuant to the requirements of Government Code Section 65962.5.

Significant and unavoidable impacts resulting from this project include fugitive dust generation and visual impacts.

The review and comment period extends from December 18, 2000, to February 2, 2001. The public is welcome to submit written comments within this time frame. Direct all written comments to the attention of Kevin Shannon, Solid Waste Division, Resource Management Agency, 5961 South Mooney Boulevard, Visalia, California 93277. The EIR is available for review during regular business hours at this same address.
Publish: December 18, 2000
Ad#06512864